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| DATE: | 12/19/2023 |
| TO: | Health Alert Network |
| FROM: | Debra L. Bogen, MD, FAAP, Acting Secretary of Health |
| SUBJECT: | Pertussis Update |
| DISTRIBUTION: | Statewide |
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| COUNTY: | n/a |
| MUNICIPALITY: | n/a |
| ZIP CODE: | n/a |
| This transmission is a “Health Advisory” provides important information for a specific incident or situation; may not require immediate action. | |

HOSPITALS: PLEASE SHARE WITH ALL MEDICAL, PEDIATRIC, NURSING AND LABORATORY STAFF IN YOUR HOSPITAL; **EMS COUNCILS:** PLEASE DISTRIBUTE AS APPROPRIATE; **FQHCs:** PLEASE DISTRIBUTE AS APPROPRIATE **LOCAL HEALTH JURISDICTIONS:** PLEASE DISTRIBUTE AS APPROPRIATE; **PROFESSIONAL ORGANIZATIONS:** PLEASE DISTRIBUTE TO YOUR MEMBERSHIP; **LONG-TERM CARE FACILITIES:** PLEASE SHARE WITH ALL MEDICAL, INFECTION CONTROL, AND NURSING STAFF IN YOUR FACILITY

Summary

- Since October 2023, the Pennsylvania Department of Health (DOH) has been seeing an increase in cases along with outbreaks of [pertussis](#) across Pennsylvania, primarily amongst high school students and their close contacts.
- Providers should have an increased suspicion for pertussis in patients who present with a cough lasting longer than two weeks with at least one of the following [symptoms](#): paroxysms of cough, inspiratory whoop, post-tussive vomiting and/or apnea.
- Any patient with clinical suspicion for pertussis should be [tested for pertussis](#) with both culture and PCR.
- If there is a high index of suspicion for pertussis and/or if the patient has certain [high risk conditions](#) the provider should start antibiotics prior to receiving test results and the patient should be told to remain home until they have taken five days of antibiotics or until they test negative for pertussis.
- Primary care providers should promptly prescribe [Post Exposure Prophylactic](#) (PEP) antibiotics to high-risk patients and close contacts of cases. This includes all household contacts of cases.
- High risk patients and contacts of cases may also need a dose of [vaccine that includes pertussis](#).
- To prevent the spread of vaccine preventable diseases like pertussis, the DOH reiterates the importance of people of all ages to remain up to date on all vaccines, including pertussis vaccine.
- The DOH also reminds providers to immediately report suspected cases of pertussis to local public health authorities or to the DOH at 877-PA-HEALTH (877-724-3258).

Background

Since October 2023, the Pennsylvania Department of Health (DOH) has been seeing an increase in cases along with outbreaks of pertussis amongst high school students and their close contacts. These cases are occurring regardless of vaccination status and may be due to waning immunity in this population. With increases in a number of respiratory viruses this time of year, there is a concern that providers may miss a case of pertussis by misdiagnosing a patient with a viral respiratory illness rather than pertussis.

DOH asks providers to have a high index of suspicion for pertussis, regardless of vaccination status, in patients who present with the following:

- Cough lasting longer than two weeks, especially if they also have at least one of the following symptoms:
 - Paroxysms of cough
 - Inspiratory whoop
 - Post-tussive vomiting
 - Apnea
- Providers should be suspicious of pertussis in a patient with prolonged cough even if the patient is fully vaccinated against pertussis.
- If there is a known exposure to a case of pertussis.

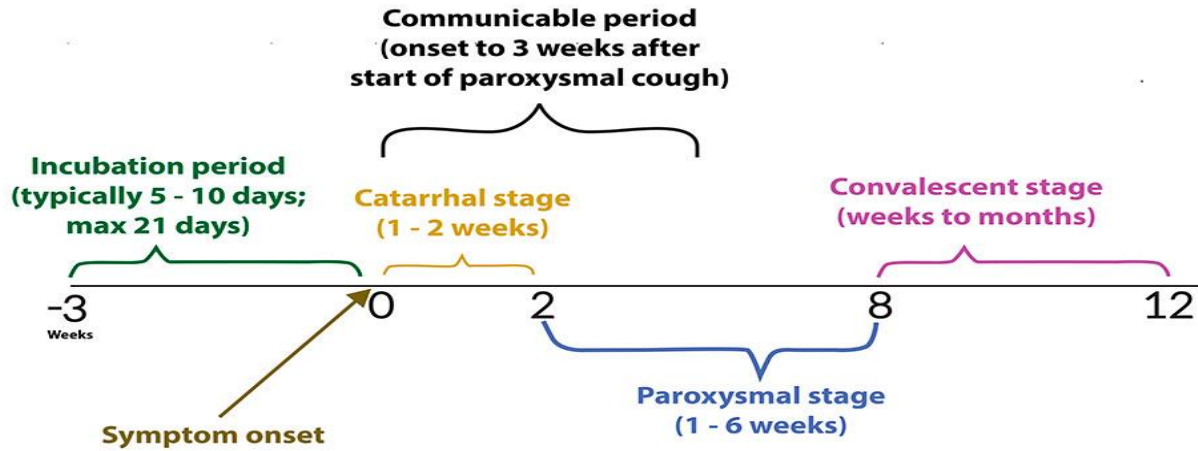
DOH recommends initiating treatment for pertussis prior to getting test results back for patients in which there is a high index of suspicion for pertussis and in those patients with certain [high-risk conditions](#). Patients diagnosed with pertussis should isolate at home until 5 full days of antibiotics have been completed. Household contacts and other high-risk contacts of patients diagnosed with pertussis should also receive post exposure prophylaxis promptly from their own primary care provider.

Pertussis Clinical Manifestations & Transmission

Pertussis is an acute bacterial disease caused by [Bordetella pertussis](#), a gram-negative bacillus. It is spread via airborne transmission through contact with infected droplets. The incubation period is commonly 7-10 days with a range of 5-21 days. The patient is infectious from the beginning of symptoms until 3 weeks after the start of the paroxysmal cough or until 5 days of treatment with an appropriate antibiotic. The clinical course of the illness is divided into three stages:

- Early Stage - Catarrhal Stage (1-2 weeks)
 - Onset of coryza (runny nose), sneezing, low grade fever, and a mild cough.
 - As this stage continues, the cough becomes more severe.
 - In infants and young children, this stage can present as apnea and cyanosis.
- Later Stage - Paroxysmal Stage (1-6 weeks)
 - Cough becomes the classic 'whooping cough' in which a patient has paroxysms of cough followed by a long inspiratory effort, 'the whoop.'
 - Patients can become cyanotic during the paroxysmal cough.
 - Post-tussive vomiting can occur.
 - Paroxysmal cough episodes are more frequent at night.
- Recovery - Convalescent Stage (weeks to months)
 - Cough gradually lessens over 2-3 weeks.

Pertussis Disease Progression



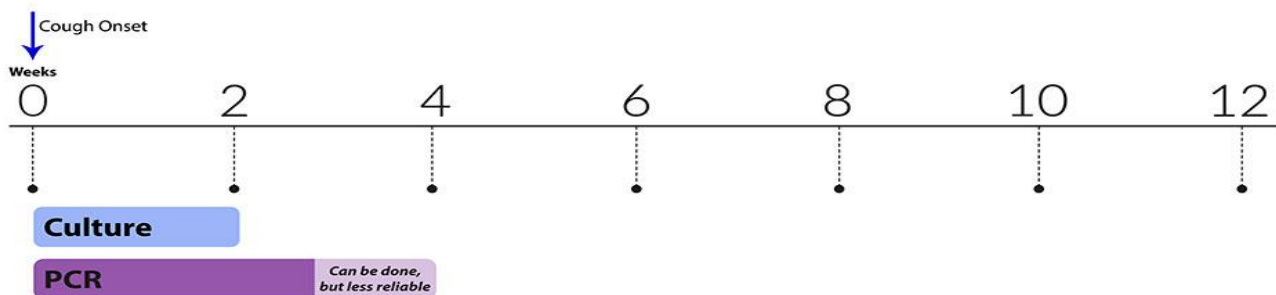
cdc.gov/pertussis



Pertussis Testing

Providers should **test for pertussis by both culture and PCR** in any patient who is suspected of having pertussis. Culture is considered the gold standard for pertussis testing and is best performed in the first 2 weeks after cough onset; however, it can take up to 1 week to have results of a culture for pertussis. Samples sent to BOL will be cultured and isolates from the culture are sent to the CDC for further testing. PCR testing results are usually available within a few days and testing can occur up to four weeks after cough onset. Serology is not reliable for the diagnosis of an acute case of pertussis. Testing is done by [nasopharyngeal \(NP\) swab](#) or [aspirate](#). A properly obtained NP swab is essential for optimal diagnostic results. Testing should ideally occur within the first 2 weeks of cough onset and can occur even if the patient is on antibiotic therapy. Both pertussis culture and PCR testing are available through commercial laboratories.

Optimal Timing for Pertussis Diagnostic Testing



cdc.gov/pertussis



Treatment for Pertussis:

Pertussis should be treated as early as possible in the illness and preferably prior to the coughing paroxysms begin. Providers should strongly consider initiating treatment prior to getting test results if the following are present:

- A strong clinical suspicion of pertussis.
- A patient who is at risk for [severe or complicated disease](#) such as infants or patients whose health conditions may be worsened by a pertussis infection.
- A patient that will have contact with someone who is considered high risk.

The macrolides are considered first choice antimicrobial agents for the treatment of pertussis. The choice as to which macrolide to use will depend upon the patient's age and medical history. These include azithromycin, clarithromycin, and erythromycin. Providers can also use trimethoprim-sulfamethoxazole if there is a clinical indication to not use a macrolide antibiotic.

All patients who are diagnosed with pertussis or in whom there is a high index of suspicion for pertussis should be treated with antibiotics and told to stay home until they have completed 5 days of antibiotics or until they test negative for pertussis.

PREVENTION:

• **Post Exposure Prophylaxis (PEP) of Contacts**

- DOH and CDC supports targeting [postexposure antibiotic](#) use to people who are household contacts or at high risk of developing severe pertussis, as well as people who will have close contact with others at high risk within 21 days of exposure.
 - High risk individuals include:
 - Infants and people in their 3rd trimester of pregnancy
 - All people with pre-existing health conditions that may be worsened by a pertussis infection.
 - People who will have contact with people who are considered high risk (infants, pregnant people, immunocompromised or other high risk health conditions).
 - People in high-risk settings such as neonatal intensive care units, childcare, and maternity wards.
- The antibiotics used for PEP are the same as is used in [treatment](#) (see above) and may be given regardless of vaccination status.
- Patients who fall into one of the categories above should be encouraged to follow up with their primary care provider for an evaluation and discussion about whether they need PEP.

• **Monitoring**

- If patients do not qualify for PEP, the DOH recommends active monitoring for signs and symptoms of pertussis for 21 days from the last day of exposure.
- If symptoms develop within those 21 days, patients should contact their provider for an evaluation and possible pertussis testing and treatment.

• **Vaccination**

- Close contacts who are not immunized or under-immunized should have pertussis immunization initiated or continued as soon as possible using age-appropriate products according to the recommended schedule.

To prevent the spread of vaccine preventable diseases like pertussis, the DOH reiterates the importance of people of all ages to remain up to date on all vaccines, including pertussis vaccine.

DOH also reminds providers to immediately report suspected cases of pertussis to local public health authorities or to DOH at 877-PA-HEALTH (877-724-3258).

For questions, please call your local health department or DOH at 1-877-PA-HEALTH (877-724-3258).

Individuals interested in receiving future PA-HANs can register at <https://ondemand.mir3.com/han-pa-gov/login/>.

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.

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| This information is current as of December 19, 2023, but may be modified in the future. |
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