Mpox Investigation Overview

The mpox virus has two genetic clades: I and II. Clade I is endemic to central Africa, and Clade II to west Africa. Each clade of the virus has subclades: clade Ia and clade Ib; clade IIa and clade IIb. Clade IIb has been associated with the 2022-23 mpox outbreak that has predominantly affected gay, bisexual, or other men who have sex with men (MSM) in the United States and globally. North Carolina's first case was identified on June 23, 2022. Nearly all mpox cases in North Carolina have been in men who have sex with men, consistent with findings from other jurisdictions. North Carolina mpox case data is published monthly and available on NCDHHS's mpox website.

In 2024, an outbreak of clade Ib mpox was identified in Central and Eastern Africa, including the countries of Burundi, Central African Republic, Democratic Republic of the Congo, Republic of the Congo, Rwanda, and Uganda. On August 14, 2024, the World Health Organization (WHO) declared the ongoing outbreaks a public health emergency of international concern (PHEIC). Travel-associated cases have been reported in Africa, Asia, Europe, and North America including in the United States in 2024. According to the CDC the risk of clade I mpox to the public remains low.

The following guidelines provide a brief overview of the steps of an mpox investigation. Investigations that may be complicated by setting, high-risk individuals, travel to Central or Eastern Africa, or other complicating factors should be discussed with the Communicable Disease Branch epidemiologists.

Basic Steps of an Mpox Investigation

1. Collect clinical information	• Obtain healthcare provider clinical notes from date(s) of service for this disease/condition • Look for evidence in the medical record that supports clinical findings described in case definition • If patient hospitalized for this disease, obtain medical record (admission note, progress note, lab report(s) and discharge summary)
2. Review laboratory information	• Review laboratory report(s) specific to this disease • Evaluate laboratory results to determine if requirements of the case definition are satisfied • Contact healthcare provider if further testing of the patient is indicated • Testing is available at the NC SLPH and many commercial laboratories. See SLPH's mpox specimen collection guidance and CDC's specimen collection guidance
3. Apply the case definition	• Use the case definition to determine if the clinical and laboratory findings meet the case definition criteria. Most patients in NCEDSS will either be probable or confirmed upon receipt of initial laboratory findings
4. Attempt to identify source of exposure	• Review clinical records for potential source(s) of exposure • Ask about travel to Central or Eastern Africa in the 21 days preceding symptom onset or close contact with someone with such recent travel

5. Implement control measures	• Use CDC guidance to teach at risk people about the disease
	• During the course of the investigation, interview exposed contacts for symptoms of illness. Course of action will depend on the type of contact, presence of symptoms, time since last exposure, and exposure setting. Follow CDC's monitoring guidance
	  ◦ Consider PEP for persons exposed to mpox using the Jynneos vaccine
	  ◦ Refer symptomatic individuals to healthcare provider for evaluation and testing
	• Work with local health director, environmental health specialist, local animal control and NCDA to evaluate risk, identify infected wild, exotic or pet mammals and the need for personal protective equipment. Isolate/quarantine infected/potentially infected animals and ensure disinfection of potentially contaminated areas where pets were held

6. Report to NC Communicable Disease Branch (CDB)	• Enter Part 1 and Part 2 Communicable Disease Reports into NC EDSS as a new event or update the existing event if already entered • Assign event to State Disease Registrar when case investigation complete
7. Personal protective equipment	• Utilize gloves, N95 masks, eye protection and protective gowns to avoid coming into contact with mpox blisters or body fluids • Follow CDC's Mpox Infection Prevention and Control in Healthcare Settings Guidance

Additional Resources:

- CDC Mpox Website: https://www.cdc.gov/mpox/index.html
- NC DHHS Mpox Website: https://www.ncdhhs.gov/mpox
- APHA *Control of Communicable Diseases Manual*, 21st ed.
- Red Book, 2024-2027 Report of the Committee on Infectious Diseases. 33rd ed.