Clark County Combined Health District

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HEALTH ALERT: Measles Diagnosis and Testing

March 12, 2026

Summary and Action Items

- As of 3/5/26, there were 1,281 confirmed measles cases reported in the United States in 2026, 9 of which were reported in Ohio. Currently, Columbus Public Health and Franklin County Public Health are investigating a measles outbreak with 5 cases.
- Measles is extremely contagious and individuals infected with measles can spread it to others, even before they have symptoms. The measles virus can live for up to 2 hours in the air after an infected person leaves the room.
- **Measles is a Class A reportable disease.** If measles is suspected, facilities should implement appropriate infection prevention and control measures and report any case, suspected case, or positive laboratory result **immediately via telephone** to the local public health department in which the patient resides. Prompt recognition, reporting, and implementation of infection prevention and control measures are critical to limiting the spread of disease.
    - ***The Clark County Combined Health District (CCCHD) can be reached 24/7 at 937-390-5600***
- For patients with suspected measles, collect both Respiratory (oropharyngeal or nasopharyngeal) AND serology (serum) specimens for testing

Background

Measles is a highly contagious viral illness that typically begins with a prodrome of **fever, cough, coryza (runny nose), and conjunctivitis (pink eye), lasting 2-4 days prior to rash onset**. Modified measles can occur in infants who still have maternal antibodies and in those who received measles vaccine or immune globulin soon after exposure. Measles can cause severe health complications, including pneumonia, encephalitis (inflammation of the brain), and death. Complications from measles are more common among children younger than 5 years of age, adults older than 20 years of age, pregnant women, and people with compromised immune systems. As many as one out of every 20 children with measles gets pneumonia, the most common cause of death from measles in young children.

The virus is transmitted by direct contact with infectious droplets or by airborne spread when an infected person breathes, coughs, or sneezes. Measles virus can remain infectious in the air and on surfaces for up to two hours after an infected person leaves an area. Infected people are contagious from 4 days before the rash starts, through four days afterward. The incubation period for measles from exposure to fever is usually about 10 days (range 7 to 12 days), and from exposure to rash onset is usually about 14 days (range 7 to 21 days).

Diagnosis and Testing

Consider measles as a diagnosis in anyone with a febrile illness and clinically compatible symptoms (e.g., a generalized maculopapular rash with cough, coryza, or conjunctivitis). The attached flowchart may be used to help identify people at increased risk for measles. A clinical history should include assessment for known contact to someone with measles, recent travel to areas with measles transmission, including international travel, and MMR vaccination status.

Collection of virologic and serologic specimens is recommended for confirmation of disease. **For patients with suspected measles, collect BOTH:**

- **Respiratory (oropharyngeal or nasopharyngeal) AND**
- **Serology (serum) specimens for testing**

Please see the attached guidance for collection and submission of suspected measles specimens.

The Ohio Department of Health (ODH) will accept specimens from suspected measles cases who meet the clinical criteria AND meet one of the following: 1) have a recent travel history or known/potential exposure to a case of measles and/or 2) are unvaccinated. Providers who suspect measles where the patient does not meet the clinical criteria for ODH lab testing may send specimens to the laboratory they normally use.

To request approval for testing at ODH, healthcare providers should contact the local public health department in which the patient resides. Local public health will contact ODH to request specimen approvals.

For additional clinical information for healthcare providers, please visit the CDC website.

Reporting

Report a case, suspected case, and/or positive laboratory result immediately via telephone to the local public health department in which the patient resides. If patient residence is unknown, report immediately via telephone to the local public health department in which the reporting healthcare provider or laboratory is located.

******The Clark County Combined Health District (CCCHD) can be reached 24/7 at 937-390-5600******

Prevention

Recommend MMR vaccine for all eligible patients who are unvaccinated or not fully vaccinated. Childhood immunization schedules can be found on the American Academy of Pediatrics (AAP) website here.

Persons with suspected or confirmed measles infection should be isolated, including exclusion from school or childcare center, for four days following the onset of rash. Contacts who might be susceptible should be immunized with measles vaccine as soon as possible after exposure. Measles vaccine given within 72 hours after exposure may prevent or reduce the severity of disease. Immune globulin (IG) can prevent or modify measles in a susceptible person if given within six days of exposure. IG may be especially indicated for susceptible household contacts less than one year of age, pregnant women, or immunocompromised persons, for whom the risk of complications is increased.

Please see the Measles Chapter in the ODH Infectious Disease Control Manual and CDC website for additional guidance on the public health management of cases and contacts and infection prevention and control measures.

To minimize the risk of measles transmission in healthcare settings, healthcare personnel should do the following:

1. Ask patients with febrile rash illness about a history of travel, contact with foreign visitors, transit through an international airport, or possible exposure to a person with measles in the 3 weeks prior to symptom onset. The possibility of measles should be considered for patients with such a history and symptoms consistent with measles.
2. Mask patients with suspected measles immediately, if tolerated. Encourage respiratory etiquette.
3. **Do not allow patients with suspected measles to remain in the waiting room or other common areas; isolate patients with suspected measles immediately in an airborne infection isolation room if one is available**. If such a room is not available, place the patient in a private room with the door closed. For additional infection control information, please refer to the CDC's control measures for measles.
4. If possible, allow only healthcare personnel with documentation of two doses of MMR vaccine or laboratory evidence of immunity to measles (i.e., measles IgG positive) to enter the patient's room.
5. Healthcare personnel should wear an N95 or higher-level respirator regardless of presumptive evidence of immunity. A user seal check should be performed each time the respirator is donned.
6. If possible, do not allow susceptible visitors in the patient’s room.
7. Do not use the examination room for at least two hours after the possibly infectious patient leaves.
8. If possible, schedule patients with suspected measles at the end of the day.

9. Notify the local health department in whose jurisdiction the patient resides immediately by telephone about any patients with suspected measles.
10. Notify any location where the patient is being referred for additional clinical evaluation or laboratory testing about the patient's suspected measles status, and do not refer patients with suspected measles to other locations unless appropriate infection control measures can be implemented at those locations. The patient must wear a mask, if feasible.
11. Instruct patients with suspected measles and exposed persons to inform all healthcare providers of the possibility of measles prior to entering a healthcare facility so appropriate infection control precautions can be implemented.
12. **Make note of the staff and other patients who were in the area during the time the patient with suspected measles was in the facility and for two hours after they left. If measles is confirmed, your local health department will help assess exposed people for measles immunity.**

For additional details about prevention measures in healthcare settings, refer to CDC's Interim Infection Prevention and Control Recommendations for Measles in Healthcare Settings.

Attachments

- Measles Screening Guide for Healthcare Facilities
- Collection and Submission of Suspected Measles Specimens

Additional Resources

- ODH Infectious Disease Control Manual (IDCM) Measles Chapter
- American Academy of Pediatrics (AAP) Immunization Schedule
- CDC Measles Guidance for Healthcare Providers
- CDC Manual for the Surveillance of Vaccine-Preventable Diseases Measles Chapter

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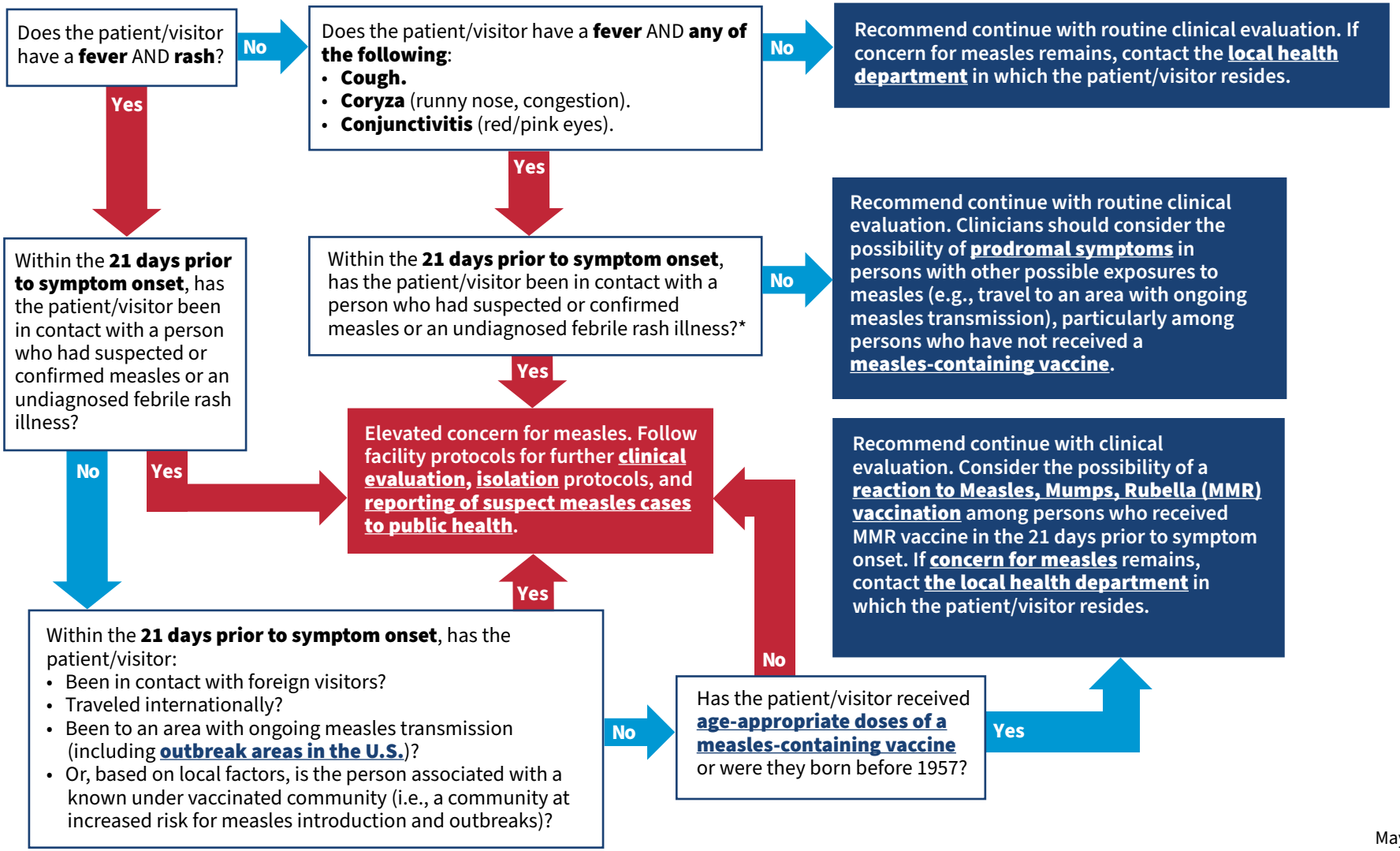
Message Details
Title: Measles Diagnosis and Testing
Date: 3/12/26
To: Healthcare providers

Ohio Department of Health

Measles Screening Guide for Healthcare Facilities

Consider measles in anyone with a febrile rash illness. The following flowchart may be used to help identify people at increased risk for measles.



May 12, 2025

***Note: For persons with prodromal symptoms only (no rash) and identified risk factors for measles, elevated concern for infection may support implementation of appropriate infection prevention and control measures; however, measles testing may not be indicated unless a rash develops. Measles RNA detection by reverse transcription polymerase chain reaction (RT-PCR) and serologic testing are most successful when specimens are collected after rash onset.**

Department of Health

Collection and Submission of Suspected Measles Specimens

The Ohio Department of Health (ODH) will accept specimens from suspected measles cases who meet the clinical criteria and meet one of the following: 1) have a recent travel history or known/potential exposure to a case of measles and/or 2) are unvaccinated.* Providers who suspect measles where the patient does not meet the criteria for ODH lab testing should be instructed to send specimens to the laboratory they normally use.

Clinical criteria:

An illness characterized by **all** the following:

1. A generalized rash **and,**
2. A fever **and,**
3. Cough, coryza, or conjunctivitis.

*Under certain circumstances exceptions may be made, for example if an IgM test comes back positive from a commercial or hospital lab and measles is strongly suspected, and confirmatory testing is needed.

Timing is critical in collecting quality measles specimens:

- Detection of measles RNA and measles virus isolation are most successful when samples are collected on the first day of rash through the three (3) days following onset of rash. Detection of measles RNA by RT–PCR may be successful as late as 10–14 days post rash onset.
- IgM tests are often positive on the day of rash onset. However, up to 20% of tests for IgM may give false negative results in the first 72 hours after rash onset. Therefore, IgM tests that are negative in the first 72 hours after rash onset should be repeated. IgM obtained four (4) days after the onset of rash is the preferred laboratory diagnostic procedure. IgM is detectable for at least 28 days after rash onset.

How to collect measles specimens (collect both respiratory swabs and serum samples):

Respiratory Swabs - Throat/oropharyngeal (OP) or nasopharyngeal (NP) swabs are the preferred samples for virus isolation or detection of measles RNA by RT–PCR. Use synthetic swabs with an aluminum or plastic shaft; swabs with cotton tips and/or wooden shafts will be rejected. Swabs should be transferred to 2-3 mL of **viral transport medium (do not allow to dry out).

- For an **oropharyngeal** (OP) swab:
  - Insert into the mouth and swab the posterior pharynx.
  - Place the swab in container with transport media, break off end of swab so that it fits in container.
  - Label the container with patient name, patient date of birth, date of collection, and type of specimen.
- For a **nasopharyngeal** (NP) swab:
  - Tilt the patient's head back 70 degrees.
  - Insert a dry swab into one nostril straight back (not upwards) and back to the nasopharynx.
  - The distance from the patient's nose to the ear gives an estimate of the distance the swab should be inserted.
  - Allow swab to remain in place for several seconds to absorb secretions.
  - Rotate the swab gently two to three (2-3) times and withdraw slowly.
  - Place the swab in container with transport media, break off end of swab so that it fits in container.
  - Label the container with patient name, patient date of birth, date of collection, and type of specimen.

**Cell culture medium (minimal essential medium or Hanks' balanced salt solution) or other sterile isotonic solution (e.g. phosphate buffered saline) can be used. The presence of protein, for example 1% bovine albumin, 0.5% gelatin, or 2% serum, stabilizes the virus. Samples without a source of protein in the medium will lose 90%– 99% infectivity within two (2) hours at 4°C.

Serology (serum) samples - Blood for serologic testing is collected by venipuncture or by finger/heel stick. Use tubes without additives—a plain, red-top tube or serum-separator tube (SST). The preferred volume for IgM and IgG testing at CDC is 0.5-1 mL of serum; however, testing can be done with as little as 0.1 mL (100 µL). Generally, 5 mL of blood will yield about 1.5 mL of serum.

- Do not freeze the tube before serum has been removed. Centrifuge the tube to separate serum from clot. Gel separation tubes should be centrifuged no later than two (2) hours after collection. Aseptically transfer serum to a sterile tube that has an externally threaded cap with an o–ring seal.
- Capillary tubes can be utilized for infants. Capillary tubes require the submitter to have access to the appropriate centrifuge for these capillary tubes. Clinical laboratories should have 50 or 100 µL capillary tubes that are typically used for a variety of tests such as hematocrits or total lipids on newborns. At least three (3) of the 50 µL hematocrit capillary tubes should be collected and spun in a hematocrit centrifuge.
- Label the container with patient name, patient date of birth, date of collection, and type of specimen.

Storage and shipment:

- Measles virus is sensitive to heat and viability decreases markedly when samples are not kept cold.
- It is important to transport samples with cold packs as soon as possible following sample collection. Avoid repeat freeze-thaw cycles or freezing at -20°C (standard freezer temperature) because formation of ice crystals decreases infectivity. If -40°C or -70°C freezers are not available, it is recommended to keep the sample in the refrigerator (4°C).
- Processing the swabs within 24 hours will enhance the sensitivity of both the RT-PCR and virus isolation techniques.

How to submit specimens to the Ohio Department of Health Laboratory:

- Local Health Departments should call ODH Vaccine Preventable Disease Epidemiology at (614) 995-5599 as soon as possible the next business day regarding specimen submission approvals to ODH laboratory.
- Please submit all orders for measles tests through the eLIMS portal (https://elims.odh.ohio.gov). If you have not previously been granted portal access, please call 888-634-5227 for assistance.
    - For serum specimens (serology testing) complete each of the following:
        Submit measles serology orders through the eLIMS portal.
        - Select “Send Out” as the test and fill out order specific data. CDC Specimen Submission Form 50.34 –
        - Test order name: Measles Serology
        Test order code: CDC-10244 Suspected agent: Measles Virus.
    - For swab specimens (PCR and/or measles genotyping) complete measles order requests in the eLIMS portal.
      Print requisitions and send with specimens.
- Label all specimens with at least two (2) identifiers that match the paperwork. Unlabeled specimens will be rejected.
- Place collected specimens and frozen cold packs in a sealed plastic bag (or other watertight secondary packaging).
- Place sealed plastic bag and submission forms in a rigid third container, such as a fiberboard box.
- Overnight shipment is preferred for receipt within 24 hours. Store specimens that can be received within 24 hours at 4°C until they are shipped. Specimens that cannot be processed within 24 hours should be frozen at -40°C or lower (preferably -70°C) and shipped on dry ice. Specimens collected on a Friday or Saturday should be frozen at -40°C or lower (preferably -70°C) and shipped on dry ice the following Monday. Follow protocols for standard interstate shipment of etiologic agents. All shipments must comply with current DOT/IATA regulations for Category B Biological Substances.
- Ship the specimen to the following address:

    Ohio Department of Health
    Laboratory Attn: Virology - Measles
    8995 Main St., Building # 22
    Reynoldsburg, OH 43068

May 6, 2025