



Bulletin No. 25

October 25, 1994

Tuberculosis Threatens Rural Alaskans

Detection of infectious, pulmonary tuberculosis (TB) in several rural villages has sounded a wake-up call for Alaska's medical and public health professionals. Intensive investigations are underway in Savoonga, Gambell, St. Paul and Scammon Bay. Awaiting further field work are St. George, Chevak, Hooper Bay, and Mt. Village.

- Savoonga** (population 618): Public health teams skin tested 290 persons not known to be previously TB skin test positive, obtained chest x-rays from 297 persons, and collected sputum for acid-fast bacillus (AFB) smear and culture from 122 people. Preliminary results identified 6 persons with pulmonary TB and 43 persons whose skin test changed from previously negative to positive (ie, ≥ 10 mm induration). These 41 people were infected with *Mycobacterium tuberculosis* at some time between the occurrence of the negative and the positive skin test--for 18 of them, the last negative skin test was within a 2 year time period. Each of the six TB patients with active disease has been started on isoniazid (INH), rifampin, pyrazinamide, and ethambutol administered as directly observed therapy (DOT). Arrangements for starting INH preventive therapy for the remaining infected persons have not yet been completed.
- Gambell** (population 641): Skin tests were placed on 387 persons, chest x-rays were obtained from 163 persons, and sputum specimens were collected from 83 persons. Four cases of active pulmonary TB and 51 newly infected persons--including 23 who appeared to be infected during the past 2 years--were identified. The TB patients with active disease were started on four drug therapy given as DOT; arrangements for INH preventive therapy are pending.
- St. Paul** (population 670): During 1993-94, four persons were identified with active tuberculosis: two subsequently died and two were started on self-administered four drug therapy. The epidemiologic investigation consisted of skin tests of 251 persons, chest x-rays of 70 persons, and sputum collection for AFB smear and culture of 61 persons. Preliminary results indicate that one person had previously unidentified active pulmonary TB and eight persons had a skin test which changed from previously negative to positive. Arrangements were made to place all three patients with active disease on DOT.
- Yukon-Kuskowkim Delta** (estimated populations--Scammon Bay 417; Hooper Bay 964; Chevak 682): Routine tuberculin skin testing of school children conducted by the Bethel Health Center identified four children with new positive tests in Scammon Bay. Follow-up medical evaluation of these children and epidemiologic investigation of their contacts in Scammon Bay and the other two above villages identified seven persons with suspected pulmonary TB and four persons with newly acquired tuberculous infection.

Discussion: During the past 25 years, TB incidence in Alaska has been steadily decreasing. For 1990-1993, an average of 63 cases were diagnosed each year (range: 57-70 per year). As of October 17, 62 cases of TB were diagnosed among Alaska residents during 1994. The increase that has occurred in 1994 illustrates the need for continued vigilance for TB among Alaska health-care providers. When undiagnosed, TB can spread to family members, friends, and other community members resulting in additional TB cases. The cardinal symptoms of TB are cough, fever, weight loss, and hemoptysis.

Routine annual screening of school-children is an essential component of TB control in Alaska. Follow-up investigations conducted in response to children with TB skin test conversions lead to discovery of unrecognized, undiagnosed, and untreated pulmonary TB cases.

All TB patients should be treated using Directly Observed Therapy. The Section of Epidemiology, in coordination with public health nurses, assures that mechanisms are in place for DOT to be carried-out. Persons needing INH preventive therapy should be strongly considered for DOT as well.

Patients hospitalized for TB should never be discharged until arrangements for DOT have been established.

Arrangements for patients who are not hospitalized should be initiated as soon as TB is a likely possibility. The Section of Epidemiology will help set-up a DOT program. Patients should be provided with a minimum supply of TB medications (ie, 2 or 3 days) in order to carry them through to their first DOT visit.

Patients who are suspected to have TB must be reported to the Section of Epidemiology at 561-4406.

Village	Population	PPD Status		No. CXR	No. Sputum ⁺	Active TB
		No. done	No. Positive (No. Converters*)			
Savoonga	618	290	43 (18)	297	122	6
Gambell	641	387	51 (23)	163	83	4
St. Paul	670	251	8 (1)	70	61	3
Scammon Bay	417	investigation underway				7

*Converter = patient with positive skin test and last known negative skin test within the past 2 years.

+No. Sputum refers to number of persons from whom sputum specimens were obtained.