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## Prevalence of Trachoma Among Navajo Indian Children

JOEL A. LUDLAM\*

*Indian Health Service, Public Health Service, Shiprock, New Mexico*

### Abstract

Examination of some 6000 Navajo children in their schools in the Shiprock, New Mexico area between 1975 and 1977 yielded an overall prevalence of trachoma of 2.4%. The prevalence was highest for high schoolers (3.8%) and lowest for pre-schoolers (2.3%). These prevalences are lower than those found (6.0%) for Navajo schoolchildren in the Gallup, New Mexico area 8-9 yr previously.

Key Words: trachoma, prevalence, Navajo children, ocular disease, Indian Health Service

Since 1955 the Indian Health Service (a component of the Health Services and Mental Health Administration of the Department of Health, Education, and Welfare) has been working on American Indian reservations to improve the health of the Indian and Alaskan native people. The Navajo reservation covers about 25,000 sq mi in 3 states (New Mexico, Arizona, and Utah) and has a population of about 128,000 which is served by 8 service units of the Indian Health Service Program.<sup>1</sup> At the Shiprock (New Mexico) Service Unit the optometry officer is responsible for trachoma control in addition to the usual optometric (comprehensive eye care) duties.

In 1970 Lawler et al.<sup>2</sup> reported on the prevalence of trachoma among 17,403 Navajo Indian children screened (1960-1969) in their schools as part of a trachoma con-

trol program at the U.S. Public Health Service Indian Medical Center at Gallup, New Mexico. They found the prevalence of *active* trachoma to be 3.8% among 6-9-yr-olds, 6.3% among 10-13-yr-olds, and 9.7% among 14-19-yr-olds. Among these oldest children, 7 girls had the disease for every boy. No significant differences in the prevalence were found between the sexes in the younger age groups. Lawler and his colleagues suspected that the high prevalence of trachoma among the older female school children resulted from their sharing of eye cosmetics. Their report of a progressive *decrease* with age in the prevalence of active trachoma among Indian tribes in Southern Arizona was attributed to greater accessibility for examination and treatment.

The purpose of this communication is to report on the prevalence of trachoma found in 1975-1977 among some 6,000 school-age Navajo children in 27 schools served by the Shiprock Service Unit in New Mexico.

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\* Optometrist.

## THE DISEASE

Trachoma is an infectious keratoconjunctivitis characterized by conjunctival inflammation with lymphoid follicles and papillary hyperplasia.<sup>3</sup> Conjunctival scarring and vascular invasion of the cornea (pannus) may lead to gross deformity of the eyelids, progressive visual loss, and blindness. Trachoma is found in a multitude of climates throughout the world; in the United States it occurs mostly among Indians and Mexican immigrants. Poor hygiene and crowded living conditions, particularly in dry and dusty regions, increase the prevalence. *Chlamydia (Bedsonia) trachomatis* is the causative infectious agent. The disease is transmitted by direct contact with discharge from the eyes or nose or materials soiled with the discharge. The incubation period after contact is 5–12 da. Oral tetracycline, (Achromycin V) or sulfonamides are effective in treating the disease in the active stages.<sup>3</sup>

## THE STUDY

The 27 schools in the Shiprock area include pre-schools, elementary, junior high, and high schools, and boarding schools, which had a total enrollment of about 6,000. At the time of the study (1975–1977) most of this student sample was attending the elementary and junior high schools.

During 1 wk each yr, the trachoma control officer and several trachoma nurses from the Shiprock Service unit examined all the school children from nearly all the

schools. Several centrally located schools were selected, and the children were brought to 1 of these schools for examination.

The active stages of the disease are easily recognized. Children with suspicious symptoms (such as burning sensation or tearing when going into sunlight) or signs (such as papillae or lymphoid follicles) were separated for further diagnosis. When differential diagnosis was difficult, the child was considered as trachoma suspect and was reexamined at 1–2-mo intervals.

When the diagnosis was confirmed, the child was treated with antimicrobial agents. Attempts were made to screen for trachomas those persons living with the diseased child.

Table 1 summarizes the prevalence of trachoma among Navajo children in the Shiprock area during the years 1975–1977. The mean prevalence of the disease for all 3 yr is 2.4%; an additional 3.1% of the children were trachoma suspects. There was a general increase in trachoma prevalence with school level: 2.3% in the pre-schoolers, 2.8% in the elementary schoolers, and 3.8% in the junior high and high schoolers. Although Lawler et al.<sup>2</sup> also found a progressive rise in trachoma prevalence with age among Navajo schoolchildren, it is important to mention that their overall prevalence (6.0% for preschoolers to age 19) obtained in 1966–1969 in the Gallup, New Mexico area is substantially higher than the overall prevalence (2.4% for pre-schoolers through high schoolers) obtained about

TABLE 1. Prevalence of trachoma among Navajo children was obtained by examining during each of 3 yr nearly all the children attending 27 schools in the Shiprock, New Mexico area.

	1975	1976	1977	All years
All grades	6,000	6,124	5,631	17,755
Trachoma positive	98 (1.6%)	229 (3.7%)	105 (1.9%)	432 (2.4%)
Trachoma suspect	145 (2.4%)	220 (3.6%)	188 (3.3%)	553 (3.1%)
Pre-schools		659	667	1,326
Trachoma positive		18 (2.7%)	15 (2.2%)	33 (2.5%)
Trachoma suspect		20 (3.0%)	15 (2.2%)	35 (2.6%)
Elementary and other schools		5,188	4,743	9,931
Trachoma positive		199 (3.8%)	83 (1.7%)	282 (2.8%)
Trachoma suspect		189 (3.6%)	168 (3.5%)	357 (3.6%)
Junior high and high schools		277	221	498
Trachoma positive		12 (4.3%)	7 (3.2%)	19 (3.8%)
Trachoma suspect		11 (4.0%)	5 (2.3%)	16 (3.2%)

8-9 yr later in the Shiprock area. Whether the lower prevalences reported here are due to sample differences or to the trachoma control program is not known. Future longitudinal studies of the prevalence of trachoma in the same samples will resolve this question.

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**AUTHOR'S ADDRESS**

Joel A. Lud  
U.S. Public Health Service  
P.O. Box  
Shiprock, New Mexico 87