FLEET MPOX MEDICAL GUIDANCE
15 October 2024

Background

On 14 Aug 2024, the World Health Organization (WHO) Director-General declared a Public Health Emergency of International Concern (PHEIC) due to the spread of mpox virus outside of the Democratic Republic of the Congo (DRC) into several neighboring countries. Spread to additional countries during this PHEIC is likely.

Mpox is a disease caused by infection with Monkeypox virus, one of several "pox" viruses that can cause human illness. There are two types of mpox, clade I and clade II. This latest outbreak is new and distinct from the recent global mpox outbreak and PHEIC that began in 2022, which was caused by mpox clade IIb. The current outbreak is caused by a newly emerged subclade of the virus, clade Ib. While historically clade I is more severe than clade II, specific details about the epidemiology, to include transmissibility and severity, of this new subclade of mpox are still being studied. What is known is that it can spread from person-to-person through direct contact with rash, scabs, body fluid, and to a lesser extent, respiratory secretions or by touching items previously in contact with the rash or body fluids. It can also spread through direct contact with an infected animal.

The public health control measures in place for the previous outbreak of clade II mpox are expected to remain effective. The JYNNEOS vaccine, available and recommended for personnel at high risk, is also expected to remain effective.

As with the previous clade of Mpox, both the risk to force and risk to mission are assessed as low.

Mpox Transmission

Mpox transmission requires direct, skin to skin contact with an infectious individual (infectious sores, scabs, or body fluids), items contaminated by patients with mpox (e.g., clothing and bedding), or potentially from close prolonged face-to-face contact (which can generate droplets or short-range aerosols). In the 2022 clade II mpox pandemic, 94% of cases in the United States were associated with sexual contact. Transplacental infection can occur (which may result in adverse pregnancy outcomes) as can transmission via close contact during and after birth. Additionally, humans can get mpox from wild animals with mpox and may be able to transmit the disease to pets. In most cases, transmission occurs from persons who are already symptomatic, however, some people can spread mpox to others 1-4 days prior to symptom onset. Patients with mpox are generally infectious from the time they become symptomatic until all lesions have crusted over, those crusts have separated, and a fresh layer of healthy skin has formed under the crust. Illness typically lasts 2-4 weeks. The incubation period (i.e., time from exposure to symptom onset) of mpox is usually 1-2 weeks but can be as short as 5 days or as long as 21 days.

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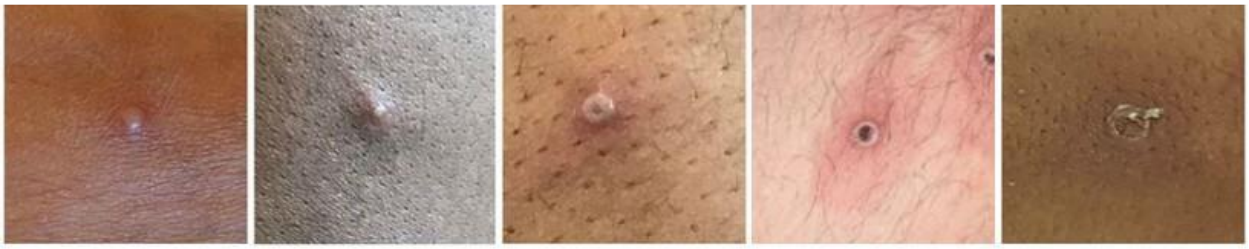
Clinical Management

Identification

Initial (prodromal) symptoms may include fever/chills, headache, myalgia, backache, swollen lymph nodes, respiratory symptoms, and fatigue and are followed simultaneously or shortly thereafter by the onset of a painful rash that may appear on the face, hands, feet, chest, genitals, anus, or inside the mouth. Rash typically begins as 2-5 mm macules which evolve to papules (classically described as rubbery, well circumscribed, deep-seated lesions that can become umbilicated), vesicles, then pseudo-pustules (papules that simulate pustules but are predominantly filled with cell debris). Lesions eventually crust over, and crusts typically dry up and fall off 7-14 days after rash begins. During the 2022 outbreak, patients most commonly reported 1-20 lesions, and cases with more than 100 lesions were rare. People with underlying immune deficiencies may have more severe illness.

Figure 1: Examples of mpox skin lesions



Evaluation

If the diagnosis of mpox is being considered, infection prevention and control measures should be implemented immediately to reduce the risk of transmission. If mpox is suspected, ensure the patient is separated from other patients and evaluated in a room that can easily be disinfected (preferably with dedicated toileting facilities). Special air handling is generally not required. Patients should don a facemask if any individual enters the room. Healthcare providers should use a gown, gloves, eye protection (goggles or face shield), and N95 facemask. This combination of PPE reflects contact precautions (gown and gloves), droplet precautions (eye protection), and airborne precautions (respiratory protection). While there is no epidemiologic evidence to date that monkeypox virus is spread by the airborne route, at this time the CDC recommends respiratory protection be used. CDC guidance for infection control in healthcare settings can be found at Mpox Infection Prevention and Control in Healthcare Settings | Mpox | CDC.

Clinicians should conduct a thorough patient history to assess possible mpox exposures or epidemiologic risk factors, including a detailed sexual history and travel history. Mpox is usually transmitted through close, sustained physical contact. History of present illness should include potential contact with a person who has mpox or relevant travel to an area with cases within the past 21 days. Consult the CDC Travelers' Health site for information regarding countries reporting cases. Clade I Mpox in the Democratic Republic of the Congo and Neighboring Countries - Level 2 - Level 2 - Practice Enhanced Precautions - Travel Health Notices | Travelers' Health | CDC

Clinicians should perform a complete physical exam, including a thorough skin (to include hands and feet) and mucosal (e.g., oral, genital, anal) examination for the characteristic vesiculo-pustular rash of mpox as well as palpation for lymphadenopathy.

The diagnosis of mpox should be suspected in patients who present with a rash or other symptoms that could be consistent with mpox and have an epidemiologic risk factor for infection (close contact with a suspected or confirmed mpox case, are part of a social network/community experiencing mpox, or have recent travel to an area experiencing a mpox outbreak).

If the diagnosis of mpox is suspected, orthopox virus testing should be strongly considered, in addition to testing for other pathogens in the differential diagnosis. Persons exposed to mpox through sexual contact who are asymptomatic should also be tested for HIV and other sexually transmitted infections. Polymerase chain reaction (PCR) testing for orthopoxvirus DNA should be performed on lesion samples (lesions should be vigorously swabbed to collect skin cells). Clinicians should verify specimen collection instructions with their local MTF. Additional details regarding testing may be found at the DHA link Mpox Guidance Update (5 Sep)_Final.pdf (health.mil). Serologic testing for monkeypox virus can be used to support a diagnosis of mpox and may be helpful if viral testing is not able to be performed. Antiorthopoxvirus IgM antibody is typically detectable 4-56 days after rash onset. A confirmed or probable diagnosis requires supporting laboratory evidence such as detection of virus or development of immunoglobulin (Ig)M antibodies.

The CDC recommends clinical specimens collected from patients with travel history to the Democratic Republic of the Congo, its neighboring countries, or any country with clade I mpox cases, or those who have had close or intimate contact with symptomatic people from the countries, be sent to a lab that can perform clade-specific testing as quickly as possible. In this evolving outbreak, current CDC guidance can be found at the following link Diagnostic Testing for Mpox | Mpox | CDC. If clade-specific testing is warranted and is not able to be performed at the supporting MTF, specimen submission to a public health lab with this capability or to the CDC is encouraged. This can be coordinated with your local MTF lab or the Center for Laboratory Medicine Services (CLMS) at dha.ncr.clinic-support.mbx.clms@health.mil. For deployed forces, assistance can be obtained from the Naval Infectious Diseases Diagnostic Laboratory Naval Infectious Diseases Diagnostic Laboratory (navy.mil). The cognizant NEPMU (contact information below) may also be able to facilitate testing.

Care of mpox or potential mpox cases

In operational environments, patients who are suspected mpox cases (see CDC mpox case definitions below) should be isolated and treated as probable or confirmed cases. When operationally feasible, isolate patients ashore. If a rash has not developed 5 days after prodromal symptoms, alternate diagnoses should be considered. Clinicians should seek assistance from the nearest MTF or cognizant NEPMU for support with isolation guidance as well as follow-on testing, prophylaxis, and treatment indications.

Management of patients with mpox involves supportive care as well as pain control. Most immunocompetent patients with mpox have mild disease and will recover as outpatients without medical intervention. Secondary bacterial infections can occur in patients with mpox, and patients should be counseled to contact their healthcare provider if they observe symptoms of secondary skin

infection. Supportive care requiring hospitalization may be warranted for those who have dehydration, require more intensive pain management, or experience severe disease or complications.

Medical countermeasures (e.g., tecovirimat, brincidofovir, and vaccinia immune globulin intravenous) used during the ongoing clade II mpox outbreak are expected to be effective for clade I infections. Antiviral therapy should be considered for use in people with severe disease, involvement of anatomic areas that might result in serious sequelae (e.g., scarring or strictures), or high risk for severe disease. For patients at high risk for progression to severe disease, treatment should be administered early in the course of illness. Clinicians should familiarize themselves with the clinical recognition and management guidance for mpox that may require use of therapeutics such as tecovirimat. The CDC provides a summary at https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html. Providers should consult early with their nearest MTF regarding cases that may warrant medical countermeasures.

Infection Control

Patients should isolate in a room or quarters separate from others and pets, and should not leave home/quarters except for follow-up medical care. Individuals should wear a well-fitting facemask when around others, even if respiratory symptoms are not present, and all skin lesions should be covered (e.g., long sleeves and pants) to minimize risk of contact with mpox lesions. Handwashing with soap and water should be performed regularly both by infected individuals as well as by contacts. If soap and water is not readily available, a hand sanitizer that has a minimum of 60% alcohol may be used. Patients should avoid sharing used linens, clothes, food, or utensils.

Persons with mpox should be considered infectious until all scabs have fallen off and underlying skin is completely healed (typically 2-4 weeks). The World Health Organization (WHO) suggests consistent condom use during any sexual activity for 12 weeks after recovery until more is known about the levels of virus and potential infectivity of semen and vaginal fluids during the period that follows recovery.

Avoid direct contact with soiled laundry. Soiled laundry should be gently and promptly contained in an appropriate laundry bag and should never be shaken (to avoid dispersal of infectious material). Laundry may be washed in a standard washing machine with water and detergent. Dry dusting, sweeping, or vacuuming should be avoiding (wet cleaning methods are preferred to avoid mobilizing viral particles). https://www.cdc.gov/mpox/hcp/infection-control/at-home.html

Contaminated surfaces, particularly high traffic areas frequented by the patient, should be disinfected using an Environmental Protection Agency (EPA)-registered hospital-grade disinfectant with an emerging viral pathogen claim. For mpox, the EPA recommends using Emerging Viral Pathogens (EVP) List Q disinfectants. Adhere to disinfectant instructions to ensure proper contact time on applicable surfaces. https://www.epa.gov/pesticide-registration/disinfectants-emerging-viral-pathogens-evps-list-q. If List Q disinfectants are not in stock or readily available, sodium hypochlorite can be used. Mpox does not have a sodium hypochlorite recommended ppm solution. However, a 2000ppm solution is effective against other tier-1 viruses such as MRSA, E. coli, HIV-1, and SARS CoV-2 and is expected to be effective against mpox. To make a 2000 ppm solution, use a ratio of 36 parts water for every 1 part bleach (for example, add 4 teaspoons of bleach for every 3 cups of water).

Prevention and Public Health

Contact investigation and post-exposure prophylaxis (PEP)

As soon as a suspected case is identified (using current mpox case definition for a suspected case), contact tracing should be initiated. This is particularly relevant for shipboard populations where lab testing may not be as easily accessible. Mpox case definitions have been updated (including a case definition for clade I). Mpox Case Definitions | Mpox | CDC

Conduct a public health interview to elicit names and contact information for all high and intermediate risk contacts going back 4 days prior to illness onset and ending with the resolution of the illness (or the time of the interview if illness is not resolved). The CDC recommends using your state or county/local health department reporting form or CDC's short case report form https://www.cdc.gov/poxvirus/monkeypox/pdf/sCRF-Short-Form.pdf for collecting information during patient interviews for probable and confirmed cases.

Exposure in both community and healthcare settings should be assessed to determine the risk of transmission and if post-exposure prophylaxis (PEP) is indicated. Assess exposure risk based on CDC's risk assessment standards:

- For **community exposures**, CDC risk assessment and recommendations can be found at Monitoring and Risk Assessment for Persons Exposed in the Community | Mpox | Poxvirus | CDC.
- For **healthcare setting exposures**, CDC risk assessment and recommendations for healthcare settings can be found at Infection Control: Healthcare Settings | Mpox | Poxvirus | CDC.

All contacts, regardless of level of exposure risk or vaccination status, should monitor for symptoms for 21 days after their last exposure. Symptom monitoring can be active (e.g., medical checks in directly with an exposed individual daily) or passive (e.g., exposed individual self-monitors and reports symptoms to preidentified medical contact). Monitoring should include assessment of temperature and skin examination for rash, including inside the mouth and in the genital and anal areas. Asymptomatic close contacts may return to work per Commander's operational needs and risk tolerance.

Mpox vaccine can be given as post-exposure prophylaxis (PEP) both to people with known or presumed exposure to monkeypox virus. Mpox vaccine can also be given to people with risk factors and recent experiences that might make them more likely to have been exposed to mpox. Details on the JYNNEOS vaccine can be found at: IHD Mpox Vaccine Fact Sheet. Exposure in both community and healthcare settings should be assessed to determine the risk of transmission and if PEP is indicated. The CDC defines exposures as higher, intermediate, or lower risk (see above links) depending on type of exposure, setting, use of PPE, and duration of interaction. For most individuals with a known or suspected high-risk exposure, PEP is recommended. People who are likely to have had a higher risk exposure should be offered vaccine. For individuals with intermediate-risk exposures, the need for PEP should be determined on a case-by-case basis. PEP is not indicated for those with a lower-risk exposure. As PEP, vaccine should be given as soon as possible, ideally within four days of exposure. Administration four through 14 days after exposure may still provide some protection against mpox. After 14 days, clinicians should consider the benefits of receiving vaccine on a case-by-case basis. Any person with ongoing risk of mpox exposure should be offered vaccination, even if previously exposed, and regardless

of time since exposure, as long as they have not yet developed signs or symptoms of mpox. Vaccination given after the onset of signs or symptoms of mpox, after a diagnosis of mpox, or after recovery from mpox is not expected to provide benefit. For those who have received two doses of vaccine, the need for a booster dose after an exposure has not been established, but at present is not routinely recommended. In some settings, alternatives to PEP vaccination may be considered (e.g., patients with contraindications to vaccination or who are unlikely to respond to the vaccine). MPox Vaccination- CDC Guidelines

Specific guidance for special populations such as pregnant or breastfeeding populations, or persons with HIV or other immunocompromise can be found at the following link Public Health Strategies for Mpox | Mpox | CDC.

Pre-exposure prophylaxis

JYNNEOS is fully Food and Drug Administration (FDA) approved for the prevention of mpox in individuals aged 18 years and older and is readily available within the Department of Defense. The JYNNEOS vaccine is expected to remain effective against clade I mpox. Mpox vaccination can be considered for high-risk persons and persons with known, suspected, or anticipated exposure to someone with mpox. People are considered fully vaccinated about 2 weeks after their second shot of JYNNEOS.

Pre-exposure vaccination reduces the risk of acquiring mpox, and if infection occurs in person who are fully vaccinated the symptoms are less severe. Certain individuals are at increased risk for mpox infection due to behavioral or occupational factors and should be offered pre-exposure prophylaxis (PrEP).

Per the Advisory Committee on Immunization Practices (ACIP), routine vaccination is recommended for persons age 18 and older with any of the following risk factors:

- Gay, bisexual, and other men who have sex with men, transgender, or nonbinary people who in the past six months have had one of the following: a new diagnosis of ≥1 sexually transmitted disease, more than one sex partner, sex at a commercial sex venue, or sex in association with a large public event in a geographic area where mpox transmission is occurring
- Sexual partners of persons with the risks described above
- Persons who anticipate experiencing any of the above

ACIP recommends use of vaccine for certain workers at high risk for occupational exposure to orthopoxvirus infection, such as research lab personnel and specialized clinical lab personnel performing diagnostic testing for orthopoxviruses (e.g., labs that are part of the Laboratory Response Network) and designated response team members who are at risk for occupational exposure to orthopoxviruses. ACIP also recommended offering vaccination to those who administer ACAM2000 or care for patients infected with orthopoxviruses. Routine pre-exposure vaccination to prevent mpox is not recommended for healthcare personnel because the risk of transmission in a healthcare setting is low.

JYNNEOS is a live, attenuated vaccine that contains non-replicating modified vaccinia Ankara virus. Recommendations from ACIP and CDC regarding use of vaccine for mpox prevention can be found at Interim Clinical Considerations for Use of JYNNEOS Vaccine for Mpox Prevention in the United States | Mpox | Poxvirus | CDC. Information regarding vaccine storage, handling, contraindications and

precautions can be found at the Defense Health Agency Immunization Healthcare Division website Mpox | Health.mil.

Information for Travelers and Deployers

The Centers for Disease Control and Prevention (CDC) currently recommends enhanced precautions for travelers to areas experiencing mpox transmission. Precautions include:

- Avoid close contact with people who are sick with signs and symptoms of mpox, including those with skin or genital lesions.
- Avoid contact with wild animals (alive or dead), such as small mammals, including rodents (rats, squirrels), and non-human primates (monkeys, apes).
- Avoid contact with contaminated materials used by people who are sick (such as clothing, bedding, toothbrushes, sex toys, or materials used in healthcare settings) or that came into contact with wild animals.
- Avoid eating or preparing meat from wild animals (bushmeat) or using products (creams, lotions, powders) derived from wild animals.
- Advise patients about the risk for mpox exposure through sexual contact (regardless of sexual orientation or gender identity) associated with clade I mpox.

Individual travelers and units deploying to impacted areas should receive pre-travel briefing detailing signs and symptoms of mpox as well as current CDC precautions to prevent exposure to mpox. Travelers should be counseled to avoid situations that increase potential exposure to mpox as described above. Current CDC precautions can be found at the following link Clade I Mpox in Central and Eastern Africa - Level 2 - Level 2 - Practice Enhanced Precautions - Travel Health Notices | Travelers' Health | CDC.

Travelers returning from impacted areas should remain vigilant for signs and symptoms of mpox for 21 days after departing an impacted area.

Pre-travel mpox immunizations can be considered for travelers to areas experiencing transmission who have an increased risk of personal or occupational exposure. This may include animal handlers, veterinary personnel with animal contact, laboratory personnel, security personnel, medical personnel, civil engineers, special operations, and civil affairs personnel. Additionally, immunization can be considered for travelers to areas experiencing transmission who have the potential to come in close physical contact with local populations or animals. See CDC guidance for current pre-travel mpox immunization recommendations. If pre-travel vaccination is indicated, recommend starting mpox vaccine series at least 6 weeks before travel begins. Travelers to DRC or other countries with sustained spread of clade I mpox, regardless of sexual orientation or gender identity, should be made aware of activities associated with cases and should consider being vaccinated with two doses of JYNNEOS if they anticipate high-risk sexual exposures while traveling Health Alert Network (HAN) - 00516 | Prevention Strategies for Mpox, including Vaccinating People at Risk via Sexual Exposure, for U.S. Travelers Visiting Countries with Clade I Mpox Outbreaks (cdc.gov)

Continue to follow CDC's current vaccine guidance to prevent clade II mpox infection, which continues to circulate in the U.S., and protect against clade I.

Surveillance and Reporting

Routine surveillance is one of the best ways to quickly identify outbreaks of disease. Already existing disease and injury surveillance activities should include monitoring of patients presenting with rash suggestive of an infectious disease. If a case is suspected, enhanced surveillance (actively identifying other potential mpox cases through disease and injury tracking and clinical record queries) should be implemented for all patients presenting with rash.

Medical Department staff will report suspect, probable, and confirmed cases of mpox within 24 hours using Disease Reporting System internet (DRSi). Reports should include comments regarding recent travel history, exposure history, and high-risk activities. Further information on reporting, to include how to obtain an account, is available by contacting the DRSi helpdesk at usn.hampton-roads.navmcpubhlthcenpors.list.nmcphc-ndrs@mail.mil. Standard 5W reporting from ship medical through the chain of command (as is done with other high interest medical conditions) is encouraged. Assistance with reporting requirements by operational platforms may be obtained through the cognizant NEPMU.

Consultation

NEPMUs can provide consultative assistance with contact tracing, mitigation, isolation measures, education, reporting and messaging. Contact information is available at NMCFHPC Field Activities

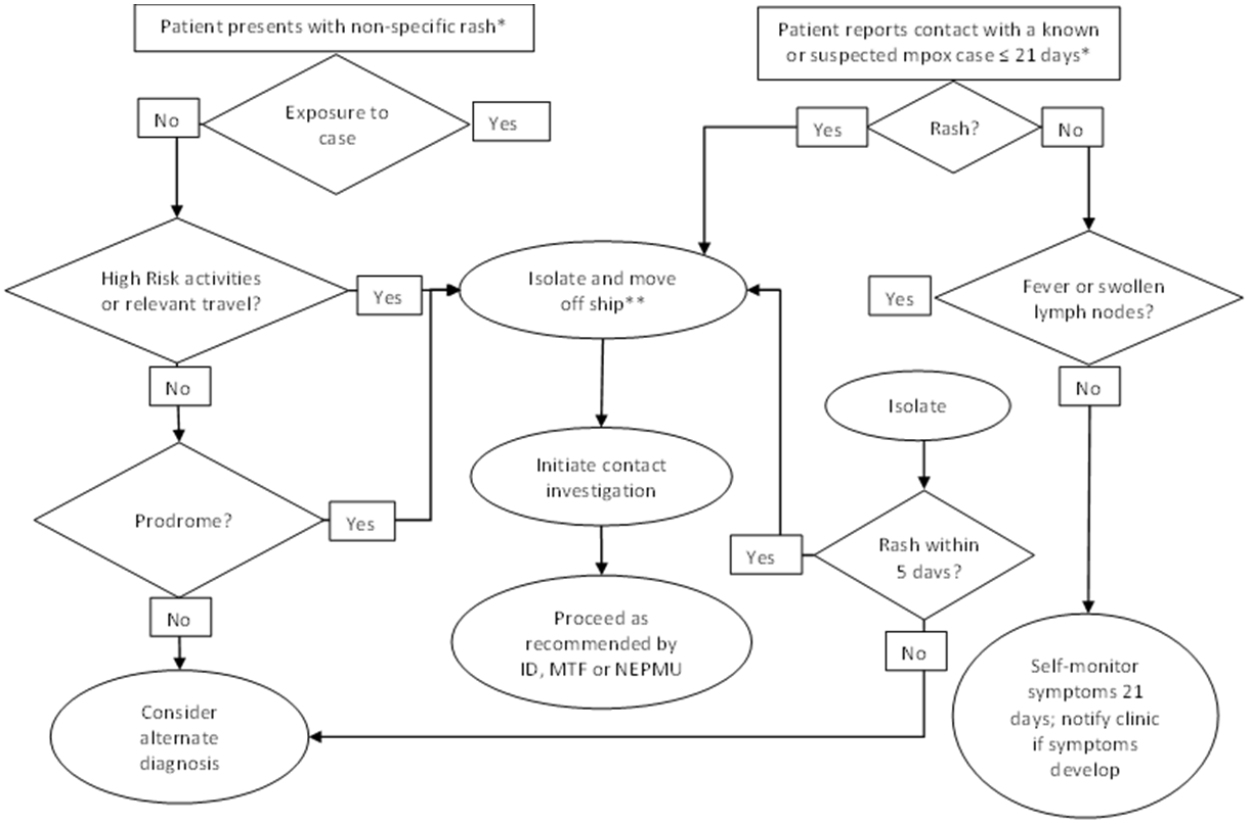
MTF infectious disease specialists and the DHA Immunization Healthcare Division (through a 24/7 answering service at 877-438-8222) can assist with clinical consultation, vaccine access, and treatment.

Additional Resources

Detailed guidance on MPX prevention and control measures for Fleet and operational units can be found in the CAC-enabled NMCFHPC MPX toolbox:
https://obiwan2.health.mil/sites/nmcphc/pps/SiteAssets/WebPartPages/Monkeypox-Toolbox.aspx.

Navy Environmental and Preventive Medicine Units (NEPMUs) can provide consultative assistance with contact tracing, mitigation, isolation measures, education, and messaging:
https://www.med.navy.mil/Navy-Marine-Corps-Public-Health-Center/Field-Activities/

Additional information and resources for mpox can be found at the NMCFHPC website:
https://www.med.navy.mil/Navy-and-Marine-Corps-Force-Health-Protection-Command/Preventive-Medicine/Program-and-Policy-Support/Monkeypox/



* HCW to wear mask and gloves.
** Patient to wear surgical mask and cover lesions. HCW to wear N-95 respirator, gloves, eye protection, and disposable gown.