

1975

A Mental Health Resource Guide for Native Americans in Albuquerque

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Recommended Citation

Otitis media report FY 1974 Indian Health Service, Sensory Disabilities Program, Rockville, MD. 1975

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OTITIS MEDIA REPORT FY 1974

Indian Health Service

Sensory Disabilities Program
June, 1975

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I. INTRODUCTION

This is a fourth in a series of reports on the Otitis Media Program established in July 1970 through Congressional appropriation and Administration reallocation of funds.

For the first time since otitis media became a reportable disease in the Indian Health Service, data for both acute and chronic otitis for FY 1974 show a decline rather than an increase. An Area by Area comparison is the subject of Table 1. With the exception of slightly more acute cases reported from Phoenix and slightly more chronic cases reported from USET, the figures between '73 and '74 are essentially down for both categories in every Area. While the incidence rate for calendar year '74 is not yet available, it would appear that this figure will also show a decline--for the second year in a row. Table 2 shows a decline for the first time, between successive calendar years, in this case between 1972 and 1973.

Whether or not this decline can be attributed to lessened incidence of disease, better diagnosis at the Service Unit level, or any combination of other factors, can only be speculated on at this time. The same cautions pointed out in the report of one year ago about generalizing from these data should be repeated. Cases reported are based upon variable criteria for diagnosis at the time of hospital visits so that chronic otitis is felt to be considerably underestimated. The definition of "chronic otitis media" appears, on examination of computer printouts, to be highly suspect and probability of perforation being present very questionable. Computer data must also be viewed with suspicion when the data reported on chronic otitis from Tucson over the past two years is examined; the low number of acute cases compared to the exceedingly high number of chronic cases make these data very suspect.

Other than the consistency seen in the lowered incidence figures for the past two fiscal years, very few other generalization now can be drawn from these data.

Table 1

Chronic and Acute Otitis Media, by Area
 Fiscal Year 1973 and Fiscal Year 1974
 Indian Health Service

<u>Area</u>	Fiscal Year 1973		Fiscal Year 1974	
	<u>Acute</u>	<u>Chronic</u>	<u>Acute</u>	<u>Chronic</u>
Aberdeen	9,049	645	5,779	498
Alaska	5,062	1,445	4,972	1,378
Albuquerque	4,921	246	3,592	230
Billings	4,481	444	3,094	445
Navajo	19,559	2,112	19,013	1,648
Oklahoma	5,304	629	4,799	597
Phoenix	8,127	908	8,407	607
Portland	3,196	369	2,749	294
Tucson	41	844	28	996
USET	<u>1,379</u>	<u>82</u>	<u>1,323</u>	<u>108</u>
TOTAL	61,119	7,724	52,756	6,801

Table 2
Reported New Cases of Otitis Media
and Incidence Rates for Indians and Alaska Natives
Calendar Years 1962-1973

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
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

II. AREA REPORTS

ABERDEEN

There is only one special Otitis Media Program in operation in the Aberdeen Area, that provided by contract with the University of Nebraska Medical Center to operate an ENT program and provide the services of an ENT resident to the Service Unit at Pine Ridge, South Dakota. During this fiscal year, the ENT resident also was able to make regular visits to Service Units at Eagle Butte and Rosebud, South Dakota.

The data reported herein, and in the summary table, are those reported from this program only. Preliminary figures for the first half of FY 74 for services beyond Pine Ridge indicated a total number of 246 children screened, with only 4 showing abnormal findings. This screening was conducted by PHNs and school nurses and is limited to audiometry so that the abnormal findings undoubtedly are far below those to be expected had the screening been more comprehensive.

The fiscal limitations to date have limited the program to Pine Ridge and vicinity. With this limitation in mind, however, a number of accomplishments of this program need to be stressed. For example, one unique feature of this program is the provision of services by the University within the IHS hospital facility and its satellites. By providing housing to the senior resident located on site, better continuity and long term use of the resident is achieved without, at the same time, adding to the overall cost of the contract.

There are limitations inherent in this arrangement, also, not the least of these is the difference in salaries being paid to Federal as compared to University personnel. This has resulted in some instances in the University staff person being recruited to the Federal payroll by virtue of the higher pay scale. Since IHS is limited to paying salaries at the contractor's rate, however, this problem does not seem capable of immediate solution. A second major problem beyond those inherent in the size of the program is the limitation on distribution of hearing aids. At the present time, it is necessary to transport potential hearing aid users to University of Nebraska for evaluation--a procedure which makes this cost prohibitive. The contractor, at the same time, has been unable, due to his own personnel limitations, to provide these services by sending audiologists to Pine Ridge with any degree of regularity. Accordingly, the number of hearing aids provided is far short of that needed.

Table 1: Aberdeen

PINE RIDGE FY 74

OTORHINOLARYNGOLOGY PROGRAM

Total Visits for Ear Disease			1410
Acute Ear Disease		576	
Initial Visits	363		
Follow-Up Visits	213		
Chronic Ear Disease		834	
Initial Visits	119		
Follow-Up Visits	715		
Total Visits for Other ENT Problems			767
Acute ENT Problems		405	
Initial Visits	229		
Follow-Up Visits	176		
Chronic ENT Problems		362	
Initial Visits	63		
Follow-Up Visits	229		
TOTAL PATIENT VISITS			<u>2177</u>
Initial Visits	<u>774</u>		
Follow-Up Visits	<u>1403</u>		
Total Surgical Cases			273
In-Patient Procedures		251	
Ear Surgery	84		
Other ENT Surgery	167		
Out-Patient Procedures		22	
Ear Surgery	4		
Other ENT Surgery	18		
TOTAL SURGICAL CASES			<u>273</u>
Ear Surgery	<u>88</u>		
Other ENT Surgery	<u>185</u>		
Total Field Clinic Visits			478
Total Non-Surgical Admissions			6
Referrals to Contract Health Service			7
Days of Consultant Visits			28
Total Number of Home Visits			409

Total Ear Operations (Area): 107 (including Bemidji)

ANCHORAGE

Anchorage, as the only program with specific line item budget and staff, not surprisingly is also the most successful program to date.

Case finding is largely through the State Board of Health program for communicative disorders.

Even though one otolaryngologist position was vacant for four months the surgery schedule is on target with only one year of "heavy" surgery remaining. The previously high success rate of tympanoplasties is continuing this year at 80-90% anatomical success.

The previously-reported decline in prevalence continues this year, although no hard data are available. One year ago, 16% of all surgical candidates were repeat cases; this ration, at Kotzebue at least, has now declined to 10%. The program reports new cases of chronic otitis media to be at maintenance level (no more than 3%) at Kananak, Anchorage, Kotzebue, and Barrow. Tanana and Bethel remain the big problems at present, with Bethel due to get major emphasis in near future. Overall, the projection is for achievement of maintenance level of no more than 3% throughout Alaska by no later than two years from now.

Computer problems still persist, making more precise epidemiologic data unavailable at the present time.

The major innovation in the surgery program over the past year has been the reduction of hospital time spent in Anchorage post-surgically. The effect of such reduction will be analyzed next year.

The consistency of the Alaska program is most clearly evident from a comparison of the selected services reported for FY 73 compared with those from FY 74 on the following table.

The Mt. Edgecumbe project is being better incorporated into the overall otitis media activity by utilizing the services at the otolaryngologist into the ANMC program as often as is feasible.

Table 1: Anchorage

FY 73-74 Comparisons

	<u>73</u>	<u>74</u>
Total Number Screened	5,757	6,196
Children	4,406	4,833
Adults	1,351	1,363
Number Failing and Referred for Diagnostic Audiometry	1,942	1,921
Audiometry		
Children	1,577	1,537
Adults	365	384
Otoscopy		
Children	749	1,030
Adults	154	165
Number Found with Hearing Loss	1,942	1,921
Children	1,577	1,537
Adults	365	384
Number Referred for Medical/ Surgical Evaluation	1,942	1,921
Number of Hearing Aids	29	20
Number of Persons Receiving Training	20	10

Total Ear Operations: 799

ALBUQUERQUE

As previously reported, the Albuquerque Area program is conducted through contracts with the Department of Communicative Disorders at the University of New Mexico and the Zuni Tribe. Basically, these contracts provide for screening and follow-up, referral, and aural rehabilitation services. Surgical services are provided by local private practitioners.

Through a series of unfortunate circumstances, including the death of one otitis media worker and several resignations, the Albuquerque program underwent a great deal of trauma during this year. This notwithstanding, as the comparative data indicate, the services contracted for were provided at a substantially higher rate than in the previous year.

Of particular interest in this comparison is the substantially higher yield of failures. This is primarily due to the fact that tympanometry during FY 74 was employed routinely with every child seen, whereas in 1973 only those children failing audiometry were given the tympanometric examination. This greater yield clearly indicates the need for routine use of tympanometry in any screening program.

Table 1: Albuquerque

FY 73 - 74 Comparisons

	<u>FY 73</u>	<u>FY 74</u>
Total Number Screened	2,456	4,368
Children	2,403	4,100
Adults	53	268
Number Failing	307	1,027
Audiometry	195	542
Children	173	357
Adults	22	185
Tympanometry	112	781
Children	108	696
Adults	4	85
Number Referred for Diagnostic		
Audiometry	31	167
Children	14	42
Adults	17	125
Number Found w/Hearing Loss	195	703
Children	163	518
Adults	32	185
Number Referred for medical/ surgical evaluation	105	895
Number Persons Receiving Training *	4	6
Total Ear Operations:		26

* Does not include CHRS, SU personnel and others on one-day training programs.

BILLINGS

Next to Alaska, Billings is the most successful program to date. Services in FY 74 were provided under contract with University of Washington and private practitioners in the State. Case finding is largely from the State program and IHS nursing personnel; follow-up, referral, and surveillance activities as provided by travelling team (2 audiologists, 1 specialty trained physician assistant) who initiated a very comprehensive and successful hearing aid distribution system. Area contracts with private ENT men to provide block surgery schedules at facilities in Crow and Browning were continued this year.

The comparison of gross data, below, between FY 73 and 74 indicates a great deal of consistency between the two years.

Emphasis of the project has been on case evaluation by a mobile ear team on patients referred primarily through Service Unit physicians. In general, three alternatives for medical assessment were available in each evaluation: (1) cases evaluated and treated by the physician assistant and/or his supervisor; (2) cases surgically set by the mobile ENT team in the Service Unit hospital; (3) cases referred to contract ENT physicians for either medical or surgical treatment. Patients found with significant pathology but not requiring physician intervention are evaluated from a rehabilitation standpoint by the team which may provide training and/or hearing aids or referral to such agency as CCS, DVR or University of Montana.

The screening program is carried out only on a very limited basis in order to assess the current trend and types and numbers of pathology present in school age children. Referrals from existing school screening programs are seen and evaluated by the team with appropriate action being taken on those patients found to have significant pathology.

All patients referred to contract physicians for operative procedures or receiving surgery in IHS facilities are followed at regular intervals by the team in order to assess results of the treatment, as well as to identify any complications which may result from that treatment.

During the year, additional funding in the amount of \$98,000 was added to the University of Washington contract to cover physician fees and hospital costs for treatment of individuals with

middle ear problems by contract physicians. Among other things, this improved the show up rate and reduced the amount of delay between diagnosis and treatment for individual patients. A second advantage of the approach was that it allowed the contractor to exercise some control in order to obtain continuity of care across the entire area.

The mobile ear clinic visits were coordinated to correspond with contract physician visits to individual Service Units, thereby gaining the maximum use of the facility as well as the most convenient and comprehensive care for the individual patient. This has also allowed a reduction in the cost of individual care by providing the contract physicians with complete audiological workups available at the time the patient was seen. This enabled the contract physician to schedule surgery where indicated and inform the patient of specific times and dates, rather than leaving this to be done following additional office visits in his own office. This joint effort has improved the show up rate for surgery done off the reservation as well as the quality of the follow-up care.

ENT surgery programs were organized and are now functioning within three IHS facilities in Montana. This required additional equipment and personnel for each of the programs. The summer program at Browning necessitated hiring extra nurses and associated personnel along with coordinating the schedule of "block contract" ENT surgeons who participated in the program. The winter program was held at Crow Agency and also required additional personnel and the coordination of the program which was carried out one week per month over a period of five months. The third program, at Fort Belknap, was more limited in scope due to the restrictions imposed by the facility and thereby required less additional personnel and equipment. A prime disadvantage to these programs is that they have had to be carried out as a program outside the regular operation of the hospital and accordingly has resulted in complications in coordination and function between regular personnel and the special personnel for this program.

One of the most innovative aspects of this program was the use of the physician assistant providing services as part of the mobile team. This man has been responsible for examination of all the patients who come through the mobile ear clinic. Comparison of his findings and those of the supervising otolaryngologist have been very favorable to the extent that this contractor feels that this established that paramedical personnel with limited amounts of training can conduct a very adequate examination on otologic patients. In addition, the physician assistant provides post-

operative care of patients who received surgery throughout the programs of the Billings Area. The physician assistant is also responsible for maintaining the mobile ear clinic and providing for its regular maintenance as well as participating in a number of training sessions during which time he demonstrated and discussed with various clinic and PHS nurses the techniques of using the otoscope to identify pathological conditions of the ear.

The Mobile Ear team summary report of FY 74 activities is as follows:

Number of Days At Each Service Unit:

Northern Cheyenne	13 days
Flathead	26 days
Fort Belknap	13 days
Rocky Boy	8 days
Fort Peck	23 days
Crow	47 days *
Blackfeet	34 days
Wind River	13 days
Office	27 days

Remainder of Days: Travel, Holidays, Vacation

Number of Miles Traveled: 20,179 miles

Approximate Hours of Patient Contact: 973 1/2 hours

Hearing Aid Evaluations: 139 evaluations

Hearing Aid Rechecks: 152 returns

Number of Ear Impressions: 130 impressions

Number of Patient Contacts: 2,492 patients

Diagnostic Hearing Evaluations:

Pure Tone -	2,108
Speech Audiometry -	542
Tympanometry -	1,428
Eustachian Tube Function -	281
Bekesy Audiometry -	91
Special Tests -	116

*Due to the delay in beginning the Browning Summer Program, eight days were spent at other Service Units.

Table 1: Billings

FY 73-74 Comparisons

	FY 73	FY 74
Total Patients Seen	2,432	2,226
Children	1,681	1,530
Adults	751	696
Number of Patients w/Pathology	751	1,000
Children	364	502
Adults	387	498
Number of Patients Failing		
Otoscopy	677	598
Children	400	393
Adults	277	205
Number of Patients Failing		
Tympanometry	700	472
Children	417	301
Adults	283	171
Number of Patients w/Hearing		
Loss	929	697
Children	406	249
Adults	523	448
Number Referred for Medical/ Surgical Evaluation	419	588
Total Ear Operations: 97		

Table 2: Billings

Diagnosis in Clinics and School Screenings
Fiscal Year 1973-74

		No.	%
I:1	External otitis-----	94	3.1
I:2	Cerumen (wax)-----	191	6.3
I:3	Acute otitis media (serous or purulent)-----	157	5.2
I:4	Chronic suppurating otitis media-----	140	4.6
I:5	Chronic dry otitis media-----	368	12.1
I:6	Chronic or recurrent serous otitis media-----	325	10.7
I:7	Sensorineural hearing loss-----	310	10.2
I:8	Conductive hearing loss, other causes-----	125	4.1
I:9	Dizziness, vertigo, Meniere's Disease, etc. ---	3	0.1
		<u>1613</u>	<u>52.4</u>
II:1	Acute rhinitis, common cold-----	164	5.4
II:2	Chronic atrophic or dry crusted rhinitis-----	62	2.0
II:3	Allergic or vasomotor rhinitis-----	24	0.8
II:4	Nasal fracture, acute or sequelae-----	33	1.1
II:5	Nasal septal deviation-----	49	1.6
II:6	Sinusitis-----	10	0.3
		<u>342</u>	<u>11.2</u>
III:1	Adenoids-----	81	2.7
III:2	Acute pharyngitis, tonsillitis, sore throat---	45	1.5
III:3	Chronic or recurrent pharyngitis, tonsillitis---	34	1.1
		<u>160</u>	<u>5.3</u>
IV:1	Acute or chronic laryngitis, hoarseness-----	6	0.2
IV:2	Acute or chronic bronchitis, cough-----	11	0.4
		<u>17</u>	<u>0.6</u>
V:1	All other diagnoses-----	154	5.1
V:2	No symptoms, check-up, normal ENT-----	657	21.6
		<u>811</u>	<u>26.6</u>
	TOTAL-----	3043	
	No. of school children screened out of total---	427	14.0

Patients Referred to Crippled Childrens Services: 12

Patients Referred to Vocational Rehabilitation: 40

Patients Referred to Veterans Administration: 7

Children Referred to State School for Deaf and Blind: 2

Total Number of Hearing Aids Issued During FY 74: 124

Hearing Aids Purchased by Billings Area: 66 or 53 per cent

Hearing Aids received through Communication Disorders Unit: 58 or 47 percent

Hearing Aids repaired under warranty: 8

Hearing Aids repaired under University of Washington Contract: 12

Hearing Aids Issued As Related to Degree of Hearing Loss:

Mild Loss Category (20dB - 35 dB SRT^{*}) - 1%

Moderate Loss Category (40 dB - 60dB SRT) - 52%

Severe Loss Category (65 dB + SRT) - 38%

Precipitous High Frequency Loss - 9%

*SRT - Speech Reception Threshold

Percentage of Different Models Issued:

Behind-the-ear - 69%

Body Models - 12%

Eyeglass (CROS-BICROS) - 12%

Bone Conduction - 7%

Distribution of Battery Size:

Size 675 - 45%

Size 76 - 45%

Size 401 - 10%

Type of Hearing Loss as Related to Fitting of CROS-BICROS Aids:

CROS Aid for Bilateral Precipitous Loss - 8 patients
 CROS Aid for Unilateral Deafness - 2 patients
 CROS Aid for Chronic Drainage - 2 patients
 BICROS Aid for Unilateral Deafness and Loss in Better Ear - 2 patients
 BICROS Aid for Chronic Drainage - 4 patients

Hearing Aids Issued As Related to Sex of Patient:

Male Patients Issued Aids: 51%
 Female Patients Issued Aids: 49%

Hearing Aids Issued as Related to the Age of the Patients:

Age 0 - 17 years: 6%
 Age 18- 29 years: 10%
 Age 30- 59 years: 30%
 Age over 60 years: 54%

Hearing Aids Issued as Related to Type of Hearing Loss:

Sensori-neural hearing loss - 48%
 Conductive hearing loss - 10%
 Mixed hearing loss - 52%

Percentage of the above with etiology of otitis media: 66%

<u>Model</u>	<u>Number Issued</u>	<u>Number Repaired or Needing Repair</u>
<u>Behind-the-ear</u>		
Maico CQ	17	3
Audiotone A-20	13	3
Qualitone TSP	6	1
Qualitone SWH	8	1
Omnitone Star 6F	10	
Fidelity F-11	9	4
Oticon 565 SX	3	
Widex 52	15	2
Siemens 384 SL	3	2
Norelco KL 6730	6	1
Vicon OE 124	1	1
<u>Eye-Glass Models</u>		
Sonotone CROS	12	2
Sonotone BICROS	2	
Otarion Bone Conduction	4	

<u>Model</u>	<u>Number Issued</u>	<u>Number Repaired or Needing Repair</u>
<u>Body Models - Air</u>		
Fidelity 360	4	1
Oticon 371PP	1	1
Omnitone 12	1	
Acousticon A770	3	
Zenith Award	2	

Summary of Hearing Aids Issued at Each Service Unit:

Crow:

Hearing Aids Issued: 16
Hearing Aids Repaired: 3
Hearing Aids Lost: 6

Blackfeet:

Hearing Aids Issued: 31
Hearing Aids Repaired: 7
Hearing Aids Lost: 5

Wind River:

Hearing Aids Issued: 15
Hearing Aids Repaired: 5
Hearing Aids Lost: 1

Rocky Boy:

Hearing Aids Issued: 3
Hearing Aids Repaired: 0
Hearing Aids Lost: 0

Fort Peck:

Hearing Aids Issued: 14
Hearing Aids Repaired: 1
Hearing Aids Lost: 2

Fort Belknap:

Hearing Aids Issued: 6
Hearing Aids Repaired: 1
Hearing Aids Lost: 0

Northern Cheyenne:

Hearing Aids Issued: 12
Hearing Aids Repaired: 0
Hearing Aids Lost: 2

Flathead:

Hearing Aids Issued: 27
 Hearing Aids Repaired: 3
 Hearing Aids Lost: 2

Note: The number of hearing aids repaired reflects only those aids sent in to the manufacturer for repair and not those repaired by the audiologist.

Note that over half of the hearing aids issued during FY 74 were purchased by the Billings Area-Contract funds. Two facts account for this: 1. The hearing aid dispensing program from the Indian Health Service Communication Disorders Unit in Albuquerque did not get underway until later in the FY; therefore, aids were purchased to continue the operation of the hearing aid program. 2. Special aids, namely bone conduction and CROS, are not available through the Communication Disorders Unit. Since 19% of the hearing aid patients need these types of hearing aids, they were purchased by the Billings Area in order that the amplification needs of each person could be met.

Due to the number of lost hearing aids, the following policy was adopted: Hearing aids issued will be repaired when necessary and replaced when it is no longer feasible to repair the aid, however, if the hearing aid is lost, it will not be replaced by this program. There is some indication that hearing aids are sold to pawn shops occasionally. It is hoped that this more stringent policy will alleviate this somewhat in the future.

The CHR's who attended the Otitis Media Worker training in Albuquerque have been supplied with parts necessary to make repairs (minor) to avoid having to send aids away. Major repairs will be done by the individual manufacturers either under warranty or paid per aid.

A system for hearing aid users to obtain batteries at the service unit is now in operation at each location. Persons who purchased their own aids or received them through another program are also receiving batteries.

There was a greater backlog of hearing aid evaluations at Wind River than any other service unit. Since Dr. Christianson, otolaryngologist, makes monthly visits to Fort Washakie, arrangements were made for his audiologist to also go to Wind River and see some of the hearing aid patients. This should be a more expedient way of handling the hearing aid patients and allows for monthly follow-up, if this is indicated. The hearing aids are continuing to be supplied by this program or through the Communication Disorders Unit.

If the service provided by this contract were done so on a fee-for-service basis, they would be as follows: *

	Hearing Aid Evaluations @ \$25.00	\$ 3475.00
	Hearing Aid Follow-up @ 5.00	760.00
**	Ear Impressions @ 5.00	650.00
	Pure Tone Audiometry @ 10.00	21080.00
	Speech Audiometry @ 10.00	5420.00
	Impedance Audiometry @ 15.00	21420.00
	Bekesy Audiometry @ 5.00	455.00
	Special Tests @ 5.00	<u>580.00</u>
		\$ 53840.00

* Based on fees currently charged by audiologists in the Montana area, who function on a consulting basis, and fees also correspond to the schedule in use at the University of Washington.

** Ear molds usually cost approximately \$25.00 at a hearing aid dealer.

BEMIDJI

No special otitis media funds were made available to Bemidji until this fiscal year and end-of-year funding problems prohibited the establishment of concerted program at this time. Funds made available were distributed to various Service Units to provide medical and surgical services for previously identified persons in need of such services. In addition, the Bemidji Sub-Area continued to provide services from other of its resources, most notably in Minnesota where regularly-scheduled ENT and audiological services were provided by private practitioners in Duluth and from the Mayo Clinic.

NAVAJO

As was reported last year, the surgical program at the GIMC continues to have difficulty in making any significant inroads into the surgical backlog of cases due to insufficient operating room time, operating room staff, and ENT physicians to provide these services. Other elements of the program, however, continue to function satisfactorily and, during FY 74, additional resources at facilities outside Gallup were utilized to some extent, such as the contract with McKinley General Hospital. Other contracts with private practitioners and hospitals in areas outside Gallup were also continued during this year.

Since the inception of the Otitis Media program on Navajo, the contract with the University of Colorado has been in effect to provide the services of an ENT Fellow and Senior Resident. This program also continued during FY 74 and the results of these physicians' activities are presented in Table 2 below.

The screening, case finding and hearing aid program, also in effect under contract with the University of Colorado since the program's inception, also continued throughout this fiscal year.

Data in Table 1 would indicate that the program has reached a stable point within present resource limitations. In addition to the University of Colorado project, funds made available through BIA provided for the full-time services of an audiologist for the year specifically for the purpose of fitting hearing aids. By the end of the year, 15 aids had been fitted under this program; an additional 32 students who were found to need hearing aids refused to accept them.

Navajo Area has also been outstanding in its provision of in-service training seminars for public health nurses and other interested persons. The project field audiologist also provided in-service training in the field to school nurses, PHNs, physicians, hospital nurses, and other field health personnel at each location served by the project.

Table 1 : Navajo
FY 73 - FY 74 Comparisons

	<u>FY 73</u>	<u>FY 75</u>
Total Number of Children Screened	14,356	12,061
Total Failing Audiometry	481	423
Total Failing Otoscopy	594	480
Total With Hearing Loss	594	423
Total Referred for Medical/Surgical Evaluation	594	546
Number of Hearing Aids	54	75
Number of Persons Receiving Training	27	116

Total Ear Operations: 368

Table 2: Navajo
ENT SURGICAL PROCEDURES
PERFORMED BY FELLOWS AND RESIDENTS
DURING PERIOD 7/1/73 - 6/30/74

Note: "Major Otologic Cases" include Tympanoplasty, Mastoidectomy, Tympanotomy, Etc.

1.) Dr. Lauren Holinger (Resident) - July 73 - October 73

	GIMC	McKinley General
Major Otologic Cases		
As Surgeon	39	
As Assistant		
Minor Otologic Cases		
As Surgeon	2	
As Ass't		
Other ENT Surgery		
As Surgeon	75	
As Ass't	1	

2.) Dr. John Sobel (Resident) - November 73-February 74

Major Otologic Cases		
As Surgeon	34	
As Ass't	1	1
Minor Otologic Cases		
As Surgeon	6	
As Ass't		
Other ENT Surgery		
As Surgeon	70	
As Ass't	4	

3.) Dr. Kenneal Y.C. Chun (Resident) March 74-June 74

Major Otologic Cases		
As Surgeon	25	11
As Ass't		
Minor Otologic Cases		
As Surgeon	2	
As Ass't		
Other ENT Surgery		
As Surgeon	41	
As Ass't	9	1

4.) Dr. Nguyen Thanh Tra (AMA-Sponsored Fellow Assigned by U.of Colo.)-Came on duty in Gallup May 74

Major Otologic Cases	
As Surgeon	12
As Ass't	
Minor Otologic Cases	
As Surgeon	1
As Ass't	
Other ENT Surgery	
As Surgeon	12
As Ass't	6

RESIDENT-FELLOW ENT SURGERY
(Continued)

5.) Dr. Paul Burgert (Fellow) - Came on duty 4/29/74

	GIMC	McKinley General	Ganado
Major Otologic Cases			
As Surgeon		23	2
As Ass't			
Minor Otologic Cases			
As Surgeon			1
As Ass't			
Other ENT Surgery			
As Surgeon	1	5	
As Ass't	3		

OKLAHOMA

That the Oklahoma program has gotten underway can readily be seen from the comparison of numbers of services reported for FY 73 and FY 74. Services are provided by Indian para-professionals under a tribal contract at eight Service Units. Each Service Unit is equipped with a miniature sound booth, audiometer, and related equipment. Data reported for otoscopic examinations are expected to rise as this technique is more widely used during the next fiscal year.

Lack of sufficient professional personnel through '74 inhibited the development of a large scale hearing aid provision program.

Table 1: Oklahoma
FY 73 - 74 Comparisons

	<u>FY 73</u>	<u>FY 74</u>
Total Number Screened	609	24,891
Children	469	21,422
Adults	140	3,469
Number Failing Audiometry	43	3,162
Children	30	2,622
Adults	13	540
Number Referred for Diagnostic Audiometry	44	1,246
Children	32	978
Adults	12	268
Number Found w/Hearing Loss	214	2,046
Children	91	1,642
Adults	123	404
Number Referred for Medical/Surgical Evaluation	156	749
Number of Hearing Aids	9	61
Number of Persons Receiving Training	—	17

PHOENIX

After a lapse of several years, in FY 74 Phoenix once again had the services of a full-time otolaryngologist. In the absence of any screening program and the previous limitation of the program to Keams Canyon only, no data comparable to those presented for other Areas is possible. At PIMC, however, there were 350 children and 210 adults referred for diagnostic audiometry; 69 hearing aids were purchased and issued; 13 persons receiving training in some aspects of the otitis media program; and 139 ear operations were performed.

The major new activity undertaken by the Phoenix Area is a contract, initiated at the beginning of the year, with the Department of Family and Community Medicine of the University of Arizona to study the feasibility of establishing an Otitis Media control program at several Service Units within the Area. The first phase of the contract, which was completed in February, 1974, included the following activities:

1. A literature search in preparation of a bibliography of medical and epidemiologic literature on otitis media.
2. Development of precise operational definitions and clinical classification of otitis media to be used as criteria for measuring incidence and prevalence in the second-phase, the control program.
3. A field survey and report on Service Units within the Phoenix Area, focusing attention on such contributory factors as housing, educational level, cultural factors, nutritional status, availability of medical care, and other factors which may contribute to the otitis media problem.
4. A field survey on the capability of each Service Unit to support any newly developed proposed program of otitis media control. This included appraisal of staff, housing, equipment, supply and travel requirements for such a program.
5. Suggestions were made for the development of an otitis media registry, as well as epidemiologic surveillance of a cohort population in selected Service Units to give necessary information not now available about the precise prevalence and distribution of the disease.
6. Recommendations were made for the employment of indigenous health aids at selected Service Units for the purpose of implementing the control program based upon primary prevention with emphasis on health education, early detection, and intervention.
7. Cost projections for the program on an annual basis for the next five years were also presented.

Among other findings, a careful review of the computer printouts for the Phoenix Area lead to the conclusion that very little reliability can be placed upon the existing data. Lack of uniform criteria for the diagnosis of acute and chronic otitis media has resulted in a great variability among individual physicians in recording and

reporting this disease. In addition, very little relationship was discovered between the subjective opinions of the professional staff of the respective Service Units regarding the frequency of acute otitis media in that jurisdiction, and the "objective" data reported from the printouts. The conclusion drawn is that there is, in fact, no accurate information available on the relative frequency and distribution of otitis media among the several Service Units within Phoenix Area.

Based upon the first six months of the contract, the contractor recommended that control programs be instituted at three Service Units not based primarily upon disease incidence, but upon the Service Units interest, capability, patient load and other characteristics which would permit the comparison of disease frequency as it may be associated with other factors such as geography, climate, cultural mores, accessibility to care, and related factors. In order of priority, the following Service Units were recommended for Phase B of this contract: San Carlos; Keams Canyon (Hopi); Keams Canyon (Navajo); and Colorado River.

The second phase of the project, which has been extended into the current fiscal year has been concerned with the selection of personnel to implement the program developed during the first phase at the Service Units specified. By the end of the fiscal year, these technicians had been selected and trained and this phase of the project gotten underway. No data were available by the end of the fiscal year to report on the effectiveness of the program through that point.

The major elements of the control program are:

1. Development and design of an operational training program for physicians and other personnel in order to raise the index of suspicion and increase early detecting capabilities. Standardized classifications and diagnostic criteria which have been developed are being used.
2. Intensive case follow-up: On all persons with first episodes of the disease and all children under the age of five, the following steps are taken:
 - a. Follow-up household visits by a trained health worker to assure that the patient is following the prescribed therapeutic regimen.
 - b. Planned program health education in the home directed at the parents or guardians or older children.
 - c. Environmental surveys are carried out to determine the presence or absence of crowding, availability of heat and electricity, running water, and adequate sewage disposal.
 - d. A medical history and otologic examination of siblings and other children in the household are taken.
3. Otitis media registry: Every case detected by IHS staff or the personnel is entered into a registry.
4. The active involvement of the Indian community is essential, particularly in the consumer aspect of the program and in the development of community health education program.

5. In each site chosen for the project, a specifically designed health education program is being developed with the need for developing an effective case finding procedure in high risk and low referral groups.

6. In order to establish firm baseline data, a sound system of ascertainment of the community level of infection is being developed. This is being done by developing a prospective cohort study whereby infants born after a specific date will be examined at periodic intervals to detect the early onset of otitis media. Periodic study of the cohort will help elucidate the natural history of the disease and help identify high risk groups. Every effort is being made to coordinate the projects of on going programs such as well-baby clinics.

Oak Knoll Navy Project

In June, 1973, an arrangement for the transportation of patients for otologic surgery to this Navy facility in California was undertaken. While no "final" data are yet available, preliminary assessments indicate a success of about 75%. This activity has been supported, initially, by contract medical care funds which are used to provide transportation, housing, etc. This cost is approximately \$1,100.00 per patient. Hospital charges, surgical fees, medications, etc., are paid by the Navy.

PORTLAND

During FY 74, the emphasis in the Portland Area shifted from surgical intervention to establishing otitis media preventive and outreach services at three Service Units; Fort Hall, Yakima, and Lummi. The sample project, below, describes the services being provided. Unfortunately, no statistics are available to indicate the numbers of persons receiving these services.

A. Objectives:

1. To help prevent in infants and young children the progression of acute otitis media into chronic otitis media. This will occur through the development of better health in such children combined with complete eradication of acute middle ear disease whenever it develops.
2. To assist in the provision of restorative treatment (surgery, hearing amplification, etc.) to those children, adolescents and young adults already affected with chronic otitis media through case-finding and follow-up activities.

B. General Description:

The project is tribally sponsored and administered. It receives professional support from the Indian Health Clinic. Because of similarities in activities it is closely coordinated and in some ways integrated with the already existing maternal and child health project.

C. Services Provided:

1. Acute otitis media follow-up and outreach.
2. Outreach and educational preventive health care services for infants and children.
3. Educational services for families with respect to diagnosis, treatment follow-up care for infants and children with otitis media and general health care for the family.
4. Chronic otitis media - outreach and follow-up of children with otitis media.
5. Supporting maternal outreach and educational activities to young parents (includes prenatal, post-partum and family planning).
6. Clerical support of outreach activities.
7. Participation in pertinent clinics; well child, prenatal, post-partum, otitis media.
8. Screening and case finding services, i.e., audiometric testing, etc.

D. Personnel Required and Activities of Personnel:

MCH aide

Clerk

1. Activities of MCH-Aide

a. Assists in assuring that patients with acute otitis media are followed up until discharge. High priority -- all children three years of age and under.

b. Provides outreach and educational activities to assist in establishing continuous health surveillance for all children under age of five years.

c. Assists with case finding and follow-up of patients with otitis media.

d. Assures that mothers appear for prenatal, post-partum and family planning as appropriate.

e. Assists in well child, mother and otitis media specialty clinics.

2. Activities of Clerk

a. Maintains chronic and recurrent otitis media register or roster. Includes appointment notification, tickler files, etc.

b. Assists and gives clerical support to MCH-Aide.

TUCSON

The mobile screening clinic operated under contract with the Papago tribe by the Sells Service Unit was again supported throughout FY 74. As can be seen from the data for FY 74, below, the program appears to have achieved a "maintenance" level with the backlog of previously screened patients needing services eliminated.

Table 1: Tucson

FY 73 - 74 Comparisons

	FY 73	FY 74
Total Number Screened (Audiol.)	604	458
Children	604	448
Adults	0	10
Number Failing Audio.Screen	61	6
Audiometry	9	2
Number Found w/Hearing Loss	22	0
Hearing Aids	1	9

Ear Operations: 0

USET

Two reservations within USET (Cherokee and Choctaw) have initiated programs, under contract, for case-finding, referral, and follow-up hearing aid services using local professional and para-professional personnel. Expectation is for initiation of similar program in Florida in the near future from Congressional add-on funds.

The earliest established program, for Eastern Cherokee, accounts for all the data reported below. The second contract, for the Mississippi Choctaws, was put into effect during this year, but no data were reported from this area due to several personnel changes on the contract.

Table 1: Cherokee, North Carolina

	FY 73	FY 74
Total Number Screened	2200	1707
Children	1893	1499
Adults	307	208
Number Failing	405	246
Children	216	158
Adults	189	88
Number Referred for/Surg.Intervention	291	267
Number Surgical Procedures	50	87
Number Hearing Aids Provided	0	30
Adults	0	30
Total Ear Operations:		14

III. RESEARCH & TRAINING

RESEARCH ACTIVITIES

Otitis Media Program Evaluation

This evaluation project, conducted under contract with the University of Utah, is the major research activity being carried on at this time and is being supported with Indian Health Service evaluation funds.

The purpose of the contract is to obtain baseline data on (1) current status of ear disease and services for remediation, (2) parental and community knowledge and attitudes regarding health and disease, with particular emphasis on ear disease, and (3) availability and utilization of related services available in schools which pertain to screening for disease and educational programs for children with hearing loss.

For each of five geographically diverse Indian Health Service Service Units (in Aberdeen, Phoenix, Portland, and USET Areas) the following sets of information are being obtained: (1) Medical and audiologic examinations of selected groups of American Indian children; (2) determination of location and accessibility of medical facilities; (3) determination of treatment facilities, number of physicians and their specialties, and treatment of otitis media used by these physicians; (4) determination of parental knowledge, attitudes and beliefs related to otitis media and its effects, hearing loss, and remedial prostheses, (5) determination of the availability and adequacy of hearing screening programs in the schools.

The objectives of the project are: (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; (3) to assess the effectiveness of auditory rehabilitation programs in the Indian population.

The following procedures are being used to obtain the baseline data: (1) Each preschool and early elementary grade child is given an otoscopic, audiologic and tympanometric examination to determine the prevalence of active middle ear disease, acute and chronic; (2) to examine hospital records to determine the

present rate of acute Otitis Media seen; (3) provide indigenous interviewers to: interview parents of the children examined to determine the extent of parental knowledge of ear disease, prevalent beliefs and attitudes pertaining to ear disease, hearing loss, etc.

The period of performance of this contract is to March 31, 1976.

BILLINGSInvestigation of Bacterial Contamination through the Use of the Impedance Bridge

This study was conducted in the Billings Area under the direction of Mr. Charles Lewis, Audiologist, and Ms. Carol Enscoe, Consulting Nurse-Epidemiologist.

Because of the significance of the findings of this project to ongoing screening activities, a detailed summary of this investigation is presented below. The research has been submitted for publication in an appropriate journal.

Initial motivation for the study grew out of a concern over the high numbers of post-op infections and a question concerning the involvement of the impedance bridge in this problem. The first steps in this evaluation included the culturing of the plastic tips which are used to obtain a seal in the ear canal when doing impedance measurements. Two hundred tips, which had been cleaned using the usual procedure of wiping the tips with an alcohol wipe or washing them in phisoex and water, were placed in the culture medium and the culture medium was incubated. No pathogenic bacteria colonies were found when these culture mediums were examined following incubation. This would appear to indicate that the contribution of the plastic tips to the contamination of ears is minimal.

The next portion of the investigation involved the culturing of the discharge drawn from the impedance bridge itself. Two hundred six sample cultures were taken from the discharge of the probe tips and from the discharge from the pressure outlet where it connects to the polyethylene pressure tube. These cultures were then incubated and examined. The results strongly indicated that bacteria can be drawn from the ear canal of one patient and discharged into the canal at a distance of at least six inches from the orifice of the probe tip. The bacteria which were isolated included staph aureus in six cultures, staph epidermidis in thirty cultures, beta strep in three cultures, pseudomonas in eleven cultures, and assorted other types of bacteria in lesser numbers.

The implication drawn from this finding is that one must be particularly sensitive to the possibility of drawing pathogenic bacteria from an infected ear and introducing it into the next case evaluated. This may not be of concern in cases having closed tympanic membranes; however, the possibility is certainly present that pathogenic

bacteria may be introduced into the middle ear of the patient's tympanic membrane through a perforation. It should be noted that bacteria were cultured from the discharge of the pump at the back of the machine which would indicate that they had been drawn the length of the polyethylene tube and may exist in the pump itself. Most, but not all, of the bacteria were cultured following an evaluation of an individual with active ear disease.

Based on the findings of this study, the Otitis Media Project in the Billings Area has taken the following precautionary measures:

1. Post-operative tympanometry in cases having had tympanoplasty operations is not done until the healing process is complete.
2. Cases in which myringotomies and placement of ventilating tubes have been carried out are evaluated for eustachian tube functioning only after several discharges of the pump system through the probe tip have been completed.
3. Every effort is made to end the evaluation of an individual patient with a positive pressure in the middle ear canal so that the probe tip is not removed in the presence of a negative pressure. Negative pressure may cause the bacteria to be carried further down the polyethylene tubing toward the pump.

COMMUNICATION DISORDERS UNIT

In addition to serving as the locale for coordination of all IHS otitis media activities, the Communication Disorders Unit is a service-wide facility for hearing aid distribution, calibration and repair of audiometric-tympanometric equipment, and site for development of para-professional training, etc. A limited number of "service delivery" research activities were underway during FY 74 -- collection of baseline data on individual hearing aid output for later analysis, further development of phonetic audiometry, and evaluation of Indian involvement in otitis media activities.

During FY 74, 60 audiometers were calibrated and/or repaired, in addition, Communication Disorders Unit audiometers and tympanometers were checked and calibrated on a regular schedule, data are being collected for determination of instrument stability. The electronics technician assisted in obtaining individual hearing aid output print-outs, and repaired and/or modified hearing aids as required. The technician also assisted in the development and construction of prototype instruments being developed to aid in the testing or rehabilitation activities of the Unit.

The technician was also responsible for field calibration of instruments and in the instruction of audiometric technicians in field maintenance of equipment. He was also active in tribal meetings, conferences, and aided in the interviewing and selection of the Albuquerque Area audiometric technicians.

During FY 74, 141 persons were seen for hearing clinical services at the Unit; 73 of these received hearing aid evaluations with 64 aids being dispensed.

OTITIS MEDIA CONFERENCE

The first major activity of the Communication Disorders Unit in FY 74 was the conduct of a two day Otitis Media Conference on September 21 and 22, 1973. The conference was attended by Indian Health Service and contract personnel from Albuquerque, Aberdeen, Oklahoma City, Navajo, USET, Billings, and Alaska Area offices. In addition, representatives from Health Services and Mental Health Administration in Rockville and Jefferson, Arkansas attended along with former PHS personnel from New Jersey and Maryland.

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UNM-IHS Conference
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Speakers and a brief summary of their presentations are as follows:

Dr. Alan Feldman - "Acoustic Impedance Measurement in Tympanometry". Dr. Feldman reviewed the Bluestone and Brooks studies, basic to the entire field of tympanometry. Significant findings, in Bluestone study were the lack of agreement among a group of five ENT specialists in their examination of the eustation tubes of a large number of patients. A significant finding in the Brook Study was that the peak for ear disease is five years but the peak for referral for medical attention is six and a half years.

Since ear disease may not always be accompanied by hearing loss, pure tone audiometry is limited for diagnostic purposes. Impedance audiometry is a very important diagnostic tool in locating middle ear disfunction; it is also very useful in testing very young children from whom voluntary behavioral responses are very difficult or impossible to obtain.

In pure tone audiometry, background noise is a significant factor in obtaining valid thresholds. Impedance audiometry does not require a sound proof room. There is evidence that significant educational retardation may result from as little as 25 DB hearing loss. There is a relationship between the thresholds for an acoustic reflex and pure tone for noise which may give important information on a person's hearing threshold.

Drs. Raymond Wood, G.B. DeBlanc, and Dudley Weider, "Factors Predicting Surgical Success".

Ray Wood - Dr. Wood reviewed the University of Colorado Medical Center's contract with the Indian Health Service at Wiondow Rock. This study involved a survey of nearly 22,000 children. Included in the contract was a requirement for post surgical follow-up to evaluate the effectiveness of surgical procedures done. The University examined over 1,000 medical records, of which number 700 cases had follow-up data indicating that each had had (a) preoperative examinations and (b) postoperative examinations of grafts. They also examined the hearing status pre-and post-operatively if records were in existence. This examination was done for Type I tympanoplasties only. One of the findings indicates the need for a uniform reporting system. The major conclusion of this aspect and study was that the overall surgical results were better than expected considering the conditions under which they were done.

Speakers and a brief summary of their presentations
Page 2

Bruce DeBlanc - Dr. DeBlanc reviewed the theory and philosophy of the Navajo Tribal Health and Welfare Department's function in aiding individual Navajo Indians with their problems. He also spoke about the relationship of tonsillectomies and adenoidectomies (T&A) to tympanoplasty surgical success. He follows what he refers to as the "Beal Rule of Thumb": that is, he does not perform a T&A unless it is very serious. The Navajos' also feel this way about this particular surgical procedure. He also addressed remarks to the relationship of allergies, cleft palate, cholesteatomas, infections, post-operative aural hygiene, ossicular conditions, and coclear reserve. Dr. DeBlanc also described what he does regarding post-operative follow-ups on a patient. Critical to this question is information pertaining to the family situation. What are the factors influencing care at home, at school, and the general environment? The Public Health Nurse is the person who does most of the follow-up care. Dr. DeBlanc feels that the distance between the hospital where the surgery was performed and the patient's home is a significant factor in post surgical success. Medical factors are also involved in post-operative success; one of these is bubble formation due to anesthesia knocking the graft loose. This calls for considerable attention to trouble shooting for such conditions whenever the potential for them arises.

Dudley Weider - Dr. Weider described the history of the Alaska ENT program starting with the McGrath study, the 1965 to 1968 surveys, and reviewed the recently published studies on the effects of even minimal hearing loss on the child's eventual development of linguistic skills. He also reviewed the Alaska ampicillin study in which the use of prophylactic ampicillin cut the acute otitis media rate by almost 50%. Considerable time was spent in describing the surgical procedures used at Anchorage Native Medical Center and evaluating the results, which at this time appear to be very good. A final point of considerable significance was the report that at McGrath the chronic otitis media prevalence rate had been reduced from 17% to 3%.

Charles Lewis, Drs. Joe Stewart and Lloyd Lamb, "Hearing Aid Evaluation and Distribution System". Charles Lewis described in general the Billings program, first commenting on the surgical success rate in Billings as it relates to the individual physician performing surgery. He indicated that, depending upon the surgeon used, the success rate ran from nearly 100% success to a flat 0%. One of the unique features of the Billings program is the use of a "Flexner", a specialty trained physician assistant used on the mobile van throughout the states of Montana and Wyoming. Validation of the Flexner's work, by ENT surgeons from the University of Washington, indicated that he is both reliable and valid. The over-referral rate by the Flexner, compared to what be done by the ENT physician, was about 10%.

Insofar as hearing aid distribution is concerned, Mr. Lewis indicated that one of the big problems at Billings initially was that of priorities.

In order to maintain maximal success of the program, he involves other persons at the Service Unit level to the maximum extent possible. The assistance provided by CHR's, PHNs, etc. is vital to the success of a program when the mobile unit is not physically located at that Service Unit. Mr. Lewis felt that the major weakness in the program at the present time is the concentration on middle ear disease at the expense of sensorineural and other hearing loss.

Lloyd Lamb and Joe Stewart - Drs. Lamb and Stewart described the hearing aid system developed for total Indian Health Service participation and located at the Communication Disorders Unit in Albuquerque. Dr. Stewart described in some detail the guidelines for procuring hearing aids by the field, the necessity for an Area plan in advance of distribution of aids, the follow-up maintenance and care expected to be provided hearing aid users, and the problem of battery supply, which is left up to the individual Areas. Dr. Lamb described in some detail the contractual arrangement with Indian Health Service by which the aids are purchased with Indian Health Service funds with the inventory maintained by the University which is responsible, under the terms of the contract, for the actual distribution of the instruments after an acceptable plan has been received and approved by Stewart.

Dr. Lloyd Lamb, Miss Wanda Kabotie, Dr. Joe Harding, and Mr. Francis McKinley, "Delivery of Services in Indian Communities".

The final session of the conference dealt with service delivery and was led off by Dr. Lamb and Mrs. Kabotie, who described the Albuquerque Area program. Mrs. Kabotie reviewed her activities as the otitis media worker for the Northern Pueblos and Southern Colorado stressing the tests used, her assessment of the efficiency of such tests in the field, and the results obtained so far. On the basis of the testing done to date Mrs. Kabotie estimates that overall there is a 25% incidence of pathology in Indian children served by her. Considerable time was spent in discussing from the floor Mrs. Kabotie's training, what she felt problems were with this level of training, etc.

Dr. Harding's presentation concentrated on language behavioral research, and response to new programs in the community. Emphasizing the production aide of hearing aids, he indicated that success of such a program in Indian communities relates to how better to sell the package, incorporating into it local preceptions of what hearing aid does, who needs it, and how it might best be utilized. Reviewing similar health acceptance research in Samoa, the basic step is to determine preceived needs from the peoples' point of view and then modifying the program to meet those needs. Utilizing a "heuristic elicitation methodology", consisting of (1) domain definition, (2) beliefs matrix, (3) judged similartiy, (4) preference or concept test, his organization matches up the community's perceptions with viewed needs and the ways in which these services might be delivered

Speakers and a brief summary of their presentations
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to ameliorate such needs. The community's perspective of hearing loss must be viewed in relationship to other problems--hearing impairment is probably not visualized in isolation in the Indian community. A major point to be considered in hearing aid distribution is the determination of what linkages need to be exploited in determining the identification in other people's heads regarding their perceptions of hearing aids and their usefulness.

Mr. McKinley - Mr. McKinley reviewed the history of his organization, the National Indian Training and Research Center, which was established by 40 American Indians in 1969. He reported, also, that there are now 17 Indian organizations involved in contracting work such as research, training, etc.

To date, NITRC has conducted quite a variety of studies, including one preparatory to an otitis media proposal in which five schools with varying Indian populations were surveyed. Twenty five percent of the children were considered to have "learning disabilities". Teachers tended to refer to non-Indian children as being "alexia" while Indian children were diagnosed as having "cultural" and "language problems". Based on this study, Mr. McKinley developed quite an interest in the relationship of otitis media to educational achievement which led to a survey of 400 school districts which had Indian children to assess the childrens needs with respect to history of otitis, subsequent learning, etc.

In discussing his involvement with Indian communities he reviewed the past history of research on the Indian community during the 14 years he was community coordinator for that tribe in Utah. During that time the tribe approved some 200 research projects on the reservation with only one investigator ever submitting a final report of the research to the tribe. This led to the obvious question of what benefit is this research to the Utes?

Areas of tribal concern of pertinence to the theme of the Conference was discussion of what factors are most conducive to getting Indian people into career ladders. Mr. McKinley felt that, in the past, there had been entirely too much training going on for obsolete jobs with the result that there were a number of Indians around who could be considered "career trainees". A particular significance for future planning activities at the Communication Disorders Unit is the statement that most Indian training programs are short term, developed on a "crash basis" to meet emergency needs.

At the conclusion of the Conference, it seemed to be the consensus of the group expressing an opinion that such conferences should take place on a regular basis, preferably at least once a year.

TRAINING

Paraprofessional training is undertaken at several levels. Many Areas have provided various persons with training generally ranging from a one or two day conference to "formal" audiometric sessions of up to three weeks duration. Among those receiving such training are CHR's, MCH workers, nurses, GMD's, etc. The variability of such training necessitates that the level of competence has varied considerably as well; at the lower level, the paraprofessional is instructed only in the basics of pure-tone audiometry for screening purposes. At the highest level, the instruction is intensified in such areas as anatomy and physiology, ear disease, audiometric (including impedance) testing, otologic examination (including operating microscope and pneumatic otoscope), cleaning ears, removing wax, and operating room scrub nurse activities. The general course of this training runs from two weeks to several months (in the case of the otology technician training) and for the most part is highly individualized.

The first IHS-wide training program for audiometric technicians was held in June, 1974, at the Communication Disorders Unit in Albuquerque. Sixteen trainees from seven states were enrolled in the three week course.

AUDIOMETRIC TECHNICIAN TRAINING COURSE

June 10 - 28, 1974

ENROLLMENT

<u>Name</u>	<u>Location</u>	<u>Area</u>
Gilbertson, Audrey	Tanana, Alaska	Alaska
Hensley, John	Kotzebue, Alaska	Alaska
Enos, Patricia	Tesuque, New Mexico	Albuquerque
Fr iacho, Margaret	Zuni, New Mexico	Albuquerque
Kiro, Ann	Laguna, New Mexico	Albuquerque
Lucero, Fred	Isleta, New Mexico	Albuquerque
Platero, Lawrence	Canoncito, New Mexico	Albuquerque
Talley, Connie	Albuquerque, New Mexico	Albuquerque
Ferguson, Lois	Poplar, Montana	Billings
Hewankoran, Alice	St. Ignatius, Montana	Billings
Old Bull, Laurence	Crow Agency, Montana	Billings
Vernwald, Betty	Browning, Montana	Billings
Wanstall, Roy	Ft. Washakie, Wyoming	Billings
Wise, Eleanor	Owyhee, Nevada	Phoenix
Scott, Winifred	Cherokee, North Carolina	USET
Henry, Grady	Choctaw, Mississippi	USET



L to R, Front Row

Chumley, Wise, Eriacho, Ferguson, Enos , Vernwald, Hewankovan, Kiro, Gilbertson, Foust

Second Row

Grainger, Talley, Platero, Lucero, OldBull, Henry, Wanstall, Hensley, Hood

SPECIAL FOREIGN CURRENCY PROJECTS

A number of special foreign currency projects, conducted under auspices of Public Law 480, were continued in FY 74.

INDIA

Two projects, "An investigation of hearing and speech disorders in Varanasi" and "An investigation of medical and reconstructive procedures in otolaryngological disorders", are still underway at the Banaras Hindu University in Varanasi. These projects are still in the data collection stage.

YUGOSLAVIA

Two previously reported projects "Linguistic habilitation for the hearing impaired" and "Development and evaluation of a phonetic audiometer based upon the Navajo language", were continued during FY 74. Both projects have completed the data collection phase and these data are being evaluated at the present time prior to their submission in a final report.

EGYPT

The previously reported project for Egypt stimulated during FY 72, dealing with the epidemiology of otitis media in rural areas, was approved and submitted through channels for funding in FY 75.

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Over the past four years, the Otitis Media Program has shown growth and progress. As expected, growth and progress is directly related to individual Areas fiscal and personnel restraints. Not surprisingly, Areas equipped to establish a program at onset of special funding (notably Alaska and Billings) have shown the best results to date.

At this time, each Area has an operational program of some extent, whether utilizing special otitis media funds or not. Congressionally added funds in the FY 75 budget are enabling the continual growth of programs. The lack of personnel in all Areas will continue to prove to be a handicap, particularly in surgical programs such as Navajo and Phoenix. While present contracts for services have proven to be satisfactory in many respects, unmanageable problems such as lack of control over contractor's staff, dilution of program goals, mounting overhead rates, etc., do not bode well for program effectiveness over a long period of time.

A major overall problem at this time is the lack of sufficient reliable data upon which to base evaluations of program effectiveness. The lack of uniformity of diagnoses, cited elsewhere in this report, appears to be a problem throughout the system. Since these data are for hospital visits only, they also do not include persons seen in screening programs, referred to other than hospital facilities, etc. A simplification of this approach would seem to be to combine these two categories of data, but this does not allow for any elimination of overlap of persons seen both places. In addition, variations among the screening programs themselves insofar as tests used, pass-failed criteria, etc., also work against the possibility of developing a suitable data base for evaluation purposes. The latter problem appears to be working itself toward a solution except in such areas where all the screening is provided by other agencies outside the IHS and, accordingly, are not obtainable for our purposes. The first problem could be resolved with more intensive training at the Service Unit level, but results, to date, indicate that the physicians--who make the diagnoses which are being questioned--are the least likely to attend such sessions. The data reported from the Phoenix area, if generally applicable throughout the Service, would almost seem to negate the use of these figures entirely for this purpose.

Similarly, there is a great deal of variation among Areas as to the surgical backlog. In some cases, the estimate is based upon surveys of large segments of the population while in others it is merely a tabulation of names from a waiting list, either of which makes the overall reporting of a surgical backlog an extremely difficult and highly qualified matter.

Primary recommendations to be made, based upon the FY 74 reporting data are as follows:

1. Concentration on training more Indian para-professionals, including the collection of appropriate data and use of consistent measuring devices such as both pure-tone audiometry and acoustic impedance. If the present data reporting system is to have any value for evaluation purposes, considerably more effort must be spent at the Service Unit level in developing consistent criteria for diagnoses by the physicians.

2. A more realistic means of determining each Area's potential surgery backlog needs to be developed and maintained on an ongoing basis; this could ideally be incorporated into activity #1, above.

3. Those Areas not now participating in hearing aid distribution plan should be encouraged to develop the necessary plans to enable early participation in this activity.

4. With the beginnings of a reduction in otitis media seen in some Areas, preliminary planning should be undertaken as soon as possible to develop speech and language programs as an obvious and logical outgrowth of the otitis media activity.

SUMMARY OF SERVICES

SERVICES BY AREA - FY 74*	ABERDEEN	ALASKA	ALBUQUERQUE	BILLINGS	NAVAJO	OKLAHOMA	PHOENIX	SELLS	USET***	TOTAL
Total Number Screened	1304	6196	4368	2226**	12061	24691		458	1707	53211
Children	1210	4833	4100	1530**	12061	21422		448	1499	47103
Adults	94	1363	268	696**	0	3469		10	208	6108
Total Number Failing (one patient may fail one or all three)	1514	1921	1027	1000	546	3162		6		9176
Audiometry - Children	396	1537	357	249	423	2622		4		5588
Audiometry - Adults	56	384	185	440	0	540		2		1615
Tympanometry - Children	-	1230	696	301	396	0		0		2623
Tympanometry - Adults	0	236	85	171	0	0		0		492
Otoscope - Children	1062	1030	0	393	480	131		0		3096
Otoscope - Adults	0	165	0	205	0	46		0		416
Number Referred for Diagnostic Audiometry	249	1921	167		546	1246	560	2	246	4938
Children	249	1537	42		546	978	350	2	158	3862
Adults	0	384	125		0	268	210	0	88	1075
Number with Hearing Losses	204	1921	703	697	423	2046		0		5994
Children - Unilateral	43	707	283	97	317	808		0		2255
Children - Bilateral	105	830	235	152	106	834		0		2262
Adults - Unilateral	14	200	55	151	0	145		0		565
Adults - Bilateral	42	184	130	297	0	259		0		912
Number Referred for Medical-Surgical Evaluation	1410	1921	895	588	546	749		0	267	6376
Total Ear Operations	107	799	26	97	287	46	139	0	14	1563~
Number Hearing Aids	38	20	53	124	90	61	69	9	30	494
Children	22	15	8	8	20	2	15	9	0	99
Adults	16	5	45	116	70	59	54	0	30	395
Number of Persons Trained	0	10	24	15	116+	17	13	8	2	205+
Audiometrists	0	0	6	0	2	9	0	0	2	19
ChRs	0	0	12	6	9	8	0	0	0	35
GMOs	0	10	2	3	3	0	1	0	0	19
Other	0	0	4	6	102+	0	12	8	0	132+
Current Surgical Backlog	22	934	120	149	7000	53	16	0		8294****
Estimated Cost		\$150,000	\$50,000	\$119,217	\$5,000,000	\$29,040				\$5,318,257

* No data available from Bemidji and Portland Areas. See narrative Area report.

** Data not supplied in this form.

*** See Individual Area report.

**** See Summary.

~ Includes Portland Area (48 operations).

TABLE 3

Table 4:

**SUMMARY OF SERVICES PROVIDED, RESULTS, AND FOLLOW-UP REPORTED FOR
OTITIS MEDIA PROGRAM DURING FISCAL YEARS 1971, 1972, 1973 and 1974.**

	<u>FY 71</u>	<u>FY 72</u>	<u>FY 73</u>	<u>FY 74</u>	<u>TOTAL</u>
Number of Screened	20,930	21,676	29,286	53,211	125,103
Number Screening Failures *	4,061	9,038	9,629	9,176	31,904
Confirmed Hearing Losses	2,879	3,071	4,616	5,944	16,510
Medical/Surgical Referrals	2,683	3,501	10,543	6,376	23,103
Completed Surgical Procedures	2,160	1,779	2,285	2,164	8,388
Number of Hearing Aids Provided	71	131	440	479	919

* Three examinations; one patient may fail any or all three.