

# Vaccinia Investigation Overview

The term “vaccinia,” as a reportable disease in North Carolina, is meant to include the serious complications of smallpox vaccination, not the milder local and systemic reactions that many vaccinees experience. It was the risk of these complications compared to the risk of smallpox disease for the average US citizen that resulted in the repeal of state laws requiring routine smallpox vaccination. While routine vaccination against smallpox in the United States ended, the 2015 Advisory Committee on Immunization Practices (ACIP) [recommends](#) routine vaccination against the disease for specific populations at high risk of occupational exposure to orthopoxviruses.

Complications can include autoinoculation with vaccinia virus, generalized vaccinia, eczema vaccinatum, progressive vaccinia, and post-vaccination encephalitis. Any public health worker responsible for administering smallpox vaccine needs to be familiar with these and the milder reactions to inoculation with vaccinia. Resources include CDC’s [Smallpox Vaccination and Adverse Reactions Guidance](#) and [Surveillance Guidelines for Smallpox Vaccine \(vaccinia\) Adverse Reactions](#).

The following guidelines provide a brief overview of the steps of a vaccinia investigation. Always consult with the NCDHHS DPH Communicable Disease Branch (919-733-3419). CDC also provides consultation for clinicians to help diagnose and manage patients with suspected vaccinia virus vaccine adverse reactions. Clinicians may reach CDC medical staff by calling the Emergency Operations Center at 770-488-7100.

BASIC STEPS OF A VACCINIA INVESTIGATION	
<b>1. Collect clinical information</b>	<ul style="list-style-type: none"><li>• Clinical description<ul style="list-style-type: none"><li>– Document presence of rash, onset date, and characteristics (macular, papular, vesicular, pustular, generalized or localized, discrete or confluent)</li><li>– Note other signs/symptoms and any complications</li></ul></li><li>• Use information collected from the medical record or speak with the case-patient</li></ul>
<b>2. Review laboratory information</b>	<ul style="list-style-type: none"><li>• Confirmatory tests include isolation of vaccinia virus in culture or detection of virus via PCR</li><li>• Contact health care provider if further testing of the patient is indicated</li></ul>
<b>3. Apply the case definition</b>	<ul style="list-style-type: none"><li>• Use the case definition to determine if the clinical and laboratory findings meet the case definition criteria.</li></ul>
<b>4. Attempt to identify the source of exposure</b>	<ul style="list-style-type: none"><li>• Obtain poxvirus vaccination history. Record the date and site of vaccination</li><li>• Document any recent exposure to a case of vaccinia or a person who has recently been vaccinated with a poxvirus vaccine</li></ul>
<b>5. Manage the case</b>	<ul style="list-style-type: none"><li>• Vaccinia immune globulin intravenous (VIGIV) is recommended as the first line of therapy for treatment of adverse reactions resulting from continued vaccinia virus replication after vaccination using ACAM2000® or APSV.</li><li>• Antivirals may be considered as a secondary treatment after consultation with CDC.</li><li>• If it is determined that treatment of vaccinia virus vaccine adverse reactions requires VIGIV or antivirals, the CDC Smallpox Vaccine Adverse Events Clinical Consultation Team will coordinate shipment with the Strategic National Stockpile.</li></ul>
<b>6. Implement control measures</b>	<ul style="list-style-type: none"><li>• Restrict contact of people with deficient immune systems, eczema or other dermatitis conditions and pregnant women.</li><li>• Virus might be shed until scabs heal. The virus can survive for several days on clothing, bedding or bandages.</li><li>• During the course of the investigation, interview other exposed individuals for symptoms of illness. Refer symptomatic individuals to health care provider for evaluation.</li></ul>
<b>7. Personal protective equipment</b>	<ul style="list-style-type: none"><li>• Ensure that caregivers utilize gloves, eye protection and protective gowns to avoid coming into contact with blisters or body fluids</li></ul>
<b>Additional Resources:</b> <ul style="list-style-type: none"><li>• <a href="#">CDC’s About Smallpox Vaccines Website</a></li><li>• <a href="#">CDC’s Clinical Guidance for Smallpox Vaccine Use in a Postevent Vaccination Program</a></li></ul>	

