

## MEMORANDUM

**TO:** Illinois Health Care Providers and Local Health Departments

**FROM:** IDPH Division of Infectious Diseases

**DATE:** February 20, 2024

**RE:** **Think, Test, Treat, and STOP Pertussis**

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## THINK, TEST, TREAT, AND STOP PERTUSSIS

Respiratory virus season is still here! At the onset of the COVID pandemic, there was a dramatic decrease in transmission of many typical respiratory viruses and bacteria. Over the last couple of years, there has been a return to more typical patterns of flu, RSV, and other respiratory illnesses, including pertussis. The number of pertussis cases reported in Illinois each year varies, with significant peaks every few years and frequent outbreaks. In 2019, there were just over 900 cases of pertussis reported in Illinois, with decreases in reported cases during the COVID-19 pandemic. In 2023, there have been just over 600 cases of pertussis reported with those numbers not finalized until mid-2024. There are special precautions that need to be followed when testing for pertussis to avoid contamination and false positives. False positives lead to unnecessary antibiotics, time away from school, and missed work for caregivers.

### **THINK** of pertussis in anyone with the following symptoms:

- A cough of any duration in a person who has been notified of a close exposure to pertussis,
- A paroxysmal (rapid, violent, and uncontrolled) cough of any duration, with whooping, post-tussive vomiting/gagging or apnea, or
- A persistent cough of unknown etiology, lasting more than seven days.

*Note: It is important to have a sufficiently high index of suspicion when testing for pertussis. Testing an asymptomatic individual or an individual with symptoms who is more likely to have a common viral etiology is NOT recommended. Testing an individual who is unlikely to have pertussis increases the likelihood of a false positive result. Unnecessary testing is costly to families and a false positive can lead to unnecessary treatment and isolation. This must be balanced with appropriate identification of pertussis!*

## TEST for pertussis

Test	Timing of specimen collection
<b>PCR</b> (results within 24-96 hours)	Best if collected within first 2-3 weeks of cough. PCR will detect non-viable organisms present, even in persons who have been treated with antimicrobials; however, false negatives can occur and are more common later in the illness. <i>PCR testing after 5 days of antibiotic use is unlikely to be of benefit and is generally not recommended.</i>
<b>IgG Serology</b> (results can take up to a week)	In general, specimens are best collected at 2-3 weeks or later after onset of cough. Collected earlier in cough illness can lead to false negatives.
<b>Culture</b> (results can take up to 10 days)	Best if collected within first 2-3 weeks of cough. Recovering the organism is unlikely beyond 3 weeks of cough or in patients who have received antimicrobials. False negatives are common even early in the illness.

### Avoid Contamination of Clinical Specimens with Pertussis DNA

Some pertussis vaccines have *B. pertussis* DNA in them which can be detected on a PCR test. Transfer of DNA from environmental surfaces to a clinical specimen can result in specimen contamination and falsely positive results.

- Prepare and administer vaccines in areas separate from pertussis specimen collection.
- Take care when preparing and administering pertussis vaccines to avoid contamination of surfaces with vaccine.
- Ensure adherence to basic infection-control measures to prevent contamination of specimens.
  - Wearing gloves immediately before and during specimen collection or vaccine preparation and administration with immediate disposal of gloves after the procedure. Ensure gloves are changed between specimen collection and vaccination, even if testing and vaccinating the same patient.
  - Cleaning clinic surfaces using a 10% bleach solution to reduce the amount of nucleic acids in the clinic environment
- Consider using a semisolid or non-liquid transport media or transport of a dry swab without media to prevent contaminant DNA on the swab shaft from reaching the part of the specimen that is later extracted.
  - The use of liquid transport media likely also contributes to falsely positive results from contaminant DNA. When using liquid transport media, DNA that is accidentally transferred from hands to the swab shaft can be washed off into the liquid medium which freely circulates around the transport tube; this liquid is later extracted to obtain DNA for PCR testing.
  - Call your reference lab to confirm acceptable collection media.

## **TREAT** and report suspected and confirmed cases

- Use Erythromycin, Azithromycin, Clarithromycin, or Trimethoprim-Sulfamethoxazole for treatment. If 21 days have already elapsed since cough onset, treatment is not recommended, as it will not improve outcome.
- Prescribe antimicrobial *prophylaxis* (same regimen as treatment) to persons who are close contacts of pertussis cases. Do not test asymptomatic contacts.
  - Asymptomatic contacts receiving prophylaxis should not be excluded from their usual activities.
  - Symptomatic contacts should be evaluated for pertussis.
- Laboratory confirmed and clinically diagnosed cases are reportable.
- Call your local health department if you have questions.

## **STOP** transmission

Inform patients with suspected pertussis to **stay at home** and avoid close contact with others until they have:

- Completed the fifth day of an appropriate antibiotic.  
OR
- Had cough symptoms for at least 3 weeks (cases are potentially infectious for the first 3 weeks of cough).

Modified from the Minnesota Department of Health's [Pertussis Information for Health Professionals](#) and CDC's [Specimen Collection and Diagnostic Testing](#).

## **CONTACT US FOR MORE INFORMATION**

For questions regarding vaccinations, local health departments should contact the IDPH Immunization Section at [dph.vaccines@illinois.gov](mailto:dph.vaccines@illinois.gov) or call 217-785-1455 and select option 2.

For questions about reporting or surveillance, local health departments should contact the IDPH CD section at 217-782-2016. Healthcare providers with questions should call their local health department.