UCSF Health

UCSF Mpox Control Plan

I. Purpose

The purpose of this control plan is to establish safety and infection prevention guidance for the management of suspected and/or confirmed mpox patients.

II. Situation summary

- Providers caring for patients presenting for evaluation of dermatologic lesions or sexually transmitted infections, are advised to be vigilant for signs and symptoms consistent with mpox, including characteristic rash and lymphadenopathy, with or without fever.

III. Notification

- Report all suspected and confirmed mpox cases within 1 working day to Hospital Epidemiology and San Francisco Department of Health (SFDPH):
  i. Contact HEIP by calling the numbers on this link
  ii. To report cases to SFDPH print out and complete a Confidential Morbidity Report (CMR) and send the completed form with the specimens to the UCSF clinical lab. The CMR form will serve as notification to SFDPH.
  iii. Notify HEIP and SFDPH for *suspect* as well as confirmed mpx cases

IV. Case definition

- **Confirmed case:** Patient with mpox virus detected from a clinical sample
- **Probable case:** Patient with orthopox virus detected from clinical sample.
- **Suspect case:** Patient with an unexplained rash that is consistent with mpox (firm, well circumscribed, deep-seated, and umbilicated lesions; progresses from macules to papules to vesicles to pustules to scabs) and risk factors for mpox exposure.
  i. Clinicians should also consider and rule out, if possible, other more common etiologies of rash illness such as herpes simplex, varicella zoster, syphilis, molluscum contagiosum, chancroid, disseminated fungal infections including cryptococcus, disseminated gonococcus.

V. Transmission and Clinical presentation

- Transmission
  i. Mpox spreads between people primarily through direct contact with

infectious sores, scabs, or body fluids. It also can be spread by respiratory secretions during prolonged, face-to-face contact.

ii. For more information refer to this algorithm and this guidance.

- Clinical Presentation
  i. The incubation period is usually 7-14 days but can range from 5-21 days.
  ii. The development of initial symptoms (e.g., fever, malaise, headache, weakness) marks the beginning of the prodromal period.
  iii. Within 1-3 days after a fever develops, the patient develops a rash, often beginning on one part of the body (e.g., anogenital area or face) and then spreading to other parts of the body that can last 2-4 weeks. The rash develops and progresses from macules, to papules, to vesicles, and then to pustules, followed by umbilication, scabbing, desquamation.
  iv. A patient is considered infectious starting with the initial prodromal symptoms and until all skin lesions have crusted, scabs have fallen off, and a fresh layer of skin has formed.
  v. Some recent cases are presenting atypically, including no prodrome and localized lesions in the genital and perianal area.
  vi. For a more detailed list of signs and symptoms of mpox, refer to this algorithm and guidance.

VI. Patient transport

- Mask the patient (unless there are medical contraindications or patient is <2 years of age) and cover lesions with a clean sheet.
- Healthcare personnel transporting the patient that will have direct contact with the patient must wear all PPE required for Novel Respiratory Isolation (fit-tested N95, eye protection (or PAPR), gloves, gown) as noted in this guidance.

VII. Bed placement

- Inpatient
  i. Admit the patient into a single patient room with a dedicated bathroom.
  ii. No special air handling is needed unless the patient is getting or anticipated to get an aerosol generating procedure (AGP). If a patient is getting or is anticipated to get an AGP, admit them to an Airborne Isolation Infection Room (AIIR).
- Ambulatory
  i. Isolate the patient in a single exam room with the door closed and dedicate a bathroom.
  ii. No special air handling is needed unless the patient is getting or anticipated to get an AGP. If a patient is getting or anticipated to get an AGP, if available,

preferentially place them in an AIIR.

iii. Ensure that the patient remains masked (unless medically contraindicated or patient is <2 years of age) and cover any exposed skin lesions with a gown or sheet.

VIII. Isolation Precautions and Personal Protective Equipment (PPE)

- Isolation
  - i. Inpatient: Place an order for Novel Respiratory Isolation.
  - ii. Ambulatory: Observe Novel Respiratory Isolation.
  - iii. Avoid the use of portable fans.
  - iv. Duration of isolation
    1. Isolation Precautions should be maintained until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath.
    2. Maintain isolation until cleared by UCSF Hospital Epidemiology and Infection Prevention (HEIP).
    3. Patients who do not require hospitalization, but remain potentially infectious to others, should be isolated at home.
- Required PPE:
    1. Fit-tested N95 respirator (or PAPR)
    2. Eye protection
    3. Gown
    4. Gloves
  - ii. Donning and doffing PPE should be followed as per this guidance:
  - iii. Donning PPE
    1. Healthcare personnel should don all the personal protective equipment (PPE) before entering the patient's room and use PPE during all contact with the patient including during transport.
  - iv. Doffing PPE
    1. Healthcare personnel must remove and discard gloves and gown and perform hand hygiene prior to leaving the patient's room.
    2. Fit-tested N95 respirator (or PAPR) and eye protection should be removed and discarded outside of the patient's room after every room exit (not in anteroom if one is present).
    3. Do not re-use or follow extended use of the N95s.
    4. Place a trashcan outside of the patient's room to discard the N95s and if disposable, the eye protection. If a PAPR, or re-usable eye protection is worn, clean it with hospital-approved disinfectant after every room exit.

5. Refer to 'Transport Patient' for PPE guidance for this scenario.

v. Re-use or extended use of PPE is not permitted as outlined in this guidance.

- The patient should always remain in the room with the doors closed unless diagnostic or therapeutic procedures (e.g., CAT scan, surgery, etc.) are required and cannot be performed in the patient's room.
- When leaving the room, the patient must disinfect hands, put on a clean hospital gown, put on a medical mask (if safe and patient is ≥2 years of age), and a clean sheet placed over the patient (See "Transport of Patient"). If the patient is <2 years of age, cover the crib with a clean sheet during transport if safe. Inform the receiving area that the patient is on Novel Respiratory Isolation and has suspected/confirmed mpox.
- At discharge, hospitality should clean the room using the appropriate PPE and isolation as noted in this guidance. If an AGP was performed, leave the room empty for one hour prior to initiation of cleaning.

IX. Hand hygiene

- Hand hygiene is essential, as mpox is primarily spread through contact with sores, scabs, or body fluids as well as fomites.
- Hospital-approved hand hygiene products including alcohol-based hand rubs and soap and water are effective.

X. Specimen collection and testing guidance

- Order the mpox test:
  i. Enter the Apex order set 'Mpox Virus DNA, Qualitative PCR'
  ii. Any other microbiology tests sent for this patient should include in the comment that this patient is a mpox suspect.
  iii. Refer to the lab manual for more information.
  iv. Print and complete a Confidential Morbidity Report (CMR) Form and send the completed form with the specimens to the clinical lab. Tests cannot be processed without this report
- Collect the specimens following SFDPH guidance. Additional guidance on how to swab the lesions can be found here.
  i. **Collect 2 swabs per lesion** – choose up to two lesions for sampling. No need to swab every region. Sterile nylon, polyester, or Dacron swabs should be used.
  ii. Lesions do not need to be unroofed, but should be vigorously brushed with Dacron, nylon, or polyester swabs with plastic or aluminum shafts, placed individually in separate sterile tubes with viral transport media (VTM).

iii. Label with name, DOB, collection date, and unique name of the lesion -- e.g. L thigh, R thigh with "A" and "B" to differentiate between the two swabs for each site. Trim end of swab to fit into container, do not force/ bend the swab
iv. Samples from the same lesion should be placed in the same specimen bag, for a total of 2 specimen bags (2 samples per bag)
v. All specimens should be stored in the microbiology lab at 4°C if shipping within 24-72 hours, and at -80°C if shipping will be delayed.
vi. There should be one order in Apex per lesion sampled, for a total of 2 orders.

- Provider or designee must complete the Confidential Morbidity Report Form and send it to the UCSF Clinical Microbiology lab along with the specimens.
- Take necessary steps to prevent leaking and ensure that the primary specimen container if closed tightly.
- Use an appropriate, sealed secondary bag or container with absorbent material included.

XI. Clinical Lab Control and Microbiology

- Refer to the recommendations in this guidance for appropriate lab procedures.
- Microbiology will notify HEIP when mpox testing is sent on any patient.
- Expected turnaround time for results is 72-96 hours.

XII. Treatment

- Guidance regarding treatment with antiviral agents should be obtained from the clinical infectious disease services.
- For detailed information, review this guidance.
  i. For patients admitted to UCSF: Consult the clinical infectious disease team for treatment guidance: Adult patients: 415-443-8996, BCH-SF: 415-443- 2384.
  ii. For patients being evaluated in a UCSF Ambulatory/Outpatient Clinic: Refer the patient to the ID clinic; for more urgent questions contact the ID team via the pagers above.

XIII. Vaccination

Vaccination is available at these sites:

- San Francisco sites: https://sf.gov/information/mpox-vaccine
- Sites outside of San Francisco: https://myturn.ca.gov/screening?config=e4eacec2-35f7-4722-b1c8-c7f88dfbfb93

XIV. Visitation

Visitors to patients with mpox infection should be limited to those essential for the

patient's care and wellbeing (e.g., parents of a child, spouse). Decisions about who might visit, including whether the visitor stays or sleeps in the room with the patient, typically
take into consideration the patient's age, the patient's ability to advocate for themselves, ability of the visitor to adhere to infection prevention and control recommendations, whether the visitor already had higher risk exposure to the patient, and other aspects.

For visitation requests for mpox suspect or confirmed inpatients, please submit a referral to the Visitor Escalation Committee. The Visitor Escalation Committee reviews referrals including on weekend.

XV. LABOR AND DELIVERY, POSTPARTUM, NEWBORN NURSERY

I. Mpox infection during pregnancy has limited information related to susceptibility and severity. Adverse pregnancy outcomes including preterm delivery, spontaneous pregnancy loss and still birth have been reported in pregnant persons.

II. Mpox can be transmitted to the fetus during pregnancy or to the newborn by close contact during and after birth.

Symptoms

A. Fever may be difficult to differentiate from other infections, such as intraamniotic infection (chorioamnionitis), until the rash appears. For information on clinical presentation, refer to Section V.

B. Rash in a person who is pregnant with risk factors for mpox virus infection needs to be differentiated from dermatoses of pregnancy, including polymorphic eruption of pregnancy (also known as pruritic urticarial papules and plaques of pregnancy).

Diagnostic testing

A. Consider if the person has epidemiologic risk factors for mpox virus infection.
B. Co-infections with mpox virus and sexually transmitted infections (STIs) have been reported and the presence of an STI does not rule out mpox, so a broad approach to testing is encouraged. See Specimen Collection and Testing Guidance
C. Refer to Section X for information on mpox testing.

Treatment

Pregnant, recently pregnant, and breastfeeding people should be prioritized for medical treatment if needed due to risk of severe disease, transmission to the fetus during pregnancy and to the newborn after birth and risk of severe infections in newborns.

A. Tecovirimat (TPOXX) treatment-Consultation with the ID to see if this antiviral is indicated. Consult ID and MFM for help with treatment plan.

1. While Tecovirimat is the first-line antiviral, there is not any human data of impact during pregnancy to developing fetus and it is not known whether treatment with Tecovirimat prevents congenital mpox.

2. Tecovirimat was present in breast milk in animal studies. Despite potential presence of Tecovirimat in the human breastmilk, breastfeeding children with mpoxshould be treated independently with Tecovirimat.

B. The JYNNEOS vaccine can be offered to people who are pregnant or breastfeeding who are otherwise eligible.

Isolation, room placement, and workflows

Use Novel Respiratory Isolation for patients with suspected or confirmed mpox:

A. The mother and newborn will be placed in Novel Respiratory Isolation in separate rooms pending testing and/or the end of the isolation period for the mother. Newborns should be in a single room and not cohorted with other newborns or allowed into the well baby nursery.

B. Duration: Novel Respiratory Isolation should be continued until criteria for discontinuing isolation have been met (i.e., all lesions have resolved, the scabs have fallen off, and a fresh layer of intact skin has formed) and patient is cleared by HEIP. The newborn should remain in isolation (in the hospital or in the community after discharge) for at least 21 days; the length of isolation may be extended if the mother is still infectious and has contact with the infant after delivery.

For vaginal deliveries, follow Novel Respiratory Isolation workflows (i.e. “COVID-19 workflows”). For cesarean sections, follow Perioperative Services direction including the currently used workflows for other patients on Novel Respiratory Isolation (“COVID-19 workflows”).

If the neonate requires any aerosol-generating procedures, including positive pressure respiratory support and ICN admission, transport will occur in a covered isolette under Novel Respiratory precautions following COVID-19 workflows.

Postpartum

Using separate rooms for the post-partum patient and newborn is the best way to prevent transmission to the newborn during the infectious period. The newborn may be roomed in the ICN or in a separate room from the mother on the post-partum unit, depending on clinical condition and room availability. If the newborn is in a post-partum

room, they will require a full-time dedicated caregiver to be present.

Contact between the mother and newborn

A. Counsel the patient antenatally on the risk of transmission and potential for severe mpox infection in infant. Shared decision-making about post-partum planning and separation should be completed prior to delivery if possible.

B. The newborn should be bathed right after delivery and before administration of IM vitamin K/Hepatitis B vaccine or other interventions that may compromise the skin integrity.

C. No direct contact or skin to skin contact between the mother and the newborn is advised due to risk of mpox transmission. If the patient chooses to have contact with the newborn during the infectious period, strict precautions should be taken, including the following:

- Newborn: Swaddle or fully clothe newborn. After contact with the mother remove clothing or blanket and replace with new clothes/linen.
- Mother: Apply well-fitting source control mask during visit, fresh gown, and gloves with all visible skin below the neck covered. Mask, gown, and gloves must be worn by patient when newborn is present. Remove all soiled linens.

Breastfeeding

Mpox virus is spread by close contact and neonatal mpox infection may be severe; breastfeeding should be delayed until criteria for discontinuing isolation have been met (i.e., all lesions have resolved, the scabs have fallen off, and a fresh layer of intact skin has formed).

It is unknown if mpox virus is present in breast milk. Breast milk expressed from a patient who is symptomatic or isolated should be discarded while breastfeeding is delayed. To avoid inadvertently exposing an infant to the mpox virus, a healthy caregiver can feed pasteurized donor human milk or infant formula.

Visitors

Delivery and Postpartum - Limit visitors during delivery to those that are essential to the patient's care and wellbeing. Visitors must be counseled about the possible risk of acquiring mpox and required to wear the appropriate PPE (N95, eye protection, gloves, and gown) when in the room with the post-partum patient and/or baby. They should be instructed on how to don and doff the PPE and how to perform a fit-check for the N95. The visitor should not wear the same PPE between the rooms of the mother and the baby.

- Visitors should not go to the ICN, well baby nursery, or common spaces in the hospital; they should leave the hospital directly after exiting the patient room.

Discharge Planning

Consider the duration of isolation, ability to strictly adhere to recommended isolation precautions, and availability of alternative caregivers.

Newborns should be monitored for at least 21 days after birth for signs & symptoms of mpox, including daily temperature checks and full skin examinations by either a medical provider or caregiver after discharge.

Prior to discharge, the medical team will communicate with the newborn's PCP to outline appropriate and safe follow up visit logistics. This plan will be developed with the input from HEIP.

The medical team should work with social work, case management, the patients' PCP, and public health teams to identify and connect families with appropriate resources given the difficulties of prolonged separation and isolation in the post-partum period.

XVI. Environmental and Equipment Cleaning and Linen handling

- **Environmental cleaning**
  i. Hospital-approved disinfectant wipes such as Clorox hydrogen peroxide wipes are effective against mpox. Follow appropriate contact times.
  ii. Mpox is a Tier 1 (enveloped virus). See this list for a comprehensive list of cleaning agents effective against this virus.
  iii. Standard cleaning and disinfection procedures with hospital-approved disinfectants are effective.
  iv. Wet cleaning methods are preferable. Activities that could resuspend dried material from lesions, e.g., dry dusting, sweeping, or vacuuming, should be avoided.
  v. Curtains should be changed in the inpatient setting and preferentially in the ambulatory setting.
- **Equipment Cleaning**
  i. All equipment entering the patient room will be appropriately cleaned and disinfected using an approved hospital-approved disinfectant and appropriate contact time.
- **Linen**
  i. Soiled linen (e.g., bedding, towels, personal clothing) is considered potentially infectious and should be handled using the PPE described above and in accordance with Novel Respiratory Isolation. Avoid contact with lesion material (e.g., scabs) that may be present on linen while putting the linen in the bag.
  ii. Soiled laundry should be gently and promptly contained in an appropriate laundry bag and should never be shaken or handled in a manner that may disperse infectious material.

XVII. Food service

- Management of food service items should be performed in accordance with routine procedures.

XVIII. Waste handling

- Standard waste handling is appropriate for the West African Clade (currently circulating clade).
- NOTE: At present, routine waste handling is indicated because the West African Clade is circulating. If an additional clade, such as the Central African/Congo Basin Clade, is identified, HEIP will provide notification and update this document as needed.

XIX. Autopsy

- Adhere to the recommendations provided in this guidance for autopsies.

XX. Discharge planning

- Patients being discharged home should remain isolated at home until all skin lesions have crusted over, crusts have fallen off, and lesions have been replaced by a new layer of skin.
- Transfers to another healthcare facility
  i. Notify Transfer service of the patient's mpox status prior to transfer.

XXI. Ambulatory visits for confirmed, probable, or suspect cases

- For patients with concern for mpox prior to arrival to an ambulatory location:
  i. Schedule an initial video visit if possible.
  ii. Obtain and upload pictures into Apex.
  iii. Coordinate in-person visits with clinic leadership, ID, and HEIP ahead of time.
  iv. If an in-person assessment is needed, schedule the patient for the last appointment of the day.
- For all ambulatory visits
  v. Expedite placement of the patient into a single exam room with the door closed.
  vi. Ensure that the patient is masked and has covered lesions as much as possible prior to arrival.
  vii. Dedicate a bathroom for the patient to use if needed.
- Healthcare personnel who will be involved in the encounter should wear PPE as described above.
- If specimens are collected, the provider or designee must complete a CMR form for each patient (see "Specimen collection and testing guidance" for more details). Ensure that the form is completed before walking the specimen to the clinical laboratory.

- Clinic staff must stabilize and package the swabs appropriately and ensure that the CMR form is complete and placed with the specimen.
- Hospitality staff should be informed that the patient in that room, and if indicated, the bathroom, had suspected or confirmed mpox. Hospitality staff should use the appropriate PPE for cleaning including linen handling as outlined above.
    i. For offsite or leased buildings using a 3rd party cleaning service:
        1. If 3rd party cleaning service – ensure that the cleaning service is notified of the patient's suspected or confirmed mpox diagnosis and adheres to PPE and safe linen handling practice requirements
        2. If clinic staff are responsible for cleaning – ensure staff wear appropriate PPE and safely handle linens as described above.
- If an AGP was performed, leave the room empty with the door closed for one hour.
- For infection prevention guidance for the home setting, refer to these recommendations.

XXII. Occupational Exposure

- **Contact Occupational Health Services (OHS) with questions and/or concerns for exposure (415) 885-7580.**
    i. A patient may be infectious during the prodrome period and is infectious once they have the onset of the rash and until the lesions have crusted and a fresh layer of skin has formed.
    ii. Exposure risk levels are defined here.
- Any healthcare personnel who has cared for a mpox patient should monitor themselves during the 21 days following the last day of care for the development of symptoms that could be consistent with mpox infection including fever >=100.4 F (38 C), chills, new lymphadenopathy (periauricular, axillary, cervical, or inguinal), or new skin rash and should immediately notify OHS for guidance regarding medical evaluation and possible treatment.
    i. Healthcare personnel who have unprotected exposures (i.e., not wearing PPE) to patients with mpox do not need to be excluded from work duty but should undergo active surveillance for symptoms which includes measurement of temperature at least twice daily for 21 days following the exposure. Depending on the exposure, the healthcare personnel may be a candidate for post-exposure prophylaxis with mpox vaccine. Prior to reporting for work each day, the healthcare personnel should be interviewed regarding evidence of fever or rash.
    ii. Healthcare personnel who have cared for or otherwise been in direct or indirect contact with mpox patients while adhering to recommended infection control precautions may undergo self-monitoring or active monitoring as determined by the health department.
- For more information on occupational exposures refer to this guidance.

XXIII. Additional Response Guidance

- Any response guidance not outlined in this document will be developed as needed based on risk assessment. Guidance modifications will be reviewed and approved by the UCSF HEIP leadership prior to implementation.