

The following guidelines provide a brief overview of the steps of a measles contact investigation. Because measles investigations can be complicated, understanding of the [VPD Surveillance Manual](#) chapter on measles is essential. Investigations that may be complicated by setting, high-risk individuals or other factors should be discussed with the N.C. DPH Communicable Disease Branch (919-733-3419).

Endemic transmission no longer occurs in the United States. Rapid identification of travel-related cases is key to preventing spread. Contact investigations should proceed immediately for all cases of measles. When measles is strongly suspected, attempts to identify and provide prophylaxis to close contacts should proceed without delay. Prophylaxis (MMR given within 72 hours of exposure or IG given within 6 days) may prevent disease. Measles is highly contagious with a 90% secondary attack rate in susceptible populations. Transmission of airborne measles virus has occurred up to 2 hours after a case occupied a room. Measles is a public health emergency.

## Basic Steps of a Measles Investigation

<p>1. Determine immune status, clinical presentation and epidemiological factors of a suspected case</p>	<ul style="list-style-type: none"> <li>Identify symptom onset for fever, cough, coryza, conjunctivitis, and rash onset date, and determine rash progression pattern.</li> <li>Determine immune status of patient. Refer to the <a href="#">VPD Surveillance Manual</a> for criteria of acceptable evidence of immunity. Persons who meet criteria are unlikely to acquire measles.</li> <li>Inquire about recent travel history and recent contact with ill persons</li> <li>Rule out other causes like recent use of antibiotics or other illnesses (e.g. roseola, parvovirus)</li> </ul>
<p>2. Laboratory testing</p>	<ul style="list-style-type: none"> <li>If patient meets criteria for suspicion of measles, laboratory specimens should be collected as soon as possible</li> <li>A nasopharyngeal swab (preferred), and oropharyngeal swab or urine should be collected for PCR within 3 days of rash onset (collection within 10 days may be acceptable; consult CDB).</li> <li>Serum should be collected for measles IgM testing <math>\geq 3</math> days after rash onset, unless the person was recently vaccinated</li> </ul>
<p>3. Manage the case</p>	<ul style="list-style-type: none"> <li>Verify that case has been appropriately tested and isolated using airborne precautions if hospitalized during the infectious period. Isolation orders may be issued.</li> <li>Use information collected from medical records or speak with patient to identify venues where the patient might have been exposed. Exposure period is 7-21 days before rash onset.</li> </ul>
<p>4. Identify all contacts of case during infectious period</p>	<ul style="list-style-type: none"> <li>Infectious period: <u>Start</u>: 4 days before rash onset. <u>End</u>: 4 days after rash onset</li> <li>Contacts are any persons sharing air space with a case during the infectious period for up to 2 hours after a case has occupied that space.</li> <li>Immediately notify CD Branch if case traveled on commercial conveyance while infectious</li> <li>Determination of contacts should be more inclusive in high-risk settings such as healthcare facilities, day care and other settings with unimmunized persons</li> </ul>
<p>5. Collect information about contacts</p>	<ul style="list-style-type: none"> <li>Date and location of last exposure to case while infectious</li> <li>Symptoms of measles (febrile rash illness with cough, coryza, and conjunctivitis)</li> <li>Evidence of immunity</li> <li>Identify contacts with high-risk status (e.g. infants, pregnant women), and high transmission risk (e.g. health care workers)</li> </ul>
<p>6. Manage contacts</p>	<ul style="list-style-type: none"> <li>Course of action will depend on time since last exposure, type of contact, presence of symptoms, immune status and risk status</li> </ul>
<p>➤ Symptomatic contacts</p>	<ul style="list-style-type: none"> <li>Refer to healthcare provider with prior arrangement for appropriate isolation and testing</li> <li>If measles is suspected, isolate/exclude until no longer infectious</li> </ul>
<p>➤ Immune contacts</p>	<ul style="list-style-type: none"> <li>Contacts with documentation of immunity may self-monitor and report if symptomatic</li> </ul>
<p>➤ Asymptomatic contacts without acceptable evidence of immunity</p>	<ul style="list-style-type: none"> <li>MMR vaccine should be administered to non high-risk contacts as soon as possible.</li> <li>IG should be administered to high-risk contacts (infants, pregnant women, immunocompromised)</li> <li>Use daily active symptom monitoring for 21 days via phone, text, or email. Document in RedCap.</li> <li>Exclude or quarantine as needed</li> </ul>
<p>➤ Asymptomatic airline contacts</p>	<ul style="list-style-type: none"> <li>CDC Division of Global Migration and Health (DGMH) will notify CD Branch of contacts in your jurisdiction; CD Branch will promptly contact you by phone, fax and/or email.</li> <li>Contact exposed individuals immediately to verify seat number, immune status and provide disease information. Instruct contacts to monitor for symptoms for 3 weeks after last exposure. Notify CD Branch if unable to reach exposed individual.</li> <li>Complete CDC DGMH Measles Air Contact Investigation Form and return to CD Branch</li> </ul>