S.C. Department of Health and Environmental Control

South Carolina Health Alert Network

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DHEC Health Alert

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Confirmed Measles Case in Upstate Region

Summary

DHEC is investigating a case of measles occurring in a resident of Spartanburg County.

Measles is an acute viral respiratory illness and is highly contagious. Measles is characterized by a prodrome of fever, malaise, and the three "C"s -- cough, coryza, and conjunctivitis. Koplik spots, found on the buccal mucosa, are pathognomonic for measles. A generalized maculopapular rash usually appears about 14 days after a person is exposed; the incubation period ranges from 7 to 21 days. The rash spreads from the head to the trunk to the lower extremities. Patients are considered contagious from 4 days before to 4 days after the rash appears.

DHEC is advising clinicians to maintain high awareness for measles and consider the diagnosis for a clinically compatible febrile rash illness.

Guidance for Clinicians

Consider measles in patients

- who present with febrile rash illness and clinically compatible measles symptoms [cough, coryza (or runny nose) or conjunctivitis (pink eye)], and
- who have not been vaccinated against measles.

Healthcare providers should also consider measles when evaluating patients for other febrile rash illnesses, including Dengue and Kawasaki's Disease.

Measles Clinical Assessment Guide The attached Guide provides information for providers who are unfamiliar with the classic measles presentation, progression, and the characteristic pattern and distribution of the measles rash. Measles is unlikely in individuals who meet the criteria for immunity provided below, or do not have the typical, progressive rash illness. Serological testing of non-measles cases may result in false-positive results. The likelihood of false positive IgM results is higher when testing for diseases that are not common in the population. Cross-reactivity can occur due to other viral conditions or rheumatologic diseases which results in lower positive predictive value of the laboratory test. False positives occur in individuals treated for another febrile illness with antibiotics which resulted in a rash. Thus, it is important to focus testing on those who are at risk for measles.

If measles is suspected, do the following immediately:

1. Immediately place suspect measles patients into an airborne isolation (negative pressure) room. If an airborne isolation room is not available, place a surgical mask on the patient and place the patient into an exam room with a closed door.
2. If patients call to be evaluated and report either compatible symptoms or, that they are a contact to a measles case, make advance arrangements to immediately place them in an exam room away from others in a waiting room. Individuals occupying a room as long as two hours after a measles case can become infected and are considered contacts.
3. Immediately report clinically suspect measles cases to your local county health department, do not wait for laboratory results. If you have a patient that does not meet the clinical criteria with a clinical presentation or history that is concerning for measles in the attached Measles Clinical Assessment Guide.
4. For any suspect cases, please consult DHEC for guidance on appropriate tests to order given the timing of the patient's symptoms. Be aware that commercial lab testing can produce false positives, particularly for serology (IgM).

   Serology: The required case-defining laboratory specimen is blood for serology. Testing for the measles IgM antibody must be requested to diagnose measles. IgG antibody is used to determine the immune status of the patient.
   - Collect specimens in a red top vacuum tube.
   - IgM antibodies usually appear 3-5 days after onset of rash and can be present for 30 days or longer.
   - Individuals with serologic specimens collected prior to the 3rd day after rash onset that are negative may require follow-up testing.
   - IgG serology testing is available for the determination of immunity status and convalescent serum testing.
   - Specimen must be maintained cold (2-8°C) during storage and shipment.

   Virus detection: It is important to obtain viral specimens in addition to serology. Providers should obtain throat swab or nasopharyngeal swab specimens for measles virus detection. Consult with DHEC for additional guidance about specimen collection.

   - Specimens should be collected within 3 days of rash onset for the most accurate results. Specimens collected after 3 days of onset have a higher risk of false negative results.
   - Specimens will be accepted when collected up to 14 days after rash onset.
   - Polyester tipped (ex. Dacron) throat swabs with an aluminum or plastic shaft are required for testing.
   - Specimens must be collected and immediately placed in viral transport media (pink fluid). Your regional DHEC office will assist you in obtaining the correct swab and viral transport media, if the necessary specimen collection material is not available.
   - The collected swab must be immediately placed in viral transport media and stored at refrigerated temperatures. The sample needs to arrive at the Public Health Lab within 48 hours of collection. If shipping is delayed, then the sample must be frozen at minus 70 and shipped on dry ice.
   - Testing will not be performed for specimens that are collected on alternate swabs (ie. cotton tips, calcium alginate tips, or wooden shafts), received more than 72 hours after collection that aren't stored frozen, improperly labeled, warm, or dry (in less than 200ul of transport medium).

Measles Prevention

Healthcare providers are strongly encouraged to assure that their patients are up to date with age appropriate measles and all recommended vaccines.

Resources for Additional Information

- Additional guidance about measles can be found at: http://www.cdc.gov/measles/hcp.
- For photos of measles: http://www.cdc.gov/measles/about/photos.html.
- Guidelines for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings 2007: http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf
- CDC. Measles–United States, January 1–May 23, 2014. MMWR. 2014;63:496-499 http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6322a4.htm
- CDC's Measles (Rubeola) website. http://www.cdc.gov/measles/index.html
- CDC's Measles Vaccination website. http://www.cdc.gov/measles/vaccination.html
- DHEC Health Alerts and Notifications: http://www.scdhec.gov/Health/FHPF/HealthAlertsNotifications/

MEASLES CLINICAL ASSESSMENT GUIDE

Assess for measles in susceptible individuals considering the classic presentation and/or epidemiologic links that would strongly suggest evidence of measles. Because measles is no longer endemic in the U.S. this Guide may assist providers who are unfamiliar with the distinctive presentation and clinical course of measles when considering it in the differential diagnosis of individuals presenting with rash illness.

Measles is unlikely in individuals who either: meet the criteria for immunity, do not have the classic prodromal illness, typical, progressive maculopapular rash, or do not manifest with the illness progression described below. Conduct a clinical assessment for measles as follows:

	Yes	No
Evidence of Immunity		
Documentation of age-appropriate vaccination with a live measles virus–containing vaccine: ○ One previous dose of MMR? < 5% remain susceptible ○ Two previous doses of MMR? < 1% remain susceptible		
Laboratory evidence of immunity		
Laboratory confirmation of disease		
Birth before 1957		
Clinical Presentation		
Prodrome present?		
• Fever (>101° F or 38.3°C)		
• Cough		
• Coryza		
• Conjunctivitis		

Measles is unlikely if "No" responses to the above signs/symptoms in individuals with a rash.		
• Koplik's spots (bluish gray specks on a red base on the buccal mucosa) most often on the mucosa adjacent to the 2nd molars.		
• Malaise, anorexia, diarrhea, other?		
Prodrome of at least several days?		
Rash Characteristics		
Did rash follow prodrome after several days?		
Did rash begin on the face?		
Did rash progress over the course of days from the face, down the body involving the extremities last?		
Is the rash maculopapular and becoming confluent?		
Measles is unlikely if "No" responses to the above rash characteristics		
Is the individual moderately to severely ill with fever?		
Epidemiologic Link		
Possible contact with measles case or measles transmission area in the past 10 – 14 days?		

DHEC contact information for reportable diseases and reporting requirements

Reporting of **measles** is consistent with South Carolina Law requiring the reporting of diseases and conditions to your state or local public health department. (State Law # 44-29-10 and Regulation # 61-20) as per the DHEC 2018 List of Reportable Conditions available at: http://www.scdhec.gov/Library/CR-009025.pdf

Federal HIPAA legislation allows disclosure of protected health information, without consent of the individual, to public health authorities to collect and receive such information for the purpose of preventing or controlling disease. (HIPAA 45 CFR §164.512).

Regional Public Health Offices – 2018

Mail or call reports to the Epidemiology Office in each Public Health Region

MAIL TO:

Lowcountry	Midlands	Pee Dee	Upstate
4050 Bridge View Drive, Suite 600 N. Charleston, SC 29405 Fax: (843) 953-0051	2000 Hampton Street Columbia, SC 29204 Fax: (803) 576-2993	145 E. Cheves Street Florence, SC 29506 Fax: (843) 661-4859	200 University Ridge Greenville, SC 29602 Fax: (864) 282-4373

CALL TO:

Lowcountry	Midlands	Pee Dee	Upstate
Berkeley, Charleston, Dorchester Phone: (843) 953-0043 Nights/Weekends: (843) 441-1091	**Kershaw, Lexington, Newberry, Richland** Phone: (803) 576-2749 Nights/Weekends: (888) 801-1046	**Chesterfield, Darlington, Dillon, Florence, Marlboro, Marion** Phone: (843) 661-4830 Nights/Weekends: (843) 915-8845	**Anderson, Oconee** Phone: (864) 260-5581 Nights/Weekends: (866) 298-4442
Beaufort, Colleton, Hampton, Jasper Phone: (843) 549-1516 ext. 218 Nights/Weekends: (843) 441-1091	**Chester, Fairfield, Lancaster, York** Phone: (803) 286-9948 Nights/Weekends: (888) 801-1046	**Clarendon, Lee, Sumter** Phone: (803) 773-5511 Nights/Weekends: (843) 915-8845	**Abbeville, Greenwood, McCormick** Phone: (864) 260-5581 Nights/Weekends: (866) 298-4442
Allendale, Bamberg, Calhoun, Orangeburg Phone: (803) 268-5833 Nights/Weekends: (843) 441-1091	**Aiken, Barnwell, Edgefield, Saluda** Phone: (803) 642-1618 Nights/Weekends: (888) 801-1046	**Georgetown, Horry, Williamsburg** Phone: (843) 915-8804 Nights/Weekends: (843) 915-8845	**Cherokee, Greenville, Laurens Pickens, Spartanburg, Union** Phone: (864) 372-3133 Nights/Weekends: (866) 298-4442

For information on reportable conditions, see http://www.scdhec.gov/Health/FHPF/ReportDiseasesAdverseEvents/ReportableConditionsInSC/

DHEC Bureau of Disease Control
Division of Acute Disease Epidemiology
2100 Bull St · Columbia, SC 29201
Phone: (803) 898-0861· Fax: (803) 898-0897
Nights / Weekends: 1-888-847-0902

Categories of Health Alert messages:

Health Alert	Conveys the highest level of importance; warrants immediate action or attention.
Health Advisory	Provides important information for a specific incident or situation; may not require immediate action.
Health Update	Provides updated information regarding an incident or situation; unlikely to require immediate action.
Info Service	Provides general information that is not necessarily considered to be of an emergent nature.