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PUBLIC HEALTH ADVISORY

To: Health Care Providers
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Pertussis Uptick in Maine: Information on Testing, Treatment, and Prevention

Summary

The Maine Center for Disease Control and Prevention (Maine CDC) reports 101 pertussis cases between January 1 and October 23, 2024. This surpasses the 76 cases reported throughout all of 2023. Ages ranged from 1 month to 55 years old. Teenagers (13-19 years old) accounted for 43% of cases. Children under 5 years old accounted for 26% of cases.

This increase in cases is not exclusive to Maine. The U.S. Centers for Disease Control and Prevention (U.S. CDC) shared that more than 5 times as many cases had been reported [nationally](#) as of October 19, compared to the same time in 2023.

Pertussis is most effectively treated in the first, most mild, stage of illness. It is important to consider pertussis as a possible cause of cough illness, particularly in persons who have had a cough for over one week, or persons who have had exposure to someone with pertussis. To assist in this effort, Maine CDC created a [pertussis guide for health care providers](#) so that health care professionals have a resource they can use to build knowledge of pertussis and to help navigate the identification, testing, treatment, and prevention of illness.

Background

Pertussis, also known as whooping cough, is caused by *Bordetella pertussis* bacteria. Pertussis is primarily a toxin-mediated disease; bacteria attach to the cilia of the upper respiratory system and release toxins, which then damage the cilia and cause the airways to swell. Pertussis is transmitted through direct contact with respiratory secretions. Pertussis has no distinct seasonal pattern but in North America it may increase in the summer and fall. In the first stage of illness, people are highly contagious and may have mild symptoms such as runny nose, low-grade fever, and a cough that could be described as mild and occasional. In second stage of illness, classic

pertussis symptoms occur. Classic symptoms include a paroxysmal cough, inspiratory “whoop” sound, post-tussive vomiting, apnea, and cyanosis. In the third stage of illness symptoms lessen until the individual recovers.

Consider Pertussis

Early recognition of pertussis can be difficult. In the first 1 to 2 weeks of illness, symptoms may be mild and could be mistaken for another respiratory illness such as the common cold. Early consideration for pertussis allows for early detection and treatment; this reduces spread, severity, and length of illness. It is important to be discerning when evaluating cough illnesses, as pertussis is treated most effectively in the first 1 to 2 weeks of illness. When evaluating a patient, it may be helpful to consider if the patient’s symptoms have already peaked. While other common respiratory illnesses such as the common cold, influenza, COVID-19, and RSV commonly peak between days 3 through 5, pertussis does not peak this early. Pertussis typically peaks in the second stage of illness, most commonly between weeks 2 and 8. During this stage the patient may experience paroxysms, whooping, post-tussive vomiting, or apnea. In infants, apnea may be the only symptom of pertussis; cough may be weak or absent.

Testing

Polymerase chain reaction (PCR) is an important tool for timely diagnosis of pertussis. Early testing with PCR is recommended so that appropriate treatment and precautions can be initiated. Patients with signs and symptoms consistent with pertussis should be tested by PCR to confirm the diagnosis. Pertussis testing is most reliable when performed in the first 3 weeks of illness. PCR may be used with reduced reliability in the fourth week of illness. PCR testing for pertussis is available at many commercial laboratories and at Maine’s Health and Environmental Testing Laboratory. Testing asymptomatic persons should be avoided as it increases the likelihood of obtaining false positive results. Providers may treat high-risk patients prior to receipt of laboratory confirmation; however, specimens should be collected prior to the patient beginning treatment. Serologic testing for pertussis may be used beyond 4 weeks of cough illness; however, serologic testing for pertussis is not standardized across commercial laboratories and some of the tests offered are unproven or have unknown clinical accuracy. If pertussis is suspected in a high-risk patient who has been experiencing cough illness for over 4 weeks, then it is appropriate to treat empirically without ordering laboratory testing for confirmation.

Treatment

[Treatment options](#) vary by age. Early treatment is most effective, but if pertussis is not recognized early, U.S. CDC finds it reasonable to treat people 1 year of age and older within 3 weeks of cough onset, infants younger than 1 year of age within 6 weeks of cough onset, and pregnant people (especially if near term) within 6 weeks of cough onset. To reduce spread of disease, patients should isolate until either completing 5 days of antibiotic treatment, or 21 days have passed since cough onset.

U.S. CDC recommends that health care providers strongly consider treating prior to test results if the patient has: clinical history strongly suggestive of pertussis; high risk for severe or complicated disease; and contact with someone at high risk for severe disease (including infants, people in the third trimester of pregnancy, and those with immunocompromising conditions or other medical conditions that may increase the risk of severe disease, such as moderate to severe asthma).

Prophylaxis

Antibiotic prophylaxis should be administered to asymptomatic household members regardless of vaccination status. Close contacts that are at high risk for severe disease should also receive prophylaxis. Asymptomatic contacts do not need to isolate. Symptomatic household members should be treated and should isolate until either they have completed 5 days of antibiotic treatment or 21 days have passed since cough onset. Regimens for postexposure prophylaxis are the same as treatment.

Immunization

Providers should ensure all patients are up to date on pertussis vaccination per [U.S. CDC recommendations](#). Pertussis containing vaccines are part of Maine’s [immunization requirements for school children](#) and Maine’s [daycare immunization standards](#).

Reporting

All cases should be promptly reported by the diagnosing provider. Disease reports should be made through electronic laboratory reporting.

Resources

- Maine CDC, Pertussis Guide for Health Care Providers: <https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vaccine/documents/Pertussis-Guide-Providers.pdf>
- Maine CDC, Pertussis: <http://www.maine.gov/dhhs/pertussis>
- HETL LSIS, Pertussis: <https://www.maine.gov/dhhs/mecdc/public-health-systems/health-and-environmental-testing/micro/documents/Detection-of-Bordetella-Species-by-Real-Time-RT-PCR-LSIS.pdf>
- U.S. Centers for Disease Control and Prevention (U.S. CDC), Pertussis: <https://www.cdc.gov/pertussis/hcp/clinical-overview/>
 - Treatment of Pertussis: <https://www.cdc.gov/pertussis/hcp/clinical-care/index.html>
 - Testing for Pertussis: <https://www.cdc.gov/pertussis/php/laboratories/index.html>
- Pertussis: Summary of Vaccine Recommendations: <https://www.cdc.gov/pertussis/hcp/vaccine-recommendations>
- Maine Immunization Program www.immunizeme.org
 - Maine Daycare Immunization Standards: <https://www.maine.gov/dhhs/mecdc/infectious-disease/immunization/documents/Daycare-Immunization-standards-revised.pdf>
 - Maine's Immunization Requirements for School Children: <https://www.maine.gov/dhhs/mecdc/infectious-disease/immunization/documents/School-Immunization-Law.pdf>
- Maine's Notifiable Conditions List and Reporting Form: <http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/disease-reporting/>