



To: CAHAN San Diego Participants
Date: February 16, 2018
From: Public Health Services, Epidemiology and Immunizations Services Branch

Pertussis Increasing in San Diego

This health advisory informs the local medical community about the increased incidence of pertussis in San Diego County, provides links to prevention and treatment references, and reminds providers about key management issues.

Key messages:

- In 2017, 1,154 pertussis cases were reported in San Diego County, with a rate of 34.8 per 100,000, more than four times the California rate of 7.4 per 100,000.
- There were 36 infants younger than 4 months of age with pertussis in San Diego in 2017, with a rate of 3.1 per 1,000 live births, the highest rate in the state.
- Pertussis epidemics are cyclic, and the next one in California is anticipated in 2018 or 2019.
- **Every woman should receive the pertussis vaccine (Tdap) in every pregnancy** at the earliest opportunity starting at 27 weeks gestation to protect their young infants after birth, as young infants are at greatest risk of hospitalization and death from pertussis.
- The primary DTaP vaccine series is essential for reducing severe disease in young infants and should not be delayed.
- The diagnosis of pertussis can be a challenge in young infants; lack of fever and mild initial symptoms may result in underestimating the potential severity of the illness.

Situation

As of January 23, 2018, the California Department of Public Health (CDPH) [reported](#) 2,925 cases in California, with symptom onset in 2017, resulting in a statewide rate of 7.4 cases per 100,000. This number will increase due to reporting delays. As of February 13, 2018, the County of San Diego Health and Human Services Agency (HHSA) confirmed 1,154 pertussis cases in San Diego in 2017, a rate of 34.8 cases per 100,000. This is less than the 2,072 local cases reported in the 2014 pertussis epidemic, but closely approaching the 1,179 cases reported here during the 2010 pertussis epidemic. The increased number of pertussis reports continues with 52 confirmed cases with symptom onset in 2018 and another 22 cases currently under investigation.

At the end of this advisory, Figure 1 shows pertussis cases reported by month from 2010 to the present and Figure 2 presents pertussis rates by age group and race/ethnicity for cases reported in 2017. Of the 1,154 local cases reported in 2017, 36 were infants under 4 months of age, with a rate of 3.1 per 1,000 live births, the highest rate in the state. Patients ranged in age from 25 days to 93 years, with a median age of 13 years. Nineteen cases (1.6%) required hospitalization and 12 (63% of those hospitalized) were less than one year of age. There were no deaths.

Clusters of cases have been reported regularly in elementary, middle, and high school settings as well as childcare programs throughout the county. When cases occur in schools, childcare programs, and over-night camps, staff and families are directly notified and urged to seek care promptly for symptoms (example [here](#)). In some instances, individuals may be informed about the need for post-exposure prophylaxis when there are high risk individuals in the setting (example [here](#)).

Background

Pertussis is a cyclical disease with peak incidence occurring every three to five years as the number of susceptible people increases. The last epidemic years in California were 2010 and 2014, when more than 9,000 and 11,000 cases were reported, respectively. The next pertussis epidemic in California is anticipated in 2018 or 2019.

A critical strategy to protect infants too young to be vaccinated is to [immunize every pregnant woman during every pregnancy](#). To provide the best protection to young infants, the preferred time for pregnancy immunization is at the first opportunity between 27 and 36 weeks of gestation. Women should be immunized irrespective of prior Tdap history. Family members and other individuals who will be involved with the infants care should be up to date with their pertussis immunizations including one dose of Tdap for all those 11 years or older.

In 2016, local health jurisdictions (LHJs) in California conducted enhanced surveillance and contacted the mothers and prenatal care providers of pertussis cases <4 months of age. Only 27 (41%) of 66 mothers interviewed had received prenatal Tdap; of these, only 19 (29% of the total) were vaccinated during the recommended timeframe between 27 and 36 weeks of gestation. The 2015 Maternal and Infant Health Assessment (MIHA) Survey similarly estimated prenatal Tdap coverage for California at 49%. Lower prenatal Tdap uptake was observed in mothers with Medi-Cal insurance compared with mothers with private insurance in both the 2015 MIHA Survey (36% vs.65%, respectively) and 2016 LHJ enhanced surveillance (44% vs. 69%, respectively). Additional findings from the 2015 MIHA Survey can be accessed [here](#).

Recommendations

1. Encourage all individuals to be up-to-date with [current pertussis vaccination recommendations](#).
 - a. **Every pregnant woman should be immunized in every pregnancy, optimally at the first opportunity between 27 and 36 weeks of gestation.** CDPH and LHJs have developed a [Prenatal Tdap Toolkit](#) to assist in getting pregnant women vaccinated.
 - b. The primary DTaP series should be administered to children on time, with subsequent Tdap booster according to the [recommended schedule](#).
 - c. All [healthcare workers](#) should be immunized against pertussis with Tdap.
2. Inquire about recent possible pertussis exposures in schools or community settings and consider pertussis despite vaccination status when evaluating patients with respiratory symptoms.
3. Consider pertussis regardless of age in the differential of patient with unexplained, persistent cough illness. Symptoms of infection are generally milder in teens and adults, especially in those who have been vaccinated.
4. Be aware that the [diagnosis of pertussis](#) can be a challenge in [young infants](#). The lack of fever and mild initial symptoms often result in clinicians underestimating the potential severity of the illness. Mild illness may quickly transform into respiratory distress and include apnea, hypoxia or seizures. Treatment delays may increase the risk of death in young infants, especially those less than 3 months of age. A white blood cell count of $\geq 20,000$ cells/mm³ with $\geq 50\%$ lymphocytes is a strong indication of pertussis.
5. Obtain a nasal aspirate (preferable) or nasopharyngeal swab for PCR testing and/or culture (available at most reference laboratories) when pertussis is in the differential diagnosis. Serologic tests are not recommended. More information on pertussis laboratory testing is available [here](#).
6. Initiate antibiotic [treatment](#) prior to obtaining test results in patients with a clinical history suggestive of pertussis or with risk factors for severe complications. Azithromycin is the preferred antibiotic because of efficacy and compliance. Azithromycin is [covered by Medi-Cal](#) for both treatment and prevention of pertussis, and suspension may be prescribed regardless of age.

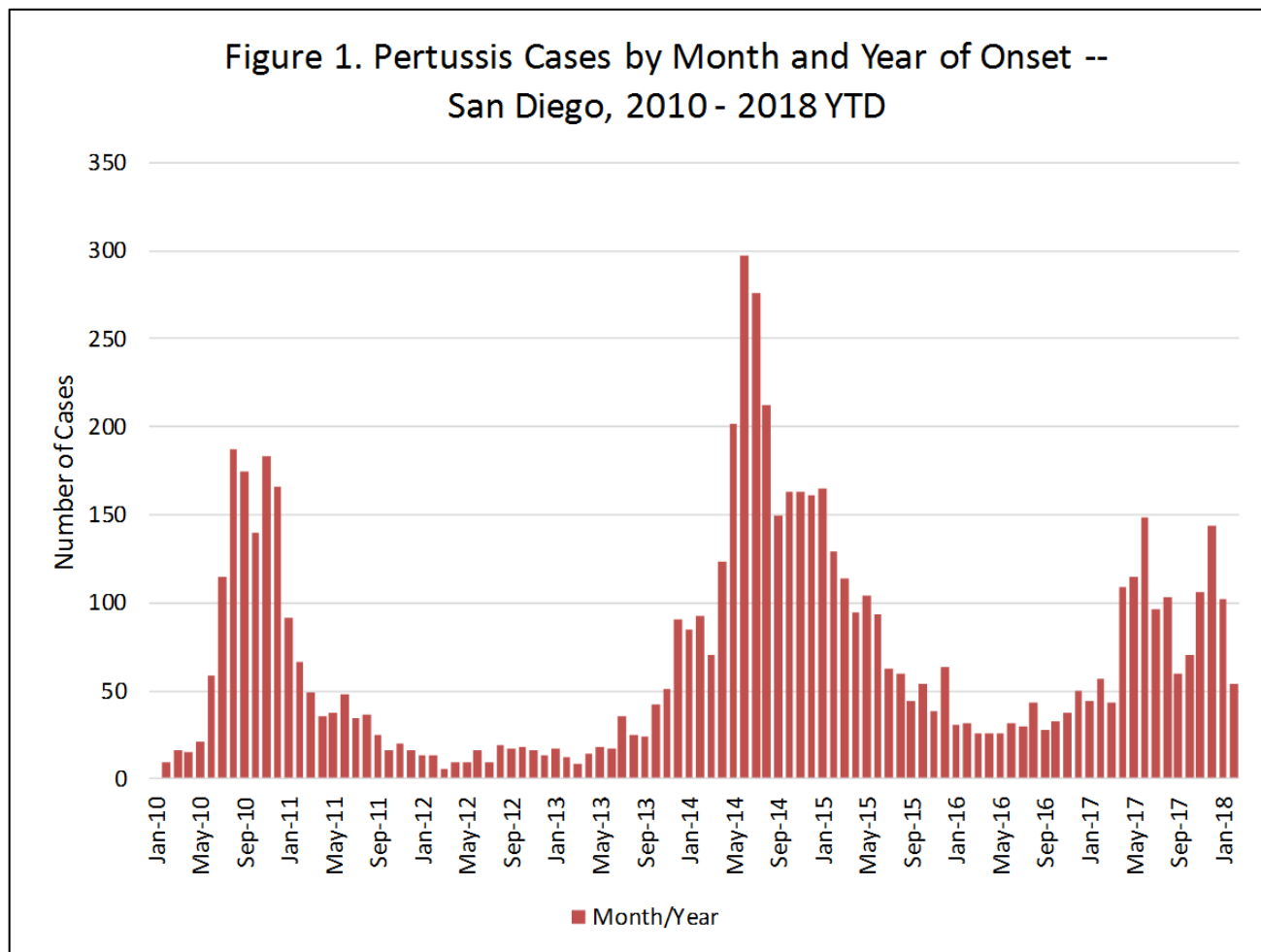
7. Instruct all patients diagnosed with pertussis to avoid contact with infants and pregnant women. In the setting of increased pertussis incidence, the benefit of K-12 school exclusion until cases complete five days of antibiotic treatment is unclear, however the Centers for Disease Control and Prevention (CDC) and the American Academy of Pediatrics currently recommend exclusion until treatment completion.
8. Provide [post-exposure prophylaxis \(PEP\)](#) to all household contacts, caregivers, and other persons who have had direct contact with respiratory, oral, or nasal secretions from a symptomatic case. PEP antibiotic treatment is the same as treatment for disease and should not be shortened. Recommendations for exposed healthcare workers may be found [here](#).
9. Report all suspected or confirmed cases to the HHS Immunization Program via [Confidential Morbidity Report \(CMR\)](#) by FAX to 619-692-5677 or by calling at 866-358-2966 (select option #5).

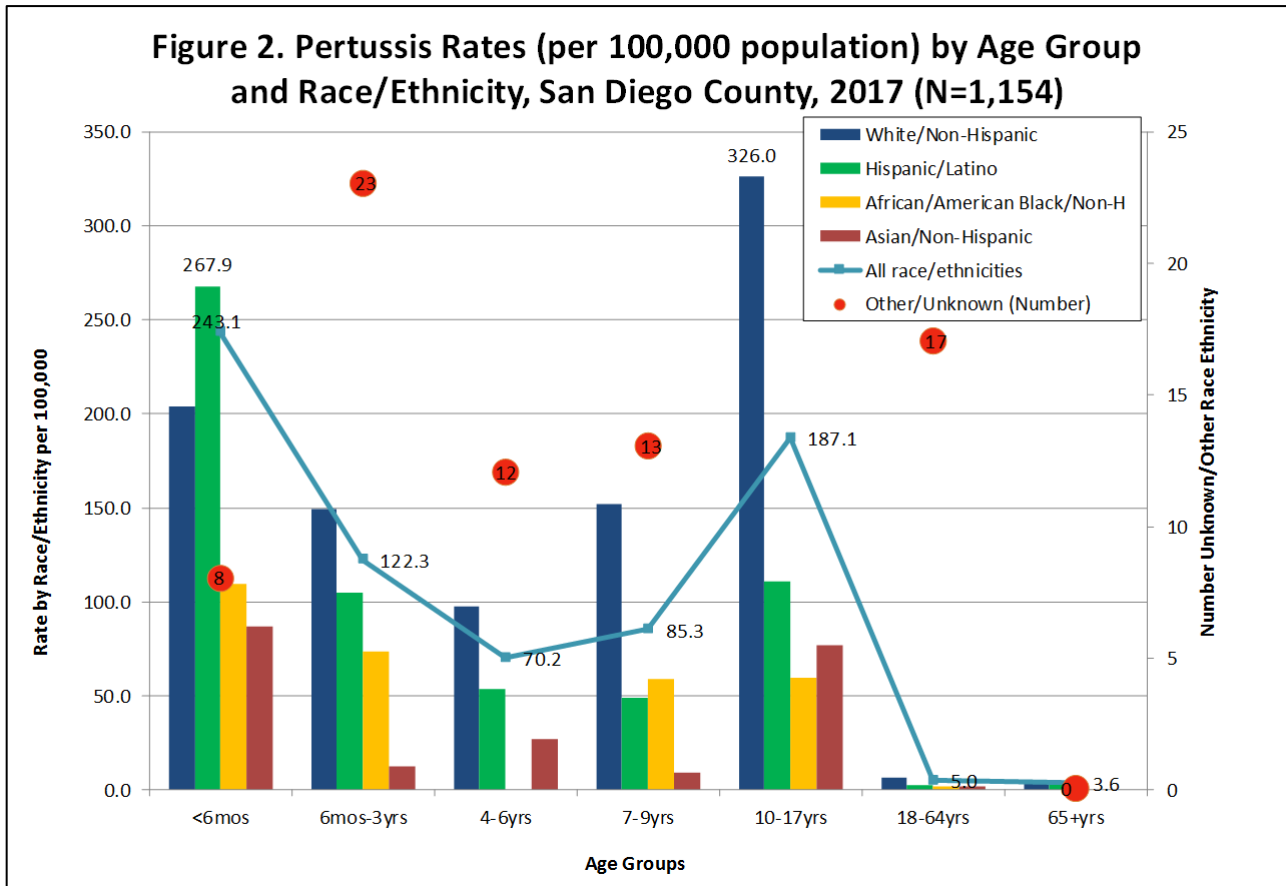
Useful resources for clinicians include the CDPH [pertussis website](#) and CDC [pertussis webpage for clinicians](#). Questions about pertussis diagnosis, management, or prevention may be directed to the [Immunization Program](#).

Thank you for your participation.

CAHAN San Diego

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