GOVERNMENT OF KERALA

Abstract

Health & Family Welfare Department - Management of Monkeypox - 'State Guidelines on Monkeypox Disease' - Revised - Orders issued.

HEALTH & FAMILY WELFARE (F) DEPARTMENT

G.O.(Rt)No.2496/2024/H&FWD Dated,Thiruvananthapuram, 21-10-2024

Read:- 1. G.O.(Rt) No. 1947/2022/H&FWD dated 07.08.2022

2. G.O.(Rt) No. 1872/2022/H&FWD dated 01.08.2022

3. G.O.(Rt) No. 2248/2022/H&FWD dated.16.09.2022

ORDER

As per the Government Order read as 1st paper above, 'State Guidelines on Monkeypox Disease' has been issued, incorporating management, contact tracing, surveillance strategies, and preventive measures in response to the multi-country Monkeypox outbreak.

(2) Consequent to the announcement of current outbreak of Monkeypox as Public Health Emergency of International Concern (PHEIC) by the World Health Organization and new Virus strain are spreading rapidly, as recommended by State Medical Board, Government are pleased to issue the '*Revised Kerala State Guidelines on Monkeypox Disease',* as annexed to this order.

(By order of the Governor)

Dr. Rajan Namdev Khobragade I A S
ADDITIONAL CHIEF SECRETARY

To:

The State Mission Director -National Health Mission, Thiruvananthapuram.

The Managing Director, Kerala Medical Services Corporation Ltd.

The Director of Health Services, Thiruvananthapuram.

The Director of Medical Education, Thiruvananthapuram.

The Director, Public Health Lab

All District Collectors.

All District Surveillance Officers.

All District Medical Officers (Health).

Principal Accountant General (A&E/Audit) Kerala.

Information & Public Relations (Web & New Media) Department.

Stock File/ Office Copy (to file F2/274/2024-HEALTH-Part(1).

Forwarded /By order

Signed by
Vilasini K V
Date: 22-10-2024 16:34:25

Section Officer

Copy to:-

Private Secretary to the Hon'ble Minister (Health)

Officer on Special Duty to Chief Secretary

PA to Additional Chief Secretary (Health)

KERALA STATE REVISED GUIDELINES ON DIAGNOSIS, ISOLATION AND TREATMENT OF PATIENTS WITH MPOX INFECTION – OCT 2024

Background

Mpox (formerly known as monkeypox) is an infectious disease caused by the monkeypox virus (MPXV) which is primarily characterized by rash and fever and may lead to severe disease. MPXV is part of the same family of viruses as the variola virus, which causes smallpox. Mpox symptoms are similar to smallpox symptoms but milder and are rarely fatal. Monkeypox is not related to chickenpox.

Mpox was first discovered in 1958 in colonies of monkeys kept for research, hence the name 'Monkeypox'. Despite being named "monkeypox," the source of the disease remains unknown. However, African rodents and non-human primates (like monkeys) might harbour the virus and infect people. The first human case of Mpox was reported in the Democratic Republic of the Congo (DRC) in 1970.

MPXV primarily occurs in Central and West Africa. The first Mpox outbreak outside Africa was reported in the United States of America in 2003. It was linked to contact with infected pet prairie dogs housed with Gambian pouched rats and dormice imported into the country from Ghana. Before the 2022 outbreak, human cases of Mpox had been reported in several central and western African countries. Previously, almost all Mpox cases in people outside of Africa were linked to international travel to countries where the disease commonly occurs or through imported animals. With the eradication of smallpox in 1980 and the subsequent cessation of smallpox vaccination, Monkeypox has emerged as the most important Orthopox virus for public health.

Molecular Epidemiology of MPXV

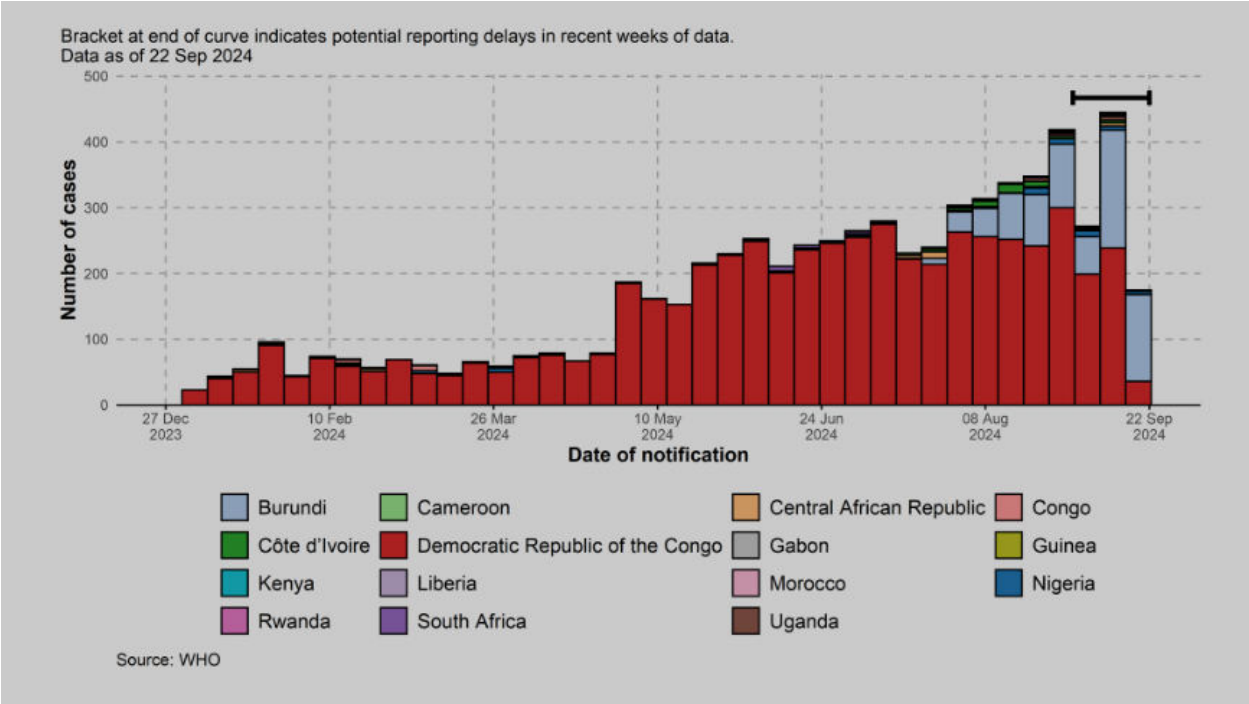
The MPXV is divided into two clades: clade I (formerly Congo Basin clade) and clade II (formerly West African clade). Each clade is further divided into two subclades, clade Ia and Ib, and clade IIa and IIb. Historically, mpox was viewed as a viral zoonosis, primarily occurring in

tropical rainforest regions of Central, West and more recently East Africa, with occasional cases exported to other regions, and limited onward community transmission. In very few instances, MPXV has been found in wild animals though the animal reservoir has not been definitively identified; no direct link (e.g., sequence homology) has ever been identified between an infected animal and an infected human in endemic areas.

CURRENT GLOBAL SCENARIO

A global outbreak of MPXV Clade IIb began in 2022, driven primarily through sexual contact amongst men who have sex with men, and particularly individuals who had multiple partners. While this global outbreak of Clade IIb has largely subsided, in 2024 an unprecedented increase in mpox cases has been observed in the African Region. This surge is primarily driven by the spread of Clade I in the Democratic Republic of the Congo, which accounts for about 90% of cases in the region. While the epidemiology is not completely understood, it is clear that two main and distinct outbreaks are ongoing in the Democratic Republic of the Congo: one involving Clade Ia in the mpox-endemic provinces (presumably still involving a degree of zoonotic transmission), and another involving Clade Ib currently in the eastern part of the country, driven by human-to-human transmission. The latter has rapidly spread in eastern Provinces as well as to neighbouring countries such as Burundi, Kenya, Rwanda, and Uganda, which had not previously reported mpox in the past. Based on limited available epidemiological data, Clade Ib has been spreading proportionally more among adults, likely through close physical contact, including sexual contact. However, while the outbreak was initially detected among sexual networks, including sex workers, as the virus spreads further, the affected groups appear to be changing, with the virus also taking hold within households and other settings. In historically endemic provinces of the Democratic Republic of the Congo, both children and adults are affected although more cases have been reported in children.

KEY FIGURES				
Reporting period: 01 January 2022 – 31 August 2024				
Area	Number of reported confirmed cases	Number of deaths among confirmed cases	Number countries reporting cases	
Global	106 310	234	123	
Reporting period: 01 January 2024 – 15 September 2024				
Area	Number of reported confirmed cases	Number of deaths among confirmed cases	Number of reported suspected cases	Number of deaths among suspected cases
Africa	6201	32	29 342	812
Democratic Republic of the Congo[1]	5399	25	25 757	806
Burundi[2]	564	0	1557	0

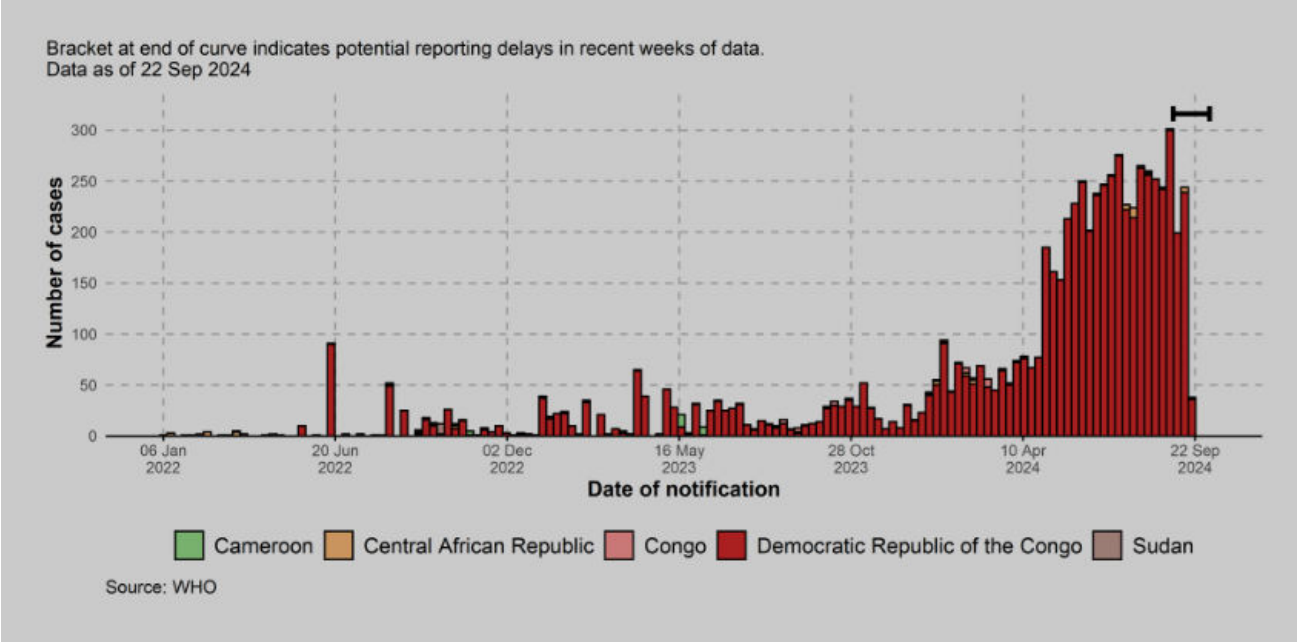


During the global outbreak, which affected a variety of high-income countries, many investigations and research studies were conducted to elucidate transmission dynamics, risk factors for infection, clinical presentation, disease severity and virus characterization through sequencing. Nevertheless, their findings mainly pertain to clade IIb MPXV with exclusively human-to-human transmission through sexual or other forms of close interpersonal contact in high-income settings with access to health care services.

Little is currently known about these parameters in the current outbreak of Clade Ib in Africa, where a broader range of transmission modes (e.g., zoonotic, non-sexual household, sexual between men and women) and population groups (e.g., children, female sex workers) appear to be involved. Quantification of person-to-person epidemiological transmission parameters such as incubation period, serial interval, secondary attack rate, reproduction number and infectious period, by MPXV clade and type of transmission is thus lacking, as is a clear understanding of risk factors in the current Clade Ib outbreak.

The global outbreak has shown that mpox due to clade IIb MPXV could also present with few lesions and in, some cases, patients were asymptomatic or pauci-symptomatic. Many cases had mucosal lesions, especially in the genital or anorectal areas. Generally, during the global outbreak, disease severity has been lower than in prior and concurrent outbreaks of mpox due to clade I MPXV. Mpox mortality is influenced by numerous individual characteristics, including the patient's immune status (particularly untreated or uncontrolled HIV infection), smallpox or mpox vaccination status and time since vaccination, age and general health status of the individual, inoculum size, and access to health services. Consistently, reported mpox mortality in countries outside of Africa has been lower. However, severe cases with medical complications, including death, have been reported for clade IIb cases. Little is yet known about the frequency of severe cases and deaths in mpox due to Clade Ib MPXV, and their relationship with the aforementioned individual characteristics.

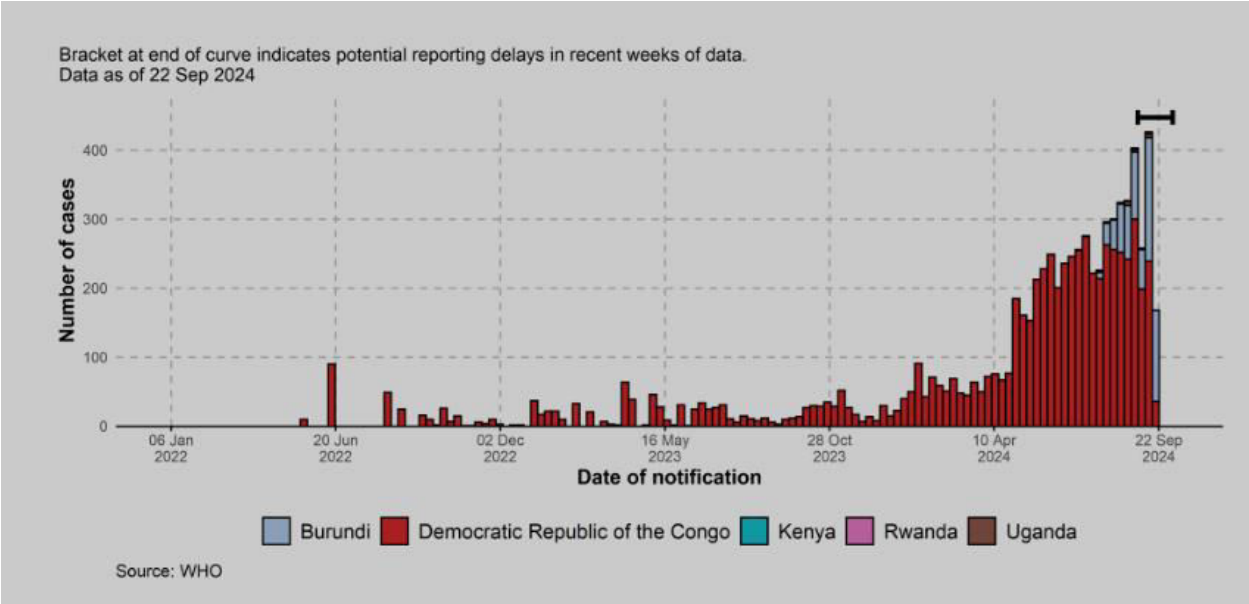
Confirmed cases of Clade Ia

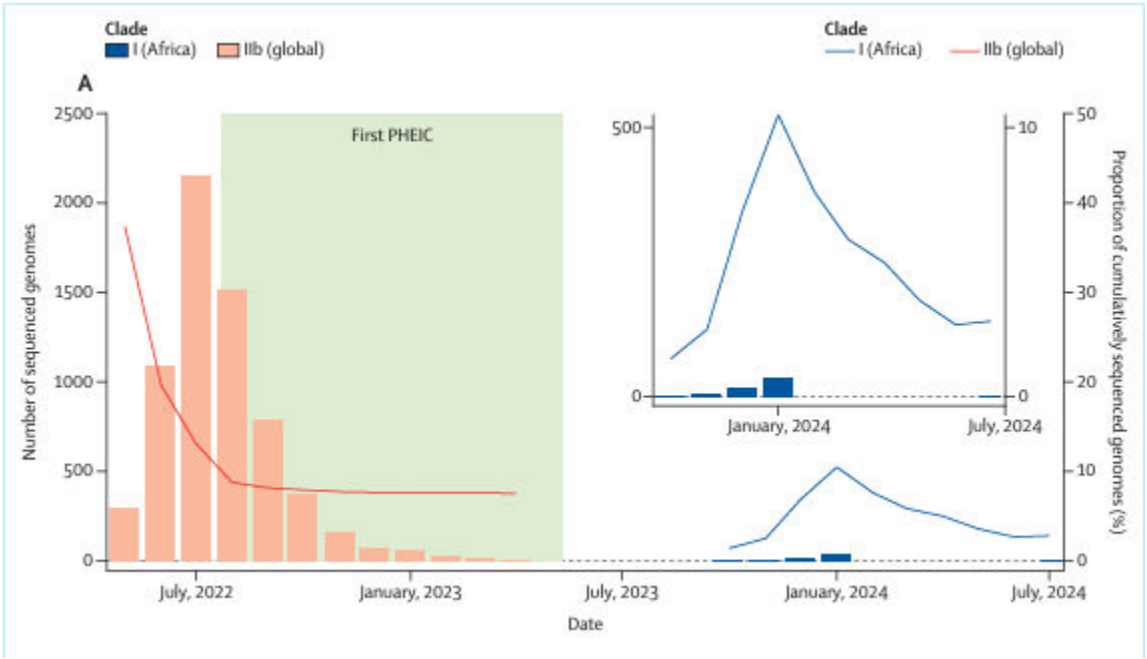


Clade Ib MPXV

In 2023, a new variant of clade I MPXV was identified in the DRC's South Kivu province, named clade Ib, demonstrating evidence of adaptation to humans due to sustained human-human transmission. In recent months, clade Ib mpox has spread to neighbouring countries, including Burundi, Central African Republic, Republic of the Congo, Kenya, Rwanda, and Uganda. In response, on Aug 14, 2024, WHO redeclared mpox as a public health emergency of international concern (PHEIC) making it the second infectious disease that has caused two independent PHEICs in the 21st century, the first being Ebola.Five countries in Africa (Burundi, the Democratic Republic of the Congo, Kenya, Rwanda and Uganda) and three countries outside of Africa (Sweden, Thailand and India) have reported clade Ib monkeypox virus (MPXV). Available information suggests that sustained community transmission of this strain is ongoing in the Democratic Republic of the Congo and Burundi.

Confirmed cases of Clade Ib





WHO Mpox Risk Assessment

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

a) In eastern Democratic Republic of the Congo and neighbouring countries: **high**.
b) In areas of the Democratic Republic of the Congo where mpox is endemic: **high**.
c) In Nigeria and other countries of West, Central and East Africa where mpox is endemic: **moderate.**
d) In all other countries in Africa and around the world: **moderate**.

Incubation period:

- The incubation period (interval from infection to onset of symptoms) of Monkeypox is usually from 6 to 13 days. However, it can range from 5 to 21 days.

Period of communicability:

- 1 to 2 days before the onset of the rash until all the scabs fall off/get subsided.
- Usually,the rash develops around 2 days after the fever and hence only symptomatic patients are infectious.

Mode of transmission:

- Human-to-human transmission occurs primarily through prolonged skin-to-skin or face-to-face contact. It can also transmit through large respiratory droplets, generally requiring prolonged close contact. It can also be transmitted through direct contact with body fluids or lesion materials and indirect contact with lesion materials, such as through contaminated clothing or linens of an infected person. Vertical transmission also has been reported.
- Animal-to-human transmission: may occur by bite or scratch of infected animals like small mammals, including rodents (rats, squirrels) and non-human primates (monkeys, apes) or through bush meat preparation.

Case Definition

1. Suspected case:

i) A person who has travelled from a region where there is ongoing Mpox transmission/is a contact with 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 anogenital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Anorectal lesions can also manifest as anorectal inflammation (proctitis), 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, herpes zoster, measles, herpes simplex, bacterial skin infections, disseminated gonococcus 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.

NB: a negative laboratory test for the listed common causes of rash illness will not be needed to classify a case as suspected mpox.

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 anogenital region or elsewhere on the body. Mucosal lesions may include single or multiple oral, conjunctival, urethral, penile, vaginal, or anorectal lesions. Anorectal lesions can also manifest as anorectal inflammation (proctitis), pain and/or bleeding.

AND

One of the following:

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

3. Confirmed case:

A person who meets either of the following laboratory criteria:

- Detection of monkeypox virus (MPXV) DNA by real-time polymerase chain reaction (PCR) and/or sequencing.

OR

- Detection of orthopoxvirus (OPXV) DNA by PCR in settings where:

-An mpox outbreak has been confirmed through MPXV-specific PCR or sequencing;

AND

- No other orthopoxviruses are known to circulate in human populations.

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 orthopoxvirus or 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.

5. Contact of a case - definition

A contact is defined as a person who has been exposed to a confirmed case (person with confirmed mpox) during the infectious period (from the start of symptoms until all lesion scabs

fall off and new skin has formed) and who has had one or more types of contacts with the case (see table below for types of exposure modes that could occur).

N.B., contacts may be listed while a case is still classified as suspected or probable but will be discarded if the case is subsequently discarded.

Direct physical (non-sexual) contact	Physical non-sexual contact: skin-to-skin and skin-to-mucosal contact, which includes touching, caressing, hugging, kissing, holding, carrying, breastfeeding, bathing/wiping, etc. Includes contact with a deceased person's skin lesions or body fluids.
Sexual contact	Mucosa-to-mucosa contact, which includes kissing on the mouth, oral (fellatio, cunnilingus and anilingus), vaginal or anal sexual intercourse.
Contact with contaminated materials	Contact of the skin or mucous membranes with dislodged lesion material (crusts), through activities such as handling clothing or bedding of a case without personal protective equipment (PPE), or cleaning of contaminated rooms without PPE, including household members who may come in contact with contaminated objects and surfaces in the absence of direct physical contact with the case; injury with needlestick used for case sampling or other potentially contaminated needle; contact with the sample of a case during laboratory activities and analysis; and contact with body fluids (e.g., breastmilk, semen) in the absence of direct physical contact.
Prolonged close (non-contact) exposure	This occurs when infectious respiratory particles (IRPs) are expelled into the air by the case, then directly deposited on the exposed mucosal surfaces (mouth, nose or eyes) of another person, or when IRPs have travelled either short or long distances from the infectious person and are inhaled by a receiving person. For example, this may include exposure to a case in close proximity, such as speaking, eating in front of each other, and other close-proximity activities. It may also include aerosol-generating procedures performed on cases in healthcare settings. The distance and time over which this occurs may vary. This is the presumed type of contact when none of the other types have occurred.
Vertical transmission	Transmission from mother to fetus during pregnancy or to the newborn during birth.

Clinical features

Mpox is usually a self-limited disease with symptoms lasting from two to four weeks. Severe cases occur more commonly among children and Immunocompromised and are related to the extent of virus exposure, patient health status and the nature of complications. The extent to which asymptomatic infection occurs is unknown. The case fatality ratio of Mpox ranges from 0

to 11% in the general population and has been higher among young children. The case fatality rate associated with infections due to the Central African clade is 10%, and that with the West African clade is 1 to 3%.The estimated CFR during the current outbreak is 2.8%.

I. Common symptoms and signs

a. Prodrome (0-5 days)

1) Fever
2) Lymphadenopathy — Typically occurs with fever onset

— Periauricular, axillary, cervical or inguinal

— Unilateral or bilateral

3) Headache, muscle aches, exhaustion
4) Chills and/or sweats
5) Sore throat and cough

b. Skin involvement (rash)

1) Usually begins within 1-3 days of fever onset, lasting for around 2-4 weeks
2) Deep-seated, well-circumscribed and often develops umbilication
3) Lesions are often described as painful until the healing phase when they become itchy (in the crust stage)
4) Stages of rash (slow evolution)

— Enanthem- first lesions on tongue and mouth

— Macules starting from the face spreading to arms, legs, palms, and soles (centrifugal distribution) within 24 hours

— The rash goes through a macular, papular, vesicular and pustular phase. Classic lesion is vesiculo-pustular

— Involvement by area: face (98%), palms and soles (95%), oral mucous membranes (70%), genitalia (28%), conjunctiva (20%).Generally, skin rashes are more apparent on the limbs and face than on the trunk. Notably, the genitalia can be involved

— By the 3rd day, lesions progress to papules

— By the 4th to 5th day, lesions become vesicles (raised and fluid-filled).

— By the 6th to 7th day, lesions become pustular, sharply raised, filled with opaque fluid, firm and deep-seated.

— May umbilicate or become confluent

— By the end of 2nd week, they dry up and crust

— Scabs remain for a week before falling off

— The lesion heals with hyperpigmented atrophic scars, hypo-pigmented atrophic scars, patchy alopecia, hypertrophic skin scarring and contracture/deformity of facial muscles following the healing of ulcerated facial lesions

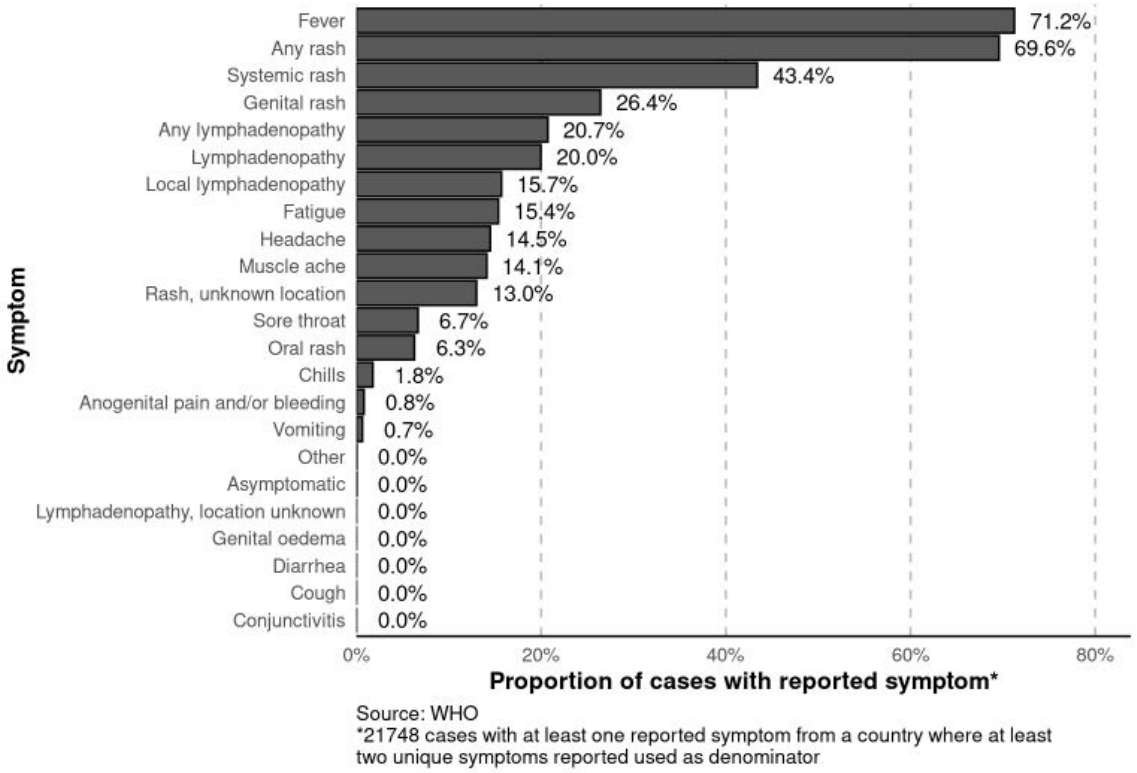
— A notable predilection for palm and soles is characteristic of Mpox

c. The skin manifestations depend on vaccination status, age, nutritional status, and associated HIV status. Mpox mostly occurs in communities with a high prevalence of malnutrition, parasitic infections, and other significant heath-compromising conditions, which could impact the prognosis of a patient with Mpox.

d.The total lesion burden at the apex of the rash can be quite high (>500 lesions) or relatively slight (<25).

The clinical presentation of Mpox cases associated with 2022 outbreak has been atypical, as many cases did not present with the classically described clinical picture for Monkeypox (fever, swollen lymph nodes, followed by centrifugal rash). Among the cases who reported at least one

symptom, 81% presented with systemic rash (widespread rash on the body), 50% presented with fever and 41% presented with genital rash.



Differential Diagnosis

The differential diagnoses of Mpox include Varicella (Chickenpox), disseminated herpes zoster, disseminated herpes simplex, measles, chancroid, secondary syphilis, hand foot mouth disease, infectious mononucleosis and molluscum contagiosum.

Complications

• Secondary infections

• Pneumonia, sepsis, encephalitis

• Corneal involvement (may lead to loss of vision)

Diagnosis

a. Personal Protective Equipment for handling the clinical specimens:

PPE to be donned before collecting the specimens should include- Coveralls/Gowns, N-95 mask, face shield/safety goggles, double pair of gloves. Donning & doffing of PPE should be carefully performed as per the standard procedure. The procedure for sample collection and transport of the clinical specimen are placed as **Annexure 2.** Instructions on sample packaging and transport are provided in detail in **Annexure 3.**

Clinical samples should be collected from the cases as per the following table

Traveller from outbreak /endemic region or Community Transmission		
Asymptomatic	• Observe for the development of any signs and symptoms for 21 days' post exposure • If signs and symptoms develop, collect specimens as per the duration of illness as mentioned below	
Symptomatic	**Rash phase****	**Recovery phase**
	• *Lesion roof- with scalpel or plastic scrapper collected in plain tube • *Lesion fluid with intradermal syringe • *Lesion base scrapings with sterile polyester swab collected in plain tube • *Lesion crust in plain tube • NPS/OPS in dry plain tube [without any bacterial medium or VTM] • Blood collected in SSGT (4-5 ml) ◎Blood collected in EDTA (2-3ml) • Urine in sterile urine container (3-5ml)	◎Blood collected in SSGT (4-5 ml) Urine in sterile urine container (3-5ml)

****The specimens from lesion should be collected from multiple sites**

Diagnostic modalities for Mpox

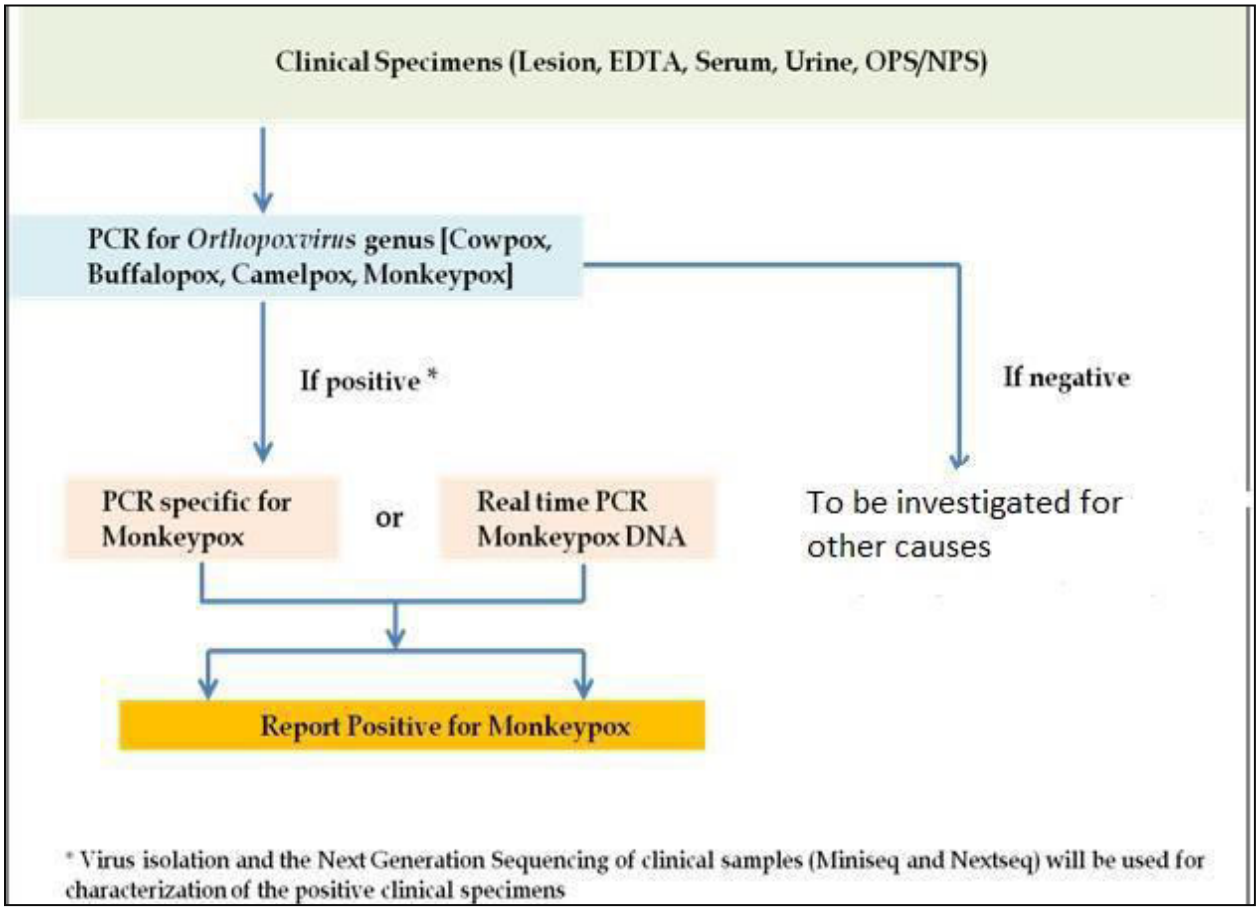
For the confirmation of Mpox on the suspected clinical specimens:

a) PCR for *Orthopoxvirus*genus [Cowpox, Buffalopox, Camelpox, Monkeypox] will be done

b) If the specimen shows positivity for the Orthopoxvirus, it would be further confirmed by

Mpox specific conventional PCR or real time PCR for Mpox DNA

c) Additionally, virus isolation and the Next Generation Sequencing of clinical samples (Miniseq and Nextseq) will be used for the characterization of the positive clinical specimens. For this, samples should be sent to NIV Pune/IAV as per the directions of DSO



Management

a. Principles of Management

• Patient isolation

• Protection of compromised skin and mucous membranes

• Rehydration therapy and Nutritional support

• Symptom alleviation

• Monitoring and treatment of complications

• Psychological support

b. Patient Isolation

- Isolate suspected/confirmed cases of Mpox in an isolation room of the hospital/ at home in a separate room with separate ventilation and toilet.
- Initially, all suspected/confirmed cases of Mpox have to be in hospital-based isolation rooms.
- Since the transmission dynamics of Clade Ib is not fully understood, it will be prudent to maintain patients with clade Ib in isolation at hospitals. For these patients, repeat samples have to be sentevery fourth day and can be discharged once PCR from all samples including crust turns negative.
- As the severity of Mpox in those with advanced HIV, those on immunosuppressants etc is high, all such patients should be treated in hospitals.
- Clade 2b may be discharged and advised to continue room isolation at home if the patient is afebrile and clinically stable. There is no need for repeat sampling for these patients every fourth day. After the crusts have fallen off repeat sampling may be performed [to be arranged by DSO] if negative, PCR result is required for travelling abroad.
- If clade is not known, isolation protocol for clade 2b is to be followed.
- Isolate until all lesions have resolved, the scabs have fallen off, and a fresh layer of intact skin has formed (usually 2-4 weeks).
- It is particularly important to try to avoid close prolonged contact with young children and people who are pregnant, breastfeeding, immunocompromised, or people who have a history of atopic dermatitis or eczema as they may be at higher risk of serious illness. If there is a chance of coming into contact these high risk groups while in home isolation, it will be better to opt for hospital based isolation.

Precautions to be followed by patients while in Home Isolation

- Patients should wear a triple-layer mask.
- Skin lesions should be covered to the best extent possible (e.g. long sleeves, long pants) to minimize the risk of contact with others.
- Should sleep in a separate room and use a dedicated bathroom.
- If patients need to spend time in the same room as someone in their household is needing help, they have to cover all skin lesions with clothes, gloves and/or bandages as appropriate and minimize any physical contact. In addition, the patient and the person in the room with (if over 2 years of age) should wear a well-fitting mask or respirator when in close contact (e.g., within 6 feet) for more than a brief encounter. It is particularly important to try to avoid close prolonged contact with young children and people who are pregnant, breastfeeding, or immunosuppressed, or people who have a history of atopic dermatitis or eczema as they may be at higher risk of serious illness.
- While in isolation, patients should avoid hugging; cuddling, massaging; kissing; sleeping in the same bed; having oral, anal, and vaginal sex; or touching the genitals or anus of others or other close skin-to-skin contact with other people. Do not share items used with other people or animals, including bedding, towels, clothes, utensils, cups, and electronics among other items, unless they have been cleaned and disinfected
- Launder or disinfect items that have been worn or handled and clean and disinfect surfaces that have been touched by a skin lesion. Patients themselves should clean them if possible.
- Patients should clean their hands frequently throughout the day, especially after direct contact with lesions. Other household members should also clean their hands frequently. Use soap and water for 20 seconds or hand sanitizers that contain at least 60% alcohol.
- **Patients should avoid use of contact lenses to prevent spreading the infection to the eyes and also should avoid shaving areas of the body that have skin lesions/rash.**
- **Isolation to be continued until all lesions have resolved, scabs have completely fallen off and a fresh layer of skin appears**

Table 2: Supportive management of Monkeypox

Component of management	Symptoms/Signs	Management
Protection of compromised skin and mucous membranes	Skin rash	• Clean with simple antiseptic Mupironic Acid/Fucidin ointment • Cover with light dressing if extensive lesion present • Do not touch/ scratch the lesions • In case of secondary infection relevant systematic antibiotics may be considered
	Genital ulcers	• Sitz bath
	Oral ulcers	• Warm saline gargles/ oral topical anti-inflammatory gel
	Conjunctivitis	• Usually, self-limiting • Consult Ophthalmologist if symptoms persist or there are pain/ visual disturbances
Rehydration therapy and nutritional support	Dehydration can occur in association with poor appetite, nausea, vomiting and diarrhoea	• Encourage ORS or oral fluids • Intravenous fluids if indicated • Encourage nutritious and adequate diet
Symptom alleviation	Fever	• Tepid sponging • Paracetamol as required
	Itching/Pruritus	• Topical Calamine lotion • Antihistaminics
	Nausea and vomiting	• Consider anti-emetics
	Headache/ malaise	• Paracetamol and adequate hydration

c. Monitoring and treatment of complications

The patient should closely monitor for the appearance of any of the following symptoms during the period of isolation:

If in room isolation at home, patients should inform health authorities if they develop any of the following symptoms

- Pain in eye or blurring of vision .
- Shortness of breath, chest pain, difficulty in breathing .
- Altered consciousness, seizure .
- Decrease in urine output .
- Poor oral intake .

- Lethargy .

WHEN CAN PATIENTS RESUME NORMAL ACTIVITIES

- All the skin lesions have healed (i.e., scabs have fallen off and a fresh layer of skin has formed at the lesion sites) AND
- Any other symptoms, including fever, have gone for at least 48 hours without the use of antipyretics.
- **Note about sex: There may be a risk of passing mpox to a sex partner even after skin lesions have healed. This is because the virus may remain in semen and other genital excretions. It is recommended that you use condoms for 12 weeks after recovery.**

a.Definition of a contact

A contact is defined as a person who, in the period beginning with the onset of the source case's first symptoms, and ending when all scabs have fallen off, has had one or more of the following exposures with a probable or confirmed case of Monkeypox:

- Direct skin-to-skin physical contact (such as touching, hugging, kissing, intimate or sexual contact.
- Direct physical contact, including 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 (eg: scabs/crusts) from an infected person.
- Face-to-face exposure (including healthcare workers without appropriate PPE)
- Direct physical contact, including sexual contact
- Contact with contaminated materials such as clothing or bedding

b. Contact Identification

Cases can be prompted to identify contacts across the household, workplace, school/nursery, sexual contacts, healthcare, houses of worship, transportation, sports, social gatherings, and any other recalled interactions.

WHO has established three levels of risk for contact with a Mpox case as follows:

a. High risk

Direct exposure of the skin or mucous membranes to skin or respiratory secretions of a person with confirmed, probable or suspected Mpox, their body fluids (e.g., lesion vesicular or pustular fluid) or potentially infectious material (including clothing or bedding) if not wearing appropriate PPE.

This includes:

• Inhalation of droplets or dust from cleaning contaminated rooms

• Mucosal exposure due to splashes from body fluids

• Physical contact with someone who has Mpox, including direct contact during sexual activities. This includes face-to-face, skin-to-skin or mouth-to-skin contact or exposure to body fluids or contaminated materials or objects (fomites)

• Normally sharing a residence (permanently or occasionally) during the presumed incubation period with a person who has been diagnosed with Mpox, or

• A penetrating sharp injury from a contaminated device or through contaminated gloves.

b. Medium risk

• No direct contact but close proximity in the same room or indoor physical space as a symptomatic Mpox patient if not wearing appropriate PPE.

c. Low or minimal risk

• Contact with a person with confirmed, probable or suspected Mpox or an environment that may be contaminated with Mpox virus while wearing appropriate PPE and without any known breaches of PPE or of donning and doffing procedures

• Community contacts, such as being in an outdoor setting with a symptomatic case without close proximity or physical contact

Travel related contact

If a probable or confirmed case is reported in a long-distance travel conveyance (e.g., lasting for more than 4 hours), travellers seated in the same row, two rows in front and two rows behind the sick traveller, as well as the cabin crew who served the case, can be considered medium-risk contacts if they had no physical contact with the case and were not wearing protective PPE such as face mask. Any passenger or crew team member who reports physical contact with a symptomatic case without using PPE can be considered a high-risk contact.

Contact monitoring

a) **There is no need to isolate the contacts but they should be monitored at least daily for the onset of signs/symptoms for a period of 21 days** (as per the case definition above) from the last contact with a patient or their contaminated materials during the infectious period. In case of the occurrence of fever, the patient has to be isolated and clinical/lab evaluation is warranted.

b) Asymptomatic contacts should not donate blood, cells, tissue, organs or semen while they are under surveillance.

c) Pre-school children shall not be sent to daycare centres, nurseries, or other group settings.

d) Health workers who have unprotected exposure to patients with Mpox or possibly contaminated materials can continue to work if asymptomatic but should undergo active surveillance for symptoms for 21 days.

Advisory for International Passengers and surveillance at Airports and Role of APHOs/PHOs is also elaborated in **Annexure 4.**

Surveillance Strategies

The proposed surveillance strategy aims to rapidly identify cases and clusters of infections and the sources of infections as soon as possible to:

a) Isolate cases to prevent further transmission

b) Provide optimal clinical care

c) Identify and manage contacts

d) Protect frontline health workers

e) Effective control and preventive measures based on the identified routes of transmission.

Surveillance outline

a) Use Standard Case Definitions by all District Surveillance Units (DSUs) under Integrated Disease Surveillance Programme (IDSP) and at Points of Entry (PoEs).

b) Even one case of Mpox is to be considered an outbreak. A detailed investigation by the Rapid Response Teams needs to be initiated through IDSP.

c) Report any suspected case immediately to the DSU and then to the State Surveillance Units (SSU).

d) Send the samples as per the guidelines to the designated laboratories.

a) Salient features of surveillance:

a) Targeted surveillance for probable cases or clusters.

b) Initiate contact tracing and testing of the symptomatic persons after the detection of the probable/confirmed case.

• Contacts of probable and confirmed cases should be monitored daily for any sign or symptom for 21 days from the last contact with a case or their contaminated materials during the infectious period.

• **Quarantine or exclusion from work is not necessary for primary contacts as long as no symptoms develop during the self-monitoring period**.

• During the 21 days of monitoring, encourage contacts to practice hand hygiene and respiratory etiquette rigorously, avoid contact with immunocompromised people, children or pregnant women, and avoid any sexual contact.

• Non-essential travel is discouraged during the self-monitoring period.

b) Core Surveillance Strategy

a) Hospital-based surveillance: Health facility-based surveillance & testing

Surveillance sites - Dermatology clinics, STD clinics, Medicine, Paediatrics OPDs, casualty etc.

• An Alert message should be pasted in front of the surveillance sites, including the suspect case definition in the local language

• All hospital staff, including security personnel, should be sensitized about the disease

• A standard operating procedure shall be in place in every hospital regarding patient flow, referral, transportation and information flow related to notifications

b) Targeted Surveillance: This can be achieved by:

i) Measles surveillance by the Immunization division

ii) Targeted intervention sites identified by NACO for MSM, the FSW population

c) Reporting

Reporting of cases is to be done in the format as in **Annexure 1.**

d) Risk Communication and Preventive Measures

Raising awareness of risk factors and educating people about the measures they can take to reduce exposure to the virus is the main prevention strategy for Mpox. There are number of measures that can be taken to prevent infection with the Mpox virus:

• Avoid contact with any materials, such as bedding that have been in contact with a sick person.

• Isolate infected patients from others.

• Practice good hand hygiene after contact with infected animals or humans. For example, washing your hands with soap and water or using an alcohol-based hand sanitizer.

• Use appropriate personal protective equipment (PPE) when caring for patients.

e) Reducing the risk of human-to-human transmission

Surveillance and rapid identification of new cases are critical for outbreak containment. During human Mpox outbreaks, close contact with infected persons is the most significant risk factor for Mpox virus infection. Health workers and household members are at a greater risk of infection. Health workers caring for patients with suspected or confirmed Mpox virus infection, or handling specimens from them, should implement standard infection control precautions. Samples taken from people and animals with suspected Mpox virus infection should be handled by trained staff working in suitably equipped laboratories. Patient specimens must be safely prepared for transport with triple packaging in accordance with WHO guidance for the transport of infectious substances.

f) Infection Prevention and Control (IPC)

A combination of standard contact and droplet precautions should be applied in all healthcare settings when a patient presents with fever and vesicular/pustular rash.

Clinical triage includes early recognition and immediate placement of the patient in a separate area from other patients (source control). All individuals, including family members, visitors and HCWs, should apply standard, contact and droplet precautions.

g) Patient isolation

The patient should be managed in isolation, and precautions should be taken to minimize exposure to surrounding persons, which include placing a surgical mask over the patient's nose and mouth—if tolerable to the patient—and covering any of the patient's exposed skin lesions with a sheet or gown.

h) Ambulance Transfer

• When a case has to be transported, the personnel accompanying the patient should wear PPE (long-sleeved gown, N95 mask, gloves, and goggles).

• Give prior information to the hospital about the admission/transfer of a potentially infectious person.

• Request the patient to wear a mask (if tolerated) and advise on Respiratory Hygiene and Cough Etiquette**.**

• If lesions are present, cover them with long-sleeved clothing/pants or a clean sheet to minimize contact with others. In the ambulance, use disposable linen if available.

• The ambulance should be cleaned and disinfected before being used for other patients. **After wearing PPE**, surfaces (stretcher, chair, door handles etc.) should be cleaned with a freshly prepared 1% hypochlorite solution or equivalent. Carefully place reusable blankets in a bag without shaking or fluffing them, then put them into a laundry bag and send for laundering, clearly labelling it, so that the person in the laundry wears appropriate PPE before handling or autoclaving it before opening. Follow the manufacturer's instructions for cleaning/disinfecting reusable equipment in the ambulance. All masks and any waste contaminated with crusts, secretions, serum or body fluids should be disposed of as infectious waste in the yellow bag.

If the driver's chamber is not separate in the ambulance, the driver should also use PPE.

i) Additional Precautions

• **PPE** (Disposable gown, gloves, N95 mask, Eye goggles) should be donned before entering the patient's room and used for all patient contact. All PPE should be disposed of before leaving the isolation room where the patient is admitted.

• **Hand hygiene** (following standard steps of hand hygiene) after each contact with an infected patient and/or their environment during care.

• Correct containment and disposal of contaminated waste (e.g., dressings) in accordance with **Biomedical Waste Management guidelines (2016 & subsequent amendments)** for infectious waste.

• Care when handling **soiled laundry** (e.g., bedding, towels, personal clothing) to avoid contact with lesion/ other infected materials.

• Soiled laundry should never be shaken or handled in a manner that may disperse infectious particles.

• Care when handling used **patient-care equipment** to prevent contamination of skin and clothing.

• Ensure that used equipment has been cleaned and reprocessed appropriately.

• Ensure provisions are in place for cleaning and disinfecting environmental surfaces in the patient care environment.

• Hospital disinfectant currently used for environmental sanitation may be used as per recommendations for concentration, contact time, and care in handling.

j) Risk communication

This includes providing public health advice through the channels that target audiences use on how the disease transmits, its symptoms, preventive measures and what to do in case of a suspect or confirmed infection. This should be combined with targeting community engagement to the population groups who are most at risk, working closely with health care providers, including STD clinics and civil society organizations.

Risk communication should be informed by insights from social listening detecting public sentiment, and should timely address possible rumours and misinformation. Health information and advice should be provided, avoiding certain stigmatizing groups such as men who have sex with men (MSM).

The key measures that can be taken to prevent infection with the Mpox virus:

• Isolate infected patients from others who could be at risk for infection.

• Avoid contact with any materials, such as bedding, that have been in contact with a patient of Monkeypox.

• Practice good hand hygiene after contact with infected persons. For example, washing your hands with soap and water or using an alcohol-based hand sanitizer.

• Use masks and gloves when caring for patients.

. While in quarantine, daily monitor symptoms and go for isolation and testing whenever any symptoms/signs develop to prevent transmission to new contacts.

13. References

1. Mpox: Global trends: World Health Organization: Sep 2024

2. Investigation of mpox transmission ;Study protocol: Version: 1.1 Date: 24 September 2024

3. Surveillance, case investigation and contact tracing for Monkeypox: Interim guidance by WHO June24, 2022

4. Epidemiological update, week 37/2024: Mpox due to monkeypox virus clade I:Europeancentre for disease prevention and control.

5. Public health strategies for Mpox: CDC Sep 12 ; 2024

ANNEXURE-1: Case Reporting Format

National Insitute of Virology, Pune

Case Information form

Field ID | Date of Collection of Specimen | Collected by

Aadhar Card Number

Patient Information :

Name of the patient | Occupation

Age in completed years | Gender | Pregnant | If Pregnant (Mention weeks of pregnancy)

Detailed Address:

Locality | Village | Taluka | City

District | State | Pincode | Contact Number

Clinical History :

Name of Hospital/ Clinic | OPD/ IPD Number

Post Illness day | Date of Hospitalization

Date of onset of symptoms

☐ Fever ☐ Chills/ Rigors Grade of fever Type of fever
☐ Myalgia ☐ Fatigue ☐ Headache ☐ Malaise ☐ Bodyache ☐ Lymphadenopathy Specify

☐ Rash ☐ Macular ☐ Papular ☐ Macolo-papular ☐ Vesicular ☐ Pustular ☐ Purpuric ☐ Ischar ☐ Bullae
☐ Scabs/ Crusts ☐ Others Specify

☐ Respiratory symptoms ☐ Cold ☐ Cough (dry) ☐ Cough (Expectorant) ☐ Nasal Discharge ☐ Breathlessness
☐ Hemoptysis ☐ Chest pain ☐ Ear Discharge ☐ Sore throat Others (Specify)

☐ Eye problems ☐ Redness ☐ Pain ☐ Watering ☐ Stickiness Others (Specify)

☐ Oro-GI symptoms ☐ Nausea ☐ Vomiting ☐ Diarrhoea ☐ Abdominal pain ☐ Loss of appetite
☐ Oral ulcers ☐ Koplik spot ☐ Swollen/tender salivary glands ☐ Others Specify

☐ CNS symptoms ☐ Altered Sensorium ☐ Convulsions ☐ Irritability ☐ Disorientation ☐ Neck pain/ Stiffness
Others (Specify)

Complications: ☐ Pneumonia ☐ ARDS On Mechanical Ventilation ☐ Coagulopathy ☐ Acute Renal Failure
☐ Encephalitis/ Meningitis ☐ Sepsis ☐ Severe Dehydration ☐ Uveitis/ Iritis ☐ Orchitis ☐ Arthritis
☐ Reye's Syndrome ☐ Myocarditis ☐ Hepatitis ☐ Hearing loss ☐ Otitis Media ☐ Acute Malnutrition
☐ Others Specify

Past History: ☐ Diabetes ☐ Hypertension ☐ COPD ☐ Asthama ☐ Pulmonary TB ☐ Heart Disease ☐ Liver disease

☐ Other Immunocompromised conditions if yes, specify ☐ Smoking

☐ Tobacco chewing ☐ Alchoholism ☐ Others Specify

Treatment History : ☐ Amoxicillin ☐ Septran ☐ Amoxiclav ☐ Azithromycin ☐ Erythromycin ☐ Levofloxacin

☐ Acyclovir ☐ Vit- A syrup Units ☐ Others Specify

Epidemiological History:

☐ Contact with case of fever with rash in last 10 days	Specify
☐ Contact with known case of chicken pox or zoomer in last 10 days	Specify
☐ Similar history in family members neighbours friends	Specify
☐ Attending any mass gathering in last 10 days	Specify
☐ Past Vaccination History (VSV Measles Mumps Rubella)	Specify
☐ Others	Specify

Time of Specimens Collected:

☐ Throat Swab ☐ Nasopharyngeal Aspirate ☐ Bronchoalveolar Lavage ☐ Swabs of Maculopapular lesions

☐ Swabs of Vesicular lesions ☐ Swabs from genitals ☐ Crusts Scabs ☐ Serum ☐ CSF ☐ Urine ☐ Others Specify

Hematological Investigations:

Hb (gm%) TLC/WBC Neutrophils Lymphocytes Eosinophils Platelets

Blood Urea Serum Creatinine Serum Albumin ALT AST

Serum Bilirubin (Total) Bilirubin (Direct) Bilirubin (Indirect) PT INR

Urine Bile Salt Bile Pigment Proteinuria Others (Specify)

X-Ray chest

Laboratory Investigations:

Real Time PCR Conventional PCR IgM Elisa IgG Elisa

Virus Isolation

Outcome History:

☐ Cured and Discharged Date of Discharge ☐ Died Date of Death

Name of treating physician Contact Number

Laboratory Diagnosis

Provisional Diagnosis

Final Diagnosis

ANNEXURE 2- Procedures for the clinical specimen collection:

- **Nasopharyngeal and Oropharyngeal swabs in screw-capped plain tube:**

▪ Explain the procedure to the patient

▪ Remove the polystyrene swab. Don't let anything touch the sterile swab on the end of the stick

▪ Ask the patient to open their mouth and stick their tongue out

▪ Use a tongue spatula to press the tongue downward to the floor of the mouth.

▪ Use a sterile polystyrene swab to swab both of the tonsillar arches and the posterior nasopharynx without touching the sides of the mouth.

▪ Reach behind the uvula and swab: a. tonsillar fauces, b. the posterior pharynx, and c. any ulceration, exudate, lesion, or area of inflammation.

▪ Don't let the sterile swab touch the patient's tongue, gums, or teeth as you gently remove it from his/her mouth

▪ Place the swab into the screw-capped plain plastic tube [without any medium or VTM]

▪ Similarly, tilt the patient's head back 70 degrees. Gently and slowly insert a polystyrene swab with a flexible shaft through the nostril parallel to the palate until resistance is encountered.

▪ The distance is equivalent to that from the nostril to the ear of the patient, indicating contact with the nasopharynx

▪ Gently rub and roll the swab, leaving it in place for several seconds to absorb secretions. If a deviated septum or blockage creates difficulty in obtaining the specimen from one nostril, use the same swab to obtain the specimen from the other nostril

▪ Slowly remove the swab while rotating it. Specimens can be collected from both nostrils

▪ Place the swab into the same screw-capped plain plastic tube [without any medium or VTM] in which the OPS swab was kept

▪ Break the excess stick and recap the tube tightly. Keep the tube in an upright position in the stand.

▪ Surface decontaminate the tube using 2% Lysol or 0.5-1% Sodium hypochlorite wipes

▪ Explain the procedure to the patient

• Venous Blood Collection in SSGT and EDTA tube:

▪ Check the patient's forearm/median cubital fossa for a prominent vein of good size. Use the median cubital vein wherever feasible.

▪ Apply the tourniquet 4-5 fingerbreadths above the site of venepuncture.

▪ Perform hand hygiene by using an alcohol-based hand rub on the outer pair of gloves.

▪ Disinfect the skin site using a wipe containing 70% alcohol, in a circular motion, from the centre to the periphery. Allow the skin to dry.

▪ Do not re-touch the site of puncture again. In case of accidental touch, repeat the skin disinfection as above.

▪ Anchor the vein by holding your thumb below the puncture site.

▪ Ask the patient to make a fist so as to make the veins prominent.

▪ Insert the needle (vacutainer or syringe needle) into the vein, bevel side up, at an angle of about 30^0 and advance the needle into the vein.

▪ Collect 5 mL of blood (into the syringe or into tubes) and aliquot 2 ml in EDTA (purple top) and 3 ml in SSGT (Yellow top) for serum separation.

▪ Release the tourniquet.

▪ Withdraw the needle gently and apply a piece of sterile gauze to the puncture site

▪ Ask the patient to gently press down on the gauze on the puncture site, keeping the arm folded

▪ If a syringe and needle were used for collection, transfer the blood inside the tube by piercing the stopper of the tubes placed firmly on a rack.

▪ Invert EDTA tubes gently 4-5 times to ensure proper mixing of the additives Keep the tubes in an upright position in the stand.

▪ Discard the syringe and needle into the sharp's container

▪ Surface decontaminate the SSGT and the EDTA tube using 2% Lysol or 0.5-1% Sodium hypochlorite wipes

• **Urine sample collection in the screw-capped sterile urine container:** ▪ Explain the procedure to the patient

▪ Provide privacy to the patient

▪ First, ask the patient to wipe/clean the genitals

Ask the patient to urinate a small amount into the toilet bowl and then stop the urine flow.

▪ Then collect a sample of urine into the clean or sterile container provided

▪ Ask the patient to collect about 3 to 5 mL of midstream urine sample into the collection tube provided, taking care not to contaminate the outside of the container

▪ Ask the patient to finish urinating into the toilet bowl

▪ Close the lid carefully and keep the container standing position

▪ Surface decontaminate the SSGT and the EDTA tube using 2% Lysol or 0.5-1% Sodium hypochlorite wipes

▪ Explain the procedure to the patient

▪ Sanitize the skin covered with lesion with 80% alcohol wipes to start the collection

▪ Remove the lesion roof using a sterile scalpel or plastic scrapper Place the roof in the screw cap plain tube.

▪ Similarly, use a 1ml intradermal syringe to collect the pustule/ vesicular fluids from multiple lesions and collect in a fresh screw cap plain tube

▪ Use the polystyrene swab to collect the scrapings from the base of the lesions by gentle scraping and put it in a fresh screw cap plain tube

▪ The scab/crust, if formed using a polystyrene swab, should also be collected in a fresh screw cap plain tube

▪ Keep the samples immediately in +4 degrees Celsius as soon as they are collected

▪ After collection of samples, appropriately labelled sample tubes need to be sealed with parafilm

▪ Centrifuge the serum tube before shipment

▪ Tubes need to be wrapped with the absorbent tissue paper/cotton and placed in Ziplock bags/Secondary receptacles

▪ Samples should be transported in dry ice as per the instruction provided in Annexure3 (adapted from the WHO Guidance on regulations for the transport of

• Lesion roof, base scrapping, fluid and crust/scab collection [collect from multiple sites]:

Procedures for the transport of the clinical specimens:

infectious substances 2021-2022) along with the case record form provided with this document.

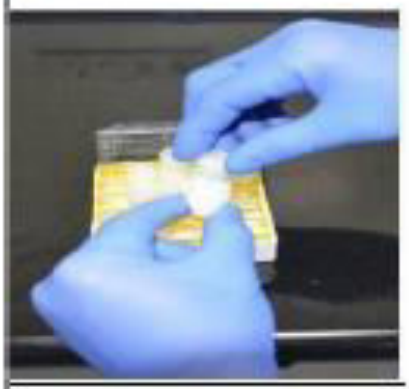
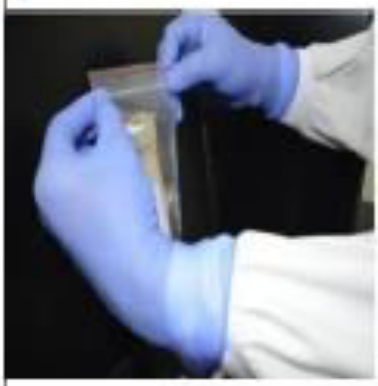
ANNEXURE 3: INSTRUCTIONS ON SAMPLE PACKAGING AND TRANSPORT

This is just a visual representation. Use appropriate PPE and collection tubes as described earlier in this document

STEP 1: ARRANGING THE SAMPLE VIALS

A	B	C
		
*Wear a full set of appropriate Personal Protective Equipment and identify the labelled sample tubes	*Seal the neck of the sample vials using parafilm to prevent leakage during transit.	Cover the sample vials using absorbent material to contain leakage in case of breakage.

STEP 2: ARRANGING THE PRIMARY VIALS WITHIN A STURDY, LEAK-PROOF SECONDARY CONTAINER

A	B
	
Option 1: Using a cryo-box as a secondary container. (Seal the lid of the box after arranging the samples, using cello.)	**Option 2: Using a 50-mL centrifuge tube as a secondary container. (Seal the neck of the tube using a cello.)**
C	D
	
Placing the centrifuge tube inside a zip-lock pouch	**Placing the zip-lock pouch inside a sturdy plastic container. (Seal the neck of the container using cello.)**

[Note: Sample vials can also be placed inside a zip-lock pouch, covered in absorbent material and secured by heat-sealing or rubber bands. Then, the zip-lock pouch should be placed inside another plastic pouch and secured.]

STEP 3: ARRANGING THE OUTER CONTAINER

A	B	C
		
Option 1: **Using a thermocol box as an outer container and placing the secondary container within it, surrounded by hard-frozen gel packs**	**Option 2:** **Using a hard-board box as an outer container and placing the secondary container and the gel packs**	**Placing the completed Case Report Form/Request Form inside a leak-proof, zip-lock pouch**
D	*E*	
		**<u>Documents to accompany:</u>** **Packing list/Proforma Invoice** **Air waybill(for air transport) (to be prepared by sender or shipper)** **Value equivalence document (for road/rail/sea transport)**

Securing the zip-lock pouch with the Case Report Form on the outer container	**Attaching the labels:** **Sender's Address and contact number;** **Consignee's Address and contact number;** **Emergency Contact's name and number**	

**Filled sample referral form to be kept in a plastic cover should be taped to the outer surface of the thermocol box while transporting the sample.

ANNEXURE ii -Advisory for International passengers

Travellers should AVOID close contact with sick people, including those with skin lesions or genital lesions.

Contact with dead or live wild animals such as small mammals, including rodents (rats, squirrels) and non-human primates (monkeys, apes).

Eating or preparing meat from wild game (bushmeat) or using products derived from wild animals from Africa (creams, lotions, powders).

Contact with contaminated materials used by sick people (such as clothing, bedding, or materials used in healthcare settings) or that came into contact with infected animals.

Consult the nearest health facility if you develop symptoms suggestive of Monkey pox like fever with rash & you were in an area where Monkey pox has been reported to have had contact with a person who might have had Monkey pox.

Role of APHOs/PHOs:

Remain in a state of alert, particularly for the passengers arriving from countries reporting monkey pox outbreaks; familiarize with clinical presentation of Monkey pox;undertake strict thermal screening and record history of travel to affected countries in the last 21 days;establish/strengthen referral arrangements from airport/sea port to identified link hospital.

Also, familiarize Bureau of Immigration personnel, airline personnel and any State health personnel deployed with them about the disease; inform concerned airlines about the detection of a suspect case for the purpose of disinfection procedure to be followed as per the standard guidelines.