State of Alaska Epidemiology Bulletin

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Pertussis Update — Alaska, 2024–2025

Background

Pertussis (whooping cough) is a vaccine-preventable bacterial illness that spreads through respiratory droplets.[1] Infants are at highest risk for severe disease and may show few or no symptoms before developing respiratory distress, apnea, or bradycardia. In older children or adults, symptoms typically start 5–10 days after exposure and include runny nose, fever, and a mild cough, which may progress into paroxysmal coughing. The characteristic inspiratory "whoop" sound of pertussis is most typically displayed by children aged 6 months to 5 years following coughing fits. Patients may also experience vomiting when coughing or having difficulty breathing. Infants whose mothers were not vaccinated during pregnancy, or who are not up to date on their pertussis immunization, are at the highest risk for hospitalization and death.[2] Vaccination remains the most effective way to prevent pertussis infection.[3]

Pertussis is a reportable condition in Alaska. During 2019–2023, the Section of Epidemiology (SOE) received an average of 13 reports of pertussis per year. This *Bulletin* summarizes the epidemiology of a large pertussis outbreak that occurred in Alaska during 2024–2025.

Methods

SOE reviewed pertussis reports received during April 2024 through April 2025 and classified cases as probable or confirmed. Patients, or their parents/guardians, were interviewed by public health nurses to identify risk factors for illness and close contacts. Vaccination histories were reviewed using VacTrAK, Alaska's immunization information system.

Results

During April 2024 through April 2025, 679 confirmed and probable cases of pertussis were reported in Alaska, resulting in an incidence rate of 92 cases per 100,000 population. By region, 34% of cases were in Anchorage (n=228, rate: 78/100,000), 20% in Mat-Su (n=136, 117/100,000), 12% in Southwest (n=82, 198/100,000), 11% in Interior (n=74, 67/100,000), 10% in Gulf Coast (n=69, 83/100,000), 8% in Southeast (n=56, 79/100,000) and 5% in Northern (n=34, 123/100,000). Among the 74 patients aged <1 year, 50 (68%) were not up to date on their pertussis immunization. Twenty-nine (4.3%) patients were hospitalized. Of those, 18 (62%) were aged <1 year and 12 (29%) were aged <3 months. Among the hospitalized infants aged <3 months, nine (75%) had mothers who had *not* received Tdap during their pregnancy. One death occurred, involving an unvaccinated infant.

Discussion

While the pertussis case counts were lower than usual during and immediately after the COVID-19 pandemic, cases surged in Alaska and nationally beginning in fall 2024. During this outbreak, the number of reported cases in Alaska was more than seven times higher than in either 2018 or 2019.[4] This increase is thought to be due to decreasing immunization coverage as well as waning immunity.

During the summer and fall of 2024, unvaccinated children in Alaska were more than 13 times as likely to contract pertussis as those who were up to date on their pertussis immunizations.[4] In response, the SOE implemented targeted community messaging, educational outreach, and a media campaign to raise awareness and encourage vaccination. SOE also promoted key strategies to prevent illness after exposure, including recommending prophylactic antibiotics for household contacts, people in high-risk groups, and selected others.[5]

Maternal vaccination with Tdap during weeks 27–36 of pregnancy substantially reduces the risk of pertussis in infants and is the only source of protection for infants aged <2 months, when the risk of death from pertussis is greatest.[2] Maternal Tdap vaccination also reduces pertussis-related hospitalizations in infants aged <3 months by up to 90%.[2]

Recommendations

1. Ensure every pregnant woman receives one dose of Tdap during gestational weeks 27–36 of each pregnancy, regardless of prior Tdap history.
2. Ensure that infants complete the primary DTaP series on schedule, at age 2 months, 4 months, and 6 months.
3. Ensure children receive DTaP boosters at age 15–18 months and at age 4–6 years.
4. Ensure that children aged 11–12 years receive one dose of Tdap, followed by a booster dose every 10 years throughout adulthood. Provide catch-up immunization as appropriate for any child or adult with missed doses.[6]
5. Ensure that household members and caregivers of infants are fully vaccinated to help protect infants.
6. Obtain a nasopharyngeal swab specimen for pertussis testing. Testing is available at commercial laboratories and the Alaska State Public Health Laboratory (ASPHL).
7. Follow CDC post-exposure prophylaxis guidelines for persons at increased risk for severe disease.[5]
8. Report suspected or confirmed cases of pertussis to SOE by phone: 907-269-8000 or fax: 907-561-4239 using the reportable infectious diseases form.

References

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5. CDC. Postexposure Antimicrobial Prophylaxis. Available at: https://www.cdc.gov/pertussis/php/postexposure-prophylaxis/index.html
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Acknowledgments

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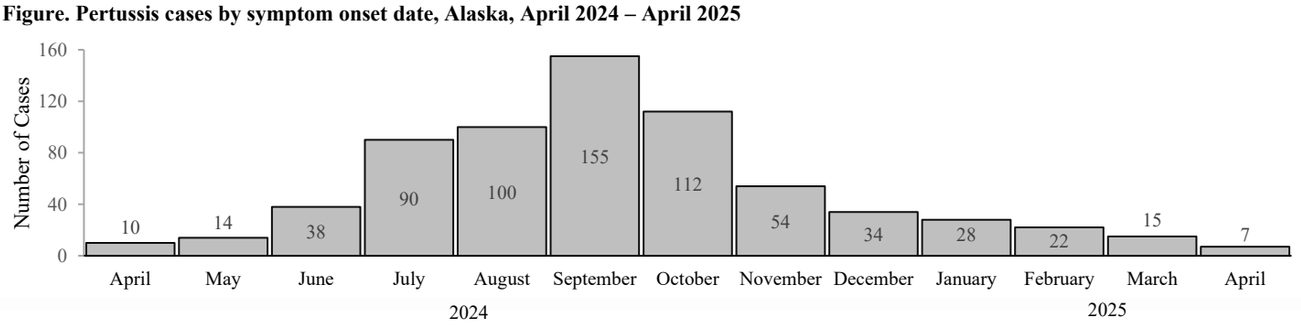
Figure. Pertussis cases by symptom onset date, Alaska, April 2024 – April 2025



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