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Shishmaref Teams Up to Fight Tuberculosis

Shishmaref, a village of about 530 people, is located in northwestern Alaska, just below the Arctic Circle. During the annual Shishmaref school tuberculosis (TB) skin test screening in October 1995, 4 healthy children were found to have newly positive TB skin tests. In addition, 2 newly positive TB skin tests (PPDs) were discovered among family members of these children. These findings suggested that there was active TB disease in the village and that TB infection was being transmitted. The last active case of TB in Shishmaref had been reported 23 years ago.

In early November, Norton Sound Health Corporation public health nurses screened the entire village. A total of 157 TB skin tests (PPDs) were placed and another 4 newly positive PPDs were discovered. Of 96 persons known to have previously positive PPD skin tests, 94 were interviewed for symptoms of illness and 29 persons submitted sputum specimens for TB culture. By December 5, 1995, 10 people (four were children) suspected of having active TB disease were placed on four-drug antibiotic treatment. In addition, 9 persons who were close contacts to persons with suspected active TB were placed on isoniazid for preventive treatment.

In early December, a team from the Section of Epidemiology and Norton Sound Health Corporation reviewed the contact lists of all suspected TB cases. This evaluation suggested that all suspected cases and persons with newly positive PPD tests were within an extended family; there were only two exceptions. Although the investigation showed that TB had not spread widely throughout the village, additional follow-up was planned 3 months later. Village leaders had already mobilized the community to bring TB under control.

During December 1995 and January 1996, 3 of the 10 suspected TB cases were confirmed by sputum cultures. All 10 persons were taking four-drug antibiotic treatment, given as directly observed therapy (DOT). Eight of the 9 close contacts were taking isoniazid preventive treatment. No additional cases of active TB disease were identified after early December.

On January 29, 1996, a team from the Section of Epidemiology and Norton Sound Health Corporation traveled to Shishmaref for the 3-month follow-up. During this visit, 369 PPD skin tests were read; 2 newly positive skin tests were discovered. These 2 persons had already been identified as contacts to an active TB case. They probably were infected in early November, before TB treatment started. (PPD skin tests may take up to 12 weeks to become positive after asymptomatic infection with TB.) **No unsuspected newly positive PPD skin tests were found.**

During the January 29 village visit, 72 persons with long-standing positive PPD skin tests were again interviewed for symptoms of TB. Seventy-one submitted at least one sputum specimen to be examined for TB. None of these specimens have been positive by microscopic examination, but cultures are still pending.

Conclusions: Seven suspected and three confirmed cases of active TB were detected among a large extended family as a result of school TB skin test screening during October 1995. All active TB cases and contacts are on effective antibiotic treatment using DOT. Two persons with newly positive PPD skin tests found during the most recent village visit were known contacts of a TB case. No new TB cases have been found over the past 2 months. Shishmaref's active participation and commitment has been important in rapidly bringing TB under control.

Table 1. Results of TB screening in Shishmaref

	PPDs read	New positive PPDs	Symptom interviews	Sputum specimens	TB culture positive sputum	New suspected or confirmed TB cases
Oct. 1995	230*	6	-	-	-	-
Nov. 1995	157	4	94	87	3	9
Jan. 1996	369	2	72	158	0**	0

* school testing plus contact and family testing

** results still pending

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