

Family members most often source of whooping cough in young infants

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Infants with whooping cough were most likely infected by the people they live with, according to a multi-country study led by researchers from the University of North Carolina at Chapel Hill School of Public Health.

The study found that parents were the source of pertussis, commonly known as whooping cough, in 55 percent of infants. In all, household members including siblings, aunts and uncles, cousins and grandparents were responsible for 75 percent of pertussis cases among infants for whom a source could be identified.

The results appear in the April 2007 issue of the *Pediatric Infectious Disease Journal*.

Pertussis is a highly contagious bacterial infection. Although pertussis vaccination has reduced the number of reported cases in industrialized countries by more than 95 percent from what it was in the 1950s, the number of reported pertussis cases in the United States has tripled in the past two decades.

"It is important to understand how the disease is spread, particularly to infants who are too young to be vaccinated themselves, so that steps can be taken to prevent infections in these vulnerable infants and potentially save lives," said Dr. Annelies Van Rie, assistant professor of epidemiology in the UNC School of Public Health and the study's senior author.

"It is troubling to learn that infants are often infected with pertussis by their own family members, who are often unaware of having pertussis themselves, and in whom pertussis could have been prevented if they had received a pertussis booster vaccination," she said.

The study, funded by grants from the Institut Pasteur Foundation, Sanofi Pasteur and Sanofi Pasteur-MSD, was conducted over a 20-month

period in four countries – Canada, France, Germany and the United States. The researchers found that among infants with pertussis for whom the source case could be identified, parents were the primary source of pertussis in infants, followed by siblings (16 percent), aunts/uncles (10 percent), friends/cousins (10 percent), grandparents (6 percent) and part-time caregivers (2 percent).

"Ongoing research, such as this study, demonstrates that adolescents and adults can transmit pertussis to infants," Van Rie said. "Pertussis immunization of adolescents and adults, especially those in contact with young infants would not only protect themselves from pertussis, but would also protect young infants from pertussis and could save lives."

Newborns who are too young to be fully vaccinated against the disease are more vulnerable to severe pertussis and face the possibility of serious complications and even death. Infants account for more than 90 percent of pertussis deaths in the U.S.

The disease is spread through airborne droplets that are transmitted when an infected person coughs or sneezes. It may start as a mild cold or dry cough that persists and eventually worsens. The infected person may look and feel healthy between episodes of coughing. If left untreated, people infected with pertussis can spread the disease for several weeks.

Reports of pertussis have increased most dramatically among adolescents and adults. This is partly because pertussis immunity from early childhood vaccinations wears off, leaving adults and adolescents susceptible to the disease. Most adolescents and adults are not diagnosed with pertussis because they frequently have milder cases of the disease and physicians still perceive pertussis as a childhood disease.

The U.S. Centers for Disease Control and Prevention now recommends that adults and adolescents be given a tetanus-diphtheria-pertussis booster (Tdap) in place of the tetanus-diphtheria (Td) booster to reduce the burden of pertussis in the United States.

Source: University of North Carolina at Chapel Hill

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