



NC DEPARTMENT OF
**HEALTH AND
HUMAN SERVICES**

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To: North Carolina Clinicians
From: Zack Moore, MD, MPH, State Epidemiologist
Wendy Holmes, RN, Head, Immunization Branch
Subject: Increase in Measles Cases in the United States (3 pages)
Date: May 7, 2019

Background

According to the Centers for Disease Control and Prevention (CDC), 704 cases of measles were reported from 22 states from January 1 to April 26, 2019. This is the greatest number of cases reported in the U.S. since measles was declared eliminated in 2000. Among all measles patients, 503 (71%) were unvaccinated, 76 (11%) were vaccinated, and the vaccination status of 125 (18%) was unknown. No cases of measles have been identified in North Carolina in 2019.

Measles is a highly infectious acute viral illness that can be spread through coughing, sneezing, and contact with respiratory secretions of an infected person. Illness begins 7–21 days after exposure with a fever ≥ 101 °F, cough, coryza, and conjunctivitis. Koplik spots may be visible on the buccal mucosa. After 3–7 days of illness, a maculopapular rash begins on the face and spreads to the rest of the body. Persons with measles are contagious from four days prior to rash onset (with the rash onset considered day zero) through four days after rash onset.

The recent outbreaks started when unvaccinated travelers visited countries where there is widespread measles transmission, were infected with measles, and returned to the United States. When measles is imported into an under-vaccinated community it becomes difficult to control the spread of the disease.

Recommendations

The following recommendations are provided for North Carolina clinicians in order to rapidly identify measles cases and control the spread of infection:

- Consider the diagnosis of measles in anyone presenting with a febrile rash illness (fever ≥ 101 °F) and compatible symptoms of cough, coryza, conjunctivitis, or Koplik spots.
- **Contact the state Communicable Disease Branch (919-733-3419; available 24/7) or your local health department immediately if measles is suspected** to discuss laboratory testing and control measures.
- Immediately implement airborne isolation precautions for any patient with suspected or confirmed measles. Rooms that had been occupied by a suspect or confirmed measles patient should not be used for two hours after the patient leaves.

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LOCATION: 225 North McDowell St., Raleigh, NC 27603
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AN EQUAL OPPORTUNITY / AFFIRMATIVE ACTION EMPLOYER

- Notify EMS and/or the receiving facility prior to transporting or referring patients with suspected or confirmed measles to avoid additional exposures.
- Only health care personnel with documented immunity to measles (written documentation of two doses of measles containing vaccine, or laboratory evidence of immunity) should attend to patients with suspected or confirmed measles. Health care personnel without evidence of immunity who are exposed to measles should be offered the first dose of MMR vaccine and excluded from work from day 5 after the first exposure to day 21 following after their last exposure.

Laboratory

Detection of measles-specific IgM antibody and measles RNA polymerase chain reaction (PCR) are the most common methods for confirming measles infection.

- Obtain both a serum sample and a throat swab (or nasopharyngeal swab) from patients suspected to have measles at first contact with them.
 - The likelihood of detecting measles virus is greatest when the swab is collected on the first day of rash through the 3 days following onset of rash. However, virus may still be recovered through day 10 following rash onset.
 - If measles IgM is negative from a serum sample collected less than 3 days after rash onset, a second serum sample collected 3–10 days after symptom onset is recommended.
 - Note that serologic and virologic results can be difficult to interpret in individuals who have recently been vaccinated.
- Contact the Communicable Disease Branch to discuss testing at the North Carolina State Laboratory of Public Health (SLPH). **Testing at SLPH is available only with prior approval from the Communicable Disease Branch.** Testing for measles IgM is also available through some commercial laboratories.

Vaccination

Vaccination with MMR vaccine is the best way to protect against measles. One dose of measles-containing vaccine administered at age ≥ 12 months is approximately 93% effective and the effectiveness of 2 doses of measles-containing vaccine is $\geq 97\%$.

- Clinicians should provide MMR vaccine to all unvaccinated patients who are eligible for this vaccine and discuss the importance of MMR vaccine with parents. Parents consider their child’s healthcare professionals to be their most trusted source of information when it comes to vaccines; you have a critical role in helping parents choose vaccines for their child.
- One dose of MMR vaccine, or other presumptive immunity, is sufficient for most U.S. adults born on or after 1957. Presumptive evidence of measles immunity includes:
 - Birth before 1957,
 - Laboratory evidence of immunity, or
 - Laboratory confirmation of disease.
- Certain adults are considered to be high risk and need two doses of MMR, each dose separated by at least 28 days, unless they have other presumptive evidence of measles immunity, as listed above. These adults include:

- Students at post-high school education institutions
- Healthcare personnel
- International travelers
- Persons without evidence of immunity who are exposed to a confirmed case of measles are recommended to receive MMR vaccine. MMR vaccine administered within 3 days of exposure is considered an effective control measure
- Immunoglobulin is recommended for persons exposed to a confirmed case of measles who are at high risk for complications, including:
 - infants less than 12 months of age
 - pregnant women without evidence of measles immunity
 - severely immunocompromised persons (regardless of immunologic or vaccination status)

Immunoglobulin should be administered within 6 days of exposure.

This is an evolving situation and additional public health recommendations may be forthcoming if cases or outbreaks are identified in North Carolina.

Additional information

- Measles cases and outbreaks in the U.S.: <https://www.cdc.gov/measles/cases-outbreaks.html>
- Increase in measles cases: https://www.cdc.gov/mmwr/volumes/68/wr/mm6817e1.htm?s_cid=mm6817e1_w
- Provider resources for vaccine conversations: <https://www.cdc.gov/vaccines/hcp/conversations/index.html>