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Study Finds Parents Pass Whooping Cough to Babies

By NICHOLAS BAKALAR

Rates of [pertussis](#), or whooping cough, have been steadily increasing since the 1980s, and a new study reports that infants most often catch the disease from older household members, especially infected parents. Adults can transmit the illness without having any symptoms themselves.

There were more than 25,000 cases reported in 2005, the latest year for which there are figures, up from an average of 2,900 a year in the 1990s. The panel that advises the [Centers for Disease Control and Prevention](#) now recommends [vaccination](#) for all adolescents and adults up to 64, and for older people if they have close contact with babies. While the disease is usually mild in adults, it can be fatal in infants.

“The big problem in previous studies was that they looked at those who had symptoms, and then extrapolated from them to people for whom they had no information,” said Dr. Annelies Van Rie, the senior author.

“We had information on all close contacts independent of symptoms,” Dr. Van Rie said, “and therefore our conclusions do not have the bias of incomplete information. Our study confirms that parents are an important source for infant pertussis.”

Children with pertussis almost always suffer its vivid symptoms — bouts of violent coughing, followed by gasping for breath with a characteristic high-pitched whoop. Young infants appear especially ill and distressed, sometimes even turning blue as they gasp for air, and then vomiting after the coughing episode. The disease is spread by contact with airborne droplets from coughing or sneezing.

The researchers tracked 91 cases of pertussis in infants less than 6 months old in 12 hospitals in France, Germany, the United States and Canada. They also examined 347 of the infants’ contacts, and found that 76 percent to 83 percent of the transmissions to infants could be attributed to a household member. Half the infections were from parent to child.

Dr. Margaret K. Hostetter, who leads the department of [pediatrics](#) at Yale, was impressed with the study’s methodology and said it reinforced the case for early vaccination.

“Sometimes we think waiting a month or two beyond the appropriate time for the immunization isn’t a big deal,” she said. “This study shows that those very early months are extremely important for a baby’s protection.” Dr. Hostetter was not involved in the [study](#), which appears in the April issue of The Pediatric Infectious Disease Journal.

The authors write that their analysis benefits from its strong prospective design in which cases and transmission routes were detected with laboratory analysis. In addition, the study included examination of cases in which there were no symptoms, calling into question the common belief that asymptomatic people cannot transmit the disease.

At the same time, the researchers acknowledge that they were unable to identify a source of infection in a significant proportion of infants, which may suggest that casual contacts outside the family area are also a source of infection.

“Parents play the most important role,” said Dr. Van Rie, who is an assistant professor of epidemiology at the [University of North Carolina](#). “But casual transmission in the community is not negligible. So the vaccination of adults in the community is important.”

The pertussis vaccine now used in the United States for older children and adults is given in a single-dose combination known as Tdap for tetanus, diphtheria and acellular pertussis. There are two versions of the vaccine, one for people 10 to 18, and the other approved for ages 11 to 64.

A stronger dosage of the vaccine, often referred to as DTaP, is recommended for all infants, and is usually given at ages 2, 4 and 6 months with a fourth dose at about 15 to 18 months. A booster dose is recommended at 4 to 6 years, before the child enters school.

“When adults get vaccinated,” Dr. Van Rie said, “they protect themselves from a mild disease. But they protect infants from a disease that can be deadly.”

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