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CLINICAL BULLETIN			
Bulletin #	Title		Date Issued
#2024-03-07-01	Measles		March 7, 2025
Superseded	Released By:	Source:	Pages
	Maine EMS	MDPB	
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Maine EMS continually tracks emerging infectious diseases. Amongst other events, Maine EMS and the MDPB are currently following the 2024/2025 measles outbreak. This Clinical Bulletin is intended to alert EMS clinicians of the current outbreak, its status, and the common clinical presentation of measles. PLEASE NOTE, there are currently NO reported cases of measles in Maine, however, given that measles is one of the most contagious viruses known and this outbreak is more significant than the baseline incidence of measles in the U.S., Maine EMS believes awareness of the current event and the common presenting complaints surrounding measles is essential.

Current Outbreak

As of February 27, 2025, Texas is experiencing its most severe measles outbreak in nearly three decades, with 124 confirmed cases since late January. The outbreak has tragically resulted in the death of an unvaccinated school-aged child—the first measles-related death in the U.S. since 2015. The majority of cases are concentrated in Gaines County and have also spread to nine other Texas counties and into New Mexico. Notably, 18% of children in Gaines County are exempt from mandatory vaccinations, contributing to the rapid spread of the virus.¹

In addition to this event, officials in Kentucky² report a single case of measles in an individual returning from international travel from an area currently experiencing a measles outbreak, and authorities in New Jersey are reporting up to 3 cases.³



¹ From the website: <https://www.dshs.texas.gov/news-alerts/measles-outbreak-feb-28-2025>, accessed 2/28/25

² From the website: <https://www.chfs.ky.gov/News/Documents/Health%20Officials%20Announce%20Measles%20Case%20in%20Kentucky.pdf>, accessed 2/28/25

³ From the website: <https://www.nj.gov/health/cd/topics/measles.shtml>, accessed 2/28/25

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These events on the East Coast are currently NOT felt to be related to the events in TX. As this event unfolds, additional cases in Florida⁴ and Quebec⁵, amongst other communities, have been reported.

The most up-to-date information regarding the 2025 measles outbreaks can be found on the CDC's "Measles Cases and Outbreaks" page, updated every Friday starting 2/21/25 and found at this website: <https://www.cdc.gov/measles/data-research/index.html>.

Age Groups Affected

The current outbreak in Texas predominantly affects children between the ages of 5 and 17.¹ This trend underscores the vulnerability of school-aged children, particularly those who are unvaccinated or under-vaccinated. The most common ages to contract measles are children under 5 years old and those who have not received full vaccination.

Overview of Measles

Measles is a highly contagious viral infection characterized by symptoms such as fever, cough, runny nose, red eyes, and a distinctive red rash. Despite being preventable through vaccination, measles remains a significant public health concern, especially in areas with declining immunization rates.^{6 7 8}

How Measles is Spread

Measles is spread through respiratory droplets when an infected person coughs or sneezes. The virus can remain in the air and on surfaces for up to two hours after an infected person has left the area. Measles is highly contagious, with 90% of unvaccinated individuals who come into contact with an infected person contracting the disease.

Vaccination

"Fully vaccinated" against measles involves receiving two doses of the MMR (measles, mumps, rubella) vaccine:

1. First Dose: Administered between 12 and 15 months of age.
2. Second Dose: Administered between 4 and 6 years of age.

This two-dose regimen is approximately 97% effective in preventing measles and provides long-term, possibly lifelong, immunity.

Course of Illness and Symptoms

Measles symptoms typically appear 7 to 14 days after exposure and progress through stages:

Initial Symptoms:

- High fever
- Cough



⁴ From the website: <https://abcnews.go.com/US/1st-case-measles-detected-florida/story?id=119495312>, accessed 3/6/2025

⁵ From the website: <https://www.quebec.ca/en/health/health-issues/a-z/measles/measles-outbreak>, accessed 3/6/2025

⁶ From the website: <https://www.who.int/news-room/fact-sheets/detail/measles>, accessed 2/28/25

⁷ From the website: https://www.cdc.gov/measles/signs-symptoms/index.html?utm_source=chatgpt.com, accessed 2/28/25

⁸ From the website, https://www.idsociety.org/public-health/measles/know-the-facts/?utm_source=chatgpt.com, accessed 2/28/25

- Runny nose (AKA coryza, or “acute inflammation of the mucous membranes of the nose, with discharge of mucous”⁹)
- Red, watery eyes
- Koplik Spots: Small, white spots with a bluish center appearing on the inner lining of the cheeks, typically 1-2 days before the rash develops.

These early symptoms are often referred to as the "Three C's" of measles: Cough, Coryza, and Conjunctivitis.

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Rash Development

- A red rash emerges, usually starting on the face and spreading downward.
- The rash typically appears 3 to 5 days after the initial symptoms.

The illness usually lasts about 7 to 10 days.

Morbidity and Mortality

While many individuals recover from measles without issues, the disease can lead to severe complications, especially in children under 5 and adults over 20. These complications include:

- Pneumonia: A serious lung infection and a leading cause of measles-related deaths.
- Encephalitis: Swelling of the brain that can lead to convulsions and permanent brain damage.
- Severe Diarrhea and Dehydration
- Ear Infections: Which can result in permanent hearing loss.

Approximately 1 to 3 out of every 1,000 children who contract measles will die from respiratory and neurological complications.

Treatment

There is no specific antiviral treatment for measles. Instead, care focuses on relieving symptoms and preventing complications. Common supportive treatments include:

- Fever reducers (such as acetaminophen or ibuprofen) to manage fever and discomfort.
- Hydration to prevent dehydration, particularly if diarrhea or high fever is present.
- Vitamin A supplementation, which has been shown to reduce the severity of measles and lower the risk of complications, particularly in children with vitamin A deficiency.



⁹ From the website:

[https://www.collinsdictionary.com/dictionary/english/coryza#:~:text=\(k%C9%99'ra%C9%AAz%C9%99%20\),of%20mucus%3B%20a%20head%20cold,accessed 3/5/25](https://www.collinsdictionary.com/dictionary/english/coryza#:~:text=(k%C9%99'ra%C9%AAz%C9%99%20),of%20mucus%3B%20a%20head%20cold,accessed%203/5/25)

- Hospitalization and respiratory support for severe cases, especially if pneumonia or encephalitis develops.

While these treatments can help alleviate symptoms and reduce the risk of severe outcomes, they do not cure measles. The best protection remains prevention through vaccination.

Important Steps for the Maine EMS Clinician

Please recall, at present there are no reported measles cases in Maine, however the severity of the illness and the contagious nature of the measles make awareness necessary. Please recall, while the initial presenting complaints of measles, namely fever, cough, and upper respiratory symptoms, are very non-specific, they are similar to other high risk viral illnesses, including COVID and influenza. Measles is spread by the airborne route, therefore, precautions appropriate for COVID (airborne respiratory protection which includes glove, gowns, eye protection and respiratory precautions including an N95, or equivalent¹⁰) are protective against measles.

Should you come into contact with a patient who you are concerned has measles, based on the presenting complaints, physical exam findings, presence of high-risk contacts, please consider the following steps:

- 1) Immediately don the appropriate level of personal protection (includes glove, gowns, eye protection and respiratory precautions including an N95, or equivalent),
- 2) Mask the patient,
- 3) Manage the patient's active complaints per the Maine EMS Protocols, and
- 4) Notify the receiving hospital with your concerns as soon as operationally possible to allow the hospital to prepare

Resources

- 1) CDC Infection Control for Healthcare Workers - <https://www.cdc.gov/infection-control/hcp/healthcare-personnel-epidemiology-control/measles.html>
- 2) CDC Infection Control in Healthcare Settings - https://www.cdc.gov/infection-control/hcp/measles/?CDC_AAref_Val=https://www.cdc.gov/infectioncontrol/guidelines/measles/index.html
- 3) CDC Clinical Overview of Measles (including isolation recommendation) - <https://www.cdc.gov/measles/hcp/clinical-overview/index.html>
- 4) CDC Yellow Book - Measles - <https://wwwnc.cdc.gov/travel/yellowbook/2024/infections-diseases/rubeola-measles>

Many EMS clinicians have undergone testing to ensure they have responded to their measles vaccine, however, for the EMS clinician who has not gone through this process or has questions about their vaccine status, response to the vaccine or personal questions based on your individual medical history, please consult your personal physician.

Thank you for your attention to this important topic. Maine EMS and the MDPB will continue to follow this event and will update Maine EMS Clinicians with any importance updates.

Acknowledgements

The MDPB and Maine EMS would like to thank Dr. Rachel Williams, the Maine EMS-C Medical Director, for her work on this Clinical Bulletin.

¹⁰ From the website: <https://www.cdc.gov/infection-control/hcp/basics/transmission-based-precautions.html>, accessed 2/28/25