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To: North Carolina Clinicians
From: Zack Moore, MD, MPH, State Epidemiologist

Alert: Increase in Pertussis Cases (2 pages)

The North Carolina Division of Public Health is working with local health departments to investigate recently reported pertussis cases. Since November 1, 2017, 134 cases have been identified statewide and additional cases are under investigation. A majority of cases are associated with outbreaks in Henderson, Orange, and Wake counties, and have occurred primarily in school-aged children. This memo is intended as a reminder about reporting, testing and control measures for pertussis.

Background

Pertussis (also known as whooping cough) is a contagious, respiratory disease that is highly communicable and spread through contact with respiratory secretions. Pertussis has a secondary attack rate of up to 80% in susceptible close contacts. Persons with pertussis are infectious from the beginning of respiratory symptoms through the third week after the onset of paroxysms, or until completion of effective antimicrobial treatment. Persons who are suspected to have pertussis (cough with paroxysmal cough, whoop, or post-tussive vomiting) should be isolated until they are no longer infectious. Suspected cases of pertussis should be reported to the local health department as soon as possible and within 24 hours of identification to allow timely follow up of contacts.

Pertussis outbreaks can be difficult to manage and control. Preventing severe illness and complications among those at highest risk should be a top priority. Clinicians should focus on reducing the risk of transmission among persons at greatest risk of poor outcomes, including:

- Infants
- Pregnant women in the 3rd trimester
- Persons with a pre-existing condition that may be exacerbated by a pertussis infection

Pertussis in infants can be severe and disease presentation may be atypical. Pertussis should be considered in infants with unexplained gagging, gasping, vomiting, apnea, or seizures. If pertussis is suspected in an infant ≤ 3 months of age, treatment with azithromycin should be started immediately and hospitalization should be considered. Additional information regarding the management of pertussis in young infants is available from the [Centers for Disease Control and Prevention \(CDC\)](#) and from the [California Department of Public Health](#).

Laboratory Testing

Pertussis culture and PCR testing of nasopharyngeal specimens remain important clinical tools for outbreak confirmation and prompt diagnosis. PCR is recommended if specimens are collected within 4 weeks of cough onset. Serological testing can be difficult to interpret in vaccinated individuals and the clinical accuracy of some commercially available tests is unproven or unknown.

Vaccination

Vaccination is the best way to reduce the risk of pertussis. Persons who are vaccinated are also less likely to experience poor outcomes if they do become infected. All children should be vaccinated according to the recommended schedule from the Advisory Committee on Immunization Practices. All persons aged 11 or older who have not received Tdap vaccine or for whom vaccine status is unknown should receive a single dose of Tdap. Pregnant women should receive a Tdap in the **3rd trimester of each pregnancy** to protect their own health and facilitate antibody transfer to the infant. During outbreaks, prevention measures should focus on efforts to improve Tdap coverage during pregnancy to reduce severe illness and possible deaths in vulnerable infants.

Treatment and Post-exposure prophylaxis

Early treatment of pertussis is very important to lessen the severity of disease and reduce transmission. Despite treatment, cough may persist for several months. Post-exposure prophylaxis (PEP) is recommended for all household contacts to a pertussis case within 21 days of onset of cough. PEP is also recommended for other close contacts to pertussis cases who are at high risk of developing severe pertussis, and persons who have routine close contact with others at high risk. The recommended antimicrobial agents for treatment and PEP are azithromycin, clarithromycin and erythromycin. Clinicians can also use trimethoprim-sulfamethoxazole.

Additional resources can be found on the CDC website.

- Guidance for appropriate testing can be found at: <https://www.cdc.gov/pertussis/clinical/diagnostic-testing/diagnosis-pcr-bestpractices.html>
- Treatment guidance is available at: <https://www.cdc.gov/pertussis/clinical/treatment.html>
- Information on PEP can be found at: <https://www.cdc.gov/pertussis/outbreaks/PEP.html>