NC DEPARTMENT OF HEALTH AND HUMAN SERVICES

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To: North Carolina Clinicians
From: Zack Moore, MD, MPH, State Epidemiologist
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Subject: Increase in Measles Cases in the United States (3 pages)
Date: March 3, 2025

Background
This memo is intended as a reminder for North Carolina clinicians about measles reporting, testing, and vaccination, given recent increased measles activity in the United States and globally.

According to the Centers for Disease Control and Prevention (CDC), 164 cases of measles have been reported from nine jurisdictions in 2025 as of February 28, 2025, including recent outbreaks in Texas and New Mexico. There has been one death associated with the Texas outbreak. According to the World Health Organization (WHO) an estimated 107,500 people died from measles in 2023, mostly under or unvaccinated children under the age of five years. A total of 285 measles cases were reported in the U.S. in 2024 from 33 jurisdictions including one case in North Carolina.

Measles cases and outbreaks in the United States typically originate when unvaccinated or under-vaccinated United States residents are exposed while traveling internationally. When measles cases occur in an under-vaccinated community, it becomes difficult to control the spread of the disease. Clinicians should offer measles vaccination to under- or unvaccinated families or individuals planning any international travel, including to countries such as Canada and the United Kingdom, where measles outbreaks are ongoing. Vaccination is highly effective and the best way to prevent measles.

Prompt recognition, reporting, and investigation of measles cases are important because the spread of the disease can be limited with early case identification and vaccination of susceptible contacts.

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

- Consider the diagnosis of measles in anyone presenting with a febrile rash illness and compatible symptoms of cough, coryza, conjunctivitis and recent international travel or travel to a region reporting recent cases.
- **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.
- 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. Healthcare 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 their last exposure.
- Keep records of anyone who may have been exposed (e.g. other patients in the waiting room) and if possible, prevent exposures by making alternate testing arrangements (e.g. testing outside, using an alternate entrance, bringing the patient in as the last patient of the day).

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 ≥97%.

- It is recommended that providers utilize the North Carolina Immunization Registry (NCIR) to assess MMR coverage of their eligible patient population and vaccinate those that are not up-to-date or whose MMR status is unknown.
- 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.
- **Healthcare providers and health departments should not accept verbal reports of vaccination without written documentation as presumptive evidence of immunity.**
- All U.S. residents older than age 6 months without evidence of immunity who are planning to travel internationally or to areas with known outbreaks domestically should receive MMR vaccine prior to departure.
    - Infants aged 6 through 11 months should receive one dose of MMR vaccine before departure. Infants who receive a dose of MMR vaccine before their first birthday should receive two more doses of MMR vaccine, the first of which should be administered when the child is age 12 through 15 months and the second at least 28 days later.
    - Children aged 12 months or older should receive two doses of MMR vaccine, separated by at least 28 days before departure.
    - Teenagers and adults without evidence of measles immunity should receive two doses of MMR vaccine separated by at least 28 days before departure.
- One dose of MMR vaccine, or other presumptive immunity, is sufficient for most U.S. adults born during or after 1957. Presumptive evidence of measles immunity includes:
    - Written documentation of one or more doses of a measles-containing vaccine administered on or after the first birthday for pre-school age children and adults not at high risk
    - Written documentation of two doses of measles-containing vaccine, each dose separated by at least 28 days for school-age children and adults at high risk, including college students, healthcare personnel, and international travelers
    - Birth before 1957
    - Laboratory evidence of immunity
    - Laboratory confirmation of disease
- Persons without evidence of immunity who are exposed to a confirmed case of measles are recommended to receive MMR vaccine. MMR vaccine administered within 72 hours of exposure is considered an effective control measure.

- Immunoglobulin (Ig) 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)

*In a measles outbreak setting, infants 6 through 11 months of age can receive MMR vaccine in lieu of Ig if administered within 72 hours of exposure.

Immunoglobulin should be administered within 6 days of exposure. Vaccine should not be administered within 6 months of administration of immunoglobulin. **Do not administer MMR vaccine and Ig at the same time, as this practice will invalidate the vaccine.**

Laboratory

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

- Obtain a nasopharyngeal or oropharyngeal swab in VTM or UTM as well as a blood specimen from patients suspected to have measles at first contact with them. Urine specimens can also be submitted, although nasopharyngeal (NP) or oropharyngeal (OP) swabs are preferred.
  - An oropharyngeal or nasopharyngeal swab should be collected for PCR and viral culture, ideally within 3 days of rash onset. While not optimal, collection within 10 days may be acceptable.
  - Serum should be collected for measles IgM testing >3 days after 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 (919-733-3419; available 24/7) or your local health department to discuss testing at the North Carolina State Laboratory of Public Health (SLPH). **Testing through SLPH is available only with prior approval from the Communicable Disease Branch, but in most circumstances is much faster than commercial testing. Measles vaccine RNA testing is also available through SLPH for situations involving recent vaccination.** Testing for measles serology and PCR is also available through some commercial laboratories.

Additional information about submission criteria and shipping can be found in Appendix A of the NCSLPH SCOPE Guide to Laboratory Services. NCSLPH can test NP specimens in VTM and will forward other specimens to a vaccine preventable disease center or CDC. Contact the Virology/Serology Unit at SLPH (919-733-3937) for any questions related to specimen collection, storage, and shipment.

Additional information

Measles cases and outbreaks in the U.S.: https://www.cdc.gov/measles/data-research/?CDC_AAref_Val=https://www.cdc.gov/measles/cases-outbreaks.html
Measles information for healthcare providers: https://www.cdc.gov/measles/hcp/clinical-overview/?CDC_AAref_Val=https://www.cdc.gov/measles/hcp/index.html
Think Measles Clinician Job Aid: https://downloads.aap.org/AAP/PDF/ThinkMeasles-final.pdf
Provider resources for vaccine conversations: https://www.cdc.gov/vaccines-children/hcp/?CDC_AAref_Val=https://www.cdc.gov/vaccines/hcp/conversations/index.html
North Carolina Kindergarten Immunization Dashboard: https://immunization.dph.ncdhhs.gov/schools/kindergartendashboard.htm