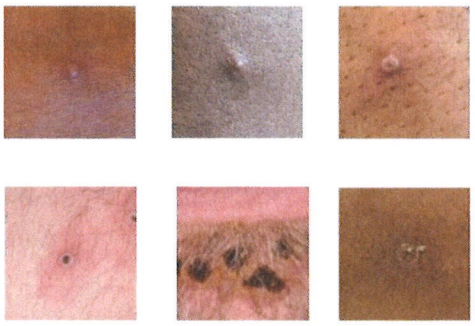
Purpose	To provide guidance on monkeypox screening, infection prevention and control precautions, notifications and patient management.
Scope	NYC Health + Hospitals Health System ***Please note, all guidance is subject to change as additional information becomes available.**

Case Definitions	**Suspect Case**
	• New characteristic rash* OR
	• Meets one of the epidemiologic criteria and has a high clinical suspicion† for monkeypox
	
	Probable Case
	• No suspicion of other recent Orthopoxvirus exposure (e.g., Vaccinia virus in ACAM2000 vaccination) AND demonstration of the presence of
	  ○ Orthopoxvirus DNA by polymerase chain reaction of a clinical specimen OR
	  ○ Orthopoxvirus using immunohistochemical or electron microscopy testing methods OR
	  ○ Demonstration of detectable levels of anti-orthopoxvirus IgM antibody during the period of 4 to 56 days after rash onset
	Confirmed Case
	• Demonstration of the presence of Monkeypox virus DNA by polymerase chain reaction testing or Next-Generation sequencing of a clinical specimen OR isolation of Monkeypox virus in culture from a clinical specimen
	
	Epidemiologic Criteria
	Within 21 days of illness onset:
	• Reports having contact with a person or people with a similar appearing rash or who received a diagnosis of confirmed or probable monkeypox OR
	• Had close or intimate in-person contact with individuals in a social network experiencing monkeypox activity, this includes men who have sex with men (MSM) who meet partners through an online website, digital application ("app"), or social event (e.g., a bar or party) OR
	• Traveled outside the US to a country with confirmed cases of monkeypox or where Monkeypox virus is endemic OR
	• Had 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 (e.g., game meat, creams, lotions, powders, etc.)
	
	Exclusion Criteria
	A case may be excluded as a suspect, probable, or confirmed case if:
	• An alternative diagnosis* can fully explain the illness OR
	• An individual with symptoms consistent with monkeypox does not develop a rash within 5 days of illness onset OR
	• A case where high-quality specimens do not demonstrate the presence of Orthopoxvirus or Monkeypox virus or antibodies to orthopoxvirus

	†Clinical suspicion may exist if presentation is consistent with illnesses confused with monkeypox (e.g., secondary syphilis, herpes, and varicella zoster). *The characteristic rash associated with monkeypox lesions involve the following: deep-seated and well-circumscribed lesions, often with central umbilication; and lesion progression through specific sequential stages—macules, papules, vesicles, pustules, and scabs.; this can sometimes be confused with other diseases that are more commonly encountered in clinical practice (e.g., secondary syphilis, herpes, and varicella zoster). Historically, sporadic accounts of patients co-infected with Monkeypox virus and other infectious agents (e.g., varicella zoster, syphilis) have been reported, so patients with a characteristic rash should be considered for testing, even if other tests are positive.
Summary	• Providers should be alert for patients who have rash illnesses consistent with monkeypox, regardless of patient's travel history or specific risk factors for monkeypox, and regardless of gender or sex of sex partner(s). • In people with epidemiologic risk factors, rashes initially considered characteristic of more common infections (e.g., varicella zoster, herpes, syphilis) should be carefully evaluated for concurrent characteristic monkeypox rash and considered for testing. • The rash associated with monkeypox involves vesicles or pustules that are deep-seated, firm or hard, and well-circumscribed; the lesions may umbilicate or become confluent and progress over time to scabs. • Presenting symptoms typically include fever, chills, the distinctive rash, or new lymphadenopathy; however, onset of perianal or genital lesions in the absence of subjective fever has been reported. • The rash associated with monkeypox can be confused with other diseases that are encountered in clinical practice (e.g., secondary syphilis, herpes, chancroid, and varicella zoster). However, a high index of suspicion for monkeypox is warranted when evaluating people with a characteristic rash, particularly for men who report sexual contact with other men and who present with lesions in the genital/perianal area or for individuals reporting a significant travel history in the month before illness onset or contact with a suspected or confirmed case of monkeypox.
Clinical Recognition	**Key Characteristics for Identifying Monkeypox** • Lesions are well circumscribed, deep seated, and often develop umbilication (resembles a dot on the top of the lesion) • Lesions are relatively the same size and same stage of development on a single site of the body (ex: pustules on face or vesicles on legs) • Fever before rash • Lymphadenopathy common • Disseminated rash is centrifugal (more lesions on extremities, face) • Lesions on palms, soles • Lesions are often described as painful until the healing phase when they become itchy (crusts) Examples of Monkeypox Rashes Photo credit: UK Health Security Agency  **Incubation period** Infection with monkeypox virus begins with an incubation period. A person is not contagious during this period.

- Incubation period averages 7–14 days but can range from 5–21 days.
- A person does not have symptoms and may feel fine.

Prodrome

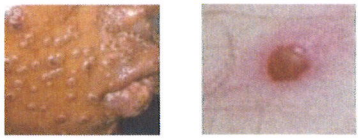
Persons with monkeypox will develop an early set of symptoms (prodrome). A person may sometimes be contagious during this period.

- The first symptoms include fever, malaise, headache, sometimes sore throat and cough, and lymphadenopathy (swollen lymph nodes).
- Lymphadenopathy is a distinguishing feature of monkeypox from smallpox.
  - This typically occurs with fever onset, 1–2 days before rash onset, or rarely with rash onset.
  - Lymph nodes may swell in the neck (submandibular & cervical), armpits (axillary), or groin (inguinal) and occur on both sides of the body or just one.

Rash

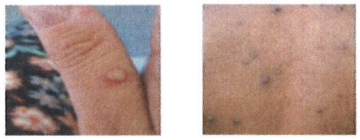
Following the prodrome, lesions will develop in the mouth and on the body. Lesions progress through several stages before falling off. A person is contagious from the onset of the enanthem through the scab stage.

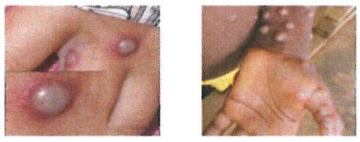
Key Characteristics of Monkeypox Rash

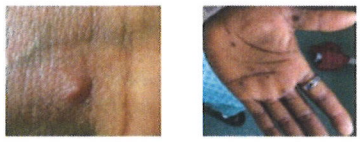


More Monkeypox Rash Photos

Photo Credit: NHS England High Consequence Infectious Diseases Network







Enanthem Through the Scab Stage

Stage	Stage Duration	Characteristics
Enanthem		• The first lesions to develop are on the tongue and in the mouth.
Macules	1–2 days	• Following the enanthem, a macular rash appears on the skin, starting on the face and spreading to the arms and legs and then to the hands and feet, including the palms and soles. • The rash typically spreads to all parts of the body within 24 hours becoming most concentrated on the face, arms, and legs (centrifugal distribution).
Papules	1–2 days	• By the third day of rash, lesions have progressed from macular (flat) to papular (raised).
Vesicles	1–2 days	• By the fourth to fifth day, lesions have become vesicular (raised and filled with clear fluid).

	Pustules	5–7 days	• By the sixth to seventh day, lesions have become pustular (filled with opaque fluid) – sharply raised, usually round, and firm to the touch (deep seated). • Lesions will develop a depression in the center (umbilication). • The pustules will remain for approximately 5 to 7 days before beginning to crust.
	Scabs	7–14 days	• By the end of the second week, pustules have crusted and scabbed over. • Scabs will remain for about a week before beginning to fall off.

Resolution of Rash
Pitted scars and/or areas of lighter or darker skin may remain after scabs have fallen off. Once all scabs have fallen off a person is no longer contagious.

NOTES REGARDING 2022 OUTBREAK:
West African monkeypox is associated with milder disease and fewer deaths. Human infections with the Central African monkeypox virus clade are typically more severe compared to those with the West African virus clade and have a higher mortality. **The current monkeypox outbreak being reported in the U.S are of West African Clade.**

Current cases have atypical features:

- Although all patients diagnosed with monkeypox in the U.S. to date have experienced a rash or enanthem, some cases have presented with some features uncharacteristic of classic monkeypox disease. These include:
- Rash still characteristic; but often starting in genital and perianal areas
- Rash beginning in mucosal areas (e.g., genital, perianal, oral mucosa)
- Lesions scattered or localized to a specific body site, rather than diffuse, and that may not involve the face or extremities
- Lesions in different stages of progression on a specific anatomic site.
- Classical prodromal symptoms not always occurring before the rash if they occur at all.
- Presentation with symptoms such as anorectal pain, tenesmus, and rectal bleeding.
- Being recognized at outpatient clinics because easily confused with sexually transmitted infections
- Prodromal symptoms mild or not occurring
- Presentation similar to some sexually transmitted infections (STI), such as syphilis, herpes, lymphogranuloma venereum (LGV), or other etiologies of proctitis.
- Easy to confuse with sexually transmitted infection OR varicella zoster virus. Obtain sexual and travel history; determine if any contacts have/had a similar rash
- The diagnosis of an STI does not exclude monkeypox, as a concurrent infection may be present.

Process	**Patient Screening and Placement** • Identify: Assess the patient for signs and symptoms, travel history, and epidemiological criteria. Regardless of gender or sex of sex partner(s), providers should be alert for patients who have rash illnesses consistent with monkeypox, regardless of their travel history or specific risk factors for monkeypox. ○ If lesions are observed prior to registration, isolate patient immediately.

- Isolate: Adhere to Enhanced Droplet + Contact + Eye Protection precautions when caring for a suspected or confirmed patient with monkeypox.
  - Isolate patient in a single-person, private examination room with dedicated bathroom (Note: airborne infection isolation room (AIIR) is not required unless conducting aerosol generating procedures).
  - Patients requiring intubation and/or extubation and any procedures likely to spread oral secretions should be performed in an AIIR and should be placed on Airborne + Contact + Eye Protection precautions.
  - If uncertain or if Varicella is being considered, patients should be placed on Airborne + Contact + Eye Protection precautions until ruled out.
  - Keep door closed and minimize entry and exit.
  - Transport and movement of the patient outside of the room should be limited to medically essential purposes. If the patient is transported outside of their room, they should use well-fitting source control (e.g., medical mask) and have any exposed skin lesions covered with a sheet or gown.

- Inform: Notify facility leadership and infection prevention and control department.

Infection Prevention and Control & Personal Protective Equipment (PPE)

- Perform hand hygiene before and after all patient contact, contact with potentially infectious material, and before putting on and upon removal of PPE, including gloves. Use soap and water for at least 20 seconds or use alcohol-based hand rubs. If hands are visibly soiled, use soap and water.
- Adhere to Enhanced Droplet + Contact + Eye Protection Precautions.
- PPE used by healthcare personnel who enter the patient's room should include:
  - Gown
  - Gloves
  - Eye protection (i.e., goggles or a face shield that covers the front and sides of the face)
  - NIOSH-approved particulate respirator equipped with N95 filters or higher
- Keep a log of all persons who care for or enter the rooms or care area of these patients.
- Do not extend the use of N95 respirator or eye protection if patient is suspected or confirmed to have monkeypox.

Laboratory Specimen Collection

Effective 14 July, 2022, NYC Health + Hospitals will begin using LabCorp for Monkeypox testing. Test result reporting has been fully, electronically integrated from test order to test result reporting.

Sample Requirements/Description

- EPIC Orderable- MONKEYPOX, DNA, PCR (SEND OUT) [LABC2102]
- Turn-around Time- 2-3 days upon receipt of samples to LabCorp
- Performance Monitoring- will be performed by System Lab Services daily
- Sample Routing-samples for testing will route through our Northwell/HHC CLNY lab on to LabCorp based on current workflows in place for each site, including Gotham.

Test Requirement/Parameters	**Monkeypox, DNA, PCR**
Method:	Polymerase chain reaction (PCR)
Specimen Requirements:	Two dry swabs (polyester, rayon or Dacron swab)
Supplies:	Two dry swabs in one sterile container
Collection Instructions:	Vigorously swab or brush the base of the lesion with a sterile dry polyester, rayon or Dacron swab. Collect a second swab from the same lesion. Insert both swabs into one sterile tube and break off the end of the swabs, if required, to tightly close the sample. **Do not add any transport media to the sample.** Two swabs should be submitted to ensure adequate material is sampled. If lesions with differing appearances are present, consider submitting an additional set of swabs on a separate order.
Specimen Stability:	Refrigerated 7 Days Frozen 30 Days

If sending specimens to New York City Public Health Laboratory (Note: all suspected congo basin clade case samples will be sent to NYC PHL upon discussion with NYC DOHMH Provider Access Line), refer to Instructions for Submission of Specimens for Monkeypox Testing to the New York City Public Health Laboratory:
https://www1.nyc.gov/assets/doh/downloads/pdf/labs/monkeypox-specimen-testing.pdf

Waste Management

- If clinician teams determine that a patient **does not have known epidemiological risk for the Congo Basin clade** of monkeypox (e.g. history of travel to the Democratic Republic of the Congo, the Republic of Congo, the Central African Republic, Cameroon, Gabon, or South Sudan in the prior 21 days) **it is appropriate to manage waste from suspected monkeypox patients as RMW**.
- If the Congo Basin clade of monkeypox is excluded, medical waste does not have to be held pending clade confirmation and medical waste needs to be packaged, transported, and treated as RMW. The waste must be packaged in accordance with 49 CFR § 173.197, labelled as United Nations (UN) 3291, Regulated medical waste (Monkeypox waste), and treated by incineration or by autoclaving at 121°C/250°F for at least 30 minutes.
- If Congo Basin Clade is suspected, it needs to be packaged, transported, and treated as Category A waste. The waste must be packaged in accordance with 49 CFR § 173.196, labelled as United Nations (UN) 2814, Infectious substances, affecting humans (Monkeypox waste), and treated as Category A waste.
    - **Notify EVS immediately if Congo Basin clade is suspected.**

Environmental Infection Control

- Standard cleaning and disinfection procedures should be performed using an EPA-registered hospital-grade disinfectant with an emerging viral pathogen claim. Products with Emerging Viral Pathogens claims may be found on EPA's List Q. Follow the manufacturer's directions for concentration, contact time, and care and handling.
- Soiled laundry (e.g., bedding, towels, personal clothing) should be handled in accordance with standard practices, avoiding contact with lesion material that may be present on the laundry. Soiled laundry should be gently and promptly contained in an appropriate laundry bag and never be shaken or handled in manner that may disperse infectious material.
- Activities such as dry dusting, sweeping, or vacuuming should be avoided. Wet cleaning methods are preferred.
- Management of food service items should also be performed in accordance with routine procedures.

Duration of Precautions

- Decisions regarding discontinuation of isolation precautions should be made in consultation with NYC DOHMH and/or facility infectious disease specialists and infection prevention and control.
- Isolation Precautions should be maintained until all lesions have crusted, those crusts have separated, and a fresh layer of healthy skin has formed underneath.

Vaccine and Therapeutics

Vaccine and therapeutics can be made available in consultation and coordination with NYC DOHMH, as warranted.

For Medical Countermeasures Available for the Treatment of Monkeypox: https://www.cdc.gov/poxvirus/monkeypox/clinicians/treatment.html

For JYNNEOS™ vaccine information: https://www.cdc.gov/vaccines/hcp/vis/vis-statements/smallpox-monkeypox.html

Visitor Guidance

- Visitors to patients with monkeypox 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, is up to each facility based on case-by-case taking into consideration:
  - The patient's age
  - the patient's ability to advocate for themselves
  - ability of the visitor to adhere to IPC recommendations
  - whether the visitor already had higher risk exposure to the patient, and other aspects.
- In general, visitors with contagious diseases should not be visiting patients in healthcare settings to minimize the risk of transmission to others.

References	Infection Control: Healthcare Settings | Monkeypox | Poxvirus | CDC https://www.cdc.gov/poxvirus/monkeypox/clinicians/infection-control-healthcare.html CDC COCA: What Clinicians Need to Know About Monkeypox in the United States and Other Countries (5/24122). https://emergency.cdc.gov/coca/ppt/2022/052422_slides.pdf The USDOT June 2022 guidance: https://www.phmsa.dot.gov/transporting-infectious-substances/planning-guidance-handling-category-solid-waste NY State Monkeypox Health Advisory (July 8, 2022) https://health.ny.gov/diseases/communicable/zoonoses/monkeypox/docs/2022-07-08_han.pdf

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Reviewed and Readopted Without Change

Signature	Title	Date
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