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PUBLIC HEALTH ADVISORY

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Pertussis Circulating in Maine

Summary

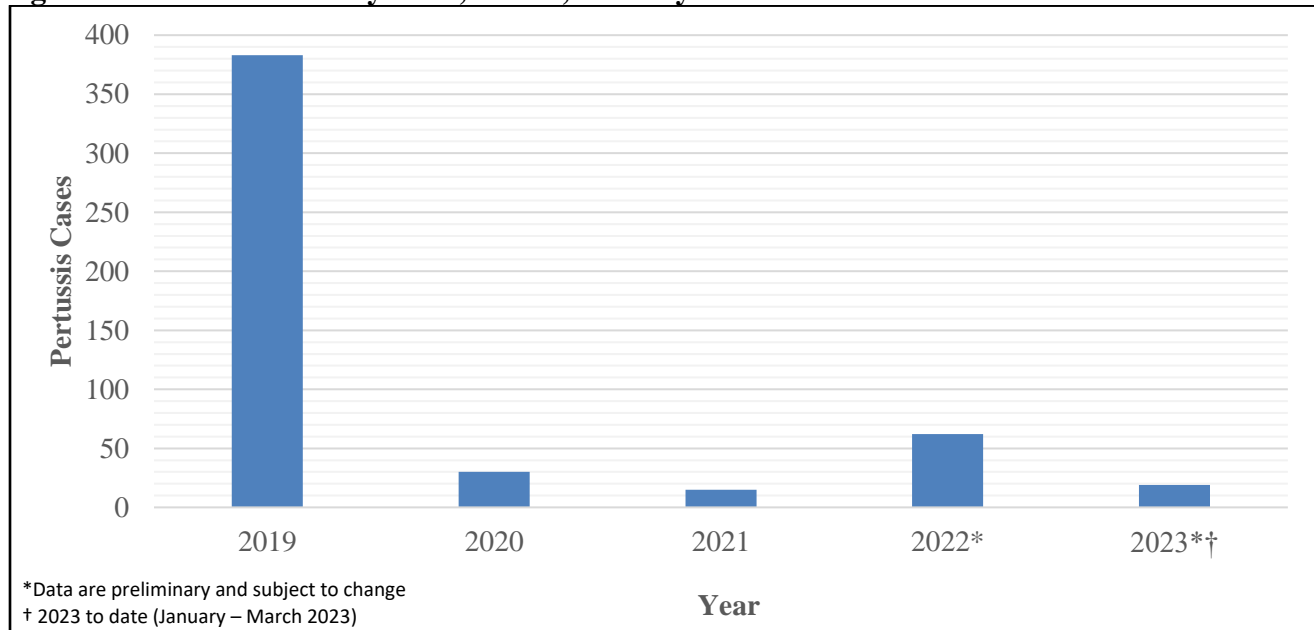
Cases of pertussis are on the rise in Maine. It is important for healthcare providers to be able to recognize the signs and symptoms of pertussis, test for pertussis, treat pertussis, determine who should receive prophylaxis, and vaccinate patients against pertussis.

Background

Pertussis is a highly contagious disease caused by *Bordetella pertussis* bacteria which are transmitted via direct contact with the respiratory secretions of infected persons. Classic pertussis symptoms include paroxysmal coughing (commonly followed by a high-pitched “whooping” sound) and post-tussive gagging or vomiting. Pertussis can cause serious illness and can be life-threatening, especially in infants. Around half of infants less than 1 year of age with pertussis require hospitalization.

Pertussis counts have been on the rise in Maine. In the first three months of 2023, providers reported nineteen cases of pertussis, more than twice the number reported during that same time period in 2022. Pertussis case counts in 2023 have already surpassed the total count of cases in 2021. Figure 1 shows pertussis case counts by year (based on date of report). From 2011 through 2019, Maine experienced an elevated incidence of pertussis compared to the national average. While case counts since 2020 remain lower than 2019 levels, it is possible that statewide trends could return to pre-COVID-19 levels again.

Figure 1. Pertussis Cases by Year, Maine, January 2019 – March 2023



Recommendations for Clinicians

- **Consider pertussis based on symptoms.** Providers should consider pertussis in patients with a cough lasting more than 2 weeks, cough with paroxysms, whooping (often absent in older children), or post-tussive gagging, vomiting, gasping, gagging, apnea, and/or cyanosis. Symptoms of infection are generally milder in teens and adults, especially in those vaccinated for pertussis. Fully vaccinated persons can get pertussis. Providers **should not** assume pertussis is unlikely in vaccinated patients.
- **Test for pertussis.** Patients with signs and symptoms consistent with pertussis should be tested by PCR to confirm the diagnosis. For PCR testing, collect a nasopharyngeal swab using a polyester-, nylon-, or rayon-tipped swab. PCR testing for pertussis is available at many commercial laboratories and at Maine’s Health and Environmental Testing Laboratory. Serology is not recommended for diagnosing pertussis. Testing asymptomatic persons should be avoided as it increases the likelihood of false positive results. PCR has optimal sensitivity in the first 3 weeks of cough. Providers should test early to initiate treatment of patients and prophylaxis of close contacts (as described below).
- **Treat pertussis.** Early treatment with antibiotics is important. Antibiotics may help decrease illness severity when started before coughing starts. Antibiotics can also help prevent spreading the disease to close contacts. U.S. CDC [recommends](https://www.cdc.gov/pertussis/clinical/treatment.html) treating persons one year old and older within three weeks of cough onset and treating pregnant persons and infants within six weeks of cough onset.
 - Macrolides (azithromycin, clarithromycin, and erythromycin) are the preferred treatment for pertussis in patients ≥ 1 month old.
 - For patients under 1 month old, azithromycin is the recommended treatment.
 - Treat before getting test results when signs and symptoms strongly suggest pertussis, the patient is at high risk of severe disease or complications, or the patient will soon have routine contact with someone who is at high risk of serious disease.
 - For additional treatment guidelines, included cautions regarding the use of azithromycin, see <https://www.cdc.gov/pertussis/clinical/treatment.html>.
 - **Have a low threshold to treat infants.** If pertussis is a possible diagnosis in an infant, treatment with azithromycin should be started immediately, even before test results are known. The severity of illness in an infant with pertussis is unpredictable and clinical decline

can be rapid. Maine CDC recommends that all young infants (aged <3 months) with possible pertussis be admitted to the hospital, and many will require pediatric intensive care unit care.

- **Administer prophylaxis for close contacts.** Prescribe antibiotic prophylaxis to asymptomatic household members within 21 days of the index cases cough onset, and to high-risk contacts of persons diagnosed with pertussis (e.g., infants and their household contacts, pregnant women, healthcare workers) within 21 days of exposure. Vaccination status does not change pertussis prophylaxis recommendations. The macrolides used to treat pertussis are also used for prophylaxis.

Check vaccination status. Providers should ensure that all patients, regardless of age, are up-to-date on pertussis vaccination per [ACIP recommendations](#). See Table 1 below for general recommendations. For questions about catch up vaccination and special situations please see [U.S. CDC: Pertussis: Summary of Vaccine Recommendations \(https://www.cdc.gov/vaccines/vpd/pertussis/recs-summary.html\)](https://www.cdc.gov/vaccines/vpd/pertussis/recs-summary.html). Immunity wanes over time: being up-to-date on vaccine is especially important for adults who are around infants.

Table 1. Summary of Routine Pertussis Vaccination

Population	Pertussis Vaccination Recommendation
Infants and children	One dose of DTaP at each of these ages: 2 months, 4 months, 6 months, 15 through 18 months, and 4 through 6 years.
Adolescents	A single dose of Tdap, preferably at 11 to 12 years of age.
Pregnant people	A single dose of Tdap during every pregnancy, preferably during the early part of gestational weeks 27 through 36. U.S. CDC only recommends Tdap in the immediate postpartum period for new birthing parents who did not receive Tdap during their current pregnancy and did not receive a prior dose of Tdap ever (i.e., during adolescence, adulthood, or a previous pregnancy).
Adults	Give adults who have never received Tdap a single dose of Tdap. This can be given at any time, regardless of when they last got Td. This should be followed by either a Td or Tdap booster every 10 years. (Note: When feasible, Boostrix® should be used for adults 65 years or older; however, either vaccine product administered to a person 65 years or older is valid. Providers should not miss an opportunity to vaccinate persons aged 65 years or older with Tdap. Therefore, providers may administer the Tdap vaccine they have available.)

Reporting to Maine CDC

- **Pertussis is a reportable disease.** Disease reports should be made through electronic laboratory reporting. The notifiable conditions reporting form and list of notifiable conditions can be found at www.maine.gov/dhhs/disease-reporting
- Report all cases of pertussis in an infant by phone to 800-821-5821 or fax to 800-293-7534.

Useful Resources

- Maine CDC: Pertussis: <https://www.maine.gov/dhhs/pertussis>
- Maine CDC: LSIS for 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. CDC: Pertussis: <https://www.cdc.gov/pertussis/clinical/>
 - Treatment: <https://www.cdc.gov/pertussis/clinical/treatment.html>
- Infographic for pertussis vaccination <https://www.cdc.gov/pertussis/images/pertussis-vacc-all.jpg>
- For information about vaccines or vaccine schedules, please contact the Maine Immunization Program at www.immunizeme.org or by calling 1-800-867-4775.