

What did we learn from the 2010 California whooping cough epidemic?

July 19 2012

Because whooping cough (pertussis) is almost as contagious as measles (affecting ~12-17 individuals with each case), clinicians are required to report cases of this bacterial respiratory tract infection to the state's department of public health. In 2010, California had the highest number of cases of whooping cough in 60 years. A new study scheduled for publication in *The Journal of Pediatrics* describes the 2010 whooping cough epidemic and details strategies to decrease the incidence of this infection.

Kathleen Winter, MPH, and colleagues from the California Department of Public Health (CDPH) evaluated 9,154 cases of whooping cough with onset between January 1 and December 31, 2010; 809 cases were hospitalized and 10 resulted in death. All deaths and most of the hospitalized cases (62%) were in infants less than 3 months of age, and infants less than 6 months of age had the highest disease rates. In the population aged less than 6 months, [Hispanics](#) had the highest incidence of whooping cough. However, in children and adolescents 1-18 years of age, Whites had the highest incidence.

It is recommended that infants should receive 4 doses of DTaP ([diphtheria](#), tetanus, and pertussis) vaccine by 18 months of age, and children should receive whooping cough "booster" doses at 4-6 years of age (DTaP) and 11-18 years of age (Tdap). Adults are also encouraged to receive the Tdap booster because immunity from both the disease and the vaccine wanes over time. The number of cases of whooping cough was elevated in pre-adolescents, even when they are fully vaccinated,

indicating that protection from the 5-dose DTaP series may wane before the Tdap booster is given. However, the authors believe that the decrease in cases of 11-14 year olds suggests that Tdap is effective for adolescents.

In response to the sharp increase of cases in 2010, CDPH implemented a [public health campaign](#) to distribute educational materials to [health care providers](#) and the public to stress the importance of rapid diagnosis and treatment, especially in young infants, recommend vaccination for adults older than 64 years of age, under-immunized children 7-9 years old, and pregnant women, and provide free Tdap booster vaccines to hospitals, community health centers, and Native American health centers for pregnant and postpartum women and other infant contacts. To decrease the occurrence of whooping cough in infants who are too young to be vaccinated, it is important to immunize household and family members who will be in close contact with the baby (a strategy known as "cocooning") and increase the immunity of the population as a whole to decrease infants' exposure to pertussis.

Prior to the epidemic in 2010, only 23% of California birth hospitals had policies to offer Tdap to postpartum women. In 2011, the Centers for Disease Control and Prevention recognized the extreme vulnerability of young infants and recommended universal Tdap immunization for pregnant women (after the 20th week of gestation) who previously had not received Tdap. According to Ms. Winter, "In the absence of better vaccines, it is imperative that strategies to protect young infants directly, such as maternal vaccination during pregnancy, be evaluated for effectiveness. In addition, it is critical that providers continue to be vigilant and promptly diagnose and treat young infants with [whooping cough](#)."

More information: "California Pertussis Epidemic, 2010" by Kathleen Winter, MPH, Kathleen Harriman, PhD, MPH, RN, Jennifer

Zipprich, PhD, Robert Schechter, MD, John Talarico, DO, MPH, James Watt, MD, MPH, and Gilberto Chavez, MD, appears in *The Journal of Pediatrics*, [DOI 10.1016/j.jpeds.2012.05.041](https://doi.org/10.1016/j.jpeds.2012.05.041)

Provided by Elsevier

Citation: What did we learn from the 2010 California whooping cough epidemic? (2012, July 19) retrieved 3 January 2023 from <https://medicalxpress.com/news/2012-07-california-whooping-epidemic.html>

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