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Public Health Partners Bring Village TB Outbreaks Under Control

During 1994 and early 1995, several villages had tuberculosis outbreaks, including Savoonga (8 cases, 38 converters) and Gambell (12 cases, 29 converters) on St. Lawrence Island (*Epidemiology Bulletins* No. 25, October 25, 1994; No. 8, March 9, 1995). Since that time, public health teams have focused on assuring that all persons with tuberculosis disease or infection were being identified, diagnosed, and treated. This *Bulletin* describes results of public health control measures in Savoonga and Gambell.

Savoonga: During May 1995, PPDs were placed on 252 of 307 previously skin-test negative residents. Three converters were identified: ages 14, 28, and 36 years. One of these had not been tested during a previous visit in February; the other two persons were PPD negative in February 1995, indicating possible continuing transmission of TB between February and May, 1995. Thirty-nine sputum specimens from 16 persons were collected for acid-fast bacilli (AFB) smear and *Mycobacteria* cultures; all smears and cultures were negative. Chest x-rays were obtained on 137 persons; no new TB cases were identified. In early September, PPDs were placed on 244 of 284 previously negative residents; no converters were found. In late September, testing of 13 previously PPD negative Savoonga residents who were missed earlier that month yielded 3 converters, ages 14, 16, and 24 years. One person was last tested in August 1994, the second was PPD negative in February 1995, and the other was PPD negative in May 1995. Further evaluation of the three recent converters is underway. All cases and converters have or are now in the process of successfully completing medical treatment.

Gambell: During May 1995, PPDs were placed on 355 of 398 previously skin-test negative residents; two converters were found. These persons were negative in February, indicating continued TB transmission either at the end of 1994 or between February and May, 1995. In addition, a 22-year-old Savoonga resident visiting Gambell was identified as a converter. Of 26 sputum specimens collected from 12 persons, all cultures and all but one smear were negative; the one positive smear was from a known case still smear positive. Chest x-rays were obtained on 117 people -- one new case of active TB was identified; the case was previously known converter who had been placed on isoniazid in December 1994. Because of the large number of persons needing anti-tuberculosis medications, special clinic-based directly observed therapy (DOT), including home visits was arranged. In June, 48 PPDs were placed, 46 were read, and 3 converters were found. These three persons were not tested since September 1994. They were most likely infected in late 1994, a period during which there were active cases in the village. In September 1995, PPDs were placed on 362 previously PPD negative persons; 2 adult converters were found. Both had been PPD negative in February 1995. Associate investigations failed to identify an active TB case. One active case was in the village during April 1995 and could have been the source for these two persons. No converters were found in the school. All cases and converters have or are now in the process of successfully completing treatment.

Discussion: Extensive field work in the villages of Gambell and Savoonga during 1994-1995 by an effective team of Public Health Nursing, Native Regional Health Corporation staff, and Epidemiology staff resulted in control of this serious epidemic of TB. **Use of DOT for both cases and converters played a critical role in bringing the epidemic under control.** Extensive collaboration among all agencies resulted in effective village investigations, appropriate contact follow-up, and timely administration of anti-tuberculosis medications.

Conclusions:

1. Extensive cooperation among state and local health agencies and village leaders was key to bringing tuberculosis under control in these villages.
2. DOT for all active cases and converters provided a crucial element of tuberculosis control.
3. Continued vigilance for persons with symptoms of TB will be needed. Three sputum samples should be collected from persons with symptoms consistent with TB (productive cough, weight loss, night sweats, or hemoptysis).
4. Adequate public health infrastructure must be maintained to prevent outbreaks of tuberculosis.

PPD Status

Location	Date of Trip	No. Needing Follow-up	PPDs Placed	Converter	Reactor	Negative	Not Read	CXR	Sputum Specimens	New Cases
Savoonga	5/95	307	252	3	3	245	1	137	39	0
Savoonga	9/95	284	244	0	0	241	3	0	0	0
Savoonga	9/95	43	13	3	0	4	6	pending	pending	pending
Gambell	5/95	398	355	2*	0	314	39	117	26	1**
Gambell	6/95	77	48	3	2	41	2	4	7	0
Gambell	9/95	421	362	2	0	348	12	3	7	0

* One additional converter was identified: a Savoonga resident visiting in Gambell.

** Previously known converter on isoniazid since December 94 progressed to active disease. This case was identified prior to the May trip.

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