

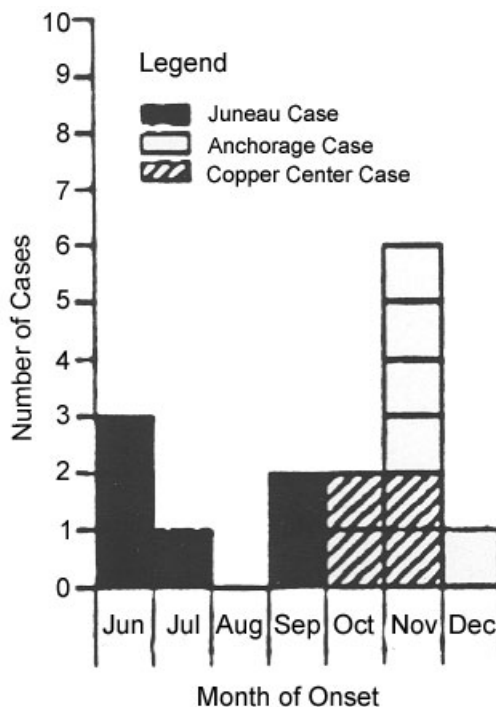


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## Pertussis (Whooping Cough) Resurfaces in Alaska

Since early June, 15 cases of pertussis have been reported from Juneau (6 cases), Copper Center (4 cases), and Anchorage (5 cases) [Figure]. This is the third greatest number of pertussis cases reported annually in Alaska since 1971: only in 1985 and 1978 were more cases reported (30 and 20 cases, respectively).



Twelve (80%) of the cases were confirmed by culture of nasopharyngeal secretions. Affected persons ranged in age from 2½ months to 49 years (mean, 13.4 years; median, 8 years), including 8 children, three adolescents, and four adults. Eleven were female. Three patients were hospitalized; all have recovered.

The first four cases--all Juneau residents--appear to have been related. The index case was a 21-year-old Vermont man who arrived on May 27 to visit a Juneau family. He developed a cough on May 31 and was seen on June 8 by a physician, who prescribed erythromycin. He left Juneau on June 9 and could not be located. On June 10, a 16-month-old girl in the household developed a cough, which later became paroxysmal. A nasopharyngeal (NP) culture collected on June 19 yielded *B. pertussis*. Her 3-year-old brother developed a cough on June 26. He was not medically evaluated or cultured, but he received erythromycin for at least six days. The third case was a 33-year-old woman who had visited the home on five occasions during June 14-27; she became ill on June 28. The fourth was a 30-year-old woman who had lived with the family in June; she became ill on July 1. Two Juneau residents who developed pertussis in September were not obviously linked to this cluster.

Two of the Copper Center patients were members of a high-school basketball team which had recently competed with teams from Eielson AFB, Valdez, and Delta. Their schools were advised to institute surveillance for possible cases of pertussis.

The five cases reported in Anchorage occurred among members of two families who lived together in November.

Three cases (aged 8, 14, and 15 years) had received both a primary series and a booster dose of diphtheria-tetanus-pertussis (DTP) vaccine. Twelve had no documentation of having received a primary series of the vaccine (three persons had a single dose; nine had none).

Pertussis is an acute respiratory infection caused by *Bordetella pertussis*. It is characterized initially by a nasal discharge (catarrh); during the first 1-2 weeks of illness, an irritating cough develops and becomes paroxysmal, and lasts for 1-2 months or longer. Paroxysms consist of a series of violent coughs followed by a characteristic crowing or high-pitched inspiratory whoop, often ending with the expulsion of tenacious mucus or with vomiting. Adults and infants may not have the typical whoop or cough paroxysm. The number of pertussis deaths in the USA is low; about 90% of deaths are among children under one year of age, and 75% are under 6 months. The case-fatality rate is 0.5% in infants less than 6 months old. Pneumonia is the most common cause of death.

Man is the only reservoir of *B. pertussis*. The disease is transmitted by direct contact with respiratory discharges of infected persons, primarily by airborne droplets. Often it is brought home by an older sibling or a parent. The incubation period is 7-10 days, rarely exceeding 14 days. It is highly communicable in the early catarrhal stage before onset of paroxysmal cough. Cases treated with erythromycin become non-infectious after about 5 days of therapy.

Pertussis is a growing problem in this country. During 1979-82, an average of 1,750 cases were reported annually in the USA. More than 4,000 cases were reported nation-wide during 1989. Declining pertussis immunization rates probably account for much of this increase. Cases in adolescents and adults in the USA occur because of incomplete immunization and waning immunity.

A substantial number of children state-wide are unimmunized or underimmunized against pertussis. During the 1989-90 school year, 5.7% of 5,909 day-care center (DCC) attendees over age 2 years whose immunization records were audited, had no

documentation of receiving 3 or more doses of DTP vaccine. It is worth noting that the percentage of DCC attendees with religious exemptions to immunization has doubled--from 0.25% to 0.5%--since 1986-87.

Pertussis disease can be simulated by parapertussis (a similar but milder illness caused by *B. parapertussis*) and by viral illnesses, especially those caused by adenoviruses.

Diagnosis is based on the recovery of *B. pertussis* from NP swabs obtained early in the illness. Direct fluorescent antibody (DFA) stains of NP secretions may provide rapid presumptive diagnosis; however, DFA testing may have low sensitivity and variable specificity. DFA test slides and Regan-Lowe culture transport medium are available from State Public Health Laboratories. These tests should be reserved for persons with pertussis-like respiratory symptoms and close contacts of confirmed cases.

The acceptance and use of pertussis vaccine has suffered because of concerns about its safety. However, extensive reviews of studies have concluded there is no causal association between DTP vaccination and either SIDS or permanent neurological damage. Because morbidity and mortality from pertussis are greatest in the very young, opportunities for age-appropriate vaccination should not be missed. DTP vaccine should not be withheld because of mild acute illness in an otherwise well child or delayed because of prematurity (DTP should be given in usual doses at the usual chronologic ages).

Cases should be treated with erythromycin to shorten their period of communicability. A 14-day course of erythromycin for all close contacts is recommended. Close contacts under age 7 years should also be offered a dose of DTP if they have not already received 4 DTP doses or have not received a DTP dose within the prior 3 years. DTP vaccine is not given routinely to children older than 6 years.

Section of Epidemiology staff can assist with the diagnosis of pertussis. All suspected or confirmed cases of pertussis should be reported to the Section of Epidemiology at 561-4406.

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