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Village Tuberculosis Outbreaks -- Update

There were 93 tuberculosis (TB) cases among Alaska residents during 1994. This is the largest number of cases since 1985 (when 110 cases were reported) and a 50% increase over the average of 62 cases annually between 1986 and 1993. Forty-six (49.5%) of the 93 cases during 1994 were outbreak-associated; that is, they were part of three or more epidemiologically linked cases. Outbreak-associated cases occurred on St. Lawrence Island (Gambell and Savoonga), in the Yukon-Kuskokwim Delta (Hooper Bay, Scammon Bay, Mountain Village, Chevak, and Lower Kalskag), and in St. Paul.

There has been an intensive public health response to the outbreaks. Community health aides, public health nurses, physician assistants, x-ray technologists, and physicians from Regional Health Corporations, the Indian Health Service, and the private sector have teamed up with Division of Public Health staff from the Sections of Laboratories, Nursing, and Epidemiology to conduct comprehensive field investigations in each affected community. As of March 3, 3,020 persons have had tuberculin skin tests, 810 persons have had chest x-rays, and 1,369 sputum specimens have been collected (Table 1). In addition to the TB cases mentioned above, testing has led to identification of 84 tuberculin skin test converters and 99 skin test reactors. More than 200 persons have been started on antibiotics to treat or prevent tuberculosis.

Update of outbreaks:

Savoonga: A public health team made a follow-up visit between February 2 and 10. PPD skin tests were placed on 247 of 265 previously negative residents. Testing identified 20 converters (in addition to 18 converters already identified). A total of 76 sputum specimens from 27 persons were collected for acid-fast bacilli (AFB) smear and *Mycobacteria* culture. Fifty-seven persons had a chest x-ray during the visit. Arrangements for directly observed therapy (DOT) were carefully reviewed or established to ensure that all 38 converters and 8 cases were receiving appropriate medication(s).

Gambell: This community was revisited during February 6-11. Eight skin-test converters and two reactors were identified as a result of placing 377 tuberculin skin tests. Twenty-three sputum samples were collected from 12 persons. Chest x-rays were obtained on 64 residents. Again, DOT arrangements were reviewed or established to ensure that all persons for whom medication(s) were prescribed were taking the medication(s).

St. Paul: Follow-up visits were conducted during the weeks of January 16 and February 13. Tuberculin skin tests were placed on five persons previously identified as close contacts of active cases; all were negative. Treatment regimens for all six TB cases were reviewed; five were modified to isoniazid (INH) and rifampin since each had already completed more than 2 months of four drugs (INH, rifampin, ethambutol, and pyrazinamide) and had fully sensitive *Mycobacterium tuberculosis* isolates.

Yukon-Kuskokwim Delta: Public health teams visited the villages of Chevak, Hooper Bay, Mountain Village, and Scammon Bay during January 9-23. The numbers of previously negative residents skin tested were, by village, Chevak, 458; Hooper Bay, 545; Mountain Village, 581; and Scammon Bay, 303. No new PPD positive persons were found in Hooper Bay, but 10 new positives were found in Scammon Bay, and 2 each were found in Mountain Village and Chevak. Overall, 537 sputum specimens were collected from 209 persons. Based on symptom reviews or PPD skin test results, the teams identified 240 persons who needed to have a chest x-ray. Because of difficulties with the x-ray equipment, x-rays could not be obtained during the January field investigation. A team revisited the four villages and obtained 189 x-rays during the week of February 28.

During February through June 1994, public health nurses from the Bethel Health Center made several visits to Lower Kalskag and Russian Mission to investigate TB cases and their contacts. A record review showed that, in addition to 9 TB cases, there were 122 other persons investigated. Among these, 72 had a PPD, 29 had a chest x-ray, and 101 sputum specimens were collected. As a result of this follow-up, 29 persons were placed on INH.

Table 1. Selected characteristics of tuberculosis outbreaks, 1994-1995*

Village	Population	PPD Status ⁺			CXR's	Sputum Specimens	Cases
		Converter	Reactor	Negative			
Chevak	822	2	1	455	34	75	1
Gambell	643	29	35	377	206	239	13
Hooper Bay	1,257	0	1	544	31	85	2
Lower Kalskag§	291	9	16¶	47	29	101	9
Mountain Village	952	0	5	573	79	221	2
Savoonga	618	38	26	274	316	355	8
Scammon Bay	477	5	5	306	45	149	8
St. Paul	665	1	10	261	70	144	6
Total	5,725	84	99	2,837	810	1,369	49

* Through 3/3/95.

⁺ Results shown include persons skin-tested as part of the TB outbreak investigation. Persons known to be PPD positive from previous testing were not included in this part of the table.

§ The PPDs, CXRs, and Sputum Specimens reported for Lower Kalskag include contacts evaluated in Russian Mission.

¶ As many as 10 of the 16 persons classified as reactors may have been converters. Available information was incomplete.

(Special thanks to the community health aides, public health nurses, and laboratory microbiologists who have worked hard to control these outbreaks.)