



Department of Health and Social Services
William J. Streur, Commissioner

Division of Public Health
Ward Hurlburt, MD, MPH, CMO/Director

Editors:
Joe McLaughlin, MD, MPH
Louisa Castrodale, DVM, MPH

3601 C Street, Suite 540
Anchorage, AK 99503 <http://www.epi.Alaska.gov>

Local (907) 269-8000
24 Hour Emergency 1-800-478-0084

Bulletin No. 5 January 30, 2013

Pertussis Epidemic — Alaska, 2012

Background

Pertussis (whooping cough) is an endemic disease in the United States that can cause serious and sometimes life-threatening complications in infants and young children -- particularly those who are not fully vaccinated. Peaks in pertussis cases typically occur every 3–5 years. During 2012, the Alaska Section of Epidemiology (SOE) documented 356 cases of pertussis in Alaska, far surpassing case counts from the previous 3 years.¹ This *Bulletin* summarizes selected epidemiologic characteristics of Alaska's 2012 pertussis cases.

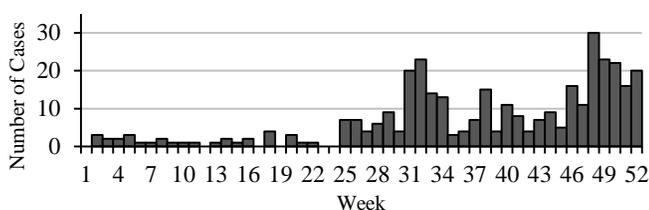
Methods

Data were obtained from SOE's reportable conditions database and paper records. Cases were classified as either confirmed or probable according to national case definition standards.² Additional immunization information was obtained from VacTrAK, Alaska's immunization information system. Persons aged <18 years were considered up-to-date for pertussis vaccination if evidence of age-appropriate vaccination consistent with the Alaska Immunization Schedule was documented by a parent/patient report or medical records.³ Adults were considered up-to-date if they had received at least one Tdap vaccination prior to infection. Rate calculations were performed using Alaska Department of Labor and Workforce Development population data.

Results

In 2012, a total of 356 pertussis cases (322 confirmed and 34 probable) were reported to SOE, yielding an incidence of 49.3 cases per 100,000 persons. Case counts increased precipitously in late July and remained high through the last week of December (Figure).¹ Of the 356 infected persons, 200 (56%) were female, and 247 (69%) were aged <15 years (Table 1). Vaccination status at time of illness was known for 285 (80%) cases; of those, 168 (59%) were up-to-date.

Figure. Cases of Pertussis by Onset Date — Alaska, 2012



Of the 291 (82%) infected persons for whom race was known, incidence rates were highest among Alaska Natives (71 per 100,000) and Whites (37 per 100,000). Rates by region were highest in the Northern region (Table 2)

Discussion

In 2012, the incidence of reported pertussis cases in Alaska was over four times the national average incidence of 11.6 cases per 100,000 persons, and a number of states are reporting rates considerably higher than the Alaska rate.⁴

Similar to what has been found in other states, the high illness rate among Alaska children aged 10–14 years is suggestive of early waning immunity from acellular pertussis vaccines.⁵ This is particularly underscored by the fact that 10–14 year-old children had the second highest up-to-date immunization coverage status of any age-group (Table 1). Importantly, while fully vaccinated children can develop pertussis, as a whole, their clinical course and infectiousness are considerably reduced compared to unvaccinated children.⁵ Moreover, unvaccinated children are at considerably greater risk for pertussis than children who are fully vaccinated with DTaP.⁵

Vaccination status was not recorded for more than 20% of reported cases. Increased reporting and recording of vaccination status would improve our understanding of vaccination coverage and efficacy.

Recommendations

1. Ensure that children are age-appropriately immunized with a pertussis-containing vaccine (DTP/DTaP).
2. Ensure that adolescents/adults receive one dose of Tdap.⁶
3. Prevent additional transmission by using appropriate antibiotic prophylaxis of contacts to persons with pertussis.
4. Report all cases of pertussis to SOE via fax (907-561-4239) or telephone (907-561-4234 or 800-478-1700).
5. Consult the Alaska State Public Health Laboratory Manual for pertussis specimen submission information (available at: http://dhss.alaska.gov/dph/Labs/Documents/publications/Lab_Svcs_Manual.pdf).

References

1. SOE. Alaska Pertussis Cases by Year, Region, and Age Group. Available at: <http://www.epi.alaska.gov/id/dod/pertussis/cases.htm>
2. CDC. NNDS Case Definitions. Available at: http://wwwn.cdc.gov/nnnds/document/2012_Case%20Definitions.pdf
3. Alaska 2012 Child and Adolescent Immunization Schedule. Available at: <http://www.epi.alaska.gov/id/iz/schedule.pdf>
4. CDC. Pertussis Outbreaks. Available at: <http://www.cdc.gov/pertussis/outbreaks.html>
5. CDC. Pertussis Epidemic — Washington, 2012. *MMWR* 2012;61(28):517-22. Available at: <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6128a1.htm>
6. SOE. Expanded Use of State-Supplied Tdap and MCV4 Vaccines. Bulletin No 12, May 9, 2011. Available at: http://www.epi.alaska.gov/bulletins/docs/b2011_12.pdf

Table 1. Cases of Pertussis by Age and Immunization Status — Alaska, 2012

Age (years)	AK Population	Pertussis Cases	Incidence per 100,000	Immunization Status		Unknown
				Up-to-date	Not up-to-date	
0–4	54,971	96	174.64	38 (40%)	44 (46%)	14 (15%)
5–9	51,548	66	128.04	43 (65%)	17 (26%)	6 (9%)
10–14	51,382	85	165.43	54 (64%)	16 (19%)	15 (18%)
15–19	50,574	21	41.52	10 (48%)	5 (24%)	6 (29%)
20–64	454,898	85	18.69	20 (24%)	34 (40%)	31 (36%)
65+	58,817	4	6.80	1 (25%)	1 (25%)	2 (50%)

Table 2. Cases of Pertussis by Region and Immunization Status — Alaska, 2012

Region	Cases	Incidence per 100,000	Immunization Status		Unknown
			Up-to-date	Not Up-to-date	
Anch/Mat-Su	178	46	79 (44%)	48 (27%)	51 (29%)
Gulf Coast	44	55	26 (59%)	14 (32%)	4 (9%)
Interior	71	63	18 (25%)	38 (54%)	15 (21%)
Northern	38	141	30 (79%)	6 (16%)	2 (2%)
Southeast	8	11	2 (25%)	6 (75%)	0 (0%)
Southwest	16	38	11 (69%)	5 (31%)	0 (0%)