

1977

## Disabilities and their effects on American Indian and Alaska Native communities.

Unknown

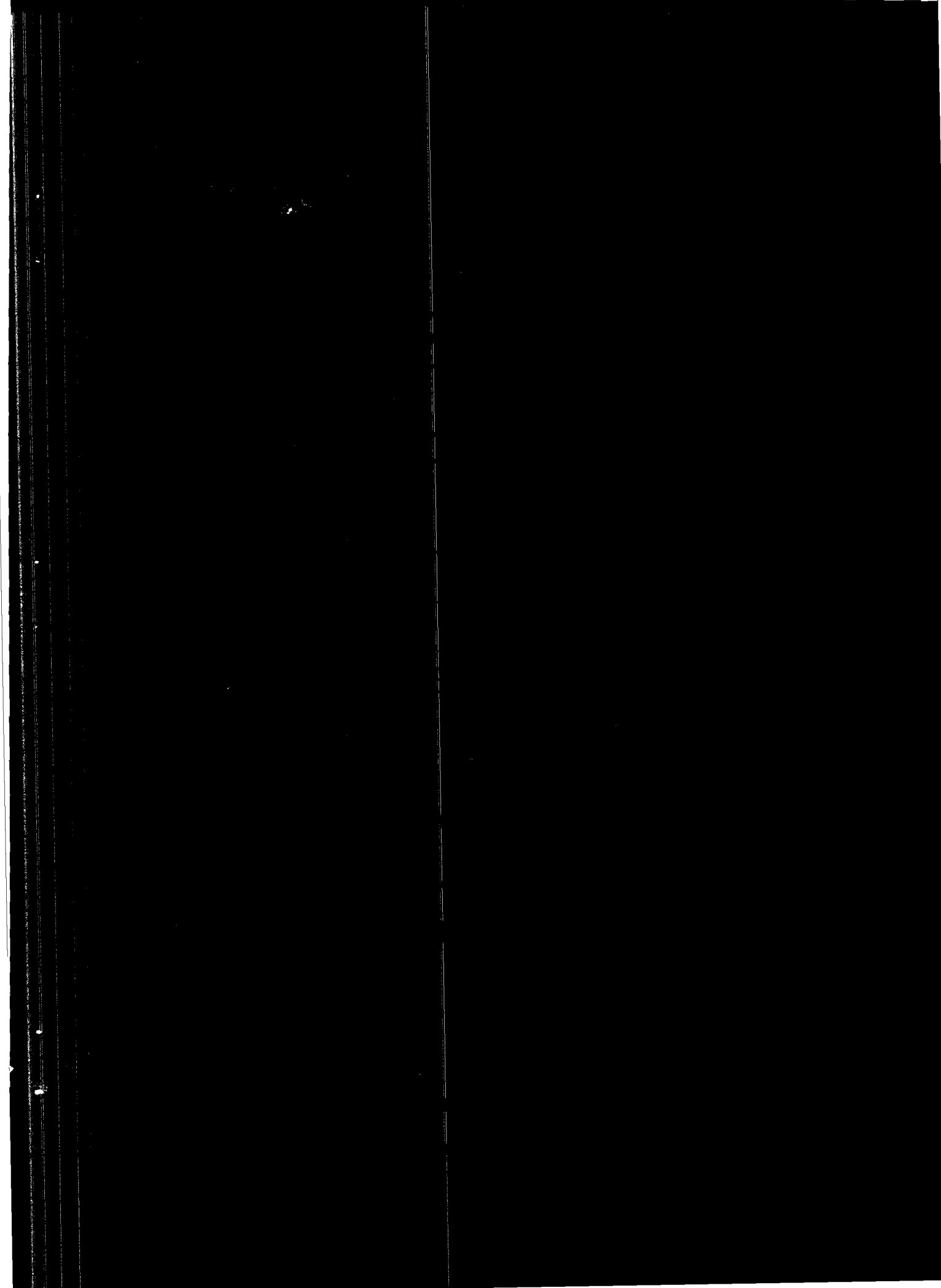
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O T I T I S   M E D I A  
A N D  
C O M M U N I C A T I O N   D I S O R D E R S  
R E P O R T

FY 1976

Indian Health Service

Sensory Disabilities Program

June, 1977



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## I. INTRODUCTION

This is the sixth in a series of reports on the Otitis Media Program which was established in July 1970 through Congressional appropriation and an Administration reallocation of funds. The total budget for this initial year was \$1,300,000. of which \$438,000. (including 32 positions) were specifically identified for a program in Alaska.

With exception of relatively minor budgetary increases during the intervening years, the major additional funding for the program came with the FY 76 budget which added 1.4 million dollars (including 34 positions) to expand the program in all areas outside Alaska. This enabled the Indian Health Service for the first time to place their own personnel in every Area except Portland and to begin truly comprehensive programs for the control and remediation of otitis media throughout the Service. The relatively late date the funds and positions were made available, however, did not allow for all the positions being filled by the end of FY 76.

From the beginning, the orientation of the program has been to attack the problem of otitis media from four major directions; (1) establishment of preventive programs aimed at those factors contributing to the otitis media with particular emphasis on preventing the chronic stage of the disease, (2) case finding a treatment of acute otitis media emphasizing the under two year old group, (3) treatment of chronic otitis media in correcting its complications, and (4) institution of rehabilitative measures, initially through the provision of hearing aids, but expanding into remedial speech and language services as well.

These four areas of emphasis are approached to the use of both professional personnel and para-medical personnel in such activities as case finding, parental and community education, treatment of the disease and its surgical remediation, establishing the procedures for hearing aid referral and maintenance of the instruments once in use, initiation of remedial speech and language services, etc.

In the reports from the Areas which follow, as well as the compilation of fiscal year statistics, it should be noted that FY 76 was a "five quarter" year due to the change of the fiscal year ending date from June 30 to September 30. Calendar year data remain on the usual 12 month basis.

For several years the Annual Otitis Media Report has cautioned that some of the data presented therein needed to be viewed with some skepticism. The same caution applies this year, particularly where Table 1 is concerned. After showing declines for two years, the incidence rates for otitis media during the calendar year 1975 appeared to be increasing. The program evaluation section in this report, however, indicates a sharp reduction of new disease in many geographic locations within Indian Health Service which is not compatible with the data in Table 1

compiled from APC reports. As noted previously, cases reported are based upon highly variable criteria for diagnosis at the time of a hospital visit which is not reflected in the surveys reported later on in which rigorous examinations have been made of large numbers of pre-school and school age children. In an effort to improve the consistency of diagnoses, the senior clinician in otolaryngology is meeting with other ENT personnel within the Service to revise and refine the APC form to reduce its present ambiguity.

The late apportioning of the FY 76 budget meant that for the larger portion of the year activities were primarily maintaining previously established program levels and, later on, establishing the various positions provided for in the budget and allowing these new personnel to revise or reconstruct Area Otitis Media Program Plans. Even so, the emphasis of the program continued to allow for gradual expansion into both the lower and upper age levels with program growth reported from each Area Office. Program expansion into related communication disorders continued to expand within the limits of the funds available.

T A B L E    1

Reported New Cases of Otitis Media  
and Incidence Rates for Indians and Alaska Natives  
Calendar Years 1962-1975

CY	Indian and Alaska Natives		Indians		Alaska Natives	
	Number of Cases	Rate Per 100,000	Number of Cases	Rate Per 100,000	Number of Cases	Rate Per 100,000
1975	56,569	11,377.9	51,775	11,701.5	4,794	8,761.1
1974	53,555	10,958.2	48,708	11,202.0	4,847	8,991.6
1973	58,036	12,103.6	52,999	12,429.4	5,037	9,487.1
1972	57,781	12,289.8	53,419	12,780.1	4,362	8,361.4
1971	49,478	10,742.4	45,283	11,066.9	4,195	8,159.8
1970	44,008	9,745.0	41,109	10,253.1	2,899	5,723.2
1969	39,351	8,892.3	36,568	9,313.6	2,783	5,577.3
1968	36,470	8,413.7	33,503	8,717.5	2,967	6,038.0
1967	30,211	7,118.8	27,377	7,281.0	2,834	5,857.6
1966	28,224	6,909.6	25,144	6,968.0	3,080	6,467.2
1965	22,614	5,688.2	21,502	6,131.3	1,112	2,372.6
1964	22,290	6,243.7	21,267	6,772.9	1,023	2,379.1
1963	18,397	5,211.7	17,052	5,500.6	1,345	3,127.9
1962	13,382	3,801.7	12,383	4,007.4	999	2,323.3



T A B L E    2

Summary of Services Provided, Results, and Follow-Up  
Reported for Otitis Media Program FY 71-76

	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>FY 75</u>	<u>FY 76</u>	<u>Total</u>
Number Patient Contacts <u>1/</u>	20,930	21,676	29,286	53,211	46,016	65,420	236,539
Number Screening Failures <u>2/</u>	4,061	9,038	9,629	9,176	9,009	20,201	61,114
Confirmed Hearing Losses	2,879	3,071	4,616	5,944	4,588	7,132	29,010
Medical/Surgical Referrals	2,683	3,501	10,543	6,376	5,656	5,307	34,066
Completed Surgical Procedures	2,160	1,779	2,285	2,164	1,754	1,776	11,918
Number of Hearing Aids Dispensed	71	131	440	479	754	1,821	3,696

1/ Since FY 75, includes screening, more refined testing and follow-up visits from hospital referred patients, well baby clinics, etc.

2/ Test battery includes three examinations; one patient may fail any or all three.

## II. AREA REPORTS

### ABERDEEN

(FY 76 Base, \$343,000. and 3 Positions)

The FY 76 budget expansion enabled the Aberdeen program to expand beyond the limited University of Nebraska at Pine Ridge contract which has been in effect from the beginning of the special otitis media funding . Three positions allocated were earmarked for an audiologist, a clerk, and a physicians assistant. Work under the contract throughout the years it has been in existence has in most respects been satisfactory although there are indications recently that there have been a fewer number of middle ear procedures being done compared with other ENT procedures such as rhinoplasty; it is unclear whether this is due to the middle ear surgery backlog being reduced, the previously reported high 'no-show' rate continuing; or whether case selection may be primarily to give the ENT resident a broader experience than would be afforded by ear surgery alone.

The new funds will allow the project to expand beyond Pine Ridge probably through contractual services for medical, surgical, and audiological services throughout the Area. Several small audiometric enclosures and related equipment were purchased for various of the Service Units which will probably eliminate the need for a mobile van.

Additional training for technicians has been provided during the past year and this activity expected to increase since the overall Area program is becoming operational.

ABERDEEN

6

	<u>FY 76</u>
Total Number Screened	<u>2500</u>
Children (below 17 years)	<u>2000</u>
Adults	<u>500</u>
Number Failing	<u>700</u>
Audiometry - children	<u>600</u>
- adults	<u>100</u>
Tympanometry - children	<u>Unknown</u>
- adults	
Otoscopic - children	<u>600</u>
- adults	<u>100</u>
Number Referred for Diagnostic Audiometry	<u>700</u>
Children	<u>450</u>
Adults	<u>250</u>
Number Found with Hearing Loss	<u>490</u>
Children	<u>250</u>
Adults	<u>240</u>
Number Referred for Medical/Surgical Evaluation	<u>550</u>
Number Receiving Medical/Surgical Services	<u>270</u>
Number of Hearing Aids Provided	<u>130</u>
Children	<u>10</u>
Adults	<u>120</u>

FY 76

## Number of Persons Trained for OM Activities

14

Audiometrists

0

CHRs

11

GMOs

0

Other

3

## Current Backlog of Surgical Procedures

Number

Unknown

Estimated Cost (CMC)

325,000

ALASKA

(FY 76 Base, \$515,000. and 32 Positions)

As reported in previous years, the Alaska program has progressed satisfactorily throughout the duration of the special otitis media funding.

Reports indicate that the reduction of the surgical backlog in Alaska generally is behind schedule due to the loss of an otolaryngologist at Anchorage Native Medical Center but that the overall disease reduction is continuing. It should be noted that the reduction is not reflected in the APC data reported for Alaska in Table 1.

The hearing aid distribution program run in conjunction with the State Department of Health has continued with overall good results to the point that the Area reports that anyone in need of amplification is receiving a hearing aid.

During the year, the ANMC staff prepared an evaluation of the program to date and this information is presented in the evaluation section, page 41 in this report.

## ALASKA

	<u>FY 76</u>
Total Number Screened	<u>6385</u>
Children (below 17 years)	<u>4794</u>
Adults	<u>1691</u>
Number Failing	<u>1544</u>
Audiometry - children	<u>1214</u>
- adults	<u>330</u>
Tympanometry - children	<u>952</u>
- adults	<u>131</u>
Otoscopic - children	<u>782</u>
- adults	<u>108</u>
Number Referred for Diagnostic Audiometry	<u>1544</u>
Children	<u>1214</u>
Adults	<u>330</u>
Number Found with Hearing Loss	<u>1544</u>
Children (unilateral)	<u>633</u>
Children (bilateral)	<u>581</u>
Adult (unilateral)	<u>161</u>
Adult (bilateral)	<u>169</u>
Number Referred for Medical/Surgical Evaluation	<u>1544</u>
Number Receiving Medical/Surgical Services	<u>1544</u>
Number of Hearing Aids Provided	<u>156</u>
Children	<u>23</u>
Adults	<u>133</u>

FY 76

## Number of Persons Trained for OM Activities

25

Audiometrists

0

CHRs

3

GMOs

2

Other

20

## Current Backlog of Surgical Procedures

Number

499

ALBUQUERQUE

(FY 76 Base, \$240,800. and 0 Positions)

Difficulties with the primary contractor created problems in the Albuquerque Area during this year. Professional staff on the contract maintained the program at its usual level of quality but administrative and other problems persisted to the point where the contract was not renewed at the time of expiration in July 1976. A private corporation consisting of University personnel providing services under that contract was formed to continue the services through the end of FY 76 and beyond.

The program described in previous reports, the operation of a mobile unit with referral services available to the Communication Disorders Unit, has been the pattern for this program over the past several years and this element has worked satisfactorily. The contract provided for the services of four audiometric technicians, one full-time audiologist, and two graduate assistants. Two additional technicians are also employed at Zuni and Isleta, the latter being supported with CHR funds. Speech therapy services were provided at Zuni, Mescalero, and Santo Domingo.

Previously reported problems with the program persist, notably those associated with lack of feedback from the Service Unit once referrals have been made from the contractor. The hearing aid and battery distribution for the Albuquerque Area has been one of the outstanding features of the program.



## ALBUQUERQUE

12

	<u>FY 76</u>
Total Number Screened	<u>4583</u>
Children (below 17 years)	<u>3063</u>
Adults	<u>665</u>
Number Failing	<u>1269</u>
Audiometry - children	<u>87</u>
- adults	<u>52</u>
Tympanometry - children	<u>208</u>
- adults	<u>21</u>
Otosopic - children	<u>49</u>
- adults	<u>19</u>
Number Referred for Diagnostic Audiometry	<u>942</u>
Children	<u>436</u>
Adults	<u>506</u>
Number Found with Hearing Loss	<u>292</u>
Children (unilateral)	<u>57</u>
Children (bilateral)	<u>176</u>
Adult (unilateral)	<u>8</u>
Adult (bilateral)	<u>51</u>
Number Referred for Medical/Surgical Evalutation	<u>807</u>
Number of Hearing Aids Provided	<u>154</u>

BEMIDJI

(FY 76 Base, \$137,000. and 2 Positions)

The additional resources available during FY 76 enabled the Bemidji Area to establish two positions (for an audiologist and clerk) and will allow the program to develop beyond its previously reported extent.

A contract awarded to Michigan State University to provide services for Indian beneficiaries in Michigan met with less than outstanding results and was not renewed beyond its expiration date. The summary of the results of the final report from this contract are presented on the following page.

Services in Minnesota were provided by private practitioners from Duluth and by the Mayo Clinic team as has been the case over the past several years.

MICHIGAN STATE UNIVERSITY CONTRACT

The following conclusions were drawn from the screening program:

- "1. Persons on Michigan reservations have fewer middle ear problems than found in surveys of other Indian populations. However, the persons on Michigan reservations have more middle ear disease than found in the general population.
2. Persons on Michigan reservations have fewer hearing problems than found in surveys of other Indian populations. However, they do have more hearing problems than found in the general population.
3. Persons from Michigan reservations have slightly more articulation problems than found in the general population.
4. Persons from Michigan reservations have voice problems similar to the upper estimates found in the general population.
5. Persons from Michigan reservations have language problems similar to that found in the general population.
6. Persons from Michigan reservations have fewer rhythm problems than found in the general population."

BILLINGS

(FY 76 Base, \$329,000. and 4 Positions)

As has been reported regularly in these reports, Billings has had one of the most successful otitis media programs within Indian Health Service. During the first year that special funds were available, Billings Area developed a program around a mobile otologic-audiologic van to travel throughout the Area providing case finding, otologic-audiometric examinations, surgical followup services, and hearing aid selection services. Referrals are made to the traveling clinics, through the local schools, health facilities, and other sources. Once a person has been evaluated, immediate referrals to the appropriate medical personnel are made.

The Billings program has also pioneered in the development of the "block" surgery idea at IHS facilities whereby contract otolaryngologists have access to the operating rooms all day for a period of up to two weeks, enabling large numbers of surgical procedures to be done at a significantly lower cost. An additional benefit is the availability of the surgeon to provide in-service training sessions with Service Unit staff pertaining to the identification and treatment of middle ear disease.

During the four years that the program was in operation, a total of 15,818 persons had otologic diagnostic workups with 1,404 surgical procedures being performed and 481 hearing aids issued. Cost for the program for the years in question (FY 71-76) was \$1,156,000. for an average cost for all three services of \$65.48 per patient. Not included in these calculations are followup services, counseling services, in-service training sessions, etc.

The program is staffed by two audiologists, two physician assistants, and one staff assistant with the surgical expertise provided on an "as need" basis under contract.

During the life of the program, the chronic disease rate in Billings has been reduced from 3 percent to 1 percent, the level in the general American population. At the end of FY 76, only 28 identified chronic ears were still awaiting surgery. Further information on the Billings program is contained in the program evaluation section which follows.

Billings was also one of the first Area Offices to establish speech pathology services which were expanded beyond the one Service Unit program in effect at the beginning of the year. The anticipation was that three Service Units would be operational by January 1, 1977.

In each case an individual is hired through the cooperation of the Billings Area Otitis Media Program and the contracting agency which in

each case is the Tribal Health Board. Technical and professional assistance is provided through the Area Office under contract with a speech pathologist working closely with the otitis media program in Billings.

Another unique feature of the speech pathology program in Billings is the involvement of other agencies. Indian Health Service provides first year startup funds which are rapidly reduced as Headstart, Johnson-O'Malley, tribal, and third party payment resources added. Under this plan, the Indian Health funding can be eliminated by the end of the third year.

## BILLINGS

	<u>FY 76</u>
Total patient visits <u>1/</u>	<u>10255</u>
Total patients screened <u>1/</u>	<u>6928</u>
Patients seen for complete initial ENT evaluation	<u>3327</u>
Patient revisits	<u>1950</u>
Total children visits	<u>3168</u>
Total adult visits	<u>2109</u>
Total patients(children)	<u>1976</u>
Total patients(adults)	<u>1350</u>
Of the 3327 patients seen for complete initial ENT evaluations, the following numbers failed:	
<u>Audiometry</u>	
Children	<u>521</u>
Adults	<u>1231</u>
<u>Tympanometry</u>	
Children	<u>449</u>
Adults	<u>227</u>
<u>Otoscopic</u>	
Children	<u>742</u>
Adults	<u>396</u>
Number Referred for diagnostic audiometry	<u>3043</u>
Children	<u>1976</u>
Adults	<u>1067</u>

FY 76

Types of hearing loss in children  
and adult population

<u>Children</u>	<u>521</u>
Unilateral Conductive	176
Unilateral Mixed	6
Unilateral Sensori-neural	50
Bilateral Conductive	227
Bilateral Mixed	10
Bilateral Sensori-neural	52
 <u>Adults</u>	 <u>669</u>
Unilateral Conductive	97
Unilateral Mixed	21
Unilateral Sensori-neural	51
Bilateral Conductive	40
Bilateral Mixed	128
Bilateral Sensori-neural	332

Number referred to otolaryngologist for medical/ surgical evaluation	<u>648</u>
Number receiving medical/surgical services	<u>1172</u>
Number of hearing aids provided	<u>178</u>
Number of hearing aids repaired	<u>89</u>
Dollar amount spent on repairs	<u>\$3523</u>
Dollar amount spent on batteries	<u>\$5500</u>
Aids obtained through outside services	<u>18</u>
Number of persons trained for otitis media activities	<u>87</u>
Audiometrists	<u>5</u>
Community Health Representatives	<u>25</u>
GMOs	<u>26</u>
Other (PHN-Tribal Nurses, Health Boards, Speech Pathologists)	<u>31</u>
Current backlog of surgical procedures (identified)	<u>28</u>
Estimated Cost (Contract Medical Care)	<u>\$21000</u>

FY 76

## Speech Therapy Services

Number evaluated for speech/language problems	<u>568</u>
Number of sessions for speech/language problems	<u>685</u>

1/ These figures represent the total number of school age Indian children screened in the Billings Area during Fiscal Year 1976 and the wedge period. The screening efforts are carried out as a cooperative venture between the Billings Area Communicative Disorders Program and the various state and regional agencies which are involved in school screening programs. Most frequently, this takes the form of the state supplying the audiometrist and the Communicative Disorders Program supplying the physician's assistant with general supervision being provided by the Communicative Disorders Program. Once the screening is complete, all referrals are made to the Communicative Disorders Program for complete ENT evaluation and appropriate follow-up. It should be pointed out that state and regional programs frequently attempt to shift the responsibility for screening these children to the Indian Health Service, however, it is the position of the Billings Area that this abarration of responsibility should be resisted in order to assure that the public schools on the reservations receive all services for which they are entitled. State programs are not responsible for the screening of Headstart and frequently for screening of kindergarten programs so the responsibility for screening all school systems which do not fall under state responsibility are assumed by the Indian Health Service through the Communicative Disorders Program.



Surgical Procedures  
FY 1976 and Wedge Period

<u>Procedure</u>	<u>FY 1976</u>
Tonsillectomy & Adenoidectomy or tonsillectomy or Adenoidectomy	42
Tympanotomy & insertion of PE tubes	91
Tympanoplasty	60
Mastoidectomy	5
Tympanomastoidectomy	5
Stapedectomy	4
Exploratory Tympanotomy	2
Paper Patch	4
Meatoplasty	1
Excision of Lesions	12
Nasal Surgery	26
Other (Fx mandible, Caldwell-Luc, tarsorrhaphy, Z-plasty, Otoplasty, Sinus wash, etc.)	56
Total procedures	322

NAVAJO

(FY 76 Base, \$708,600. and 12 Positions)

Many of the problems reported last year, the lack of additional ENT personnel and the abbreviated operating room schedule at Gallup Indian Medical Center, were alleviated to a large extent during FY 76. New funds and positions made available this year enabled the ENT program at GIMC and the field program to expand considerably with many of the services formerly provided under contract with the University of Colorado now conducted by Federal personnel. At the present time the Colorado contract provides the services of an otologic fellow and a senior resident.

At this time there are essentially four full-time ENT surgeons operating at either GIMC or McKinley General Hospital (which provides operating room support and hospital care under contract). This should enable more significant inroads into the chronic ear surgical backlog but probably nowhere near enough to keep pace with the new cases identified by the field team.

Field team now consists of an audiologist (who rotates with a second working audiologist at GIMC) and four Navajo otologic-audiometric technicians. The addition of a new mobile van has greatly enlarged the field team's capabilities. The major deficiency with the program is still the inability to move the screening age downward but this should be gradually accomplished as the field team reduces the extent of work being undertaken in the schools.

The addition of Civil Service personnel has enabled the Navajo Area to assume responsibility for the own hearing aid distribution program.

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	<u>FY 76</u>
Total Number Screened (Otitis Media Project)	<u>9498</u>
Children (Below 17 years)	<u>9498</u>
Number Failing	<u>1066</u>
Audiometry - children	<u>605</u>
Tympanometry - children	<u>844</u>
Otoscopic - children	<u>889</u>
Number Referred for Diagnostic Audiometry	<u>605</u>
Children	<u>605</u>
Number Found with Hearing Loss	<u>605</u>
Children (unilateral)	<u>370</u>
Children (bilateral)	<u>275</u>
Number Referred for Medical/Surgical Evaluation	<u>889</u>
To Contract Otologist	<u>(See Footnote(a))</u>

FY 76

Total Number of Procedures by Contract  
Footnote(b)

64

Total Amounts Spent for Otologic Surgery  
Footnote(c)

\$67,426.41

IHS Funds

\$67,426.41

Other Sources

None

McKinley General Hospital(ENT Contract)

\$125,325.00

Number of Hearing Aids Purchased

Data at Communication  
Disorders Unit

Children

HEARING  
AIDS18

Adults

FITTED

300

Number of Persons Trained Under OM Program

ENT Nurse(R.N.)

1

ENT Residents(U.of Colorado)

3

CHM Trainees

10

Medical Students(Long-term 4-6 weeks)  
(Short-term 1-2 days)

2

GMOs

Lectures,Indiv.teaching

15

Other

Dental Residents &amp; Staff

8

PHN's,Field Health Staff,etc.

25

Persons trained by field lectures,teaching films,etc.Unable to estimate.

Current Backlog of Surgical Procedures

Estimated Number

1000

Estimated Cost

\$1,500,000.00

Speech Therapy Services

Number evaluated for speech/language problems

Footnote(d)

Audograms performed at GMC ENT/Audiology Clinic

2000

IN-PATIENT E.N.T. SURGERY PERFORMED IN GALLUP  
DURING PERIOD 7/1/75 THROUGH 9/30/76

		Gallup Indian Medical Center FY 76	McKinley General Hospital FY 76
Tonsillectomy and/or Adenoidectomy	Child	39	
	Adult	48	14
Myringotomy(with or without tubes)		19	5
Tympanoplasty	Child	73	
	Adult	63	99
Tympano-Mastoid or Mastoidectomy		16	7
Myringoplasty		2	
Tympanotomy(includes middle ear exploration,stapedectomy,etc.)		3	
Facial Nerve Decompression		1	
Other Otologic		18	5
Nasal Septoplasty		8	
Septo-Rhinoplasty		64	50
Maxillo-Facial Fractures & Related Surgery*		14	1
Direct Laryngoscopy		24	2
Bronchoscopy		30	
Esophagoscopy		15	1
Other E.N.T. Procedures		80	23

\*Many nasal fractures are treated by the E.N.T.Service,but mostly on an outpatient basis.

TOTAL OPERATIONS

517

207

TOTAL PATIENTS

477

194

## ADDENDUM TO FY 76 OTITIS MEDIA REPORT

FY 76

Patients seen at Gallup Indian Medical Center 6659  
 ENT Clinic (Patients in FY 75 - 5036)  
 These figures represent patients actually  
 "logged in" at ENT Clinic, and do not include  
 patients seen after-hours as emergencies or  
 drop-ins, or patients presenting on non-  
 clinic days.

Otology clinics were held throughout the Navajo 32  
 Area by IHS Otolaryngology Staff based at GIMC.  
 Audiology services for these clinics provided  
 by staff Audiologist/Audiometric Technicians.  
 At Tuba City, Otology Fellow holds clinic and  
 performs surgery on average once a month. Each  
 clinic averages 30 - 50 patients.

Clinics held by contract Otologists (Dr. Wasylenki-  
 Cuba). (Dr. Edgerton - Shiprock), (Dr. Herzon -  
 Crownpoint). Audiology services for the latter 2  
 consultants provided by our staff.

Surgical Backlog continues to be poorly defined and is  
 ultimately dependent on the interest and enthusiasm of  
 staff at individual Service Units in maintaining Otitis  
 Media Registers. Children can be fairly well defined,  
 but there is a vast amount of otologic and other ENT  
 surgery in adults needing to be done which can only be  
 guessed at. At this time, the only Service Unit reporting  
 a fairly accurate backlog figure for otology is Tuba City,  
 which reports 200 + patients identified in need of primary  
 surgery plus 50 needing revision surgery. Addendum: Winslow  
 reports 42 children.

Operating Room problems at GIMC continue to plague all services  
 performing surgery. There seems to always be a shortage of  
 Anesthetists, O.R. Nurses (or both), or of Ward nursing personnel.  
 McKinley General Hospital has helped spare the ENT Service some  
 of this difficulty, but in the Spring of 1976, MGH underwent a  
 change of Administration (to Pres. Hosp., Albq.) along with  
 considerable loss of personnel. This made it virtually im-  
 possible for us to utilize MGH for surgery for a period of  
 several weeks. Presbyterian has made positive efforts to  
 overcome this problem.

# Footnotes

- (a) Regular Otology Clinics are held by these contract Otologists: Dr.Eugene Wasylenki(Cuba) - monthly; Dr.Craig Edgerton(Shiprock) - monthly; Dr.Fred Herzon(Crownpoint) - alternate months. Data as to total # of patients seen not available.
- (b) Dr. Wasylenki - 23 patients  
Dr. Edgerton - 41 patients  
Data regarding any CMC Otologic surgery at BCMC not available.
- (c) Breakdown CMC Expenditure (b)
- |                             |                            |
|-----------------------------|----------------------------|
| Dr.Edgerton (Shiprock S.U.) | Dr.Wasylenki (Albuquerque) |
| Hospital \$18,736.31        | Hospital \$15,820.99       |
| Doctor 13,640.00            | Doctor 11,381.63           |
| Anesthesia 3,206.00         | Anesthesia 4,401.45        |
| <u>\$35,582.31</u>          | X-Ray 240.03               |
|                             | <u>\$31,844.10</u>         |
- (d) No Speech Pathologist is available at CIMC except for 4 days a year when Cleft Lip/Palate Clinic is held(quarterly). The Speech Pathology consultant sees on average 10-15 patients per clinic for a total of 40-60 patients/year. There are contract BIA Speech Therapists scattered throughout the Reservation, but IHS has little communication or contact from these individuals.

OKLAHOMA

(FY 76 Base, \$336,600. and 3 Positions)

Conversion of the previous audiologic services provided for under contract and the addition of an administrative assistant with the positions made available during this year have enabled the Oklahoma program to provide continuity of care and overall program coordination which was not possible under contractual arrangements in the past. The addition of a MCH consultant to the Area Office has led to the further development of the program which not only covers screening activities throughout the state but is expanding into the speech and language areas as well. Tribally contracted technicians and their backups at the Service Units throughout the Area provide the screening services. The state is divided so that each audiologist is responsible for one half the state, enabling much more frequent audiologic services than was the case even one year ago. Screening activities, in common with many of the other Areas, still concentrate on school age children but with the commitment to extend the age downward at the earliest feasible time.



## OKLAHOMA

	<u>FY 76</u>
Total Number Screened	<u>16779</u>
Children (below 17 years)	<u>14259</u>
Adults	<u>2520</u>
Number Failing	<u>2528</u>
Audiometry - children	<u>1201</u>
- adults	<u>915</u>
Tympanometry - children	<u>583</u>
- adults	<u>135</u>
Otoscopic - children	<u>213</u>
- adults	<u>98</u>
Number Referred for Diagnostic Audiometry	<u>1838</u>
Children	<u>1029</u>
Adults	<u>809</u>
Number Found with Hearing Loss	<u>1647</u>
Children (unilateral)	<u>423</u>
Children (bilateral)	<u>477</u>
Adults (unilateral)	<u>227</u>
Adults (bilateral)	<u>520</u>
Number Referred for Medical/Surgical Evaluation	<u>962</u>
Number Receiving Medical/Surgical Services	<u>962</u>
Number of Hearing Aids Provided	<u>294</u>
Children	<u>23</u>
Adults	<u>271</u>
Number of Persons Trained for OM Activities	<u>8</u>
Audiometrists	<u>7</u>
CHRs	<u>1</u>
Current Backlog of Surgical Procedures	
Number	<u>65</u>
Estimated Cost (CMC)	<u>\$28,750.00</u>

PHOENIX

(FY 76 Base, \$354,600. and 2 Positions)

The Phoenix Area program is conducted through a combination of Federal activities at Phoenix Indian Medical Center, a contract with the University of Arizona, and an agreement with Oak Knolls Naval Hospital in California. The field services are provided for under the University of Arizona contract, in the main, and are limited to the Parker, Keams Canyon, and San Carlos Service Units. The field technicians collect and analyze data on all cases of acute and chronic otitis media, other diseases of the ear, hearing loss, and deafness. The technicians also make followup home visits on all outpatients below the age of six years seen with acute otitis media for the purposes of determining compliance with the treatment prescribed, examining other members of the family to identify ear disease, conduct health education programs for the patient and his family, and work to increase the rate of return visits for medical treatment. The contractor also collects data on all newborns in the specific communities for the purposes of longitudinal and epidemiological study of ear disease in the population being served.

The second non-IHS activity undertaken in the Phoenix Area is through a memorandum of agreement with the Navel Regional Medical Center in Oakland, California. The Navy provides a field case identification program and surgical program at the Oak Knolls Hospital for beneficiaries from selected sites within the Phoenix Area. In addition to the medical and surgical services, audiologic services up through the selection and fitting of hearing aids is also provided under this agreement.

The Phoenix Indian Medical Center program is staffed by two otolaryngologists, an audiologist, and supportive medical-surgical personnel. Two positions provided this year went to an EENT program coordinator and surgical nurse. Limited speech therapy services are provided for by contract.

PHOENIX AREA  
EAR CARE PROGRAM DATA SUMMARY

<u>Outpatient Visits</u>	<u>FY 76</u>	<u>WEDGE (Jul 1, 76 - Sep 30, 76)</u>
IHS: Direct	19671	*9089
Contract	1091	188
Oakland Naval ENT	4130	*1890
University of Arizona Otitis Media		
Acute Case Home Visit + Exam	468	80
Household Contact Visit + Exam	1257	190
Cohorts Exam	872	377
Newborns Exam	325	84
<u>Procedures</u>		
IHS		
Audiograms	1667	432
Hearing Aids	78	21
Oakland Naval		
Audiograms	1938	* 552
Hearing Aids	9	* 49
<u>Surgical Procedures</u>		
IHS	230	46
Oakland Naval	99	* 73

\* Denotes six month totals (July 76 - Dec 31, 76)

## PHOENIX INDIAN MEDICAL CENTER

## ANNUAL AUDIOLOGY REPORT

FY 76

TYPE	A G E			TOTAL
	0-3	4-15	16-ADULT	
HT*	167	604	792	1563
HAE*	6	21	77	104
TOTAL	173	625	869	1667

\*HT-Hearing Tests; \*HAE-Hearing Aid Evaluation (includes return visits)

FIELD CLINICS: (included in above totals)

San Carlos: 174

Keams Canyon: 70

Parker: 29

Peach Springs: 10

Southwest Indian School: 26

PORTLAND

(FY 76 Base, \$176,000. and 0 Positions)

The Portland program underwent major revisions during FY 76 with a change in the MCH consultant. During FY 76 the previous program, a part of an overall MCH program, provided services to young children and their parents and emphasized acute otitis media surveillance during well-baby clinics, home visits, etc. This program was undertaken at six Service Units and the otitis media contacts for the year are summarized on the following page.

Three contacts were also let with otologic-audiologic facilities (Yakima, Bellingham, and Spokane) for the purpose of selecting and fitting hearing aids.

PORTLAND

<u>Service Unit</u>	<u>Otitis Media Contacts</u>
Colville	223
Yakima	211
Warm Springs	51
Lummi	318
Fort Hall	640
Nez Perce	128
	<hr/>
Total	1,571

TUCSON

(FY 76 Base, \$22,000. and 0 Positions)

The Tucson program, located at Sells Service Unit, has from its inception be largely a mobile program looking at upper respiratory infections and otitis media. The data for FY 76 which follow indicate that while 630 children were screened only 19 failed audiometry with no information available as to whether or not any of these had a confirmed hearing loss. Otitis media would appear to be very well under control at this Service Unit with no surgical backlog indicated at this time, even though the APC report indicates 1,000 cases of chronic otitis media for the year.

## TUCSON

FY 76

Total Number Screened	<u>630</u>
Children (below 17 years)	<u>630</u>
Number Failing	<u>19</u>
Audiometry - children	<u>19</u>
Number Referred for Diagnostic Audiometry	<u>19</u>
Children	<u>19</u>
Number of Persons Trained for OM Activities	<u>18</u>
CHRs	<u>2</u>
Other	<u>16</u>



USET

(FY 76 Base, \$192,600. and 2 Positions)

During FY 76 a contract was let with the Seneca Tribe in New York to provide services similar to those conducted under tribal contracts with Cherokee, Hollywood, and Philadelphia. These contracts call for the services of a technician to provide screening and followup services throughout the respective reservation areas.

The two positions provided in the FY 76 budget have gone to a staff assistant located at USET Headquarters and a program coordinator located in Cherokee.

A limited number of hearing aids have been made available to Philadelphia and Hollywood for distribution to contracts with audiologists in those locales.

## USET

	<u>FY 76</u>
Total Number Screened	<u>4491</u>
Children (below 17 years)	<u>3644</u>
Adults	<u>841</u>
 Nuber Failing	 <u>1381</u>
Audiometry - children	<u>598</u>
- adults	<u>461</u>
Tympanometry - children	<u>281</u>
Otosopic - children	<u>56</u>
- adults	<u>2</u>
 Number Referred for Diagnostic Audiometry	 <u>691</u>
Children	<u>401</u>
Adults	<u>307</u>
 Number Found with Hearing Loss	 <u>731</u>
Children (unilateral)	<u>274</u>
Children (bilateral)	<u>98</u>
Adults (unilateral)	<u>283</u>
Adults (bilateral)	<u>76</u>
 Number Referred for Medical/Surgical Evaluation	 <u>426</u>
Number Receiving Medical/Surgical Services	<u>303</u>
Number of Hearing Aids Provided	<u>55</u>
Children	<u>2</u>
Adults	<u>53</u>

COMMUNICATION DISORDERS UNIT

(FY 76 Base, \$375,000. and 6 Positions)

The primary activities conducted at the Communication Disorders Unit are the coordination of the overall Sensory Disabilities Program, the training of technicians, maintenance of the audiometric calibration facility, and distribution point for hearing aids -- the last three activities being conducted under contract.

During FY 76, a major change in the program was a change of contractors with the entire facility being moved from the University of New Mexico to an office building in downtown Albuquerque.

The previously planned expansion of training activities was undertaken during this fiscal year with a total of 24 training activities taking place varying from one days duration to three weeks duration. The training coordinator expanded the training activities farther afield from Albuquerque during this period with courses being conducted throughout New Mexico and in Portland, Rapid City, and Pine Ridge. In addition, the coordinator site visited throughout New Mexico, Hollywood, Florida; Talihina and Tishimingo, Oklahoma; Anchorage and Sitka, Alaska; and Philadelphia, Mississippi. The training program for otologic technicians was initiated under contract during this time with the initial contract covering the development of an otologic technician training course, its curriculum, and the development of field sites for the conduct of the training. Once technician received initial instruction in this aspect on a developmental basis by the end of the fiscal year.

The calibration laboratory reported 148 audiometers calibrated from all nine Areas. In addition, the technician worked throughout New Mexico in checking out electrical connections for the mobile unit. He attended two advanced training seminars -- one in Cleveland and the other in Charlottesville. Technician is also responsible for reminding various Service Units the need for calibrating the instruments; during this time, he received a 55% response to various written directives promoting the service.

During the fiscal year, 1,158 hearing aids were issued to the various Areas. The total number of aids handled by this facility to date is now 2,790.

The early intervention program for infants and their parents was initiated during this fiscal year on a one-half time basis. The bulk of the activities undertaken were, first, to develop and evaluate the testing techniques to be used for the 0-3 year old population; develop and present early intervention elements into the audiometric technician training course; conduct field training of audiometric technicians into early intervention; begin developing the elements of the parent training program; provide and evaluates early intervention services in the Albuquerque Area. This activity was expanded to full time during the "wedge" period and continues at this level at the present time.

## ABSTRACT

In order to evaluate progress of the otitis media program from its inception in FY 71 through FY 76, three studies are reported and evaluated.

1. In Alaska, where chronic otitis media in some areas was found to be 23%, most recent evidence indicates the program goal of a rate no more than 3% has been achieved. This has been accomplished through an intensive and aggressive program of prevention, case finding, and medical/surgical care involving the coordination of many diverse elements.
2. A reassessment of the six Service Units studied in the GAO report of 1973 shows that acute disease has increased in those areas with either no or a new otitis media control program, while chronic disease has decreased at each of the six sites.
3. The IHS evaluation study of otitis media indicates a marked decrease in chronic ear disease even in those Service Units which do not have an operational otitis media control program. Three of the five Service Units showed a greater overall ear disease problem than in the general population.

Conclusion to be drawn include:

- (1) Chronic otitis media has declined over the past several years;
- (2) the impact of the program has been variable;
- (3) serous otitis media appears to be an increasing problem;
- (4) deficiencies in the IHS APC forms obscure efforts to determine extent of chronic otitis media; and
- (5) chronic otitis media appears to be decreasing in locales not yet served by a special control program.

## 1. INTRODUCTION

Prior to the advent (in FY 71) of an otitis media control program within the Indian Health Service numerous surveys and studies indicated a problem of almost overwhelming magnitude. In 1965, for example, a survey of 3,000 Navajo children indicated that over 7% of them had chronic otitis media, a rate seven times greater than that for the general population. In Alaska, a study for the same year indicated that 23% of the villagers in seven Eskimo communities had a history of draining ears on more than one occasion. Of this number, 65% had their first episode before the age of one and 89% before the age of two. Thirty one percent of this group also showed a hearing deficit of 26 dB or more. In 1968, a survey of White Mountain Apaches showed a 8.3% morbidity rate for chronic middle ear disease. Corroboration of the extent of the problem is also deduced from the reported new cases of disease within the Indian Health Service ambulatory patient care records which indicate a rate of disease (in 1962) of 3,802 climbing (in 1972) to a peak rate of 12,290 per 100,000 population. The most recent data indicate a rate of 11,378 per 100,000.

In addition to being a major health hazard, the resultant hearing loss can provide life long impairment. A survey in Bethel, Alaska, for example, indicated that of a total of 516 students, 53% of the males and 39% of the females had a hearing loss of at least moderate extent. Other surveys found Indian children in British Columbia with a 31% hearing loss rate, Alaskan Indian children with 23% hearing loss rate, and Aleut and Indian children with a 26% hearing loss rate.

The three reports which follow are evaluations undertaken to assess the current status of chronic otitis media in the American Indian and Alaska Native population and while none is truly comprehensive in scope the resulting information by virtue of its consistency has high predictive value for those Areas not actually investigated.

## 2. ALASKA

The Alaska program was begun through a Congressional appropriation of 32 positions and \$438,000 in the FY 71 budget. The following were the goals of the program:

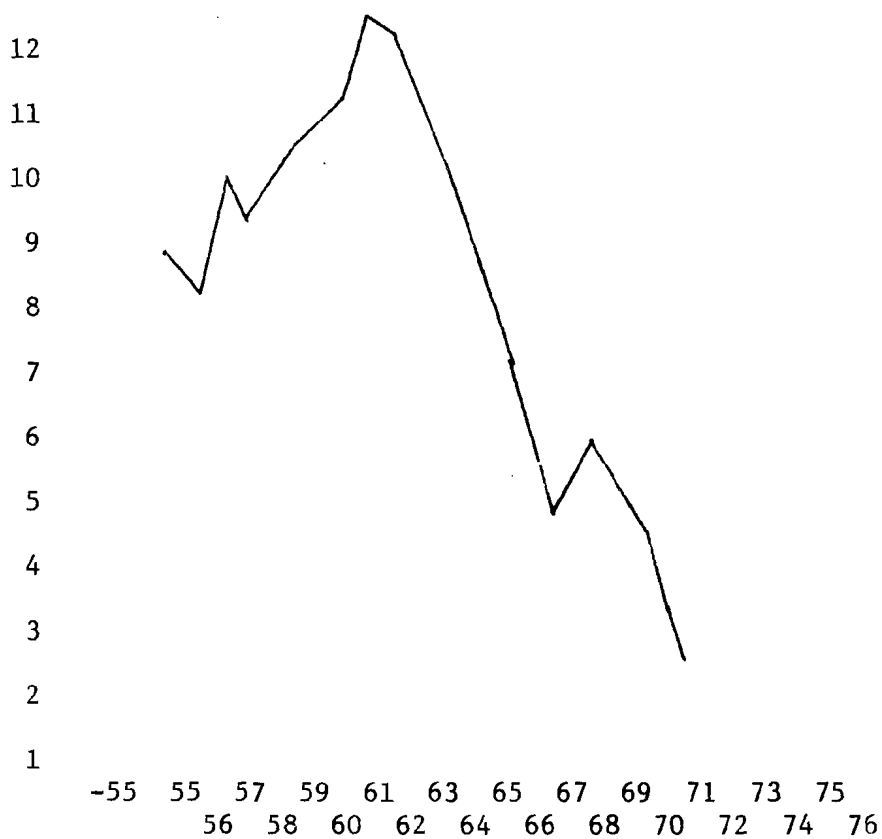
- (1) Reduction of new cases of chronic otitis media to 3% or less.
- (2) Examination of the entire school population to
  - (a) find and provide surgery for all cholesteatomas;
  - (b) provide restorative surgery for all perforations;
  - (c) provide surveillance of the population and continue evaluation of surgical results and;
  - (d) provide hearing aids and other services for rehabilitation.

The most recent assessment of the program in Alaska (May 1976) indicates:

- (1) The incidence of chronic otitis media in children has been reduced to 2.6% in those children born in 1970 who are now six years old and entering school. (See Figure I).
- (2) All Alaska Service Units are now at maintenance level with the exception of Bethel which should achieve maintenance by the end of FY 77.
- (3) The ratio of cholesteatoma to chronic otitis media has been reduced to 0.018.
- (4) All patients with cholesteatoma have had surgery or are now scheduled for surgery.
- (5) There have been no deaths in Alaska from otitic meningitis over the last six years.
- (6) Restorative surgery for chronic otitis media is in excess of 3,000 cases with the backlog of school children to be eliminated by the end of FY 77.
- (7) Results of surgery to date indicate a success rate of approximately 80%.
- (8) The supply of hearing aids is now sufficient to provide amplification for anyone in need.

These results have been achieved through an aggressive detection, treatment, and surgical program involving not only ANMC personnel in the hospital and in the field but with the assistance of local service unit personnel, community health aides and State Board of Health personnel. The coordination of all these efforts allowed for better casefinding and communication at the local level as to the course and seriousness of the disease, where to go for help, how to treat it, and then when to refer for corrective surgery when appropriate.

While data from the FY 76 ambulatory patient care forms (see Conclusions) still indicates a problem of considerable magnitude, most recent discussions with Anchorage personnel (February 1977) indicate that these forms are no longer an accurate indication of the prevalence of chronicity but are rather the result of deficiencies in the reporting form itself.

FIGURE 1PercentYEAR OF BIRTH OF COHORT

PREVALENCE RATES FOR CHRONIC OTITIS MEDIA  
IN ALASKAN NATIVES

"PREVALENCE RATE" - Number of cases of known COM on 2/76 by year of birth  
(Births for that year - infant deaths for following year)

### 3. UPDATE OF THE GAO REPORT

In 1973, the General Accounting Office submitted a report to the Congress on "Progress and problems in providing health services to Indians" which included a chapter entitled "Need for a more comprehensive program of otitis media control."

In the report, based on data from FY 72, the GAO surveyed six Service Units to determine, among other things, the extent of acute and chronic otitis media in the population served by those Service Units.

Using the same data source used by the GAO in establishing FY 72 disease rates, the APC reports for FY 76 were reviewed from the Service Units in question. Their results are summarized in Table 1.

Two indications of the otitis media program's effectiveness should be, first, an increase in the number of new patients with acute disease (due to increased Service Unit and community awareness) and, second, a reduction in chronic disease (due to earlier treatment of the acute disease). Based upon the data comparisons from the two years investigated, these indications appear in four of the Service Units studied.

Interestingly, this increased acute disease rate was seen not only at Service Units instituting a control program sometime since FY 71 but in others (such as Red Lake and Yuma) which had some services but no specific otitis media control program. At the same time, programs in effect a longer period of time should show disease reduction. This appears to be the case in both Crownpoint and Pine Ridge where programs were established early in the days of the program but not at Crow which established a program at approximately the same time. The extremely high increase of disease noted at Whiteriver is probably related to an intensive case finding and treatment program initiated there after 1972.

As noted above, if a program is effective a reduction of chronic disease should result from children in the acute stage being seen and treated earlier. The data presented in Table 1 substantiate this conjecture in each of the six Service Units surveyed. Again, the most dramatic reductions are seen for Crownpoint and Pine Ridge with Red Lake much higher than would be expected and Crow not as high as might be expected.

For an in-depth analysis of the progress between the four years since the FY 72 and FY 76, two Service Units with early established programs were selected for more intensive study with the following results.

#### Crownpoint

After the close of FY 76, the otitis media control team from the Gallup Indian Medical Center surveyed all the schools served by the Crownpoint Service Unit to obtain an assessment of the extent of chronic disease

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T A B L E I

<u>SERVICE UNIT</u>	<u>1972</u>		<u>1976</u>	<u>Difference</u>	<u>% Difference</u>
Yuma	158	Acute OM	293	135	+ 85.4 %
	30	Chronic OM	17	13	- 43. %
Crownpoint	1392	Acute OM	1316	76	- 5.45%
	513	Chronic OM	128	385	- 75. %
Whiteriver	692	Acute OM	1507	815	+118. %
	219	Chronic OM	123	96	- 43.8 %
Pine Ridge	1217	Acute OM	1174	43	- 3.53%
	299	Chronic OM	136	163	- 54.5 %
Red Lake	463	Acute OM	930	467	+101. %
	110	Chronic OM	52	58	- 53. %
Crow	497	Acute OM	726	229	+ 46.1 %
	129	Chronic OM	93	36	- 28. %

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Comparison of APC Data

1972 - 1976

T A B L E 2

<u>SCHOOL</u>	<u>FY 72 SURVEY</u>	<u>FY 77 SURVEY</u>
Crownpoint Boarding School	6.4%	9.3%
Crownpoint Elementary	4.1%	2.6%
Thoreau Elementary	Not screened	3.2%
Thoreau Boarding School	Not screened	3.2%
Smith Lake	Not screened	3.6%
Mariano Lake	Not screened	2.2%
Pueblo Pintado Boarding School	7.2%	8.3%
Lake Valley Boarding School	Not screened	1.8%
La Vida	Not screened	4.8%
Borrego Pass	12.0%	6.7%
Baca Boarding School	Not screened	8.2%

Chronic Otitis Media Prevalence &  
Comparisons at Crownpoint Schools

T A B L E 3

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<u>AGE</u>	<u>PERCENT</u>
5 Yrs.	3.8%
6 Yrs.	15.4%
7 Yrs.	10.4%
8 Yrs.	7.6%
9 Yrs.	13.9%
10 Yrs.	16.5%
11 Yrs.	20.3%
12 Yrs.	5.1%
13 Yrs.	2.5%
14 Yrs.	1.3%
15 Yrs.	1.3%
20 Yrs.	1.3%

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Percentage of Chronic O.M. Patients  
By Age - Crownpoint Schools

at this time. These results are summarized in Table 2 along with the results of a similar survey undertaken during FY 72 at certain of the schools within the area. It should be noted that in the most recent survey the examinations conducted were much more extensive in scope in that they included impedance audiometry as well as otoscopic examination and audiometric screening. Each child's diagnosis of chronic otitis media was validated by impedance and otoscopy.

The rate of chronic disease for the schools surveyed were 4.6% for 1977 and 4.4% for 1972. This would appear to indicate that no improvement could be measured over the intervening four years. A school-by-school analysis along with an analysis of the age of children with a chronic ear indicates such is not the case.

Each of the schools with a high chronic disease rate, with the exception of La Vida, is a boarding school serving children from very remote areas of the reservation with poor or no access to health care. In the case of Crowpoint Boarding School, for example, children in attendance are from 50 miles or more from the school itself. The contrast with Crowpoint Elementary school (2.6%) is marked evidence of the disparity of pupils in attendance at such of the two schools. The other boarding schools, Pueblo Pineda and Baca show similar results with an unacceptably high level of disease. Both Crowpoint and Pueblo Pineda do show decreases from four years ago but not nearly as dramatic as the Orange Pass School which, while it serves students of the reservation noted for its abject poverty, still has made a marked decrease in chronic disease in the intervening four years.

The data presented in Table 3 are of special significance in this evaluation. The children reported on were pupils in attendance from kindergarten through sixth grade, ages 5 through 20 years. The lowest percentage of chronic disease is in the five year old group with three children diagnosed chronic otitis media (3.8%). The chronic rate then is high but quite variable from ages six through twenty, peaking at age 11 and decreasing markedly at the older age ranges. These data would indicate that many of the children seen in the 1972 survey have still not had restorative surgery or, if so, did not have a successful restoration. The lower figures for the upper ages possibly indicate these children had had a higher surgical rate than those in the intermediate years. While it is too early to determine whether or not this is the trend, the relatively lower prevalence at the five year old level is encouraging since, as noted above, chronic otitis media is a disease of younger children.

#### Crow

In view of the apparent discrepancies in the APC data reported above, the Communicative Disorders staff at Billings Area Office obtained individual patient records for those patients reported with chronic

otitis media during the year and, along with previous patient records, determined the actual diagnosis involved. The results of this analysis follow:

Number of individuals having a diagnosis of chronic otitis media based on On-Request Report No. 1 (7/1/75 through 6/30/76).	103
Number of individuals seen by Communication Disorders Program.	61
Number of patients whose chart could not be located.	12
No diagnosis could be determined from chart.	12
Recurrent serous otitis media	26
Otitis externa	3
Chronic otitis media	22
Other	23

Of those persons having tympanic membrane perforations, the following conditions were found to exist:

Had surgery	11
Refused surgery	1
Not surgical candidates	6
No ENT evaluation	3
Needs tympanoplasty	1

In order to cross-check the sorts of information being submitted on the APC forms, the same group then re-evaluated the individual records of all persons reported with chronic otitis media at the Blackfeet Hospital in Browning with the following results:

Number of individuals having a diagnosis of chronic otitis media based on On-Request Report No. 1 (7/1/75 through 6/30/76)	103
Number of individuals seen by Communication Disorders Program	82

Number of patients whose chart could not be located	6
Acute otitis media	12
Recurrent serous otitis media	32
Otitis externa	1
Post-op mastoid	6
Within normal limits	4
No diagnosis could be determined from chart	2
Other	3
Chronic otitis media	37

Of those persons having tympanic membrane perforations, the following conditions were found to exist:

Had surgery - intact	9
Had surgery - failed	2
Refused surgery	5
Not candidates for surgery at time of last evaluation	17
Needs ENT evaluation	2
Scheduled for surgery	2

The actual determination of the problem based upon these examinations indicates that a rather serious problem of over-referral and inappropriate diagnosis of chronic otitis media has taken place at both Service Units. Of particular concern is the high number of patients with serous otitis media \*labeled chronic otitis media, possibly due to the lack of a serous category on the APC form.

From the review of these two Service Unit records, it is clearly evident that chronic otitis media in these locales is at nowhere near the level of prevalence which would be expected from the computer printout alone. These data are also consistent with the overall finding from the Billings Area that the chronic otitis media rate has dropped from 3% to 1% over the past four years.

\*Fluid behind the eardrum which is not involved with a toxic bacterial infection.

#### 4. OTITIS MEDIA EVALUATION STUDY

Over the past three years the Indian Health Service has supported a contract with the University of Utah to provide baseline data for evaluation of the otitis media program. The objectives of the project have been (1) to assess the impact of the otitis media program on the prevention of the disease; (2) to assess the reliability of certain techniques for predicting surgical success; and (3) to assess the effectiveness of auditory rehabilitation programs in the Indian population. In order to obtain the necessary data for this study, five geographically diverse Service Unit areas from throughout the Indian Health Service were selected for study. While the final report of the project is pending, a number of preliminary findings are of sufficient importance to be reported at this time.

In each of the five study sites (Hollywood, Florida; Lapwai, Idaho; Fort Duchesne, Utah; Owyhee, Nevada; and Sisseton, South Dakota) the prevalence of chronic middle ear disease was remarkably low with the Idaho site being significantly above the disease prevalence for the population as a whole. At the same time the overall percentage of conductive hearing loss associated with otitis media (10.6%) is significantly higher than that for the general population. Nearly 30% of the subjects in all Areas showed some type of hearing loss or ear pathology (including impacted cerumen), again a figure much high than that for the general population. A summary of the results for total ear problems and chronic otitis media is presented in Table 4.

Three of the Areas surveyed (Florida, Utah, and Idaho) show higher rates of overall ear problems than in the general population of children, which is estimated at 20%; both Nevada and South Dakota showed an overall rate lower than the general population of children. The extent to which these higher rates may be due to serous otitis media and/or finding of this study is the lower than expected disease rates for chronic otitis media in four of the five sites surveyed.

T A B L E 4

<u>SERVICE UNIT SITE</u>	<u>% PERFORATIONS</u>	<u>% OVERALL EAR PROBLEMS</u>
Florida	1.9	29.2
Idaho	5	23.8
Nevada	.2	5.2
South Dakota	2.5	16.7
Utah	2	28.7

Comparison of Perforations &  
Overall Ear Problems

## 5. CONCLUSION

Results from the foregoing evaluations all point to the following conclusions: (1) The Indian Health Service has a markedly lower prevalence of chronic otitis media at the present time than was the case at the time the program was initiated; (2) the effect of the program in certain areas such as the Crownpoint schools has been minimal while it has been of considerable impact in such areas as Montana; (3) with a decline in chronic otitis media have been a marked increase in diagnosis of serous otitis media which may or may not reflect an increase prevalence of this disease; (4) deficiencies in IHS data reporting system significantly obscure the assessment of the extent of disease through the use of the ambulatory patient care forms, and (5) decline in chronic disease, based upon the Utah study, indicates a reduction in chronic ear disease even in the absence of a special program for its remediation in four of the five Service Units surveyed.



