MPOX VIRUS

Federal Bureau of Prisons

Clinical Guidance

February 2023

WHAT'S NEW

- Based on the current (2022-2023) mpox virus outbreak, the following updates have been provided:
  - Modes of transmission include all observed modes of transmission to date, such as tattooing, body piercing, and occupational exposures when personal protective equipment (PPE) is insufficient or incorrectly worn.
  - There is a high prevalence of anal and perianal lesions as well as oropharyngeal and perioral lesions at diagnosis.
- Updated oral health considerations include information that while exposure to the oropharynx and saliva can transmit infection, it is unclear if an oral lesion must be present at the time of exposure.
- The infectious period has been updated to include infectivity 1-4 days before symptom onset in some persons, particularly during sexual activity.

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1. PURPOSE

The purpose of the BOP *Clinical Guidance for Mpox Virus* is to provide recommended procedures for detection, diagnosis, treatment, and prevention of mpox in the correctional setting.

2. ETIOLOGY

Mpox is caused by the same family of viruses as smallpox and is not related to chickenpox. The source of the disease is unknown. For general information concerning mpox, see *https://www.cdc.gov/poxvirus/mpox/about.html*.

3. MODE OF TRANSMISSION

TYPICAL SPREAD

- Person-to-person viral spread occurs primarily through direct contact with infectious sores, scabs, or body fluids. As such, mpox can spread during activities that include close, personal contact with an infected person (e.g., cuddling, sexual activity) and during activities with prolonged face-to-face contact involving respiratory secretions (e.g., kissing).
- Indirect transmission can occur through contact with materials, such as clothing or linens, that have been contaminated with infectious material from body fluids or sores.
- The virus can also infect a fetus by crossing the placenta from the mother.

➔ *During the 2022-2023 outbreak, mpox virus has been transmitted primarily through sexual contact; however, transmission through needlesticks with skin lesion-contaminated sharps, through body piercing and tattooing, and occupational exposures in the absence of full or sufficiently effective personal protective equipment (PPE) have also been reported.*

LESS LIKELY SPREAD

- Animal-to-human transmission is possible and is typically acquired through contact with infected animal body fluids or a bite, or through preparation of raw or minimally processed infected animal meat or other animal products.

4. CLINICAL PRESENTATION

TYPICAL PRESENTATION

- **FLU-LIKE ILLNESS:** Symptoms may include fever, headache, myalgia, fatigue, chills, respiratory symptoms (e.g., sore throat, nasal congestion, cough), and swollen lymph nodes which may be localized or generalized. When present, these symptoms may last up to 5 days and either precede, follow, or occur at the same time as the rash.
- **RASH:** Lesions appear as pimples or blisters in various parts of the body, including the inside of the mouth and anus causing proctitis. While they may not be in the same stage of development throughout the body, they begin as 2 to 5 mm diameter macules and evolve to papules, vesicles,

and then pustules. After 7 to 14 days of rash onset, the lesions crust over, and the crusts dry up and fall off. The rash is often painful, but when crusted, it can become itchy.

- The 2022-2023 outbreak is notable for the high prevalence of anal and perianal lesions as well as oropharyngeal and perioral lesions at diagnosis.

- ***Clinical features of mpox may be confused with other conditions and rash illnesses,*** *such as scabies, chickenpox, herpes simplex virus, secondary syphilis and other sexually transmitted infections, measles, and other pox viruses (e.g., Orf virus).*

DISEASE COURSE

- Illness is typically self-limited and rarely fatal with symptoms lasting 2 to 4 weeks, although underlying immune deficiencies, pregnancy, breastfeeding, active exfoliative skin conditions (e.g., eczema), and atopic dermatitis may lead to worse outcomes. Complications may include secondary infections, bronchopneumonia, encephalitis, sepsis, and infection of the cornea with ensuing loss of vision.

- *For additional information (including rash photographs), see Signs and Symptoms | Mpox | Poxvirus | CDC and Clinical Recognition | Mpox | Poxvirus | CDC*

ORAL HEALTH CONSIDERATIONS

- Based on data from past mpox outbreaks, dentists should recognize that the rash is more concentrated on the face (95% of cases) and affects the oral mucous membranes in 70% of cases. This correlates with the 2022-2023 outbreak finding of a high prevalence of oropharyngeal and perioral lesions.
- Evidence indicates that exposure to the oropharynx and saliva can transmit infection; however, data are insufficient to determine if an oral lesion needs to be present at time of exposure.
- When a skin rash is absent but intraoral lesions are present, dentists should rule out other lesions, such as aphthous ulcers and herpetic lesions, by monitoring the patient for improvement. Herpetic lesions are typically present on keratinized tissue and resolve in 7 to 10 days, whereas aphthous ulcerations are present on non-keratinized tissue and typically resolve in 7 to 14 days. Refer patients with unexplained oral mucous membrane lesions to medical providers.

- *Follow CDC and BOP guidelines concerning dental infection prevention and control practices at Summary of Infection Prevention Practices in Dental Settings: Basic Expectations for Safe Care (cdc.gov) and https://www.bop.gov/resources/pdfs/infection_control_in_dental_healthcare_guidance.pdf*

5. INFECTIOUS AND INCUBATION PERIODS

- **INCUBATION PERIOD:** The incubation period is approximately 1-3 weeks.
- **INFECTIOUS PERIOD:** All persons infected with mpox virus are infectious from the time symptoms start until the rash has fully healed with formation of a fresh layer of healthy skin after the scabs have fallen off (usually 4 to 21 days). However, some persons are infectious up to 4 days before symptom onset, particularly when transmission is due to sexual activity.

6. DIAGNOSIS

All inmates should be screened at intake for symptoms and signs of mpox.

- A **PRESUMPTIVE DIAGNOSIS** is based on:
  - Clinical suspicion (e.g., presence of a rash or other symptoms that could be consistent with mpox), **AND**
  - Epidemiologic risk factors for infection (e.g., close contact with a person suspected or known to have mpox).
  - Diagnosis of mpox should also be suspected in patients who present with genital ulcer disease or proctitis that does not respond to empiric treatment for typical sexually transmitted infections.
- A **CONFIRMATORY DIAGNOSIS** is based on a positive mpox DNA qualitative viral PCR.
  - Utilize the Mpox Virus DNA, qualitative real-time PCR collected in viral transport medium via swab sample. Do NOT use sharps to sample lesions.
  - This laboratory test is active in BEMR and is processed through Quest. Testing supplies can be ordered through Quest.

Patients who are symptomatic or suspected of having mpox and placed in medical isolation pending diagnosis confirmation should be coded in BEMR with ICD-10 code B04-I. Patients with a confirmed diagnosis of mpox should be coded in BEMR with ICD-10 code B04 "Mpox".

REPORTING

ALL cases of inmate mpox infection should be reported via the **BOP Reportable Infectious Disease (RID)** system and to the local public health department per state requirements.

Per **Program Statement 6701.01 Employee Health Care**, *Employees who become aware they have been exposed to or have acquired an infectious disease that could be transmitted, under normal working conditions, to others at the workplace must notify their supervisor. The diseases that will be reported are those that can be spread through the air or by physical contact with others or common surfaces.*

7. TREATMENT

A general overview of treatment considerations, including vaccination, is provided in this section. BOP continues to collaborate with the CDC on the best public health strategy for vaccination, testing, and treatment and more information will be forthcoming as it becomes available.

- **There are currently no FDA-approved treatments specifically for mpox virus infection** and treatment is symptomatic. However, United States Government stockpiled antivirals developed for use in patients with smallpox and vaccines used for pre- and post-exposure prophylaxis developed to protect against smallpox may be effective and have been approved or authorized against mpox under Emergency Use Authorization (EUA). Refer to *Section 11. Vaccination* for information regarding vaccinations for mpox.
- Institutions should NOT reach out to the CDC or manufacturers directly and should refer questions regarding obtaining vaccinations or medications for treatment to their institution pharmacist or Regional Chief Pharmacist.

MILD DISEASE

- Most patients have mild disease and recover without medical intervention. Supportive care is the mainstay treatment, which may include hydration and treatment of secondary bacterial infection.

MODERATE TO SEVERE DISEASE

- **Supportive care requiring hospitalization may be needed** for those who have or are at risk for dehydration (e.g., nausea, vomiting, dysphagia), those who require pain management, and those experiencing severe disease or complications.
- **Antiviral therapy and vaccination should be considered for those who have severe disease and for those at risk for severe disease.** This includes those younger than 1 year of age; persons with a history or presence of atopic dermatitis or other active exfoliative skin conditions, such as eczema; persons who are pregnant or breastfeeding; and those who are severely immunocompromised.
- **Early treatment should also be considered in cases that involve anatomic areas that might result in serious sequelae that includes scarring or strictures (e.g.,** pharynx, genitals, or anorectal areas).

→ *For additional information, see Treatment Information for Healthcare Professionals | Mpox | Poxvirus | CDC and Considerations for Mpox Vaccination | Mpox | Poxvirus | CDC.*

8. SPECIAL POPULATIONS

IMMUNOCOMPROMISED PATIENTS

- Immunocompromised patients, including those with HIV who are not virologically suppressed, may present with an atypical, more severe, or more prolonged course of illness related to a mpox infection.
- Factors to consider when assessing the level of immune competence in a patient include underlying disease severity, duration, clinical stability, complications, comorbidities, and any potentially immune-suppressing treatment. Clinicians should consider both viral suppression and CD4 count when evaluating the extent of immunosuppression (from HIV infection or any other source).
- Moderate and severe immunocompromising conditions and treatments include but are not limited to:
  - HIV infection in the presence of a CD4 count <350 cells/mm3 or in the absence of viral suppression. (Patients with HIV who are virologically suppressed and otherwise not immunocompromised are not at increased risk of severe disease.)
  - Moderate or severe primary immunodeficiency
  - Active treatment for a solid tumor or hematologic malignancy
  - Immunosuppressive therapy for solid-organ or islet transplant
  - Active treatment with high-dose corticosteroids, an alkylating agent, antimetabolite, transplant-related immunosuppressive drug, cancer chemotherapeutic agent classified as

severely immunosuppressive, tumor necrosis factor (TNF) blocker, or other biologic agent that is immunosuppressive or immunomodulatory
    - Receipt of chimeric antigen receptor (CAR)-T-cell therapy or hematopoietic cell transplant (within 2 years of transplantation or taking immunosuppressive therapy)
- Early treatment and visual monitoring should be considered for patients who are immunocompromised.
- Antiviral treatment(s) for mpox have minimal interaction with antiretroviral therapy and with common immunosuppressive medications.

➔ *For additional information, see Clinical Considerations for Treatment and Prophylaxis of Mpox Infection in People Who are Immunocompromised| Mpox | Poxvirus | CDC*

PREGNANCY

Women who are pregnant are at significantly increased risk for adverse outcomes if infected with mpox, since the virus can cross the placenta and cause pregnancy loss or stillbirth. A low threshold for suspicion should be exercised when evaluating women with potential mpox symptoms and signs.

If a mpox infection is diagnosed, the patient should be urgently scheduled for a high-risk OB/GYN appointment ***OR*** immediately transported to an emergency room for follow-up and treatment.

9. PREVENTION AND CONTROL

PROMOTE HEALTHY HABITS

The following measures will help protect against the spread of any infectious diseases, including mpox:

- Regular hand washing with soap and water or 60% alcohol-based hand rub.
- Emphasize cleaning of high-touch surfaces (e.g., doorknobs, hand rails, telephones, keys, computer keyboards)
- Avoid close physical contact with suspected or known individuals.

PROACTIVE PREVENTION MEASURES

- Screen all new arrivals for rash illnesses, influenza-like illness, and inquire about past and present sexually transmitted infections.
- **MEDICAL ISOLATION:** Patients with symptoms or signs suspicious for mpox should be housed in medical isolation cells with solid walls, solid doors, and a dedicated bathroom. Patients can be cohorted together and separated from non-symptomatic individuals.
    - If placement in single cells is necessary, psychology staff should be consulted to ensure patients are evaluated for their suicidality risk and/or to make recommendations.
    - Medical isolation should continue while awaiting diagnosis confirmation until either mpox has been ruled out or an alternative diagnosis made.
    - Once mpox is confirmed, patients will remain in medical isolation until the rash has fully healed with formation of a fresh layer of healthy skin after the scabs have fallen off. This usually occurs in 4 to 21 days.

  - While in medical isolation, patients should undergo daily temperature checks and medical assessments to monitor progression of disease and receive symptomatic treatment as needed.
  - Do NOT transfer patients out of the facility while they are in medical isolation.
- Consider housing new arrivals who may be pregnant or who are breastfeeding in cells that offer less exposure risk to potentially infected individuals who are not showing symptoms (e.g., avoid open bay units).

PERSONAL PROTECTIVE EQUIPMENT (PPE) AND INFECTION CONTROL MEASURES

The following guidelines should be followed while patients are in **QUARANTINE** or **MEDICAL ISOLATION** for mpox:

- Post the **CONTACT/DROPLET/RESPIRATORY PRECAUTIONS** sign on the door of the **MEDICAL ISOLATION**, **QUARANTINE,** or **AEROSOL GENERATING PROCEDURES** (AGPs) cell or if utilizing cohorting, post at the entrance to the unit.
  ➔ *See Appendix 1 for an example of a sign.*
- Refer to the **BOP Mpox Guidance for Personal Protective Equipment** on the BOP intranet mpox web page for specific PPE requirements.
- Refer to *Appendix 2. Aerosol Generating Procedures (AGPs)* for guidance on the use of nebulizers, CPAP/BiPAP, oxygen supplementation and pulmonary function tests for patients who are in mpox quarantine or medical isolation.
- Refer to *Table 1. Institution Operations* on the following page for guidance on mitigation measures to reduce the spread of mpox virus.
- For **MEDICAL ISOLATION**: Patients should wear a surgical mask and completely cover any skin lesions when outside their room before their medical isolation period has ended and when any other individuals enter the room.
- Institutions should post signage throughout the facility to remind staff and inmates to perform hand hygiene and other infection control measures regularly.

TABLE 1. INSTITUTION OPERATIONS

	QUARANTINE/MEDICAL ISOLATION	GENERAL POPULATION
CLEANING AND DISINFECTION	• Use only wet cleaning methods, such as spraying or mopping with warm water and detergent. Avoid cleaning activities that can spread dried material from lesions (e.g., vacuuming, dry sweeping, use of fans). • Perform disinfection using an EPA-registered disinfectant with an *Emerging Viral Pathogens* claim, which may be found on EPA's *List Q*. Follow the manufacturer's directions for concentration, contact time, and care and handling.	• In institutions with confirmed or suspected mpox diagnosis: ○ The frequency of cleaning for communal areas and high touch surfaces (e.g., chapel, meeting rooms, recreation equipment) should be increased. ○ Inmates should be reminded to wipe down equipment after each use and wash hands frequently.
TRASH	• Inmates in medical isolation should have a dedicated, lined trash can in the room where they are isolating. • Waste from patients in medical isolation should be disposed of in a manner consistent with regulated medical waste. • Required waste management practices and classification currently differ depending on the mpox virus strain (clade). Since the current outbreak has been associated only with clade IIb, it may be assumed that any patient presenting with symptoms and signs suspicious for mpox will be due to clade IIb. As such, it is appropriate to manage the patient's waste as Regulated Medical Waste. However, if there is any concern about the clade type based on known epidemiologic risk factors for clade I, contact the health department.[1] • Waste from patients in quarantine should be double bagged in clear garbage bags.	Normal operations
LAUNDRY	• Laundry from patients in medical isolation or quarantine must be double bagged in the yellow degradable bags that go straight into the washer (Facilities orders these degradable bags) and handled in such a manner so as not to disperse infectious material. • The first bagging should be done by the source individual who will drop the affected bag into the secondary bag held by un-infected individual. • Linens may be laundered using regular detergent and warm water.	Normal operations

(Table continues on next page)

TABLE 1. INSTITUTION OPERATIONS (CONT.)		
	QUARANTINE/MEDICAL ISOLATION	**GENERAL POPULATION**
FOOD SERVICE	• Food Service should use disposable clamshells. • Use routine practice – no additional PPE required.	Normal operations
BARBER/ BEAUTY SHOP	• All patients in Quarantine or Medical Isolation will not receive these services.	Normal operations
EDUCATION, PSYCHOLOGY, RELIGIOUS SERVICES, LEGAL VISITS	• All patients in Quarantine or Medical Isolation will not routinely receive these services in group settings. • Alternative means may be acceptable such as provision of educational and religious materials, door-to-door interaction, and use of phone or video for court-ordered legal visit.	
VISITATION	• All patients in Quarantine or Medical Isolation will not receive in-person visitation. Phone or video visits may be allowed in special circumstances.	
RECREATION	• All patients in Quarantine or Medical Isolation will not participate in group activities in recreation.	
[1] Persons who may have epidemiological risk for clade I mpox virus include those with a history of travel to the Democratic Republic of the Congo, the Republic of Congo, the Central African Republic, Cameroon, or Gabon in the prior 21 days; contact with a dead or live wild animal or exotic pet that is an African endemic species or used a product derived from such animals),		

10. CONTACT INVESTIGATION

Prompt contact investigation is indicated IMMEDIATELY whenever a mpox case is diagnosed.

DEFINING AND DETERMINING CLOSE CONTACTS

CLOSE CONTACTS include any person who had skin-to-skin contact; cellmates; and those with potential exposure to the patient's clothing, bed linens, or towels. **It is critically important to identify all contacts.**

- Ask the source individual to identify other persons who, during the time the source individual had symptoms, may have engaged in the following activities:
  - Shared skin-to-skin contact of any kind (e.g., handshakes)
  - Had contact with the source individual's personal belongings
  - Shared headphones, hats, gloves, scarves, or shoes
  - Spent time together in sports or recreation that involved physical contact
  - Had any shared clothing practices
- Visit the housing unit and interview individuals to identify all possible contacts.
- Conduct an environmental assessment of the quarters of the mpox case and contacts by visiting the cell or dormitory where the patient is housed:
  - DORMITORIES: Identify ALL adjacent beds and consider patients in those beds as contacts. Identify owners of clothing items hanging on the bunk belonging to the mpox case.
  - CELLS: Cellmates are ALWAYS considered contacts.

- It may be necessary to discard excess property, trash, and torn plastic or vinyl mattresses and pillows:
  - Mpox case: discard as regulated medical waste (refer to *Table 1* on previous page for details)
  - Contacts: discard after double bagging in clear plastic bags.

Management of Close Contacts

The Regional and Central Office Infection Prevention & Control Specialists should be consulted regarding mpox outbreak management.

- **Assess all close contacts to determine whether exposure was high, intermediate, or low as per CDC guidelines.**
  For more information on exposure levels, see https://www.cdc.gov/poxvirus/mpox/clinicians/monitoring.html *and* Appendix 3. Mpox Pre- and Post-Exposure Risk Table.
- For those with **HIGH** or **INTERMEDIATE EXPOSURE**s, consult the Institution Clinical Director (for patients) or contact Occupational Safety and Health (for staff) to determine whether post-exposure prophylaxis is indicated.
- **Place all close contacts in EXPOSURE QUARANTINE and perform daily monitoring for** selective signs and symptoms of mpox, including fever ≥ 100.4°F, chills, new lymphadenopathy, and new skin rash through 21 days after last exposure to the case-patient or their materials.
  - Place on MEDICAL HOLD (SENTRY/BEMR) for the duration of the quarantine period.
  - Add ICD-10 Code B04-Q to BEMR for the duration of quarantine.
  - Post the **CONTACT/DROPLET/RESPIRATORY PRECAUTIONS** sign on the door of the **QUARANTINE** cell, or if utilizing cohorting, post at the entrance to the unit.

  See Appendix 1 for an example of a sign.
  - Move the patient into **MEDICAL ISOLATION** (separate from those diagnosed with mpox) if:
    - A rash develops – medical isolation must be maintained until mpox has been diagnosed or ruled out. If mpox is ruled out, ensure the patient completes the 21-day quarantine monitoring period, which includes days spent in medical isolation.
    - If other mpox signs or symptoms develop (e.g., fever, chills, respiratory symptoms, headache, lymphadenopathy, exhaustion, myalgia) but there is no rash – 5 days of medical isolation monitoring should occur, even if this extends past the 21-day quarantine monitoring period. If mpox is diagnosed, those who were quarantined with the patient start a new 21-day quarantine period.
  - For those diagnosed with mpox, add ICD-10 Code B04 mpox

Institution Management Following a Confirmed Mpox Diagnosis

- The **MPOX INFECTION PREVENTION AND CONTROL (IP&C) MEASURES CHECKLIST should be carefully planned and fully implemented** as described in *Appendix 4.*
- Assess patient's exposure risk (see *Appendix 3*)

- **When a case of mpox has been identified, heightened surveillance for early detection of new cases is crucial.** It may be necessary to conduct interviews and visual inspections of large groups of potential inmate contacts.
- **LONG-TERM SURVEILLANCE for mpox following an identified case is imperative for the eradication of mpox from an institution.** For at least 3 weeks following the last mpox case, clinicians should remain alert for signs and symptoms of mpox and utilize a low threshold of suspicion.

11. VACCINATION

Because mpox virus is closely related to the virus that causes smallpox, smallpox vaccines can protect people from getting mpox. There is no data available yet on the effectiveness of these vaccines on the current mpox outbreak.

Currently, there are two vaccinations, approved or authorized by the FDA, for the prevention of mpox infection. However, JYNNEOS is the main vaccine currently being used in the United States.

- **JYNNEOS** is a live non-replicating vaccine administered as two injections four weeks apart. People who receive JYNNEOS TM are not considered vaccinated until 2 weeks after they receive the second dose of the vaccine.
- **ACAM2000** is a live vaccine that should not be used in persons who are immunocompromised, have certain skin conditions or who are pregnant. Individuals who receive vaccination with ACAM2000 must take precautions to prevent the spread of the vaccine virus and are considered vaccinated within 28 days.

The BOP continues to work with the CDC to obtain vaccinations when needed. Vaccination is recommended for post-exposure (within 4 days of exposure) in select groups of high-risk patients, including the immunocompromised. Institution providers should refer to their Regional IP&Cs and Medical Directors to discuss use of vaccinations in their institution.

➔ *Refer to Considerations for Mpox Vaccination | Mpox | Poxvirus | CDC for more information regarding mpox vaccination.*

REFERENCES

Centers for Disease Control and Prevention [home page on the internet]. Mpox. Page last updated January 6, 2023. Available at: *https://www.cdc.gov/poxvirus/mpox/index.html*

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World Health Organization [fact sheet]. Mpox. Page last updated May 19, 2022. Available at: *https://www.who.int/en/news-room/fact-sheets/detail/mpox*

APPENDIX 1. MEDICAL ISOLATION AND QUARANTINE SIGNAGE

The following **CONTACT/DROPLET/RESPIRATORY PRECAUTIONS** signage in English and Spanish, can be copied (in color or black and white) for use in the facility. Signage should be posted on the door of room(s) or units(s), if utilizing cohorting, where patients with diagnosed or suspected mpox are isolated or close contacts are quarantined. Lamination is recommended, if feasible.

Contact/Droplet/Respiratory Precautions

PRECAUCIONES de aislameiento médico

ANYONE ENTERING THIS ROOM SHOULD USE: ***todas las peronas que entren e esta habitacion tienen que:***	
	**HAND HYGIENE** ***Hygiene De Las Manos***
	**N-95 RESPIRATOR (fit-tested)** ***Respirador N-95***
	**GOWN** ***Bata***
	**EYE PROTECTION** ***Protección para los ojos si contacto cercano***
	**GLOVES** ***Guantes***
	**PATIENT WEARS WELL-FITTING DISPOSABLE MASK AND KEEPS ALL LESIONS COVERED WHEN OTHERS ENTER ROOM AND DURING MOVEMENT.** ***Lleva cubierta de tela para la cara y cubre los lesiones.***
	**KEEP DOOR CLOSED AT ALL TIMES!** ***Mantenga la puerta cerrada en todo momento***

APPENDIX 2. MPOX AEROSOL-GENERATING PROCEDURES (AGPS) GUIDANCE

Institutions should minimize, to the greatest extent possible, the use of AGPs to mitigate the risk of mpox transmission for all patients who are in either mpox quarantine or medical isolation.

Among the AGPs that may be utilized within a BOP institution are nebulizer treatments, continuous positive airway pressure (CPAP), bi-level positive airway pressure (BiPAP), oxygen supplementation, and pulmonary function testing (PFT).

NEBULIZER TREATMENTS

To the greatest extent possible, the use of a metered dose inhaler (MDI) should be used instead of a nebulizer. Even in the acute setting, the use of an MDI with a spacer has been shown to be at least as effective as a nebulizer when used correctly. It may be necessary to use more doses per event, or more frequent dosing than the baseline prescription for the medication.

If a nebulizer MUST be used:

- Administer the treatment in an airborne infection isolation (AII) room when possible. If an AII room is not available, use a single room with solid walls and a solid door.
- Attach an in-line viral filter (e.g., Airlife 001851) at the end of the 6-inch flex tube that extends from the nebulizer kit.
- Minimize the number of staff involved in administering the nebulizer, and the amount of time the staff spends in the room.
- When in the room, staff should use appropriate PPE (refer to **BOP Mpox Guidance for Personal Protective Equipment** on the BOP intranet mpox web page).
- The room and equipment must be disinfected when finished (refer to *Section 9. Prevention and Control* for guidance on cleaning and disinfection).

CPAP/BIPAP

Most patients who use a CPAP machine do so for sleep apnea. In some cases, and for a short period of time during active infection, it may be reasonable to consider if the risks of aerosolization (leading to transmission) outweigh the risks of the short-term discontinuation of CPAP use during the medical isolation or quarantine period; this is a clinical decision, and as such at the discretion of the attending physician.

MILD TO MODERATE SLEEP APNEA

In cases where CPAP is used for mild to moderate sleep apnea with no significant co-morbidities, it may be reasonable to interrupt CPAP during medical isolation or quarantine to minimize transmission.

SEVERE SLEEP APNEA WITH CO-MORBIDITIES

In patients with severe sleep apnea with co-morbidities—such as morbid obesity, pulmonary hypertension, cardiomyopathy, etc.—even the temporary discontinuation of BiPAP or CPAP may

constitute a higher risk. When the decision is made to allow the patient to continue using CPAP/BiPAP, the following procedures should be considered to mitigate the spread of mpox:

- It is preferable that CPAP wearers be single-celled in a room with solid walls and a solid door that closes. Psychology Services staff should be consulted any time a patient is being considered for placement in a single cell, to ascertain whether the patient is considered high risk for suicide or has any mental health condition to preclude him/her from single-cell placement.
- The door should be closed when BiPAP or CPAP is in use.
- When in the room, and CPAP/BiPAP are in use, staff should use appropriate PPE. (Refer to the **BOP Mpox Guidance for Personal Protective Equipment** on the BOP intranet mpox web page for proper use of PPE.)
- A Contact/Droplet/Respiratory Precautions sign (see *Appendix 1*) should be posted on the door to alert staff to the PPE required for entering the room.
- Minimize the number of staff and the amount of time spent in rooms when CPAP/BiPAP are in use.
- Room and equipment must be disinfected prior to a new patient occupying a room previously used by a CPAP/BiPAP user.
- If single cells are limited, prioritize use of these rooms to patients in quarantine or medical isolation.
- Cohort CPAP/BiPAP wearers to one area of a unit in a lower bunk.
- House CPAP/BiPAP wearers maximally distanced from others.

SET-UP AND USE OF CPAP/BIPAP

- If possible, CPAP/BiPAP should be set up and used with a full-face, non-vented CPAP mask with an in-line viral filter attached to the intake and exhalation ports. The viral filters should be changed daily.
  ➔ *See diagram at the end of this appendix for installation of an in-line viral filter attachment.*
- There will be cases when the above set up is not available to the patient, and when this occurs the attending physician will decide what is in the best interest of the patient and utilize their clinical judgement in mitigating the aerosolization according to the above-described controls.

SUPPLEMENTAL OXYGEN

- Within BOP institutions, the use of supplemental oxygen is typically LOW FLOW via the use of nasal cannula. This is NOT considered to be an AGP and should NOT require specific precautions.
- Use of HIGH FLOW OXYGEN, HUMIDIFIED TRACH MASKS, or NON-REBREATHERS do involve AGPs and their use should be performed with the same precautions and measures described above for CPAP/ BiPAP use.

PULMONARY FUNCTION TESTING (PFT) AND PEAK FLOWS

- The performance of PFTs and peak flow testing for a patient with symptoms or confirmed mpox should be done at the discretion of the medical provider.

SWITCHING TO A NON-VENTED FULL-FACE MASK FOR CPAP AND BIPAP

A full-face mask for CPAP and BiPAP (ResMed Non-vented full-face mask – Small #61739, Med #61740, Lge #61741) covers mouth & nose and has no holes in the mask or elbow attachment on the mask

1. From the elbow on the mask, attach a **SWIVEL CONNECTOR** (Respironics #7041):

2. From there, attach a **VIRAL FILTER** (Airlife #001851):

3. From the viral filter, attach an **EXHALATION PORT** (Respironics #312149):

4. The remainder of the CPAP/BiPAP is unchanged.

APPENDIX 3. MPOX PRE- AND POST-EXPOSURE RISK TABLE

PRE-EXPOSURE RISK[1]	DEFINITION	RECOMMENDATIONS
BEHAVIORAL RISK FACTORS	• Gay, bisexual, and other men who have sex with men or with transgender or nonbinary people, who in the past 6 months have had: ▪ A new diagnosis of acute HIV, chancroid, chlamydia, gonorrhea, or syphilis ▪ More than one sex partner • Any of the following in the past 6 months: ▪ Sex at a commercial sex venue ▪ Sex in association with a large public event in a geographic area where mpox transmission is occurring • Sexual partners of people with the above risks	• If high potential for exposure to mpox virus, offer vaccination to prevent mpox disease.
PREGNANCY	• All patients who are pregnant or of child-bearing age. • Refer to *Section 8. Special Populations* for discussion regarding definitions of immunocompromised patients in the context of mpox.	• Complete a pregnancy test on intake. • Consider housing new arrivals who may be pregnant, who are breastfeeding, and who are immunocompromised in cells that offer less exposure risk to potentially infected individuals who are not showing symptoms (e.g., avoid open bay units).
POST-EXPOSURE RISK[1]	**DEFINITION**	**RECOMMENDATIONS**
HIGH[#] (Direct contact with infected bodily fluid)	• Any unprotected contact (lacking proper PPE) with the infected person's skin lesions, bodily fluids, or contaminated materials, or resuspension of dried exudates (e.g., shaking of soiled linens).	• Place in quarantine for 21 days. • Transfer to medical isolation if: ▪ A rash develops ▪ New signs or symptoms develop but there is no rash. ▪ Five (5) days of medical isolation monitoring should occur, even if this extends past the 21-day quarantine period. • Perform daily temperature and symptom monitoring. • **Post-exposure prophylaxis: Recommended.** • Perform symptom check prior to release from quarantine.

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MPOX PRE- AND POST-EXPOSURE RISK TABLE (CONTINUED)		
POST-EXPOSURE RISK	**DEFINITION**	**RECOMMENDATIONS**
INTERMEDIATE[#] (Indirect contact with infected bodily fluids)	• Being within 6 ft for ≥3 hours of infected patient lacking proper PPE (non-contact, non-aerosolizing procedures) *OR* • Activities resulting in contact between sleeves and other parts of the infected person's skin lesions or bodily fluids, or their soiled linens or dressings (e.g., turning, bathing, or assisting with transfer) while wearing gloves *but not wearing a gown.*	• Place in quarantine for 21 days • Transfer to Medical Isolation if: ▪ A rash develops ▪ New signs or symptoms develop but there is no rash. ▪ Five (5) days of Medical Isolation monitoring should occur, even if this extends past the 21-day quarantine period. • Perform daily temperature and symptom monitoring. • Daily temperature and symptom monitoring. • Post-exposure prophylaxis: should be discussed and informed clinical decision made on an individual basis to determine whether benefits of PEP outweigh risks. • Perform symptom check prior to release from Quarantine.
LOW/UNCERTAIN (Unlikely contact with infected bodily fluids)	• Entered the patient room without wearing proper PPE on one or more occasions, regardless of duration of exposure *OR* • As further defined by the CDC *Monitoring People Who Have Been Exposed | Mpox | Poxvirus | CDC*	• Place in Quarantine for 21 days • Transfer to Medical Isolation if: ▪ A rash develops ▪ New signs or symptoms develop but there is no rash. ▪ Five (5) days of Medical Isolation monitoring should occur, even if this extends past the 21-day quarantine period. • Perform daily temperature and symptom monitoring. • Daily symptom monitoring for selective signs and symptoms of mpox including fever ≥ 100.4°F, chills, new lymphadenopathy, and new skin rash. • No post-exposure prophylaxis is indicated. • Perform symptom check prior to release from Quarantine.
[1] When vaccination is used, JYNNEOS is preferred.		

APPENDIX 4. MPOX INFECTION PREVENTION AND CONTROL (IP&C) MEASURES CHECKLIST

MPOX INFECTION PREVENTION AND CONTROL (IP&C) MEASURES CHECKLIST	
PROACTIVE MEASURES FOR PREPAREDNESS: STANDARD PRECAUTIONS	
	Promote healthy habits that include regular hand washing with soap and water or 60% alcohol-based hand rub.
	Emphasize cleaning of high-touch surfaces (e.g., doorknobs, handrails, keys, telephones, computer keyboards).
	Avoid close physical contact with persons who are known or suspected of having mpox.
PROACTIVE MEASURES FOR PREPAREDNESS: PATIENT SCREENING	
	Screen new arrivals for a rash, influenza-like illness symptoms, and inquire about past and present sexually transmitted infections as per the medical intake process. If mpox is suspected, immediately place the affected person in medical isolation while a medical work-up is in-progress and until mpox has been ruled out and another diagnosis made. Refer to *Table 1. Institution Operations* for additional guidance.
	Consider housing intakes who may be pregnant, who are breastfeeding, or who are immunocompromised in cells that offer less exposure risk (e.g., avoid open bay units).
MPOX MANAGEMENT: DIAGNOSED PATIENTS	
	Immediately place in medical isolation utilizing contact, droplet, and respiratory precautions with a dedicated bathroom. Patients diagnosed with mpox may be housed together.
	Staff to wear PPE according to the **BOP Mpox Guidance for Personal Protective Equipment** available on the BOP intranet mpox web page.
	Use ICD-10 Code B04-I for symptomatic/suspected cases waiting confirmation. **Use ICD-10 Code B04 for confirmed cases** during duration of illness.
	Daily temperature checks and medical assessments to monitor progression of disease and receive symptomatic treatment as needed.
	Pregnant patients who are diagnosed with mpox should be ***urgently scheduled for*** *a high-risk OB/GYN* ***OR immediately transported to*** *the emergency room for follow up and treatment*.
	Place on Medical Hold (SENTRY/BEMR) for the duration of the medical isolation period.
	Inform the local health department, Clinical Director, Regional QI/IPC, and Regional Medical Director.
	Create a RIDS entry for the patient.
	Initiate a contact investigation.
	Inmates in medical isolation should have a dedicated, lined trash can in the room where they are isolating. Waste should be disposed of in a manner consistent with regulated medical waste. Refer to *Table 1. Institution Operations* for additional guidance.
	Cleaning and disinfection: Use only wet cleaning methods, such as spraying or mopping with warm water and detergent. Avoid cleaning activities that can spread dried material from lesions (e.g., vacuuming, dry sweeping, use of fans). • Perform disinfection using an EPA-registered disinfectant with an *Emerging Viral Pathogens* claim, which may be found on EPA's *List Q*. • Wear a gown, gloves, eye protection, and a well-fitting mask or N-95 respirator.
	In rare circumstances when a patient must leave the isolation area, they must wear a well-fitting surgical mask over their nose and mouth and completely cover any skin lesions. Escorting staff wear PPE according to the **BOP Mpox Guidance for Personal Protective Equipment** available on the BOP intranet mpox web page**.**
	The rash must be fully healed with a fresh layer of healthy skin after the scabs have fallen off before discontinuing medical isolation.

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MPOX INFECTION PREVENTION AND CONTROL (IP&C) MEASURES CHECKLIST (CONTINUED)	
CONTACT INVESTIGATION: CLOSE CONTACTS*	
	Assess all close contacts to determine whether exposure was high, intermediate, or low as per CDC guidelines. For more information on exposure levels, see *Appendix 3* and *https://www.cdc.gov/poxvirus/mpox/clinicians/monitoring.html.* • For those with high or intermediate exposures, consult the clinical director (for patients) or BOP Employee Heath to determine whether post-exposure prophylaxis or vaccination is indicated.
	Place all close contacts in quarantine and monitor for selective signs and symptoms of mpox (e.g., fever ≥ 100.4°F, chills, new lymphadenopathy, and new skin rash) through 21 days after last exposure to the case-patient or their materials. • Place on Medical Hold (SENTRY/BEMR) for the duration of the quarantine period. • **Add ICD-10 Code B04-Q** to BEMR for the duration of quarantine. • Transfer to medical isolation if a rash develops (and rule out mpox) ***OR*** if new signs or symptoms develop but there is no rash. In the latter situation, 5 days of medical isolation monitoring should occur, even if this extends past the 21-day quarantine period. If mpox is diagnosed, those who were quarantined with the patient start a new 21-day quarantine period.
MPOX MANAGEMENT: MANAGEMENT OF CLOSE CONTACTS*	
	Refer to *Appendix 3. Mpox Pre- and Post-Exposure Risk Table* to determine severity of risk.
	Transfer patient to Exposure Quarantine if indicated.
	Perform daily temperature and symptom checks.
	Use ICD-10 Code B04-Q for patients in quarantine.
MPOX MANAGEMENT: SPECIAL CONSIDERATIONS	
	If any new concerning symptoms develop, inform the Clinical Director, Regional QI/IPC and Medical Director, and local health department.
	If a patient with suspected or diagnosed mpox is being escorted to the ER, the hospital should be alerted in advance, if possible. The patient must wear a well-fitting surgical mask over their nose and mouth and completely cover any skin lesions. Escorting staff wear PPE according to the **BOP Mpox Guidance for Personal Protective Equipment** available on the BOP intranet mpox web page.
	If a patient diagnosed with mpox has not completed medical isolation and is due for full term release, The Regional QI/IPC, Regional Medical Director, and the local health department should be notified in advance to coordinate housing and care.
***CLOSE CONTACTS** include any person who had skin-to-skin contact; cellmates; and those with potential exposure to the patient's clothing, bed linens, or towels.	