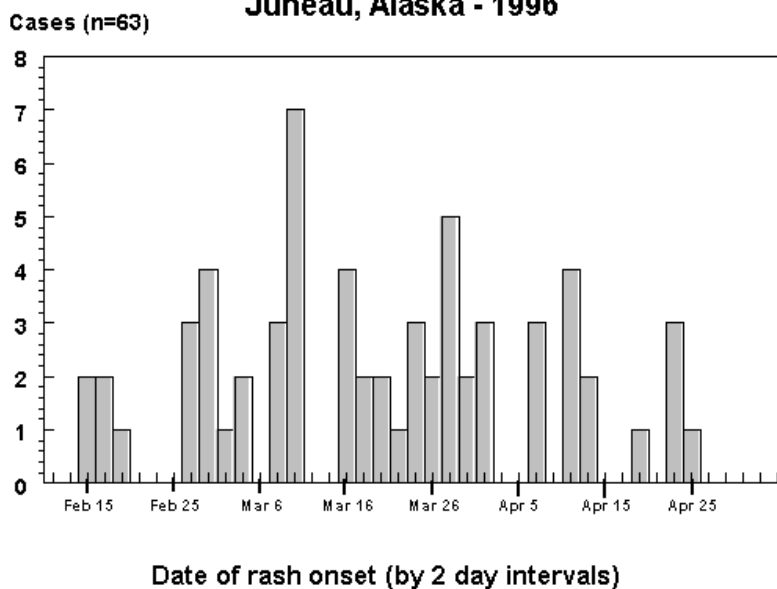




Bulletin No. 19
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Measles Outbreak - Juneau, Alaska 1996

The largest outbreak of measles among school aged children in the United States since 1994 occurred in Juneau, Alaska from February 16 through April 25, 1996. Of 63 confirmed cases reported to the Section of Epidemiology (Figure 1), 47 were serologically confirmed, and virus was cultured from 12. Of the 63 cases, 41 (65%) were among school-aged children.

**FIGURE 1. Confirmed measles cases, by date of rash onset
Juneau, Alaska - 1996**



The first five confirmed cases were four children and a teacher at an elementary school who had rash onset from February 16 through 19. No source case was found, although there were two confirmed cases employed at the Seattle-Tacoma airport, a major airport gateway to Juneau, with onset of illness one incubation period before onset of the Juneau index cases. Viral isolates from the Juneau outbreak were genotypically similar to viruses recently isolated in Europe.

Cases ranged from 8 months to 45 years of age with a median age of 11 years. Of the 63 cases, one was less than 1 year of age; 10 (16%) were 1-4 years; 41 (65%) were 5-19 years and 11 (18%) were ≥ 20 years.

There were two hospitalized cases: a child with dehydration and an adult with neutropenia. There were no deaths among cases.

Measles in Juneau was transmitted largely through school contact. The overall public school attack rate was 40/5400 (0.7%). The highest school attack rates ranged from 7/127 (3.9%) at the high school annex, 15/687 (2.2%) at a middle school, to 7/525 (1.3%) at the elementary school of the index cases. As documented in school records, prior to the outbreak over 99% of 5,400 public school children in Juneau had received at least one dose of measles-containing vaccine (MCV).

None of the 63 cases had received two doses of MCV. Thirty-three (52%) had received one dose of MCV after their first birthday. Among the 30 (48%) who were not vaccinated, 24 (80%) were eligible to be vaccinated (i.e., aged >12 months and born on or after 1/1/57). Of these unvaccinated cases who were eligible to be vaccinated, all 12 school children had religious exemptions and 2 of 9 children aged 1-4 years were siblings of these unvaccinated school children. Three (50%) of adult cases 20-38 years were unvaccinated.

Outbreak control measures focused on insuring that school aged children and contacts of suspected measles cases had received at least one dose of MCV. Several private physicians markedly increased their provision of MCV during the outbreak. Active surveillance of doctor's offices, schools and the Bartlett Hospital emergency room occurred during the outbreak. Weekly outbreak updates were faxed to health care providers and public health nurses in Juneau and Southeast Alaska. No confirmed cases of measles were found in Alaska outside of Juneau during the outbreak.

Discussion: Prior to February 1996, there had been no measles transmission in Alaska schools since 1976. Greater than 99% of Juneau school children had received at least one dose of MCV. Measles outbreaks among school aged children vaccinated with one dose of MCV have been previously documented.¹ Currently 42 states require at least one school grade cohort to have been vaccinated with two doses of MCV for enrollment. Alaska school children in kindergarten and first grade will be required to receive a second dose of MCV for school entry in the fall of 1996 (Epidemiology Bulletin No. 18, April 30, 1996).

Second Dose Measles Vaccine Alaska Requirement at a Glance	
<i>What:</i>	Documentation of receipt of two doses of measles vaccine
<i>For Whom:</i>	All students in kindergarten or first grade in Alaska schools.
<i>When:</i>	1996-1997 school year (fall of 1996)
<i>How:</i>	<p><u>Dose #1</u></p> <p><i>Medical recommendation:</i> Give at 12-15 months of age.</p> <p><i>For school compliance:</i> Must be given after 12 months of age</p> <p><u>Dose #2</u></p> <p><i>Medical recommendation:</i> Give at 4-6 years of age, prior to school entry.</p> <p><i>For school compliance:</i> Must be given at least 1 month (28 days) after dose #1.</p>
Questions? (907) 269-8000	

References

1. Gustafson TL, Lieven AW, Brunell PA, et al. Measles outbreak in a fully immunized secondary-school population. N Engl J Med. 1987;316:771-774.

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