Interim Guidance
on
Clinical Management of
Mpox (Monkeypox)
2079 (2022)

Government of Nepal
Ministry of Health and Population
Department of Health Services
Curative Service Division

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Ref. No.

Date:- 19 Dec 2022

Foreword

With immense pleasure I am writing few words of appreciation on the development of "Interim guidance on clinical management of Mpox (Monkeypox) 2079 (2022)". Mpox a zoonotic disease historically found in certain African countries was detected throughout 110 non-endemic countries since January 2022. M pox was declared a Public Health Emergency of International Concern (PHEIC) by the WHO Director-General Tedros Adhanom Ghebreyesus on July 23, 2022. Mpox was detected in the neighboring country India on July 23, 2022 which continues to be a great concern for Nepal.

Following the declaration, the Curative Service Division, Department of Health Service (DoHS) under the guidance of Ministry of Health and Population (MoHP), took the initiative to develop the interim guidance for the clinical management of Mpox, which is first of its kind. This interim guidance is expected to help healthcare workers to identify and manage the cases if ever seen in Nepal.

I would like to express my sincere gratitude to Director and the team of Curative Service Division for taking the lead along with the divisions and centers of DoHS , Department of Drug Administration(DDA) and consultant dermatologists for their contribution in development of this guidance. I am grateful to WHO Nepal for their technical and financial support in development of this comprehensive guidance.

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Foreword

Mpox (Monkeypox) is a zoonotic disease historically found in certain African countries. Since January 2022 however, 81107 cases were detected throughout 110 non-endemic countries and caused 55 Deaths. On July 2022, Mpox was detected in the neighboring country India, which continues to be a great concern for Nepal.

After WHO declared that Mpox was a Public Health Emergency of International Concern (PHEIC), the Curative Service Division, Department of Health Service (DoHS) took initiative to develop the guidance for the clinical management of Mpox. Previous guidance had not existed before in Nepal. Despite the challenges and strains on the health system due to the resource depletion brought by the COVID-19 pandemic, the Curative service division prioritized the development of this guidance document on clinical management of Mpox. The multiple and urgent activities undertaken by MoHP has shown the resilience Nepal's health system in face of the ongoing health emergencies.

This interim guidance was developed based on the learnings of endemic regions and recent scientific evidence. The guidance provides a summary of the disease etiology in addition to the preventive measures, infection and prevention control and case management. We hope this document will provide clinicians and health care workers the guidance and confidence to understand disease diagnosis and management of the cases to reduce morbidity and mortality and prevent worsening effect of monkeypox as seen in other countries. This is living interim guidance and with emergence of new evidence, we will continue to update and revise this guidance as required.

I would like to congratulate my staffs of Curative Service Division for their continued effort, members of technical working committee, representatives of Epidemiology and Disease Control Division, National Health Education, Information, and Communication Center, Family Welfare Division, Nursing and Social Security Division, National Health Training Center, National Public Health laboratory, Department of Drug Administration and Dermatologists, for their review and feedbacks in preparation of this guidance and WHO Nepal for their continuous support in process to develop this guidance.

Dr. Anup Bastola
Director
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ACRONYMS AND ABBREVIATIONS

ABG	*Arterial Blood Gas*
ABHR	*Alcohol Based Hand Rub*
AGP	*Aerosol-Generating Procedure*
AIIR	*Airborne Infection Isolation Room*
ALT	*Alanine Transaminase*
AST	*Aspartate Transaminase*
AVPU	*Awake Voice Pain Unresponsive*
BUN	*Blood Urea Nitrogen*
CRT	*Capillary Refill time*
DNA	*DeoxyriboNucleic Acid*
DRC	*Democratic Republic of the Congo*
ECDC	*European Communicable Disease Center*
EDP	*External Development Partners*
ENT	*Ear Nose Throat*
HSV	*Herpes Simplex Virus*
MSM	*Men who have sex with Men*
MSSA	*Methicillin-Sensitive Staphylococcus Aureus*
MUAC	*Mid-Upper Arm Circumference*
NGO	*Non-Governmental Organization*
PCR	*Polymerase Chain Reaction*
PEP	*Post Exposure Prophylaxis*
PPE	*Personnel Protective Equipment*
PrEP	*Pre-Exposure Prophylaxis*
RCT	*Randomized Clinical Trials*
VZV	*Varicella Zoster Virus*
WHO	*World Health Organization*

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1. INTRODUCTION

Monkeypox now recommended by WHO to be named as “mpox” after series of consultation with global experts, is a viral zoonosis caused by monkeypox virus, recognized as the most important Orthopoxvirus infection after the eradication of smallpox. The disease is called monkeypox because it was first identified in colonies of monkeys kept for research in 1958. The first human case of mpox was reported from Democratic Republic of the Congo (DRC) in 1970. Both terminologies will be used simultaneously for one year for updating International Classification of Diseases (ICD) and monkeypox will be phased out.

The clinical presentation of mpox resembles that of smallpox, a disease caused by the variola virus, also a member of the Orthopoxvirus family but it is less severe illness than smallpox. After smallpox was eradicated in 1980, mpox has emerged as a priority Orthopoxvirus for public health. In previous years, mpox spread was mostly limited to Central and West African countries and nearly all cases of mpox outside of Africa were found to be imported cases from these regions.

The current ongoing outbreak of mpox is declared as the Public Health Emergency of International Concern (PHEIC) on 23rd July 2022 by WHO.

Since January 2022, cases of mpox have been reported to WHO from 109 Member States across all 6 WHO regions. As of October 17, 2022, a total of 73,436 laboratory confirmed cases and 1,094 probable cases, including 29 deaths, have been reported to WHO. Since 13 May 2022, a

high proportion of these cases have been reported from countries without previously documented mpox transmission. Most reported cases so far have been identified through sexual health or other health services in primary or secondary health-care facilities and have involved mainly, but not exclusively, men who have sex with men. The current outbreak illustrates the easy human-to-human transmission by direct contact, respiratory secretions, contact with lesions or items containing virus. At the time of this writing, there is no confirmed cases in Nepal.

Natural History and Disease Severity

After the entry of virus from any route (oropharynx, nasopharynx or intradermal) into the body, virus replicates at the inoculation site which later spreads to local lymph nodes. Viremia occurs and spreads to different organs. The incubation period of mpox is usually 6 to 13 days following exposure (range 5-21 days).

Illness typically begins with fever, followed by development of rashes. Although most people recover within weeks, severe complications like bronchopneumonia, encephalitis, keratitis and secondary bacterial infections may occur. Sequelae have been reported more commonly among those unvaccinated for smallpox and having risk factors. Prior smallpox vaccination may result in milder disease. Risk factors for severe disease have been found in young children, immunocompromised individuals, high viral DNA in blood, maximum skin lesion and higher transaminases- AST and ALT.

Pathology

Like all poxvirus, pathology of mpox is characterized by prominent intracytoplasmic eosinophilic inclusions in epithelial cells.

The changes in epidermis may include ballooning degeneration, keratinocyte necrosis, and hyperplasia.

In the dermis, lymphocytic inflammation, infiltration by neutrophils, eosinophils, and multinucleated giant cells in ulcer and vasculitis may also present.

2. EPIDEMIOLOGY

2.1 Agent

Monkeypox virus is an enveloped double-stranded DNA virus that belongs to the Orthopoxvirus genus of the *Poxviridae* family. There are two distinct genetic clades of the Monkeypox virus: the central African (Congo Basin) clade and the west African clade. The Congo Basin clade has historically caused more severe disease and was thought to be more transmissible.

2.2 Host

Various animal species like rope squirrels, tree squirrels, Gambian pouched rats, dormice, non-human primates and other species have been identified as susceptible to Monkeypox virus. However, uncertainty remains on the natural history of monkeypox virus and further studies are needed to identify the exact reservoir(s) and how virus circulation is maintained in nature.

2.3 Incubation period

The incubation period (interval from infection to onset of symptoms) of mpox is usually from 6 to 13 days but can range from 5 to 21 days.

2.4 Mode of transmission

i. Human-to-human transmission can occur through

   a. direct contact with the infectious rash, scabs, or body fluids
   b. respiratory secretions during prolonged face-to-face contact, or during intimate physical contact, such as kissing, cuddling, or sex
   c. touching items (such as clothing or linens) that previously touched the infectious rash or body fluids
   d. pregnant women can spread the virus to their fetus through the placenta

ii. Animal-to-human (zoonotic) transmission can occur from direct contact with the blood, bodily fluids, or cutaneous or mucosal lesions of infected animals. Eating inadequately cooked meat and other animal products of infected animals is a possible risk factor.

iii. Available data suggest that ongoing epidemic is primarily human-to-human transmission mainly through sexual contacts especially men having sex with men.

2.5 Period of transmissibility

The infectious period can vary, but generally patients are considered infectious from the time of symptom onset until skin lesions have crusted, the scabs have fallen off and a fresh layer of skin has formed underneath (about 3-4 weeks).

3. CLINICAL FEATURES

Mpox can cause a range of clinical signs and symptoms. The extent to which asymptomatic infection may occur is unknown. While some people have mild symptoms, others may develop more serious symptoms and need care in a health facility. The infection can be divided into two phases.

1. The invasive period typically lasts between 1–5 days, during which time patients may present with fever, headache, back pain, myalgia, intense asthenia and lymphadenopathy. Lymphadenopathy is a typical feature of mpox which helps to differentiate it from chickenpox, measles, and smallpox.

2. This is followed by a second phase, which typically occurs 1 to 3 days after fever subsides with the appearance of a rash which can last for two to three weeks. The rash can be found on the face, palms of the hands, soles of the feet, eyes, mouth, throat, groin, and genital and/or anal regions of the body. The number of lesions can range from one to several thousand. Lesions begin flat, then fill with liquid before they crust over, dry up and fall off, with a fresh layer of skin forming underneath. The rash evolves sequentially from macules (lesions with a flat base) to papules (slightly raised firm lesions), vesicles (lesions filled with clear fluid), pustules (lesions filled with yellowish fluid), and crusts which dry up and fall off. The number of lesions varies from a few to several thousand. In severe cases,

lesions can coalesce until large sections of skin slough off. The lesions range in size from 0.5 to 1 cm in diameter and from a few to several thousand in number. Respiratory symptoms that may present in mpox are sore throat, nasal congestion, or cough. Lymphadenopathy remains a common feature, usually appearing early in the course of illness.

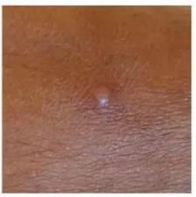
In this outbreak, patients are presenting with more mucosal lesions than previously described. Other features which are more frequently reported with increasing the number of cases are:

- presentation of only a few or even just a single lesion
- absence of skin lesions in some cases, with anal pain and bleeding due to proctitis
- lesions in the genital or perineal/perianal area which do not spread further
- lesions appearing at different (asynchronous) stages of development
- the appearance of lesions before the onset of fever, malaise and other constitutional symptoms (absence of prodromal period)

Mpox is usually a self-limited disease with the symptoms lasting from 2 to 4 weeks. The case fatality ratio of mpox has historically ranged from 0 to 11 % in the general population and has been higher among young children. In recent times, the case fatality ratio has been around 3–6%.

Risk factors and clinical findings associated with severe disease and poor outcomes (based on small, uncontrolled, observational studies) are given in the table.

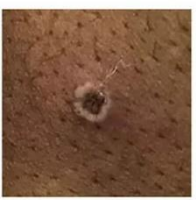
Patient groups at higher risk of severe disease or complications	• Children, pregnant women, immunosuppressed such as persons living with HIV having poorly controlled disease; patients with chronic skin conditions (e.g., atopic dermatitis), acute skin conditions- burns (limited data)
Clinical signs and symptoms of complications	• Nausea and vomiting, painful cervical lymphadenopathy causing dysphagia, poor oral intake, eye pain, vision abnormalities, hepatomegaly, sepsis, dehydration, pneumonia, ARDS, confusion
Laboratory abnormalities	• Elevated hepatic transaminases (AST and/or ALT), low blood urea nitrogen (BUN), low albumin, leukocytosis, or thrombocytopenia
Skin lesion count	• Mild (< 25 skin lesions) • Moderate (25–99 skin lesions) • Severe (100–250 skin lesions) • Very severe (> 250 skin lesions)



a) early vesicle, 3mm diameter

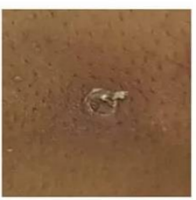
b) small pustule, 2mm diameter

c) umbilicated pustule, 3-4mm diameter



d) ulcerated lesion, 5mm diameter

e) crusting of a mature lesion



f) partially removed scab

3.1 Complications

Complications are uncommon. Severe cases occur more commonly among children, individuals with underlying immune deficiencies.

a. Skin and soft tissue- secondary bacterial infection of skin and soft tissues leading to cellulitis, abscesses, necrotizing soft tissue infections, sepsis and septic shock; subcutaneous accumulation of fluid in the crusting phase may lead to intravascular volume depletion and shock.

b. Respiratory complications- severe pneumonia and ARDS.

c. Ocular-corneal infection which may lead to vision loss.

d. Gastrointestinal- oral ulceration, loss of appetite, vomiting and diarrhea which may lead to severe dehydration, electrolyte abnormalities and shock.

e. Neurological- encephalitis.

f. Cervical lymphadenopathy which may lead to retropharyngeal abscess or respiratory compromise, sepsis, septic shock etc.

3.2 Differential diagnosis

Mpox should be differentiated from other diseases which can present with rash-

Blisters: varicella zoster virus (VZV, chickenpox), herpes simplex virus (HSV),

Anogenital eruptions: primary or secondary syphilis, molluscum contagiosum,

Maculopapular rash: measles, chikungunya, dengue fever, vasculitis and other bacterial skin and soft tissue infections.

The most important differential diagnosis is VZV. The important distinguished features are:

a. rash in varicella generally progresses quicker, is more centrally located than the centrifugal distribution of mpox.

b. rashes are 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.

c. additionally, patients with VZV typically do not have lymphadenopathy, which is a hallmark of mpox.

Co-infection with mpox/HZV has been reported from the Democratic Republic of the Congo with an incidence of 10-13%.

Summary of differentiating features with other probable diagnosis is summarized in Annex 1.

4. LABORATORY DIAGNOSIS

The real time Polymerase Chain Reaction (PCR) for detection of mpox DNA is the recommended diagnostic test (WHO reference: https://www.who.int/publications/i/item/WHO-MPX-laboratory-2022.1). The recommended clinical sample for mpox PCR test in suspected case is skin lesion material, including swabs of lesion exudate, roofs from more than one lesion, or lesion crusts. The sample should be transported in a dry sterile tube without use of any viral transport medium (VTM) packed in tripe layer and under cold chain at 2-8^{o}C to the designated laboratory (currently the National Public Health Laboratory). Sample should be accompanied with laboratory requisition form with details of date of the last exposure, date of onset of illness, date of onset of rash, date of collection of samples, demographic, epidemiological and clinical data (Annex 2). Serology tests are not recommended for diagnosis of mpox. Sample Collection and Packaging Protocol for Suspected Cases of mpox is given in Annex 3.

5. CASE DEFINITIONS FOR MPOX OUTBREAK IN NON-ENDEMIC

Suspected Case

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

A person presenting with an unexplained acute skin rash, mucosal lesions or lymphadenopathy. 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 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.
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 that causes rash illness should not preclude testing for mpox virus, as coinfections have been identified.

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 ano-rectal lesions. Ano-rectal lesions can also manifest as ano-rectal inflammation (proctitis), 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
  - 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

Confirmed case

Laboratory confirmed mpox virus by detection of unique sequences of viral DNA by real-time polymerase chain reaction (PCR) and/or sequencing.

Clinical sample must be clearly identified as “swab from the skin lesion/vesicle and or crust”. Specimens collected for mpox investigation should be refrigerated (2 to 8 degree Celsius) within one hour of collection and dispatch the sample to lab (nearest PPHL ** or NPHL ***) as soon as possible.

** Sample received by PPHL should be again dispatched to NPHL as soon as possible.
***Currently testing facility is available at National Public Health Laboratory (NPHL).

6. MANAGEMENT

Patients with mpox can be broadly divided into 2 groups- mild and uncomplicated, and severe disease or risk factors for severe disease for management purpose. Treatment for mpox is mostly symptomatic, currently no specific antiviral treatment is available.

Principles of management

a. Patient isolation
b. Protection of compromised skin and mucous membranes
c. Rehydration therapy and Nutritional support
d. Symptom alleviation
e. Monitoring and treatment of complications

6.1 Management of mild or uncomplicated cases of 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, wherever a home assessment determines IPC conditions are fulfilled at home setting.

a. Decision to isolate and monitor a patient at home should be made on a case-by-case basis and be based on their clinical severity, presence of complications, care needs, risk factors for severe disease and access to referral for hospitalization if condition deteriorates.

b. Patients isolating at home should be ambulatory, have good food and water intake, be able to feed, bathe and dress themselves, and require minimal to no assistance from a caregiver.
c. Those at higher risk for severe disease such as children, pregnant women or immunosuppressed patients should be considered for admission to a health facility for closer monitoring due to concern for clinical deterioration.
d. If vulnerable populations are living in the home setting and adequate IPC requirements cannot be met, consider isolation in a health facility.
e. Patients with mpox be given symptomatic treatment such as antipyretics for fever and analgesia for pain. Headache and pain from skin rash, oral, ocular and genital lesions, swollen lymph nodes, and generalized muscle aches are common.
   - Pruritus from rashes can also be bothersome. For oral lesions, rinse the mouth with clean, salt water at least four times a day. Consider use of oral antiseptic to keep lesions clean (e.g., chlorhexidine mouthwash) or local anaesthetic (e.g., viscous lidocaine).
   - For genital or anorectal lesions, warm sitz baths (warm bath made up of water and baking soda or epsom salt to heal and cleanse the perineal area) and/or topical lidocaine may offer symptomatic relief.
   - Symptomatic and supportive care is essential to maintain good nutrition and hydration. Oral nutrition should be encouraged daily, as patients need

sufficient energy (kcal) and essential nutrients, in addition to fluids and electrolytes.

6.2 Management of high-risk patients and those with complications or severe mpox

Patients at high risk for complications (i.e., young children, pregnant women, and those who are immunosuppressed) or those with severe or complicated mpox should be admitted to the hospital for closer monitoring and clinical care under appropriate isolation precautions.

Vital signs and clinical features to monitor systematically

Vitals sign and pain assessment	• Temperature, heart rate, blood pressure, respiratory rate, SpO_2, level of consciousness using the alert, voice, pain, unresponsive scale (AVPU), glucose • Pain scale
General condition	• Ability to eat and drink • Ability to sit and walk • Any weight loss after the onset of symptoms
Rash characterization	• Stage of rash: macules, papules, vesicles, pustules, crusted over, exfoliation • Location of the rash (face, arms, torso, genitals, legs, mucosa)

	• Number of lesions – Mild (< 25 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, pyomyositis, necrotizing soft tissue infection
Neurological status	• AVPU, coma, seizure
Volume status	• Signs of dehydration- mild, moderate, severe
Signs of perfusion	• Pulse rate and volume, capillary refill time (CRT) • Urine output (> 0.5 mL/kg/hr = good in adults; 1.0 mL/kg/hr in children) • Mottling of skin
Respiratory system	• Respiratory rate, SpO_2, signs of respiratory distress
Gastrointestinal system	• Change in appetite, weight loss, BMI, MUAC in children • Signs of malnutrition – use standardized tool (e.g. Malnutrition Universal Screening Tool)

Laboratory tests	• BUN, creatinine, Na, K, AST, ALT, glucose, white blood count, HB, platelet, PT/INR, calcium, albumin, arterial blood gas analysis (ABG)

6.3 Management of complications

1. Clinical management of skin and soft tissue lesions

The recommendation is conservative treatment of rash lesions with aims to relieve discomfort, speed healing and prevention of complications, such as secondary infections or exfoliation.

a. Counsel patient not to scratch skin.
b. 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.
c. Rash should not be covered but rather left to open air to dry.
d. 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 preferably be done by an expert wearing appropriate PPE.

Secondary infection is common in mpox but prophylactic antibiotic therapy is not recommended in

patients with uncomplicated mpox. However, lesions should be monitored for secondary bacterial infection (i.e., cellulitis, abscess) and if present be treated with antibiotics with activity against normal skin flora, including Streptococcus pyogenes and methicillin-sensitive Staphylococcus aureus (MSSA). The choice of antimicrobial therapy should be based on individual clinical assessment and local antimicrobial resistance patterns.

2. **Cervical lymphadenopathy** can occur in up to 85.65% of cases with lymphadenopathy. When large cervical adenopathy is combined with multiple oropharyngeal lesions patients may be at risk for complications such as respiratory compromise and retropharyngeal abscesses. Patients are also at risk for dehydration due to decreased food and water intake may need intravenous fluids. Patients need consultation with ENT surgeons, anesthesiologist and infectious disease clinicians or physicians. Under their care, in severe cases, steroids may be used.

3. **Ocular lesion**
   One of the most significant sequelae of mpox is corneal scarring and loss of vision. Patients may present with non-specific ocular symptoms such as conjunctivitis. Ophthalmologist should evaluate and manage the case. Ophthalmic antibiotics/antivirals if indicated for co-infection and vitamin A supplementation, especially to malnourished children. Trifluridine eye drops may be considered (if available) to hasten resolution of symptoms and prevent long-term damage from scarring, where available but steroid drops must be avoided.

4. Management of pneumonia, acute respiratory distress syndrome, hypovolemia, sepsis and septic shock, and encephalitis are managed in intensive care unit with standard treatment and monitoring.

6.4 Special group

1. Sexually active population

All patients should be advised to abstain from sex until all skin lesions from mpox have crusted, the scabs have fallen off and a fresh layer of skin has formed underneath or use of condoms consistently during sexual activity (receptive and insertive oral/anal/vaginal) for 12 weeks after recovery to prevent the potential transmission of mpox.

2. Caring of women during and after pregnancy

Pregnant or recently pregnant women with mild or uncomplicated mpox may not require acute care in hospital but monitoring in a health facility may be preferred; those with severe or complicated disease should be admitted to a health facility for care as they require optimized supportive care and/or interventions to improve maternal and fetal survival. Mode of birth should be individualized, based on obstetric indications and the woman's preferences. The induction of labor and caesarean section should only be undertaken when medically justified and based on maternal and fetal condition.

3. Caring for infants and young children with mpox

- Newborn infants of mothers with mpox should be monitored closely for evidence of potential congenital or perinatal exposure or infection. Mothers and infants or young children can also be exposed through close contact.

- Children exposed to mpox should be fully vaccinated for age according to the routine national immunization schedule and should have their vaccinations up to date, when possible.

- Infant feeding practices, including whether to stop breastfeeding in a mother with mpox should be assessed on a case-by-case basis, considering the general physical status of the mother and severity of disease, which could impact on the risk of transmission of mpox from mother to infant.

7. INFECTION PREVENTION AND CONTROL (IPC)

Implementation of appropriate Infection prevention and control measures is essential to mitigate and control the risks of mpox transmission in health care and community setting as well. For mitigation and prevention of transmission, it is very essential to follow precautionary measures as mentioned below. Since the transmission of disease can occur through direct contact with body fluids or lesion material, indirect contact with lesion material such as through contaminated clothing or linens of an infected person and respiratory secretions during prolonged face-to-face contact, standard and transmission-based precautions (contact, droplet, & respiratory precautions) must be followed. Signage and reminders of appropriate IPC measures in the workplace should be hung in the health care areas. While IPC must be strictly maintained for the care of patients with mpox disease, patient-centered care must be maintained when people undergo isolation.

7.1 Standard Precaution

Standard precautions are used for all patient care to protect the patient from unwitting contamination and to prevent the spread of infection whether known or unknown from a patient to health care workers or other people. Health care workers should always follow standard precautions and perform a risk assessment to evaluate the need to use additional precautions.

- Hand hygiene practice
- Respiratory hygiene and cough etiquette

- Use of personal protective equipment as required
- Injection safety
- Cleaning and disinfection
- Handling of laundry and linen
- Health care waste management

7.1.1 Hand hygiene

Hand hygiene is a vital component of infection control to prevent transmission of infectious agents.

- Health workers should perform hand hygiene according to the WHO Your 5 moments for hand hygiene (Annex 4) following the steps of hand hygiene recommended by WHO as mentioned in Annex 5, including prior to putting on and after removing PPE.
- Hand hygiene should be done either with Alcohol Based Hand Rub (ABHR) or with Soap and water. If hands are visibly dirty and soiled with body fluids, hand washing with soap water is recommended.

7.1.2 Respiratory hygiene

Like skin lesion, sore of mouth are also full of virus which can spread along with respiratory and salivary droplets while person talks, shout, sneeze, cough, sings. These droplets may be inhaled by another person, land on the mucosa of eyes or mouth of other person and surface can be infected by touching those surfaces and touching their face.

- Person who is in the room or providing care to the patient should wear a mask.
- Advice patient to cover nose and mouth with a mask, tissue or elbow when coughing or sneezing.

- Dispose of used tissues and masks in the wastebin with lid.
- Clean hands after contact with respiratory secretions.
- Stay at least one meter away from patient whenever possible.

7.1.3 Appropriate use of PPE

Specialized clothing or equipment worn by healthcare workers or care providers to protect themselves against microorganism. The supplies need is based on the risk of contact with body fluids, respiratory secretion, open skin of patient and even contaminated bedding, towel for instant. For monkey pox following PPE is recommended.

- disposable gown to protect clothing against body fluid, liquid splashes.
- disposable gloves for direct contact with patient and body fluids.
- disposable medical mask for respiratory droplets protection, and if aerosol generation procedure is to be performed use N 95 or respirator.
- face shield or goggles for eye protection.
- close shoes (rubber boot) may be worn when working in the areas with body fluids.

Note:

- All PPE (including respirators) must be discarded after each contact with the patient and hand hygiene performed.
- All PPE should be donned before entering the patient's room.
- All PPE should be disposed of prior to leaving the isolation area except for the respirator, which should be removed, outside of the room once the door is closed,

and hands should again be cleaned. It would be better to provide a separate room leading into the main area for handwashing, donning and doffing PPE and for storage of supplies. A tent could be set up for this, or if there is no such anti chamber part of the isolation room could also be separated by curtains, separate and safe.

- Health workers should be trained on procedures for safe putting on and removing PPE.
- Use dedicated footwear that can be decontaminated.

PPE Donning and doffing should be done as mentioned in Annex 6

7.1.4 Injection safety

Injection safety is important to protect health care workers and patients and to reduce any risk of needle stick or other injury with contaminated objects.

- Keep medication preparation area clean.
- Wash hands before preparing, giving an injection and after injection has been administered. Always wear gloves when drawing blood or giving an injection, especially if patient has a rash or if your own skin is not intact and do not forget to wash hand before and after using gloves.
- Always use sterile injection equipment, e.g., sterile syringe. Single use syringes are preferred for to give injection.
- To prevent contamination, use each vial just once. Where multi dose vials are used, disinfect lid of multi dose vial before withdraw medicine in syringe. Similarly, clean and disinfect the injection site and maintain aseptic technique while preparing and administering injection.

- Place used sharps in specially designated puncture resistant containers or destroy with needle cutter or destroyer. Ensure appropriate and safe disposal of all used supplies to prevent yourself and patients from accidental contamination.
- Do not forget to wash your hand once you complete the activities.

7.1.5 Cleaning / Disinfection

Cleaning and disinfecting help prevent the spread of infectious diseases. Cleaning of the room where a mpox case stayed should be done without stirring a lot of dust or causing the formation of aerosols and should use regular cleaning products followed by disinfection.

- Activities such as dry dusting, sweeping, or vacuuming should be avoided. Wet cleaning methods are preferred.
- PPE (heavy duty gloves, gown, respirator [e.g., N95, FFP2] and eye protection) should be worn while cleaning and disinfecting patient care equipment and patient care areas or isolation rooms.
- Always clean surfaces first with detergent and water followed by disinfection with an approved disinfectant with virucidal activities using a 0.1 % sodium hypochlorite.
- Disinfectants should be prepared and applied to surfaces according to manufacturers' instructions.
- To prevent cross-contamination, cleaning must always be carried out from the cleanest area to dirtiest area 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.
- Soiled dishes and eating utensils should be washed with warm water and soap.

7.1.6 Handling of laundry and linen

- Wear appropriate PPE (gloves, gown, fit-tested and seal-checked N95 respirator and eye protection) during collection and bagging of all linens at the point of use and laundry area.
- Carefully lift and roll linens used by the patient. Do not shake linen or laundry as it disperses contaminated infectious particles into the air and onto the surrounding surfaces.
- The laundry materials should carefully be placed in a leak-proof bag, sealed or tied and placed inside an impermeable bag for transport to laundry area.
- When handling soiled laundry (clothing, towels, bedding), care should be taken to avoid contact with the worker's skin and clothing.
- Used 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 0.1% chlorine for a minimum of 10 minutes, rinsed with clean water and allowed to fully dry.
- Workers in laundry area should follow standard and transmission-based precautions including minimize handling, avoid shaking of linen and laundry.

7.1.7 Healthcare Waste Management

All bodily fluids and solid waste of patients with mpox should be treated as infectious waste. Some examples of infectious waste include dressings from infected wounds, soiled clothes or food or bodily fluids, sharps waste consists of the items that could cause cuts or puncture wounds such as syringes, needles, disposable scalpels, and blades and so on. Waste Management should be done according to Health Care Waste Management Standard Operating Procedure 2020, based on type of the waste.

- Waste should be segregated (general waste, infectious waste and sharps) and placed in appropriate bins at point of generation of waste enable appropriate and safe handling
- Collect waste and appropriate containers located as close as possible to the patient care area, where the items are used to collect all solid, non-sharp infectious waste in leakproof waste bags and covered bins.
- Only fill the containers or bags to at most three quarters (3/4) full before closing them, collect and dispose of infectious solids and sharps waste at least once a day.
- Transport to designated treatment areas, or special facilities for treatment by burning, ensure access to these areas is carefully controlled.
- Infectious liquids such as feces, urine and vomit, or liquid waste from washing can be disposed of in the sewer or pit latrine, clean and decontaminate the facilities on a regular schedule several times a day.
- Ensure health workers are wearing appropriate PPE (e.g., gloves, gown, respirator [e.g., N95, FFP2], eye protection) during handling of waste.

7.2 Transmission-based Precaution

Mpox spreads by contact with body fluid or skin lesions and also via respiratory droplets. Contact and droplet precautions be implemented for any suspect patient with mpox. In addition to contact and droplet precautions, airborne precautions should be implemented if varicella zoster virus (i.e., Chickenpox) is suspected and until chickenpox is ruled out. Airborne precautions be implemented if aerosol-generating procedures (AGPs) are performed.

Transmission-based Precaution to be taken by Health care workers

a. Contact precautions

- hand hygiene before and after use of PPE
- PPE: gloves, gown
- use disposable or dedicated equipment for each patient

b. Droplet precaution

- hand hygiene before and after use of PPE
- PPE: mask, eye protection, gloves, gown
- Physical distancing at least 1 meter between patient and others

c. Airborne precaution

- Hand Hygiene
- Fit-tested and seal-checked N 95 respirator
- Gown (cuffed, long sleeve)
- Gloves
- Eye protection (e.g., face shield or goggles)

7.3 Visitor control

- Visitor should be strictly limited to one person at a time and the visit kept short. Space can be marked off with a cordon to keep persons at greater than 1 meter while still allowing for communication.
- Various communication channel can be used to limit visitor e.g., video call.

7.4 Patient placement

7.4.1 For suspected cases

- If varicella zoster virus (chickenpox) is suspected, patient should be placed in an Airborne Infection Isolation Room (AIIR) with dedicated bathroom or toilet if available.
- If an AIIR is not available, the patient should be placed in a well-ventilated single room with the door closed and dedicated bathroom or toilet.
- Isolation room/area should have signage posted at the entrance indicating that patient is under contact/ droplet/airborne precautions and the required PPE in the correct order for health workers.
- When chickenpox is not suspected, place the patient in a well-ventilated single room with a dedicated bathroom or toilet.

7.4.2 For confirmed cases

- 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 with a curtain between beds.

Room must be well ventilated with dedicated bathroom and toilet.

- Isolation room/area should have signage posted at the entrance indicating that patient is under contact/ droplet precautions and the required PPE in the correct order for health workers.

7.4.3 If Aerosol generating procedure (AGPs) should be perform

- If AII room is available, it would be better to perform AGPs in AII room. If AII room is not available or feasible, perform AGPs in a well-ventilated, single patient room with the door closed.
- Health workers should wear a respirator (e.g.,N95, FFP2) as well as eye protection, gown and gloves when performing AGPs.

7.5 Isolation of patient

- Isolation of the patient is needed to minimize the risk of transmission until the skin lesion has crusted and fallen off and new layer of healthy skin has formed. Appropriate physical barrier (PPE specially gown) should be used with maintaining physical distance of at least 1 meter at all times.
- 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.

7.6 Transportation of suspected mpox patients

- If a patient is suspected, probable, or confirmed mpox case, avoid unnecessary movement of patients.
- If the suspected patient must be moved or transported within or beyond the facility, the patient should not use public transportation as much as possible and ensure transmission-based precautions are maintained (droplet/contact/airborne).
- Instruct the patient to wear a well-fitting medical mask and follow respiratory hygiene and cough etiquette and cover lesions while transporting patient when transport is necessary.
- The receiving healthcare setting should be informed before transfer about required transmission-based precautions and the need to prepare the isolation or designated area.

7.7 Home care

- When caring for the patient at home, the family should provide an isolation area separate from other family members and away from shared areas of the household. This can be a separate room or part of a room with a curtain or screen divider.
- Strictly follow the advice of health care workers.
- Provide a separate area for care and allocate single person for care.
- Minimize contact with infected person, body fluid and patient care equipment.

- Use mask, gloves to care for the patient and to clean and wash patient equipment at home. Patient should wear a medical mask.
- Linens bed sheet or cover should never be shaken.
- Collect linen in leak proof bag and washed separately in high temperature > 60°C with laundry detergent and dried in sunlight. If machine washing is not possible, 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 0.1% chlorine for at least 10 minutes, rinsed with clean water and allowed full dry.
- Surface and floor should be cleaned and disinfected regularly.
- Patient's utensils should be washed with soap and warm water.
- Patient and care giver should wash hand frequently.
- Skin lesions should be kept covered with a gown, clothes, sheet or bandage, except during examination.
- Avoid unnecessary movement of the patients within home and travel unless medically indicated. Instruct the patient to wear a well-fitting medical mask and follow respiratory hygiene and cough etiquette when transport is necessary.
- While transporting to the health facility, advice to follow transmission-based precautions (droplet/contact /airborne), place a well-fitting medical mask on the patient and cover lesions and also advice to inform transport vehicle for necessary precaution, e.g., mask use, cleaning and disinfection etc.

8. SURVEILLANCE

The key objectives of surveillance and case investigation for mpox in the current context are to rapidly identify cases and clusters of infections as well as sources of infection as soon as possible to:

- provide optimal clinical care
- isolate cases to prevent further transmission
- identify, manage and follow-up contacts to recognize early signs of infection
- protect frontline health workers
- identify risk groups and
- tailor effective control and prevention measures

8.1 Surveillance strategy

Surveillance strategy on mpox will be according to guidelines from EDCD (https://edcd.gov.np/)

a. **Hospital based surveillance:** Health facility-based surveillance and testing in fever clinics, sexual health services, infectious disease units, obstetrics and gynecology, emergency departments and dermatology clinics.

b. **Targeted surveillance:**
   - Surveillance among the the vulnerable groups such as bisexual, gay or men having sex with other men (MSM) in coordination with National Center for AIDS and STD Control (NCASC).

- Surveillance in coordination with “Child Health and Immunization Service Section” of Family Welfare Division will help to find the cases, as Measles and Varicella infection resembles mpox.
- Surveillance at **Point of Entries.**

8.2 Surveillance outline

- Even a single case of mpox is to be considered as an outbreak.
- Clinicians should report suspected cases immediately to EDCD to using case reporting format (Annex 7).In the current context, as soon as a suspected case is identified, contact identification and contact tracing should be initiated. Contacts should be monitored at least daily for the onset of any signs/symptoms for a period of 21 days from last contact with a patient or their contaminated materials during the infectious period. Quarantine or exclusion from work are not necessary during the contact tracing period as long as no symptoms develop.
- Sample should be collected as per the guidance and sent to NPHL (Samples from suspected cases will be referred to designated regional reference laboratories in India, Thailand, or Australia with support from WHO till Nepal acquires in country capacity).

9. ANTIVIRALS AND VACCINES

There are no antivirals drugs specifically for monkeypox virus infections. However, monkeypox and smallpox viruses are genetically similar, which means that antiviral drugs and vaccines developed to protect against smallpox may be used to prevent and treat monkeypox virus infections.

9.1 Antivirals

Due to limited information available for the use of antivirals in mpox, it is preferable to use antivirals under randomized clinical trials (RCTs) with collection of standardized clinical and outcome data to rapidly increase evidence generation on efficacy. Tecovirimat, brincidofovir, cidofovir and NIOCH-14 are antiviral agents with limited evidence for the use in mpox.

1. **Tecovirimat**- It inhibits viral envelope formation of monkeypox virus by targeting the viral protein p37, which is highly conserved among Orthopoxviruses. Based on the reports from limited studies in human and animals, tecovirimat has been used in severe cases with immunocompromised patients. Tecovirimat is available as immediate release oral capsules administered twice daily for 14 days.

2. **Brincidofovir**- It inhibits replication of mpox virus by inhibiting polymerase-mediated synthesis of DNA. It is available as an oral tablet or suspension administered to patients as two doses 1 week apart. Reported side-effects of this medication include elevation of hepatic

transaminases, diarrhoea, nausea, vomiting and abdominal pain. Brincidofovir is not recommended in women who are pregnant due to risk of embryo-fetal toxicity.

3. **Cidofovir-** It inhibits replication of mpox virus by inhibiting DNA polymerase and is given intravenously. It has shown activity against poxviruses in laboratory and animal studies. Cidofovir associated renal toxicity and electrolyte abnormalities.

4. **NIOCH-14**- It is a synthesized compound and analogue of tecovirimat being developed. Animal challenge studies with mpox comparing NIOCH-14 and tecovirimat showed significant reduction of virus production in infected animals 7 days post infection when compared with controls. Due to the small numbers of patients treated, the clinical efficacy of this therapeutic for mpox is uncertain.

9.2 Vaccines

Third generation vaccines, attenuated smallpox vaccine strains specifically developed as safer vaccines towards (LC16) or after (MVA-BN) the end of the eradication phase by further passage in cell culture or animals are found to be about 85% effective in preventing mpox in several observational studies. MVA-BN (modified vaccinia Ankara-Bavarian Nordic), a live vaccine produced from Modified Vaccinia Ankara, attenuated (MVA), which is highly immunogenic and effective vaccine for smallpox has been approved for prevention of mpox. According to a recent interim guideline published by WHO, summary of recommendations for vaccinations against mpox) for individuals 18 years or older are as follow:

1. Based on currently assessed risks and benefits and regardless of vaccine supply, **mass vaccination is not required nor recommended for mpox at this time.**

2. All decisions around immunization with smallpox or mpox vaccines should be by shared clinical decision-making, based on a joint assessment of risks and benefits, between a health care provider and prospective vaccine, on a case-by-case basis.

3. Post-exposure prophylaxis (PEP): For contacts of cases, PEP is recommended with an appropriate second- or third-generation vaccine, ideally **within four days of first exposure (and up to 14 days in the absence of symptoms), to prevent onset of disease.**

4. Pre-exposure prophylaxis (PrEP): PrEP is recommended for health workers at high risk of exposure, laboratory personnel working with Orthopoxviruses, clinical laboratory personnel performing diagnostic testing mpox, and outbreak response team members as may be designated by national public health authorities.

10. RISK COMMUNICATIONS

Risk communications refers to real-time exchange of information, advice and opinions between experts or officials and people who face a threat (hazard) to their survival, health or economic or social well-being. Its ultimate purpose is to effect the positive behavioral change for prevention and control of outbreak and everyone that is at risk can take informed decisions to mitigate the effects of the threat (hazard) such as disease outbreak like mpox currently and take protective and preventive actions. Risk Communication uses a mix of communication and engagement strategies and tactics, including but not limited to, media communications, social media, mass awareness campaigns, health promotion, stakeholder engagement, social mobilization, and community engagement. It also should aware people about uncertainty around many elements of the outbreak and should make aware about regular updates on guidelines and recommendations.

Following elements are important for risk management.

1. **Identifying High Risk Populations:** With recent development of outbreak in newer geographic areas that was previously unaffected, it is important to deliver tailored information for specific groups.
    a. **General Public:** People living in areas affected with outbreak of mpox should understand their level of risk and anyone exposed to the virus through close contact with someone who has or may have mpox, is at risk and it is not specific to a particular demographics.

b. **Men, and in particular men who have sex with men (MSM):** Mpox affects more men and boys than women or girls. The recent outbreak in new geographical areas, the human-to-human transmission is primarily detected among MSM.

c. Women (including women who share a household with a person who has mpox, are partners of MSM or are female sex workers): These groups may also be more vulnerable in the context of the current outbreak and must be aware of the risks and preventive measures.

d. Adolescents and Young adults: Young people should be proactively engaged in awareness activities around this outbreak as their risk perception may be low despite them being at higher risk.

e. Pregnant People and children: Pregnant people may be at higher risk of severe illness, also entailing risks to the fetus and should avoid contact with anyone who may have suspected or confirmed mpox. Children are also at risk of more serious illness from mpox. Information and differentiating characters regarding childhood illness resembling mpox (like Chickenpox) should be disseminated among public.

f. Organizers and attendees of gatherings. Gathering and events may aid to conducive the spread of mpox. Efforts should be made to inform people ahead of time not to attend the event if they have confirmed or suspected mpox. Public health and social measures

like physical distancing, hand hygiene and proper use of mask should be implemented.

g. Health Workers. A detailed and updated information on early identification and infection, prevention and control measures should be disseminated among health worker to appropriately care for their patients and protect themselves from possible exposure to mpox.

h. External Development Partners, Non-Government Organization – A proper coordination and communication among EDPs and NGOs is required to disseminate information who work with target audiences and may receive as trusted sources.

2. **Avoiding Stigma** – Social Stigma in the context of health is the negative attitude or belief about a person or group of people who share certain characteristics. Following measures are used to avoid stigma, particularly with men who have sex with men.
   a. Focus communications on the behaviors – not the people – that are fueling the outbreak.
   b. Emphasize the fact that mpox spreads between people through close contact. Anyone who has close contact with someone who has symptoms mpox is at risk.
   c. Avoid using language, photographs or graphics that spread fear or place an emphasis on a particular group, activity, or community.
   d. Reiterate that stigma and discrimination harm response efforts and can ultimately prolong the outbreak.

3. Key Messages to Deliver

a. Preventive Measures
b. Modes of Transmission of mpox
c. Symptoms and signs of mpox
d. Detection and Care of mpox
e. Reporting

4. Communicating about Uncertainty

As the mpox outbreak situation is still evolving, it is important to continue to explain what is known, what is unknown and what is being done to address the unknown. An information regarding where people can find additional information, directing them to health authorities, official websites or hotlines may be advised.

11. PREVENTIVE MEASURES

Mpox is a zoonotic disease that is transmitted from animals to humans. Human to human transmission is limited but also documented with longest chain of transmission being 6 generation. It can be transmitted through contact with bodily fluids, lesions on the skin or on internal mucosal surfaces, such as in the mouth or throat, respiratory droplets, and contaminated objects. Prevention of human-to-human transmission in different settings is described in the section of IPC. Other preventive measures are described here briefly.

1. **Reducing the risk of zoonotic transmission**
   Most of the human infection are primary infection i.e., animal to human transmission. Unprotected contact with wild animals, especially those that are sick or dead, including their meat, blood and other parts must be avoided. Additionally, all foods containing animal meat or parts must be thoroughly cooked before eating.

2. **Preventing mpox through restrictions on animal trade**
   Some countries have developed regulations restricting importation of rodents and non-human primates. Captive animals that are potentially infected with mpox should be isolated form other animals and placed into immediate quarantine. Any animals that might have come in contact with an infected animal should be quarantined, handled with standard precautions and observe for mpox symptoms for 30 days.

12. LIVING GUIDANCE[1] FOR INTEGRATING GENDER, EQUITY AND HUMAN RIGHTS (GER)

Gender, equity and human rights matter in health and clinical management. The men and women, girls and boys, or any individual of gender, ability and sexual identity experience differences in health status, exposure to risk and vulnerability, access to and use of services, health-seeking behavior, experiences in health care settings, and health and social outcomes due to their biological and social standing in the society. Health inequities manifest in differential exposure, vulnerability, access, health outcomes and consequences, so it is very important to recognize these aspects and provide health services from gender, equity, and human rights perspectives. In response to mpox, the following aspects are suggested to strongly consider while managing patients in health facility settings.

1. Providing respectful care towards all patients

Naturally, we envision a relationship between patients and service providers characterized by caring, empathy, compassion, support, trust, confidence, and empowerment, as well as gentle, respectful, and effective communication to enable informed decision-making. When treating patients who are confirmed or have signs/symptoms of mpox, health workers/providers need to be aware of the diversity, providing fair treatment and respecting and protecting the

[1]WHO continues to monitor the situation closely for any changes that may affect this interim guidance. Should any factors change, WHO will issue a further update.

rights of an individual including the disadvantaged or excluded population groups.

- Demonstrate equitable and fair treatment/ behavior irrespective of an individual's age, sex, caste, ethnicity, socioeconomic status, education, sexual orientation, family/ cultural background, disabilities, or any other characteristics.
- Respect the right to information, right to participation with informed consent and refusal; right to confidentiality, privacy, dignity, choices/preferences, equitable care; and self-determination; right to freedom from harm, ill treatment and discrimination; and right to timely healthcare and to the highest attainable level of health.
- Be aware of and avoid unintended biases towards women, girls, (with or without disabilities) or any clients based on their identity, sexual orientation and socioeconomic backgrounds.
- Be aware of social stigma and practice the Dos and Don'ts. Refer the box - there are some dos and don'ts on language[2] when talking about mpox.
- Be aware of gender related biases in access to information, health seeking behaviour, service provision etc. and be non-judgmental.
- Promote evidence-based messaging that provides information on what mpox is and how it can spread and encourage seeking health care if experiencing mpox - like symptoms.
- Be culturally sensitive and appropriate to age, gender, disabilities, sexual identity and orientation etc.

[2]Disability inclusive guidelines in English FINAL

- Emphasize that anyone can get mpox and promote it as a public health concern for all. Focusing on infections among men who have sex with men (MSM) may inadvertently stigmatize this population and create a false sense of safety among those who are not gay and bisexual men.
- Remember that the mpox rash can also be found in places that can be hard to see, including the mouth, throat, genitals, vagina and anus/anal area. Ensure privacy while examining the case.
- When using images of the rash from patients mpox, focus on how symptoms typically appear in the current outbreak and avoid showing extreme cases, unless necessary maintaining identity and confidentiality of the person
- In some situations, such as healthcare provider education, it may be necessary to show extreme case presentations. Carefully consider the audience and whether only presenting images of how cases typically appear may accomplish the same goals.
- Include pictures of people from diverse backgrounds, disabilities and racial/ethnic groups[3].

[3]Reducing Stigma in Monkeypox Communication and Community Engagement

Managing social stigma - Dos and Don'ts

DO - Use respectful and dignified verbal, and body language
Don't - Use offensive verbal and bodylanguage.

DO - talk about mpox as a public health issue that concerns all people.
Don't - attach locations or ethnicity, sexual identity and orientation to the disease e.g., "African Virus".

DO - talk about people "acquiring" or "contracting" mpox
Don't talk about people "transmitting mpox" "infecting others" or "spreading the virus" as it implies intentional transmission and assigns blame.

DO - speak accurately about the risk from mpox, based on scientific data and latest official health advice.
Don't -repeat or share unconfirmed rumours.

DO - talk positively and emphasise the effectiveness of prevention and treatment measures.
Don't - emphasise or dwell on the negative, or messages of threat.

DO - emphasise the effectiveness of adopting protective measures to prevent acquiring the mpox disease, as well as early screening, testing and treatment.

For more information:
CDC Centers for Disease Control and Prevention

2. Responding to gender-based violence (GBV) [4]

Available evidence points to significant increases GBV increase in any emergency situation, and it has been exacerbated in COVID-19 situation and this has alarmed all actors working against GBV.

Five Actions for Health workers/providers to respond to GBV

- ✓ Be aware of the increased risk and health consequences of GBV in the context of emergencies.
- ✓ Recognize the signs and know when and how to ask about violence.
- ✓ If violence is disclosed, act to provide timely care for physical, sexual, reproductive and mental health.
- ✓ If violence is disclosed, provide **First-line** support and medical care to survivors. The first-line support is most important, and it involves 5 simple tasks of **LIVES:**
  - **LISTEN:** listen closely, with empathy, and without judging.
  - **INQUIRE:** assess, identify and respond to person's various needs and concerns.
  - **VALIDATE:** show that you understand survivor's experience, feeling and believe them.
  - **ENHANCE SAFETY:** discuss a plan to protect the survivor from further harm if violence occurs again.
  - **SUPPORT:** support themby helping her connect to information, services, and social support.

[4] There is currently no evidence of increase in VAWG due Monkeypox. However, there is a possible heightened risks of violence against gay or bisexual men or trans people resulting from stigmatization, or of intimate partner violence in these groups.

- ✓ Share information about available support, identify referral pathways and refer to other essential services.

What is gender - based violence (GBV)?

Gender based violence refers to harmful acts directed at an individual based on their gender. It is rooted in gender inequality, the abuse of power and harmful norms. GBV is a serious violation of human rights and a life-threatening health and protection issue**.** GBV is committed in many forms such as physical, emotional/psychological, sexual, cultural/social, economic or any kind that endangers the safety, health and well-being of an individual.

Domestic Violence refers to violent or aggressive behavior within home involving intimate partner and immediate family members.

Health facilities can identify and provide information about services available locally (e.g. hotlines, one-stop crisis management centers, shelters, psychosocial counselling) for survivors, including opening hours, contact details, and whether services can be offered remotely, and establish referral linkages. It is important to understand marginalised groups and with disabilities are likely to have additional risks and needs. The National Federation of Disabled Nepal (NFDN) can be informed, approached, reported for any such issue towards women and girls with disabilities.

Remember: Safety, respect, confidentiality and non-discrimination in relation to GBV survivors and those at risk are vital considerations at all times.

3. Considerations for managers

Studies[5] shows globally, women make up 70 per cent of the health workforce, especially as nurses, midwives and community health volunteers, and account for the majority of service staff in health facilities as cleaners, launderers and caterers. However, they are not proportionately represented at senior, managerial and decision-making levels in health - only 25% hold senior roles[6]

This scenario obtains in Nepal as well. Despite the large number, women are often not reflected in decision-making in health emergencies. Further, women are still paid less than their male counterparts for similar work and hold fewer leadership positions in the health sector and enjoy lower job security and social protection.

Masks and other protective equipment designed and sized for men leave women at greater risk of exposure. The lack of adequate attention to the menstrual hygiene needs of women health workers during long shifts is an added workplace-related challenge.

So, health managers need to be aware of the above gender-related issues and ensure that the needs of women health and care workers are prioritized and fulfilled. This means:

[5] UN Women | Explainer: How COVID-19 impacts women and girls
[6] DELIVERED BY WOMEN, LED BY MEN: A GENDER AND EQUITY ANALYSIS OF THE GLOBAL HEALTH AND SOCIAL WORKFORCE. Human Resources for Health Observer Series No. 24

- The health and care workers have access to women/gender-friendly personal protective equipment (PPE) and menstrual hygiene products, i.e., the different sizes and the design of the PPE needs to be made available and accessible considering the feminine and menstrual hygiene need.
- Flexible working arrangements are available to balance the burden of care specially for pregnant and breastfeeding mothers.
- Policies and actions are implemented to foster women health workers' increased participation in leadership and decision-making roles.
- Equal treatment and pay, paid leave, including paid sick leave, and other social protection measures are ensured to women health workers in the public and private sectors.

4. Managing disaggregated data (Sex and Age disaggregation of data)

Experiences from other outbreaks, epidemics and pandemics suggests women and girls (with or without disabilities), MSM, people from marginalised groups could face specific and often disproportionate economic, health, and social risks due to deeply entrenched inequalities, social norms, and unequal power relations though there is no evidence of such risks reported currently in mpox. Therefore, understanding the gender-differentiated impacts of mpox through sex and age, caste/ethnicity, disability disaggregated data is fundamental to policy and programme responses that can reduce vulnerable conditions and build the agency of girls and women and marginalised groups placing gender, equity, and rights at their centre.

To manage the disaggregated data, the case reporting form of clinical management should include at least sex, age, disabilities, caste/ethnicity, co-morbidities, and health care worker status, and this should be reported in regular reporting system. Analysis by this disaggregation should be prioritized by the health facilities and higher levels to identify any gaps and develop priorities for interventions. The same can be used to analyze health inequities among different vulnerable groups, and to review, take appropriate actions and report periodically.

5. Stigma reduction communications[7]

- Describe mpox as a legitimate public health issue that is relevant to all people.
- Educate about mpox. Emphasize that:
  - Mpox is spread through:
    a) direct contact with an infectious rash, scabs, or body fluids.
    b) respiratory secretions during prolonged, face-to-face contact, or during intimate physical contact, such as kissing, cuddling, or sex.
    c) touching objects, fabrics (such as clothing or linens) that previously touched the rash or body fluids of someone with mpox.
    d) being scratched or bitten by an infected animal.
  - Mpox can be acquired by all people, regardless of gender identity or sexual orientation.
  - Mpox causes a rash.

[7] Reducing Stigma in Mpox (Monkeypox) Communication and Community Engagement – US CDC

- Mpox can spread from the time symptoms start until the rash has fully healed and a fresh layer of skin has formed. This can take several weeks.

- Frame the image of mpox by:
  - Using inclusive language, such as ‘us’ and ‘we’ pronouns.
  - Using non-sensationalistic language and images.
  - Using language that resonates with the audience.
  - Presenting concepts that the audience will be open to hearing or reading.
  - Using positive, diverse, and credible images.
  - Emphasizing prevention strategies, symptom recognition, and the treatable nature of mpox to minimize fear and promote action and sense of personal agency.
- Data confidentiality including identity, location etc. should be ensured and efforts to prevent undue stigma to a particular person or a group should be strictly considered. Where possible, use aggregated data especially for review and planning purposes.

6. Integrated and inclusive services:

- Ensure the information, education and communication materials (print and electronic media) developed for mpox are accessible and inclusive language and communication are used:
  a) Description of the image for the screen reader user, labelling hyperlink etc.
  b) Videos to closed captioning, sign-language interpretation etc.

- Not to ‘categorise’ a particular group e.g. sex workers, or on the basis of sexual identity orientation as ‘high-risk’ group and not to plan targeted screening or interventions as this would stigmatise this vulnerable group.
  a) One reason we are currently hearing reports of cases of mpox from sexual health clinics in communities of men who have sex with men (MSM) may be because of their positive health-seeking behaviour[8].
- Ensure barrier free access to services for different vulnerable groups including physical and information access, sensitizing the health care staff on diverse needs and support services etc.
- Other considerations for certain populations groups such as sexually active population, pregnant, infants, young children can be found in the Clinical Management and Infection Prevention and Control for mpox - Interim rapid response guidance[9].

[8] Source; WHO / SEARO
[9]https://www.who.int/publications/i/item/WHO-MPX-Clinical-and-IPC-2022.1

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ANNEX 1: DIFFERENTIAL DIAGNOSIS OF MPOX

S.No.	Disease	Clinical Description
1	**Mpox (Monkeypox)**	- Illness is usually mild to moderate in severity but can be fatal in rare cases - Illness presenting with fever, headache, lymphadenopathy, back pain, myalgia and asthenia - fever is followed by Rash, which usually starts from face, then spreads usually in a centrifugal pattern to other parts of the body especially extremities - Rash progresses from maculopapules to vesicles, pustules and Crusts - Rashes all over the body are usually at same stage of development
2	**Chicken Pox**	- Mild/ Moderate childhood infection which can also affect adults in whom it tends to be more severe - Fever, tiredness, loss of appetite and headaches - Rashes that turns into itchy, fluid-filled blisters that eventually turn into scab.

		- Rash may first show up on the face, chest and back then spread to the rest of the body, including inside the mouth, eyelids, or genital area. - Rash is usually not pustular - Rashes are usually at different stages of development - Lymphadenopathy is not common features
3	**Measles**	- High fever, Cough, Watery Nose and conjunctivitis. - Tiny White (Koplik) spots may appear inside mouth 2-3 days after symptoms. - Flat red (maculo-papular) rashes appear on face around hairline, and spread downward to the neck, trunk, arms legs and feet.
4	**Scabies**	- Intense itching, with onset of pimple like itchy rash - the itching and rash usually affects the wrist, elbow, armpit, webbing between the fingers, waist and genital areas. - Tiny raised lines (burrows) are sometimes seen on the skin which are caused by the female scabies mite tunneling just beneath the surface of the skin. - The head, face, neck, palms and soles may be involved in

		infants and very young children.
5	**Syphilis**	- Fever, swollen lymph glands, sore throat, patchy hair loss, headaches, weight loss, muscle aches, and fatigue. - Painless chancre in primary stage of the disease - skin rashes and/ or mucous membrane lesions (sores in the mouth, genitalia or anal) mark the second stage.

ANNEX 2: LABORATORY REQUISITION FORM

SN	Place of origin	Case/surveillance ID	OP/IP number	Age and sex	Date of exposure	Date of onset of fever	Date of onset of rash	Date of specimen collection	Specimen type	Date of specimen shipping	Remarks

V. Reference:

- **Laboratory testing for the monkeypox virus. Interim Guidance, 23 May, 2022. World Health Organization.**

  https://apps.who.int/iris/bitstream/handle/10665/354488/WHO-MPX-Laboratory-2022.1-eng.pdf?sequence=1&isAllowed=y

ANNEX 3: SAMPLE COLLECTION AND PACKAGING PROTOCOL FOR SUSPECTED CASES OF MPOX

1) **Sample collection:** Collect samples from all suspected cases *(refer EDCD guidance for suspected case definition)*

2) **Equipment needed:**
   **ensure availability of following*
   - Sterile swab sticks
   - Sterile needle 'or' scalpel blade
   - Alcohol swabs
   - Disposable syringes
   - Tourniquet
   - EDTA tube
   - VTM *(for throat swab)*
   - Sterile Cryovial/dry (universal) for crust collection
   - Biohazard bag to discard waste
   - Sharps container

3) ****PPE:** Wear PPE in accordance with contact and droplet precautions [Aprons, gloves, face mask (N-95), goggles]

4) **Labelling:** Proper labelling of the tube before the collecting the sample.

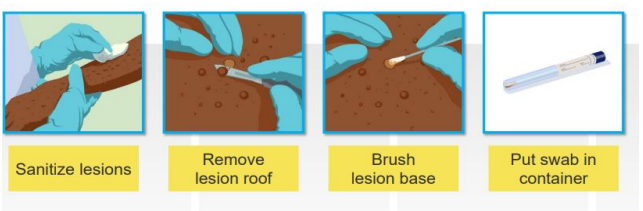
5) **Collect Samples from suspected cases as per the below mentioned criteria**

a) Day 1-4 (Febrile stage without rash)

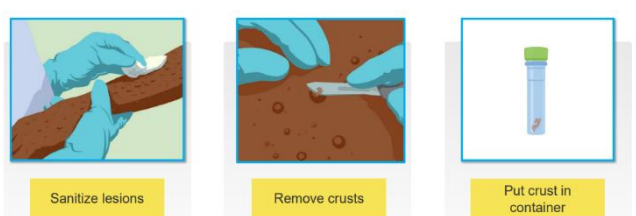
- Collect Nasopharyngeal / Oropharyngeal sample (2 specimens using two different swabs) swabs in VTM and store at 2 to 8 °C.

b)Week 2-4 (Rash phase)

- Collect *lesion base scrapings* with sterile dry swab (2 specimen one from each lesion using 2 different swabs) in sterile tube and store at 2 to 8 °C.



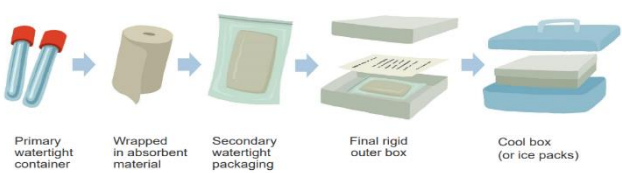
- Collect lesion roof or crust (2 specimen one from each lesion) in sterile dry cryovials ‘or’ sterile urine culture bottle and store at 2 to 8 °C.



Also, collect Nasopharyngeal/Oropharyngeal sample (2 specimens using two different swabs) swabs in VTM and store at 2 to 8 °C.

6) **Storage and transportation**

- Ensure the collected samples in tube is properly labelled, seal with parafilm ‘or’ adhesive tapes to avoid leakage and keep at 2 to 8 °C as soon as they are collected until shipped to NPHL, Teku.
- For shipping, wrap the collected samples with absorbent tissue/cotton and place into the secondary container (ziplock) and place it in the tertiary container
- Line the inside of specimen transport container with a frozen ice pack and transport at 2 to 8°C and transport as early as possible but within 72 hours to NPHL.
- Send a copy of the laboratory form (NOT inside the specimen transport container to avoid contamination with the samples) along with the samples (Appendix 1).

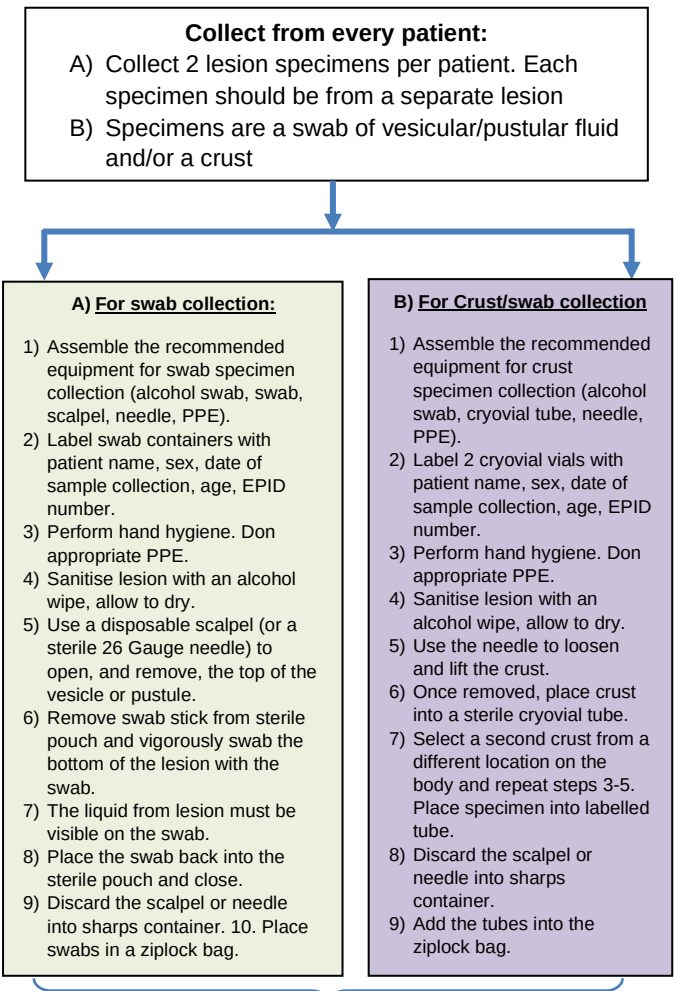


*(**Note:** Contact team of National Public Health Laboratory (NPHL), Teku as soon as hospital/ laboratory collects sample from the suspected case. Inform EDCD and NPHL of the shipment of specimens to the NPHL by phone and email)*

Tel - ……. **Email - ……**

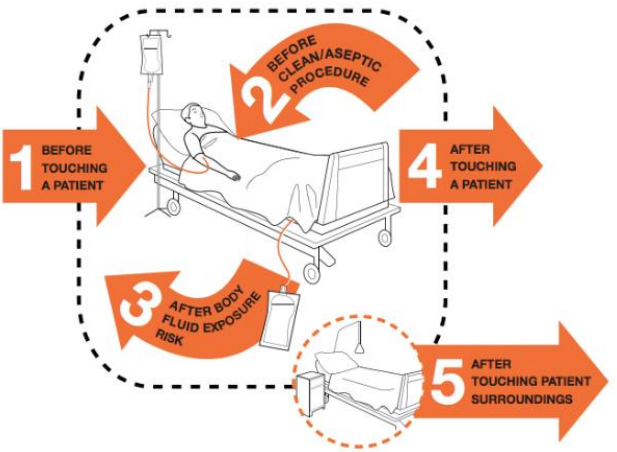
(***At NPHL:*** *Store received samples at -70 °C until shipped to a designated reference laboratory for further investigation. Aliquot samples in two parts - one to be retained at NPHL and one to be shipped to reference laboratory. Samples will be shipped from NPHL to designated reference laboratory maintaining cold chain).*

Algorithm

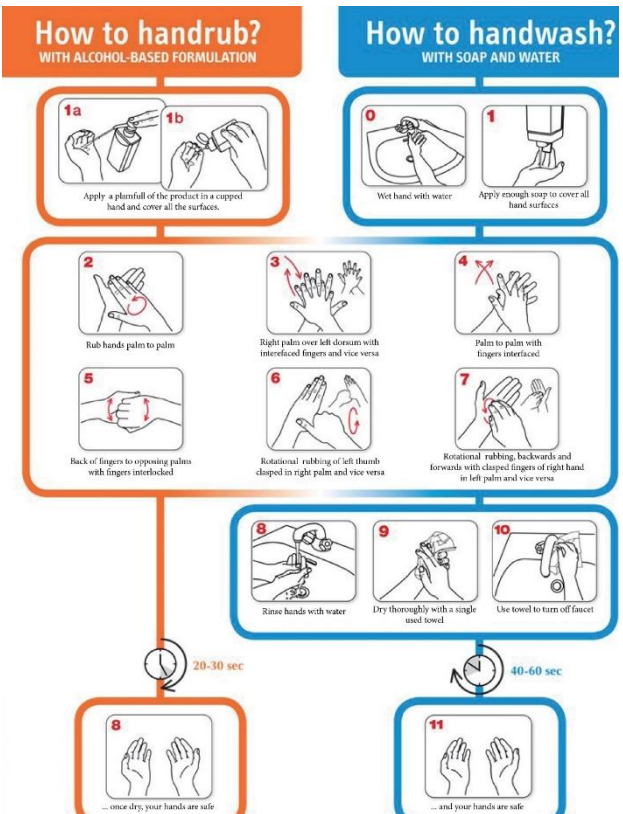

Collect from every patient:
A) Collect 2 lesion specimens per patient. Each specimen should be from a separate lesion
B) Specimens are a swab of vesicular/pustular fluid and/or a crust
A) For swab collection:
1) Assemble the recommended equipment for swab specimen collection (alcohol swab, swab, scalpel, needle, PPE).
2) Label swab containers with patient name, sex, date of sample collection, age, EPID number.
3) Perform hand hygiene. Don appropriate PPE.
4) Sanitise lesion with an alcohol wipe, allow to dry.
5) Use a disposable scalpel (or a sterile 26 Gauge needle) to open, and remove, the top of the vesicle or pustule.
6) Remove swab stick from sterile pouch and vigorously swab the bottom of the lesion with the swab.
7) The liquid from lesion must be visible on the swab.
8) Place the swab back into the sterile pouch and close.
9) Discard the scalpel or needle into sharps container. 10. Place swabs in a ziplock bag.
B) For Crust/swab collection
1) Assemble the recommended equipment for crust specimen collection (alcohol swab, cryovial tube, needle, PPE).
2) Label 2 cryovial vials with patient name, sex, date of sample collection, age, EPID number.
3) Perform hand hygiene. Don appropriate PPE.
4) Sanitise lesion with an alcohol wipe, allow to dry.
5) Use the needle to loosen and lift the crust.
6) Once removed, place crust into a sterile cryovial tube.
7) Select a second crust from a different location on the body and repeat steps 3-5. Place specimen into labelled tube.
8) Discard the scalpel or needle into sharps container.
9) Add the tubes into the ziplock bag.

- Place ziplock bags into a vaccine carrier with frozen ice packs.
- Place document into a separate ziplock bag and do not mix with samples during transportation.
- Remove PPE and discard into biohazard bag
- Perform hand hygiene.
- Transport to the National Public Health Laboratory (NPHL, Kathmandu within 24 hours at 4°C using NPHL (COVID-19) transport guidelines 6. Cold chain should be maintained during transportation to NPHL.

ANNEX 4: 5 MOMENTS FOR HAND



ANNEX 5: STEPS OF HAND HYGIENE



ANNEX: 6 PPE DONNING AND DOFFING (PICTURE)

How to put on PPE

Steps to put on PPE

1. Wash hands and gather necessary PPE of appropriate size according to risk.
2. Put on gown
3. Put on mask
4. Put on goggles or face shied
5. Put on gloves and ensure gloves are pulled over the cuffs of the gown.

How to take off PPE

Do not touch the surface and equipment unnecessarily to avoid contamination with hazardous materials.

Steps to take of PPE

1. Peel off gown and gloves from inside out so that contaminated side does not touch the hand. dispose the items safely in allocated bin.
2. Perform hand hygiene before proceeding to remove goggles or face shield.
3. Then Remove goggles or face shield using loops from behind or over the ears.
4. Similarly, remove mask using the loops from behind or over the ear. Keep hands away from the front of the eye protection and mask as they may be heavily contaminated.
5. Then dispose of these in closed bin or designated location for sterilization of equipment.
6. Perform Hand Hygiene.

ANNEX 7: CASE RECORD FORM

Case reporting format for Suspected case of Monkey Pox

Reporting health facility:

Attending physician:

Reporting officer/ Contact number:

Sno	Date of reporting	Name of Patient	Age (month/ year)	Gender (M/F/O)	Place of residence	Occupation	Pregnancy (Y/N)	Date of first symptoms onset	Date of Fever onset	Date of Rash onset/ site of onset	Any other symptoms specify	Received small pox vaccine (Y/N)	International Travel in past 5-21 days before illness (Y/N) Specify	Recent exposure to probable/ confirmed case (Y/N)	Date of Hospitalization (Y/N)	Date of sample collection (Skin lesion material for PCR)	lab report finding for sample collected	Health status (Recovered/ healthy, not recovered, LAMA, Referred, Death, unknown)

Please provide the linelist in info@edcd.gov.np , ewarsnepal@gmail.com along with **any additional information of cases**.

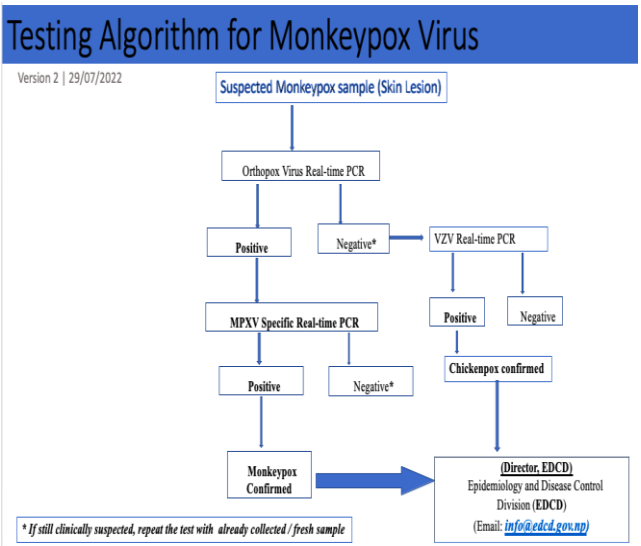
Suspected case: A person of any age presenting in a monkey pox non-endemic country

1 with an unexplained acute rash AND one or more of the following signs or symptoms, since 15 March 2022:

• Headache • Acute onset of fever (>38.5o C) • Lymphadenopathy (swollen lymph nodes) • Myalgia (muscle pain/body aches) • Back pain • Asthenia (profound weakness)

AND for which the following common causes of acute rash do not explain the clinical picture: Hand Foot and Mouth Disease, 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.

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.


Testing Algorithm for Monkeypox Virus
Version 2 | 29/07/2022
Suspected Monkeypox sample (Skin Lesion)
Orthopox Virus Real-time PCR
Positive
Negative*
VZV Real-time PCR
Positive
Negative
MPXV Specific Real-time PCR
Chickenpox confirmed
Positive
Negative*
Monkeypox Confirmed
(Director, EDCD)
Epidemiology and Disease Control Division (EDCD)
(Email: info@edcd.gov.np)
* If still clinically suspected, repeat the test with already collected / fresh sample

मङ्कीपक्सको रोकथाम र नियन्त्रणका लागि जानौं यी कुरा

तस्वीर स्रोतः OpenWHO

मङ्कीपक्सपक्स भाइसरबाट हुने एक किसिमको सरुवा रोग हो। नेपालमा हालसम्म यो रोग नदेखिए पनि विश्वका धेरै मुलुकमा देखापरेकोले आम नागरिकमा सचेतना ल्याउने उद्देश्यले यो जानकारीमूलक सूचना प्रवाह गरिएको हो ।

कसरी सर्छ ?

सङ्क्रमित व्यक्ति वा सङ्क्रमित पशुसँगाको सम्पर्कमा आउँदा निम्न अवस्थाबाट सर्छ :

१) घाउ-खटिरा-बिमिराको सम्पर्कबाट
२) शरीरबाट निस्किएको तरल पदार्थ जस्तै थुक, च्यालको सम्पर्कबाट
३) भाइरसबाट दूषित सतह र सामाग्रीको प्रत्यक्ष सम्पर्कबाट
४) सङ्क्रमित बाँदर, मुसा, लोस्के लगायतका जनावर र भाइरस रहेको ओछ्यान र लुगाबाट पनि यो भाइरस फैलिन सक्छ।

निम्न अङ्गबाट भाइरस शरीरमा प्रवेश गर्न सक्छः

- काटिएको, बिमिरा वा फुटेको छाला
- आँखा, नाक वा मुख
- श्वासनली

नेपाल सरकार
स्वास्थ्य तथा जनसंख्या मन्त्रालय
राष्ट्रिय स्वास्थ्य शिक्षा, सूचना तथा सञ्चार केन्द्र

लक्षणहरू के के हुन् ?

- ज्वरो आउनु
- सामान्यतया ज्वरो सुरु भएको १ देखि ३ दिन भित्रमा छाला, अनुहार, हत्केला र पैतालामा डाबर देखा पर्नु
- डाबर परिवर्तन भई फोका हुँदै पाप्रा लाग्ने उप्किनु
- ठाउको, ढाड र मांसपेशी दुख्नु
- शरीरका ग्रान्थिहरु बढ्नु

यस्ता लक्षणहरु देखा परेमा नजिकैको स्वास्थ्य संस्थामा सम्पर्क गर्नुहोस् ।

सम्भावित जटिलता

- आँखामा सङ्क्रमण र दृष्टि गुम्नु
- अन्य जीवाणुको सङ्क्रमण
- निमोनिया
- मस्तिष्क ज्वर
- गर्भ खेर जानु
- मृत्यु

रोकथामका उपायहरू

- मङ्गीपक्सको शङ्का वा पुष्टि भएको व्यक्तिसँग असुरक्षित सम्पर्कमा नजाने
- सङ्क्रमित व्यक्तिलाई घरमा वा अस्पतालमा आइसोलेसनमा राख्ने
- सङ्क्रमित व्यक्तिको हेरचाह गर्नेले पूर्ण रुपमा जनस्वास्थ्यका मापदण्डहरुको पालना गर्ने
- घाउसँग प्रत्यक्ष सम्पर्क हुन्छ भने पञ्जा लगाउने
- सङ्क्रमितको सम्पर्कमा आएको व्यक्तिले पीसीआर परीक्षण गर्ने
- नियमित रूपमा साबुनपानीले हात धुने वा स्यानिटाइजरको प्रयोग गर्ने
- सङ्क्रमित व्यक्तिका लुगा, तौलिया, ओछ्यान र भाँडाहरू तातो पानी, साबुन वा डिटर्जेन्टले धुने
- मङ्गीपक्सको सङ्क्रमण पुष्टि भई विरामी भएका वा मरेका जनावरको सम्पर्कमा नजाने
- सङ्क्रमितको सम्पर्कमा आएको सतह स्थान वा कोठा डिटर्जेन्टले सफा गर्ने
- मासुजन्य खानेकुरा राम्ररी पकाएर मात्र खाने
- फोहोरलाई उचित स्थानमा व्यवस्थापन गर्ने

यस सम्बन्धी विस्तृत जानकारी निःशुल्क हटलाइन नं. १११५ मा फोन गरेर लिन सक्नुहुनेछ ।

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