

Varicella Investigation Overview

The following guidelines provide a brief overview of the steps of a varicella contact investigation. Single cases of varicella are reportable in North Carolina. Investigation is essential because the disease is highly infectious and requires use of airborne and contact isolation in health care settings. Identification of a single case of varicella should trigger public health intervention to prevent an outbreak and protect high-risk contacts. Investigations that may be complicated by setting or other factors should be discussed with the NC DPH Communicable Disease Branch (919-733-3419). When varicella is confirmed or strongly suspected, attempts to identify and provide prophylaxis to susceptible contacts should begin as soon as possible. The NC DPH Communicable Disease Branch should be notified of cases in high risk settings and outbreaks (3 or more cases). Additional resources, such as school letters and line list templates, are also available through the NC DPH Communicable Disease Branch.

Basic Steps of a Varicella Investigation

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| 1. Collect clinical and laboratory information | <ul style="list-style-type: none"> Immune status (history of disease or immunization) Clinical description <ol style="list-style-type: none"> Onset date of generalized maculo-papulovesicular rash Number and location of lesions, characteristic progression of lesions, itching Other symptoms: fever, headache, complications (skin infection, pneumonia, encephalitis) Epidemiologic linkages to similarly ill persons Vesicle fluid specimen for PCR testing at SLPH is recommended for high risk patients, high risk settings and outbreak confirmation |
| 2. Determine infectious period | <ul style="list-style-type: none"> Start: From 1–2 days before rash appears End: Until all lesions are crusted over (average range, 4–6 days after rash onset) |
| 3. Manage the case | <ul style="list-style-type: none"> Isolate and exclude from school, work or other public places until all lesions are crusted |
| 4. Identify all contacts exposed to the case during infectious period | <ul style="list-style-type: none"> Exposure is defined as close contact with an infectious person, e.g.: <ol style="list-style-type: none"> Had direct contact with respiratory, oral or nasal secretions Had face-to-face exposure within 3 feet Shared the same confined space in close proximity (experts do not agree on time) Consider using a line list to organize information about contacts Notification letters can be sent to those who might have been exposed outside the home (e.g., in a school setting, letters could be sent home with children in the same classroom as the case) |
| 5. Gather information about contacts | <ul style="list-style-type: none"> Collect necessary information from contacts, including: <ul style="list-style-type: none"> Symptoms of varicella Date of last exposure to case while infectious High-risk status* |
| 6. Manage contacts | <ul style="list-style-type: none"> Course of action will depend on the type of contact, presence of symptoms, time since last exposure and high-risk status* (see below) Contacts that are unvaccinated, non-immune or not up-to-date on varicella vaccination should be referred for vaccination |
| ➤ Symptomatic contacts | <ul style="list-style-type: none"> Call ahead and refer to healthcare provider if indicated If varicella is suspected, isolate/exclude until no longer infectious Notify school nurse or occupational health |
| ➤ Asymptomatic healthy non-immune unvaccinated contacts (age 12 months or older) | <ul style="list-style-type: none"> If not contraindicated,*** administer varicella vaccine within 5 days after exposure (preferably within 3 days) For people at high-risk* of severe disease and ineligible for vaccine, administer VariZIG up to 10 days after exposure Instruct contacts to monitor for symptoms for at least 3 weeks after last exposure School exclusion: Vaccinate or exclude during outbreak until 21 days after rash onset in the last case** Healthcare exclusion: Furlough from days 8 to 21 after exposure |
| ➤ Asymptomatic healthy contacts (age less than 12 months) | <ul style="list-style-type: none"> No prophylaxis is recommended*** Parent/caregiver should monitor child for symptoms for at least 3 weeks after last exposure |

*High-risk contacts include:

- Immunocompromised children and pregnant women
- Newborns whose mother had onset of chickenpox within 5 days before delivery or within 48 hours after delivery; VariZIG or IGIV is not indicated if mother has zoster infection
- Hospitalized preterm infant (28 weeks or more gestation) whose mother lacks evidence of immunity against varicella
- Hospitalized preterm infants (less than 28 weeks gestation or birth weight 1000 g or less) regardless of maternal immunity

**Recommended in outbreak settings

***CDC Varicella Guidelines: <https://www.cdc.gov/chickenpox/outbreaks/manual.html>

Jan 2024