State of Alaska Epidemiology **Bulletin**

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MEASLES OUTBREAK ENDS

The largest measles outbreak in Alaska in more than 19 years has ended. More than four incubation periods (9 weeks) have now elapsed since the last case of measles was reported to the Section of Epidemiology. Since the onset of this outbreak, 80 cases of measles were reported (Figure).

Measles was introduced to Alaska in January 1990. Three unrelated, unimmunized children less than 15 months of age were exposed in the waiting room of a medical office in Ketchikan and later developed measles. The index case was not identified. One of these three children then transmitted measles to 11 other persons at a day-care center (DCC) he attended in Ketchikan.

Of the 11 DCC-associated cases, four were hospitalized at the Ketchikan General Hospital. They infected 10 other persons at the hospital. Three were patients who soon after being infected were discharged while they were incubating measles: two returned to their respective villages (Klawock and Metlakatla) and transmitted measles to others in their villages; the third was transferred to the Alaska Native Medical Center (ANMC) in Anchorage.

Measles then was transmitted at ANMC to others. Patients infected at ANMC transmitted measles to Nuiqsut, Anchorage, and the Kachemak Bay area. ANMC was probably also the source of measles that reached Bethel. Measles then was introduced into Fairbanks from Bethel and directly from an out-of-state source.

Epidemiologic investigation concentrated on active and passive surveillance to detect new measles cases, and identification and vaccination of all possible susceptible contacts. A second dose of measles vaccine was recommended for all Ketchikan school children who had been vaccinated before 15 months of age. We also recommended measles vaccination for children as young as six months of age in some outbreak areas (Ketchikan, Metlakatla, Craig, Klawock, Nuiqsut, English Bay, Port Graham, Homer, and Bethel).

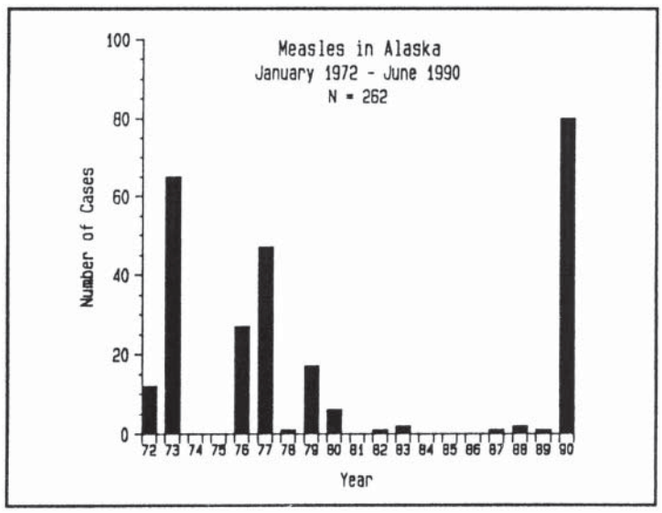
MEASLES CASES - ALASKA

Classification		Number	(% of total)
UNVACCINATED		59	(74)
Vaccine indicated but not given	20		
Routine vaccination not indicated	39		
Person <16 mos. of age	29		
Persons born before 1957	9		
Laboratory immunity/MD diagnosis	1		
Medical exemption	0		
VACCINATED (History of receiving measles vaccine)		21	(26)
TOTAL		80	(100)

Of the 80 cases, 48 (60%) were serologically confirmed. Twenty-four patients (30%) were hospitalized because of complications (usually dehydration or pneumonia). There was one death in a 4-month-old hospitalized child who was recovering from bacterial meningitis, but then developed respiratory syncytial virus (RSV) pneumonitis, and, finally, measles.

Children less than five years of age accounted for 43 (54% of all) cases. Only 10 (13%) were persons 5-19 years old; in contrast, 46% of all cases reported in the United States during 1989 were in this age group. Cases ranged in age from 3 months to 38 years. Forty-seven cases (59%) were Natives; 33 were non-Natives.

Of 59 persons with measles who were unvaccinated, 39 persons were not eligible for routine vaccination: 29 were less than 16 months of age, 9 (11%) were born before 1957 (and were presumably immune), and one had physician-diagnosed measles.



Of the 59 individuals who had not been vaccinated, 20 were persons for whom routine vaccination would be indicated (Table). Of 21 individuals who had measles and had been previously vaccinated, six had received single-antigen measles vaccine between 1967-1970, and one had received MMR at age 12 months. Only six persons age 6-19 years who had a documented history of appropriate vaccination against measles developed illness.

Summary

No measles transmission in Alaska schools was documented during this outbreak. Only 10 cases occurred in persons aged 5-19 years. On-site reviews of immunization records of 34,917 children at 133 Alaska schools during the 1989-90 academic year documented that 98.4% had received measles vaccine at or after 12 months of age. This suggests that our current program to ensure all children are vaccinated with at least one dose of measles vaccine was an effective barrier to measles transmission among school children.

Thirty-nine unvaccinated persons who developed measles (49% of all reported cases) were not eligible for routine vaccination. Of the 80 persons who got measles, 73 would not routinely have been offered a second dose of measles vaccine according to the recently developed revaccination policies proposed by the American Academy of Pediatrics (AAP) and the Immunization Practices Advisory Committee (ACIP). Two-dose measles vaccination would have had little, if any, impact in preventing this measles outbreak.

Measles transmission occurred in hospitals. Nosocomial transmission was a major factor in disseminating measles throughout the state. Discharge or transfer of patients with measles resulted in dissemination of measles statewide. Patients with febrile rash illness consistent with measles should be hospitalized only if necessary. If hospitalized, strict respiratory isolation precautions should be observed.

Continuing outbreaks in the Lower 48 states present a persistent risk of measles importation into Alaska. Health care providers in Alaska should continue to consider measles in the differential diagnosis of febrile rash illnesses. **Suspected measles cases should be reported immediately to the Section of Epidemiology (561-4406).**