Cases of whooping cough in US highest in decades

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Pertussis is at its highest level nationally in a half-century. But cases of pertussis, also known as whooping cough, often decline in late fall into early winter.

With 16 deaths nationwide this year - most of them infants no more than 3 months old - a decline that is more than a typical seasonal variation could be good news, as pertussis usually appears in waves several years apart. On the other hand, several states, mainly in the West, have been fighting multiyear outbreaks; Washington state's reached levels even higher than before a vaccine arrived in the 1940s.

At that time, pertussis caused 5,000 to 10,000 deaths a year in the United States. The classic "whoop, whoop" sound of children gasping for air amid coughing spasms set parents on edge. The disease is so contagious that up to 90 percent of close contacts who don't have immunity will become infected; a single sneeze can do it.

Sarah Long, a baby in 1945, remembers her mother talking about the time when all five children in the family came down with pertussis. "She did not change clothes for two weeks," said Long, chief of infectious diseases at St. Christopher's Hospital for Children in Philadelphia. She stayed in the room "to make sure we would all make it through coughing spells."

A "whole cell" vaccine using a killed Bordetella pertussis bacterium was added to diphtheria and tetanus toxoids as combination immunizations in

the late 1940s; within two decades, pertussis in the United States was almost gone.

Most of the world still uses that DTwP vaccine. But the side effects - pain and swelling at the injection site, and fever - were worse than from other vaccines. And there were fears, later disproved, that it caused neurological damage. As the disease faded from memory, some parents questioned the vaccine's worth.

The United State began switching to an "acellular" version made with components of the bacterium, known as DTaP, in 1992; by 2000, nearly all children got the new version of the full five-shot series. A few years later, pertussis began to rise. "It was borne out over time that those who got only the acellular vaccine got less protection by age 7, 8, and 9," said Long, a member of a pertussis working group for the Centers for Disease Control and Prevention.

The old vaccine didn't fade until around age 11, she said. The difference is now believed to be the biggest reason for the recent spikes.

Parents' refusal to vaccinate their children over religious beliefs or philosophical objections has been cited in some outbreaks around the country. But public health officials say they are not a factor in this region. Immunization rates are above average in Pennsylvania and New Jersey, and there is no pattern to disease reports here.

To counteract the waning immunity, the national vaccine advisory panel in 2005 recommended a booster shot using the adult formulation (Tdap) at age 11-12, and is finalizing guidance that women get vaccinated during each pregnancy, passing antibodies on to their newborns.

Most children who get the disease are infected by adults. Research shows that 75 percent of infant cases were transmitted by household contacts or

caregivers, and current guidelines call for them to be vaccinated. But adults are not used to getting shots for anything other than the flu, and fewer than 10 percent of adults have gotten Tdap.

The vaccine has caused other conundrums.

Even as immunity wanes, it lessens severity of the disease, so pertussis is less likely to be diagnosed based on symptoms, which tend to be milder in older people. It also complicates standard laboratory tests, which underdiagnose the infection by a factor of 10 or more.

"Pertussis is a weird kind of disease," said Gary Emmett, chief of inpatient pediatrics at Thomas Jefferson University Hospital. It looks like a cold: runny nose, aches, low fever, and a mild cough. It often goes away in adults after a week or two - plenty of time to have infected children.

The cough may continue, Emmett said, and "could be mistaken for asthma." Some cases then worsen, with vomiting and coughing fits that lead to exhaustion.

The youngest infants are unable to gasp for air with the classic "whoop," but many briefly stop breathing, known as apnea. More than half are hospitalized; of those, 1 percent to 2 percent die, the CDC reports.

As pertussis spreads - 38,056 cases have been reported nationally since January, the most since 1959 - there is a growing recognition that something must be done. Among the possibilities: strengthening the vaccine somehow, developing a new one, returning to the old one, and giving a booster shot at a younger age.

"This is a miserable disease," said Caroline Johnson, director of the Division of Disease Control. "I don't want to be the parent of a kid who

is suffering."