NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

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To: North Carolina Local Health Departments
From: Zack Moore, MD, MPH, State Epidemiologist
Scott Shone, PhD, HCLD (ABB), Public Health Laboratory Director

Re: Monkeypox Guidance for Local Health Departments
Date: May 24, 2022

This memo is intended to provide guidance to North Carolina Local Health Departments for evaluation and response to possible cases of monkeypox.

Background and Clinical Features:

Public Health authorities are tracking multiple clusters of monkeypox that have been reported in countries that are not endemic for the monkeypox virus, including the US, Australia, and multiple countries in Europe.

Person-to-person transmission has been identified, including among close household and sexual contacts. Early information indicates that many of the recent cases have been in gay, bisexual, or other men who have sex with men (MSM). Nonetheless, until more is known CDC is urging healthcare providers in the U.S. to be alert for patients who have rash illnesses consistent with monkeypox regardless of whether they have travel or specific risk factors for monkeypox and regardless of gender or sexual orientation.

Monkeypox is a rare disease caused by an orthopox virus typically found in West and Central Africa. The disease typically begins with a prodrome of fever, malaise, headache, and sometimes sore throat and cough. Shortly after the prodrome, a rash appears. Lesions typically begin to develop simultaneously and evolve together on any given part of the body. The evolution of lesions progresses through four stages—macular, to papular, to vesicular, to pustular—before scabbing over and resolving. This process happens over a period of 2-3 weeks. Lymph node swelling 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 can occur on both sides of the body or just one.

Monkeypox virus can be spread person-to-person through infected body fluids (including saliva and lesion fluid), items that have been in contact with infected fluids (fomites), and respiratory droplets. The incubation period is usually 7−14 days but can range from 5−21 days.

At this time, there are no specific treatments available for monkeypox infection, but smallpox vaccines, cidofovir, ST-246, and vaccinia immune globulin (VIG) have been used to control previous outbreaks.

Guidance for Local Health Departments:

Any suspected cases of monkeypox should immediately be reported to the Communicable Disease Branch Epidemiologist on Call at 919-733-3419. The NC Division of Public Health is available to assist with monkeypox evaluation and testing. At this time, testing for monkeypox can only be performed at public health laboratories.

To assess cases where monkeypox is suspected, please use the algorithm below. If testing is warranted after review of the algorithm and consultation with the Communicable Disease Branch Epidemiologist on Call, a REDCap event and ID number will be created by state staff. This number should be written on the test order forms.

Local health departments should consider monkeypox in patients presenting with a clinically consistent picture. Testing for herpes simplex virus (HSV), varicella zoster virus (VZV), and syphilis should be performed for patients in whom a monkeypox diagnosis is suspected, but this testing should not delay reporting to public health. Assistance with rule out testing can be provided by the North Carolina State Laboratory of Public Health (NCSLPH).

When monkeypox is suspected, contact and airborne precautions should be implemented, including gloves, protective gown, eye protection, and NIOSH-approved N95 or higher-level respirator. Providers should be aware that fomite transmission is possible; therefore respirators should not be re-used between patients.

Isolation and Quarantine Guidance:
Patients who do not require hospitalization for medical indications may be isolated at home using protective measures.
Quarantine: Monitoring People Who Have Been Exposed
Contacts of people confirmed to have monkeypox should be monitored following CDC guidance for symptoms for 21 days after their last exposure. LHDs will have the option to enroll contacts in TIMS, an automated text monitoring system, to assist in direct monitoring.
Contacts should be instructed to monitor their temperature twice daily.

- If fever or rash develop, contacts should self-isolate and notify their local or state health department immediately.
- If only chills or lymphadenopathy develop, the contact should notify their local or state health department and self-isolate at their residence for 24-hours.
    - During this time, the individual should monitor their temperature for fever; if a fever or rash develop, the health department should be contacted immediately.
    - If fever or rash do not develop and chills or lymphadenopathy persist, the contact should be evaluated by a clinician for potential cause. Clinicians can consult with their state or local health department if monkeypox is suspected.

Contacts who remain asymptomatic can be permitted to continue routine daily activities (e.g., go to work, school). Contacts should not donate blood, cells, tissue, breast milk, semen, or organs while they are under symptom surveillance.

Post-exposure prophylaxis with smallpox vaccines may be indicated for some contacts with high-risk exposures as defined in CDC guidance.

NCSLPH Specimen Collection and Testing Guidelines:

Testing Criteria

- All suspect or probable cases of monkeypox infections based on the clinical criteria described in this document should be reported to the **NC DPH Communicable Disease Branch at (919) 733-3419 for prior approval for laboratory testing**.

Orthopoxvirus Testing Employed at the NCSLPH

- The NCSLPH Bioterrorism and Emerging Pathogens (BTEP) Unit has validated the CDC Orthopox, Non-variola Orthopox, and Variola real-time PCR (RT-PCR) assays. Presumptive positive specimens will be forwarded to the CDC for confirmation.
- Estimated turn-around time for initial results is 6-48 hours from time of specimen receipt and based upon the number of specimens received.
- USE STANDARD, CONTACT, AND DROPLET PRECAUTIONS WHEN COLLECTING SPECIMENS FOR MONKEYPOX TESTING: https://www.cdc.gov/poxvirus/monkeypox/clinicians/prep-collection-specimens.html

Specimens for Orthopoxvirus RT-PCR Testing

More than one lesion should be sampled, preferably from different locations on the body and/or from lesions with differing appearances. To allow for confirmatory analysis at CDC, two dry swabs should be used simultaneously to vigorously scrub each lesion.

****PREFERRED SPECIMENS for suspected monkeypox RT-PCR testing are swabs of lesions/lesion fluid****

Disease Stage	**Acceptable Specimen Types**
Macules / Papules	Lesion biopsy
Vesicles / Pustules	Swab of lesion fluid (preferred), roof, or biopsy
Scabs	Lesion scab

Specimen Collection Guidance:

- Place each specimen in individual collection tube (i.e., one tube per lesion sampled).
- Label each specimen separately with:
    - **Specimen site / type**
    - Patient name
    - Date of birth
    - Date of collection

Swab collection - (lesion fluid)– sterile nylon, polyester, or Dacron swabs with a plastic, wood, or thin aluminum shaft. Do not use other types of swabs. Dry swabs are preferred for orthopoxvirus molecular detection; DO NOT ADD ANY TRANSPORT MEDIA.

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1. Use a disposable scalpel (or a sterile 26 Gauge needle) to open and remove the top of the vesicle or pustule (do not send the scalpel or needle). Retain lesion roof for testing, if available
2. Swab the base of the lesion with a sterile polyester or Dacron swab.
3. Break off end of applicator into a 1.5 or 2 mL screw-capped tube with O-ring or place entire swab in a sterile container. DO NOT ADD ANY TRANSPORT MEDIA.

Biopsy collection – place punch biopsy specimen (non-formalin fixed) in a 1.5 to 2 mL screw-capped plastic vial with O-ring. DO NOT ADD ANY TRANSPORT MEDIA.

Lesion roof collection

1. Use a disposable scalpel (or a sterile 26 Gauge needle) to open and remove the top of the vesicle or pustule (do not send the scalpel or needle).
2. Place the skin of the vesicle top into a 1.5 to 2 mL sterile screw-capped plastic tube with O-ring. DO NOT ADD ANY TRANSPORT MEDIA.

Scab collection

1. Use a 26 Gauge needle to pick or dislodge at least 4 scabs; two scabs each from at least two body locations.
2. Place scabs from each location in separate sterile O-ring vials. **DO NOT ADD ANY TRANSPORT MEDIA.**

Orthopoxvirus

Specimen Storage and Shipping Requirements:

- Refrigerate (2-8°C) or freeze (-20°C or lower) specimens within an hour after collection.
- Store refrigerated (2-8°C) samples for up to 7 days and frozen samples (-20°C or lower) for up to 1 month. Refrigerated samples should be sent within 5 days of collection, frozen samples should be shipped within 21 days of collection.

- **Shipment to SLPH** – If shipment is to be received within 72 h of collection, specimens must be received at SLPH cold (2-8°C) (packaged with frozen cold packs) to be acceptable for testing. For delays exceeding 72 h, freeze specimens at -70°C & ship on dry ice for receipt the following morning to ensure that the specimen remains frozen (-20°C or lower).
- Specimens shipped to SLPH must be packaged Category B

All specimen submissions **must** have a completed BTEP Specimen Submission Form

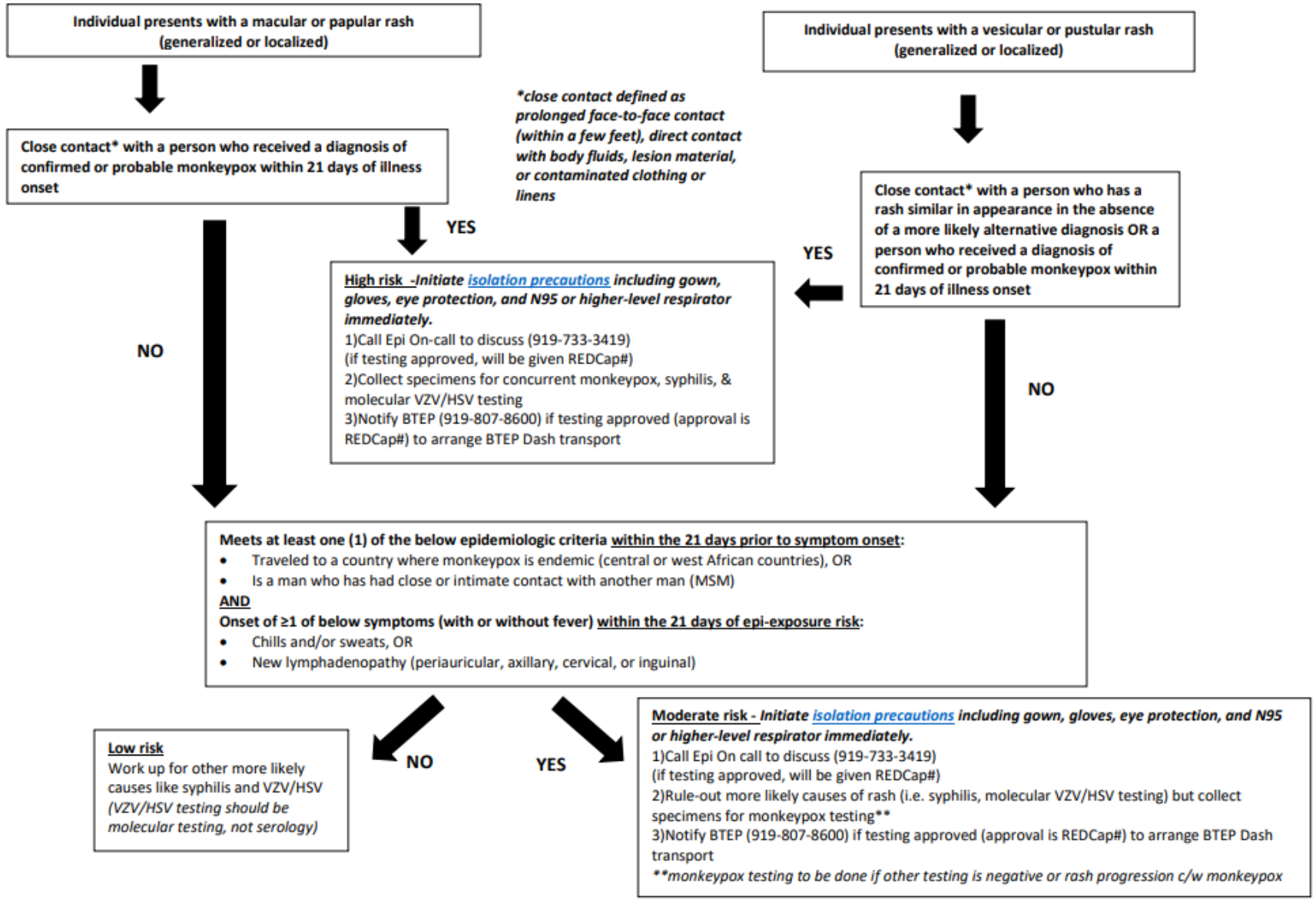
THE BTEP UNIT MUST BE CONTACTED (919-807-8600) PRIOR TO ANY SHIPMENT FOR ORTHOPOXVIRUS TESTING.

HSV, VZV and Syphilis Testing

- **HSV, VZV, and Syphilis Specimen Collection:** For HSV, VZV, and syphilis specimen collection and transport requirements, please contact your routine testing laboratory. For VZV and HSV please request molecular testing of lesion specimens, not serology. For specimens submitted to NCSLPH, please refer to SCOPE Appendix A for NCSLPH-specific specimen storage and transport requirements.
- **Submitters must complete a** NCSLPH Syphilis Serology Test Requisition form **if syphilis testing is to be done via NCSLPH.**
- **Submitters must complete a** NCSLPH Virology Test Requisition form **if VZV/HSV testing is to be done via NCSLPH.**

Additional information on monkeypox:
https://www.cdc.gov/poxvirus/monkeypox/index.html
https://www.nejm.org/doi/full/10.1056/NEJMoa032299

Evaluating Patients for Monkeypox (5/24/2022)



Although a prodromal illness (i.e. flu-like illness) commonly presents 1-3 days before rash onset with monkeypox, there have been reports of several cases presenting with perianal or genital lesions in the absence of subjective fever. Providers are encouraged to contact the epidemiologist on call to discuss any concerns or complicated situations not covered by this algorithm.