HCR
128

STATE OF ALASKA
DEPT. OF HEALTH AND SOCIAL SERVICES
DIVISION OF PUBLIC HEALTH
COMMUNICATIVE DISORDER PROGRAM
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PUBLIC HEALTH AUDIOLOGY IN RURAL ALASKA

An Inter-agency Approach

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For many years otitis media has been recognized as a major health problem in rural Alaska. Perhaps the highest prevalence of this condition in the United States is found in the Alaskan Natives. This fact has been documented on numerous occasions and as the identification and evaluation techniques have evolved, the true scope of the problem has become increasingly evident. The Communicative Disorders Program of the Alaska Department of Health and Social Services, working cooperatively with other state and federal agencies, is attempting to establish identification, evaluation, referral and remedial programs in perhaps the most challenging geographic area in the continental United States from the health services delivery perspective.

While the State's land mass of 586,500 square miles is larger than California, Montana and Texas combined, the population only slightly exceeds 400,000 people. Most of these individuals reside in the Anchorage area but there are 150 communities with populations of less than 5,000 people and 40% of all Alaskans are located in communities of less than 1,000. Most of the rural communities are accessible only by light aircraft and in the cases of larger villages, by scheduled airline services. Road systems to rural areas are almost non-existent and distances between these villages are substantial e.g. distances from Anchorage, the largest city, to various outlying communities are; Adak 1,209 miles, Barrow 722 miles, Ketchikan 768 miles and Bethel 420 miles. The entire State west to east spans a distance equivalent to that

from California to Florida. The terrain and climate vary widely from the deep cut fjords of the Southeast Panhandle where rainfall averages exceed 150 inches per year, to the tundra of Northern and Western Alaska with predictable winter lows in excess of -50° Fahrenheit. In Northern and Western Alaska exists one of the most unique human environments known in the State as "the bush". The term refers to the predominately Native villages of the area. Although urban conveniences are being introduced to these villages, they are not modern in character nor do they share much in common with America's small towns. "In bush" telephone and television are not common and in many locations residents rely upon shortwave radio. "The bush" is not connected internally or with other portions of the State by road network. Boats in the summer, snow machines in the winter and small airplanes are the most common means of travel. Residents participate in a market economy, still substantially relying on the land and water resources near their home to meet their subsistance needs. About one sixth of the State's population is Alaskan Eskimo or Alaskan Indian. There are six major languages with over twenty significantly different dialects.

There are four organizations in the State of Alaska supplying hearing health care to residents of rural areas. These include:

1. The Community Health Aide Program.
2. The Alaska State Public Health Nurses.
3. Physicians of Federal Indian Health Service.
4. Audiologists of the Alaska State Communicative Disorders Program.

COMMUNITY HEALTH AIDE PROGRAM

Since 1968 Community Health Aides have been employed by the Regional Native Health Corporations. Health Aides are Native residents of the villages who are trained in primary health care at basic and advanced levels by accredited

programs provided through the University of Alaska. There are 205 full time Aides located in 171 villages. They operate under the medical direction provided by physicians of the Indian Health Service Hospitals and their activities are monitored by the State Board of Medical Examiners. They are often the only full time health providers in residence in smaller villages and carry much of the responsibility for intervention in cases of acute otitis media and the ongoing care of chronic otitis media conditions which are quite prevalent. They operate from an established set of standing orders and are in frequent radio/telephone contact with physicians of the Indian Health Service Hospitals. It is estimated that the Community Health Aide Programs conduct 200,000 patient encounters annually for all types of problems. Otitis media is one of the most frequent causes of referral.

ALASKA STATE PUBLIC HEALTH NURSES

Approximately 60 public health nurses supply a wide range of health care to even the most remote of the Alaskan villages. These nurses are based in larger villages and itinerate out to the less populous areas on a scheduled basis as do the physicians of the Indian Health Service. In addition to their other duties, nurses receive training from the Communicative Disorders Program audiologists to provide specific services to the hearing handicapped including pure tone and impedance screening techniques, basic threshold testing, first level counselling, making of earmold impressions for prospective hearing aid users and the fitting of ear plugs as a protection against noise induced hearing loss. Nurses may also provide medication to clients with middle ear disorders from established medical standing orders. The Communicative Disorders Program provides an audiometer for each nurse involved in direct services and the nurses are responsible for administering and/or performing hearing screening activities according to established guidelines. These activities call for all children to be screened on a scheduled basis through their

pre-school and school years. While the school systems share responsibility for the implementation of screening programs for school age children, this is often done by the public health nurse in less populous areas. Local volunteers and health aides are trained to work with the nurse in screening activities.

Screening failures receive pure tone threshold tests and sometimes tympanometry from the public health nurse during his/her village visit. All test results are sent to the Communicative Disorders Program audiologists for review, interpretation and recommendations for further management. The nurses also make earmold impressions for prospective hearing aid wearers so that custom fitted ear molds are available when an individual is seen by an audiologist for a hearing aid evaluation and possible fitting. This service provided by the public health nurse often eliminates the necessity of transporting the client out of the village more than once to see the audiologist.

INDIAN HEALTH SERVICE

Physicians of the Federal Indian Health Service program staff hospitals in six outlying areas of the State and in addition a large Indian Health Services Hospital, located in the community of Anchorage. The Anchorage facility contains a staff of two to three Ear, Nose and Throat physicians and one audiologist. They see approximately 300 patients per year for surgery and conduct an ongoing out-patient program. Most of the surgeries scheduled are tympanoplasties. One of the outlying hospitals located in the Southeast section of the State (Mt. Edgecumbe Hospital) also has the services of an Ear, Nose and Throat specialist on a philanthropic fellowship routed through an Eastern university training program. Referrals are made to the ENT programs from the health aides, public health nurses, physicians functioning out of rural hospitals and from the audiologists.

AUDIOLOGY-COMMUNICATIVE DISORDERS PROGRAM

Three levels of services are provided in audiology by the Alaska Communicative Disorders Program.

1. Regional Clinic Services (located in Anchorage, Mt. Edgecumbe, Fairbanks and Bethel).
2. Community or large village clinics.
3. Remote village services.

1. REGIONAL CLINICS

Regional clinic services are provided by a staff of eight audiologists who function out of four regional clinics. Each audiologist devotes about 50% of his or her time to providing the full range of audiology services through the clinic. Regional clinics are fully equipped diagnostic facilities including two channel audiometers, clinical impedance equipment, sound level meters, hearing aid analyzers, etc. Most regional clinics also have either double or single wall sound proof rooms. These facilities form the nucleus of audiology services and are located in, or are highly coordinated with, Indian Health Service and/or nursing facilities. Clients flown in from villages receive evaluations, are fitted with hearing aids, are counselled and are referred for medical management. These regional clinics also serve as training facilities. Before each public health nurse assumes her field station a required orientation into the management of hearing disorders is provided by the audiologist. Periodically, more extensive additional training is accomplished to further enhance the level of skills. Fifty-five nurses attended such extensive training programs in 1977.

2. COMMUNITY OR LARGE VILLAGE CLINICS

Community or large village clinics are held on a scheduled basis three to six times annually. (Presently there are fifteen sites in the State which receive this type of service. All are accessible by commercial jet

service or the limited road system.) When the audiologist leaves the regional clinics to visit these areas he customarily takes with him a portable pure tone audiometer with speech circuitry, portable impedance instrumentation and the necessary supplies for conducting a clinic. Down filled parkas and bunny boots (cold weather boots) are also standard equipment for bush travel during the winter months. The case load during these clinics is referred by physicians, community health aides and public health nurses from their activities in those communities and the surrounding more remote villages. Computer print outs from a recently developed audiology data system integrates diagnostic audiology, nursing and medical information f m all sources. This facilitates the follow up of cases seen previously. Medical referral to Indian Health Service Hospital facilities is usually possible at these sites.

3. REMOTE VILLAGES

Remote villages are accessible only by light aircraft flown by "bush pilots". When traveling to these villages it is necessary to also take along a down filled sleeping bag and enough food to last the duration of the trip (two to five days). Since no other accomodations are available, visitors often resort to sleeping in the school house, church or health aides office and eating food stuffs that are brought along. The audiologist works directly with the community health aide, an itinerant public health nurse or itinerant Indian Health Service physician. He performs audiological evaluations, provides counselling, fits hearing aids, and provides training for the nurse or health aide. The nurse or health aide in turn initiates medical standing orders when necessary on identified cases. Some cases are then referred into the regional or community clinics for more extensive management.

In the past a large number of remote villages were visited annually by the audiologist but as the case load in the regional community clinics has risen, so has the ability of the health aides, and public health nurses to manage and refer. Presently only about twenty remote villages are visited each year by the audiologist. Because of the small populations in these areas and travel expense, these clinics, when attended, are for everyone in the village regardless of age, referral source or hearing complaint.

The Central Office of the Communicative Disorders Program (in Anchorage) offers direct support to the audiologists and nurses by furnishing audiometers, impedance testing equipment, supplies, testing forms and calibration services. Annually and as needed all of the 90 audiometers owned by the program are calibrated. This service is also supplied to the few school-based hearing conservation programs at cost. In addition, the computer based data collection system incorporating audiological, nursing and medical information into one ongoing patient management and statistical system was implemented in 1977 and is based in the Central Office.

EXTENT OF HEARING LOSS ENCOUNTERED

Acute otitis media and its chronic sequellae, including hearing loss has been recognized as a leading cause of medical referral among Alaskan Natives for at least the last three decades. This high prevalence of otitis media has been documented by numerous publications including, the McGrath's Project (1962); Brody (1964); Brody et al (1965); Reed and Brody (1966); Reed et al (1967); Maynard (1969); and Reed and Dunn (1970). The most comprehensive study was begun in 1960 by the Arctic Health Research Center, Kaplan et al (1973). This investigation included 643 live births occuring

between October 1960 and December of 1962 in 27 Eskimo villages in the Yukon-Kuskokwim River Deltas. In addition to periodic visits of a research nurse to these villages through the initial years of study, 489 of these children were evaluated by a physician, a nurse, an audiologist and a psychologist in a follow-up done in 1969, 70, and 71. The findings of these studies revealed that perforations and scarring of the tympanic membrane were present in 41% of the children evaluated. A hearing loss of 26 decibels (PTA) or greater was present in 16% and an additional 25% had a measurable conductive hearing loss less than 25 decibels (for a total of 41% with measurable conductive hearing impairment). Children with a history of otitis media prior to age two and a hearing loss in excess of 26 decibels for the middle speech range had a statistically significant loss of verbal ability and were behind in reading, math and language development. In addition, the children who possessed a conductive component but had hearing better than 26 decibels (PTA) were also adversely affected in verbal areas. The number of otitis media episodes was related to the tympanic membrane abnormalities observed, the amount of hearing loss and low verbal ability on achievement test scores.

Use of impedance audiometery for identification and diagnosis was begun in the early 1970's and today is used extensively throughout urban and rural Alaska. The result has been the collection of a great deal of information about the prevalence of middle ear pathology in the State. Data collection during 1975 to 1978 by the Communicative Disorders Program once again, revealed the scope of the problem encountered. During that period of time, several different age groups were monitored to establish prevalence figures. Of the pre-school population seen, middle ear effusion or tympanic membrane perforations were found in 20% of the children in Southeast Alaska and 38% of the same age group in Southwestern Alaska. Statewide prevalence is about 27% for pre-schoolers. Impedance documented negative middle ear pressure exists in

roughly 20% of this group (In excess of -100mm negative pressure). Most of the problems identified are due to serous otitis media presenting at various stages. The numbers of chronic tympanic membrane perforations are being steadily reduced due to an active surgical program but bush communities of Southwestern Alaska still have an alarming number of cases (the Bethel Alaska area, population about 15,000 had approximately 200 unilateral and bilateral surgeries performed during the 1977-78 fiscal year utilizing both State and Federal resources. Most of these were tympanoplasties).

The hearing status of high school age children from Northern villages has been monitored for more than four years by the audiology facility at Mt. Edgecumbe, (Kimball (1975). Conductive hearing losses have been found in 20-39% of the cases seen each year, sensory neural loss was found in 9-17%, Kimball (1977). The latter finding is believed to be due to noise induced hearing loss from excessive exposure to snow mobiles, rifle fire, light aircraft, motor boats etc.

The amount of ear pathology in Alaska is substantial and the continued efforts of all health care providers will be needed to eventually bring the situation to a manageable level. Prevention efforts are being emphasized through early identification and health education on several programmatic fronts and as the system of management between the many parties involved continues to develop a more and more efficient client management system should result.

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STATE of ALASKA

MEMORANDUM

DEPARTMENT OF HEALTH AND SOCIAL SERVICES

TO: The Record

DATE: December 9, 1977

FILE NO:

TELEPHONE NO:

FROM: David A. Spence, M.D., Chief
Section of Family Health

SUBJECT: Prevalence listing of otitis media with perforation.

The attached, unduplicated prevalence listing has been compiled by Cozzi Alward, R.N., and Michelle Riccardi, R.N., from the following sources: October and November, 1977, observations of perforations by field and ENT physicians, public health nurses, and audiologists (442) ears; and previous listings of persons awaiting tympanoplasties (501 ears). This is not a listing, per se, of persons for whom a tympanoplasty has actually been recommended, but it follows that a very significant number of them will be so classified once they have been evaluated by an ENT surgeon.

The bar chart shows the age distribution of the individuals under 21 years of age with chronic otitis media with perforation. In this disease, recurrent, closely-spaced or inadequately treated acute infections (which proceed to perforation and drainage) lead eventually to a rising prevalence of non-healing of the perforation. Below age five years there is inconsistent reporting since surgery has not been recommended for these ages. Further study and analysis will be required to reveal any changing incidence of perforation within the last five to ten years.

It must be noted that 119 persons have received tympanoplasty surgery at the Bethel Hospital within the last eight months and are thus not included in this listing.

Three conclusions seem warranted from this information: (1) consideration of an improved reporting format for otitis media, (2) a continued cooperative effort should be made to reduce this backlog of persons needing ear surgery, and (3) preventive measures should be undertaken to lower the incidence of new cases.

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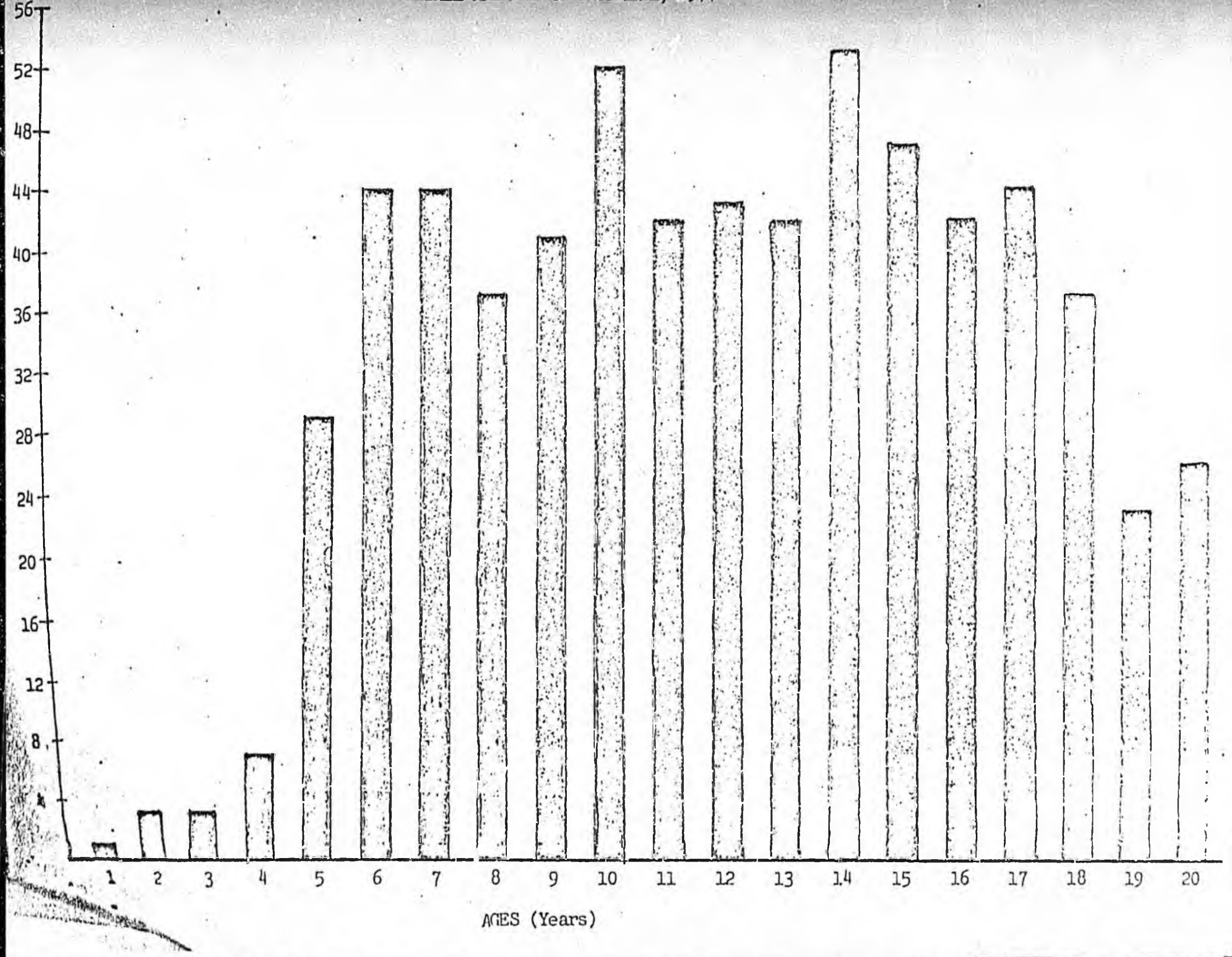

56
52
48
44
40
36
32
28
24
20
16
12
8
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20
AGES (Years)

[illegible] MEDIA WITH PERFORATION IN 45 VILLAGES IN THE BETHEL AREA

	Persons with birthdates of 1/1/56 or later (under 21 years of age)		Persons with birthdates Prior to 1956 (over 21 years of age)		
	Unilateral Perforation	Bilateral Perforations	Unilateral Perforation	Bilateral Perforations	Total Ears Perforated
Alakanuk	27	12	3	0	54
Akiachuk	18	15	0	0	51
Akiak	1	1	0	0	3
Aniak	9	1	0	0	11
Anvik	0	1	0	0	2
Atmautluak	3	1	0	0	5
Bethel	69	20	14	2	127
Chauthbaluk	3	0	0	0	3
Chefornak	9	3	1	0	16
Chevak	29	2	4	0	37
Eek	0	1	0	0	2
Crooked Creek	5	0	1	0	6
Emmonak	26	5	1	0	37
Greyling	0	0	0	0	0
Holy Cross	7	3	0	0	13
Hooper Bay	30	7	3	0	47
Kasigluk	8	1	2	0	12
Kipnuk	28	15	0	0	58
Kongiganak	11	7	2	0	27
Kotlik	18	2	3	0	25
Kwethluk	28	2	4	0	36
Lower Kalskag	2	2	0	0	6
Lime Village	"Several"	"Several"			
Kwigillingok	5	1	0	0	7
Marshall	5	2	2	0	11
Nekoryuk	13	0	0	0	13
Mountain Village	42	15	4	0	76
Napakiak	7	6	3	0	22
Napaskiak	7	3	0	0	13
Newtok	5	7	1	0	20
Nightmute	7	5	1	1	19
Nunapitchuk	4	0	0	0	4
Oscarville	6	0	0	0	6
Pilot Station	19	9	0	0	37
Pitka's Point	1	0	0	0	1
Quinhagak	8	6	0	0	20
Russian Mission	5	0	0	0	5
Scammon Bay	7	0	0	0	7
Shageluk	3	0	0	0	3
Sheldon's Point	9	0	0	1	11
Sleetmute	4	1	0	0	6
Saint Mary's	12	1	0	0	14
Stony River	4	1	0	0	6
Toksook Bay	15	3	1	0	22
Tuluksak	7	0	1	1	10
Tununtuliak	2	0	0	0	2
Tununak	15	1	2	0	19
Upper Kalskag	8	1	1	0	11
45 Villages	551 Persons	163 Persons	57 Persons	5	943

STATEMENT OF PROBLEM

For many years otitis media has been recognized as the major cause of morbidity in rural Alaska. Studies done in the middle and late 1950's reported unusually high incidence & prevalence rates of this disease among the Natives, (Haymen and Koster 1957, and the McGrath Project 1962). An infant morbidity and mortality study begun in 1960 revealed that 38% of a cohort group of Alaskan Eskimo infants had at least one episode of draining ear during their first year of life (Maynard and Hammes 1970). By 1964 otitis media was recognized as the second highest cause of morbidity among Alaska Natives. In 1965, Reed, in a follow up on the Alaska Eskimo cohort group, found that 62% of the children had had one or more episodes since birth. In the same year, Reed and Dunn also found that 63% of the children examined in six Eskimo villages showed past or present evidence of otitis media.

In the most recent studies, Kaplan, Fleshman, Bender, Baum and Clark studied 489 Alaska Eskimo children who had been followed through the first ten years of life; 76% had one or more episodes of otitis media since birth. Of these, 78% had their first attack during the first two years of life. Perforation and scarring of the tympanic membrane were present in 41%. A mild hearing loss of 26 decibels or greater was present in 17% and an additional 25% were in the normal range but had measurable conductive hearing loss. Children with a history of otitis media prior to two years of age and a mild loss (26 dB or greater) had a statistically significant loss of verbal ability and

were behind in total reading, total math and language development. In addition, children who had an early onset of otitis media but now had normal hearing with a conductive component were also adversely affected in verbal areas. The number of otitis media episodes was related to the tympanic membrane abnormality, hearing loss and low verbal ability in achievement scores.

Data collection during the first half of FY 1975 by the Communicative Disorders Project once again revealed the scope of the problem encountered. During that period of time, three specific groups were studied in detail. One group consisted of twelve preschool and Head Start classes located in Southeast Alaska. Of the 328 children tested using impedance audiometric techniques, 20% showed indications of tympanic membrane perforations or middle ear effusion, and 27% showed substantial negative middle ear pressure which indicates lack of eustachian tube functioning. This negative pressure is often a prelude to middle ear difficulties and these children could be considered at high risk.

A similar study was conducted in ten villages in the Bethel area where 211 children were seen. Of these, 33% were medical referrals, and 22% showed evidence of eustachian tube malfunctions. These two preschool studies indicate that there is still a substantial incidence of early occurance of middle ear pathology. This is especially significant since if uncorrected these hearing losses will undoubtedly affect school performance, cause emotional problems, and significant deficits in language ability. Such a hearing loss occurs at an age when speech and language readiness is at its peak.

The problem of ear pathology in rural Alaska is not a transitory one as is indicated by our third FY 1975 study which included the total

Incoming population of new students to the BIA high school at Mt. Edgecumbe. A total of 256 students were evaluated with total diagnostic batteries. About 97, or 38% of those seen demonstrated a significant hearing loss. Of those 97 individuals, 63% were conductive losses, 30% were sensori-neural, and 7% mixed. The high incidence of sensori-neural losses found in this relatively young population (ages 14 through 16) indicates either that these impairments may be due to the secondary effects of otitis media, or to excessive noise exposure or perhaps both. Alaskan Natives are exposed to an inordinate amount of high intensity noise originating from snowmobiles, rifle fire, light aircraft and motor boats. This is another problem which will receive more attention during the coming year. (For more detailed breakdown of these three specific studies, please refer to the progress report for FY 1975.)

Studies accomplished in the first half of Fiscal Year 1976 also confirm earlier findings. During that period of time, 617 Head Start children located in villages throughout the state were examined by impedance and pure tone testing procedures. Of these children, ages 3-5 years, 166 (27%) had middle ear conditions which necessitated medical referral. An additional 106 children (17%) demonstrated negative middle ear pressure, a condition associated with eustachian tube malfunction which often occurs prior to the development of serous otitis media. Another 34 children could not be tested. Only 271 (43%) were found to have no indications of middle ear problems. A summary of these findings is enclosed in Appendix C.

During Fiscal Year 1975 there were 1,745 individuals (mostly children) who were referred for medical attention by the Communicative Disorders

Program. During the first half of Fiscal Year 1976, 1,115 clients were referred for medical attention. While these referrals represent the full range of pathology, a great many of these suffer from serous otitis media.

In addition to problems encountered in attempting to deliver services in a large geographic area with poor transportation availability, Alaska has multiple layers of state and federal governmental agencies operating. Many of these have services which are of value to communicatively handicapped individuals; however, fragmentation or geographic isolation has significantly reduced any impact they may have upon the state as a whole. The programs that have established services are usually restricted to relatively small geographic areas. Few attempts to reach the communicatively handicapped individual in rural Alaska have been made.

A child with a communicative disorder has been one of the most neglected of the many health and educational problems. (Otitis media is no doubt contributing to this problem significantly.) There are virtually no clinical speech pathologists who routinely serve children in rural Alaska. When such positions have been established they have been filled with inadequately trained individuals who soon become overwhelmed by the scope of the pathology with which they are confronted. Their tenure is consequently of short duration in most cases. Staff turnover in rural Alaska is a persistent problem because of the break thus created in the continuity of services. If quality personnel are acquired for programs within the state, staff retention problems persist because there is very little that can be done to obtain on going enrichment

professionally. Funds are restricted for out-of-state travel to short courses and seminars.

Examination of the scope of the problem, areas of need and possible approaches to amelioration of the situation have been discussed from various perspectives from time to time. Some fruitful activities have developed on the clinical level and efforts expended in the area of prevention and surgical management of acute and ch otitis media have been outstanding examples of productivity by the Public Health Service field hospitals and the ear, nose and throat section of the Alaska Native Medical Center.

Answers to the problem of serous otitis media, however, remain unresolved.. This condition, which is evident in a very high percentage of children in rural Alaska, has only become evident in the last several years. Whether this condition was previously overlooked in light of the presence of more severe pathology and less sensitive diagnostic tools, or whether this is a secondary effect of antibiotic treatment representing incompletely resolved bacterial infections of the middle ear is unknown. The following is an exerpt from the 10th edition of the Textbook of Pediatrics which refers to the condition of serous otitis media specifically.

> SEROUS OTITIS MEDIA. Serous effusions of the middle ear are believed to originate as a physical phenomenon secondary to blockage of the eustachian tube and negative pressure in the middle ear cavity. The inciting cause of the obstructing edema or lymphoid hyperplasia may be nasopharyngeal inflammation, allergy or barotrauma, as from rapid descent in a nonpressurized aircraft cabin. The increasing recognition of serous otitis in the antibiotic era suggests that some cases represent incompletely resolved bacterial infections of the middle ear, but proof of this hypothesis is lacking. Attempts to isolate

viruses from serous effusions have generally been unsuccessful, but viruses may play an indirect role by setting the stage for tubal dysfunction accompanying nasopharyngitis.

The serous fluid produces a sensation of fullness in the ear, decreased hearing and a popping or clicking sound with swallowing or jaw movement. The tympanic membrane is bulging and dull, with a few injected vessels or a diffuse, dusky hue, but there is much variation in the appearance, and pneumatoscopy may indicate fluid when the membrane looks almost normal. Later in the couse when the fluid becomes viscous ("glue ear") there may be retraction, with the prominence of the short process of the malleus, and the drum may acquire a blue-white coloration.

Electroacoustic impedance testing procedures are a highly sensitive method of identifying and diagnosing this problem. However, the availability of such instrumentation is presently restricted to the audiologists in the state and needs to be extended to other health care providers. Since the condition of serous otitis is very difficult to diagnose by an otoscopic examination, the health care provider who is treating the case of serous otitis and does not have impedance instrumentation has no way to tell when the condition resolves. Consequently, the effectiveness of various remedial measures is poorly documented.

There is a lack of consensus among the medical community concerning what type of management is appropriate for serous otitis. Some individuals believe that this is a highly transient phenomena which is of short duration and do very little in the area of medical treatment of the condition. (Preliminary studies by the Communicative Disorders Project on Alaskan children indicate that it is often of longer duration. More study of this factor is needed, however.) Others believe that treatment with antihistamines and decongestants is a proper approach. Still others are quite uncertain as to whether or not these medications have any effect but use them nevertheless as a precautionary measure. There is

no unanimity concerning how long such decongestants should be administered and what should be done should the child fail to respond to such treatment.

There is also some disagreement concerning the advisability and the feasibility of using polyethelene tube insertions with persistent cases of otitis. This is relatively standard practice by otolaryngologists practicing in cities. It has never been utilized to any extent in bush Alaska.

A medical, audiological and educational policy for the treatment of serous otitis media is needed at this time. Multidisciplinary course of pathology studies on representative populations could answer some of these nagging questions. For example, serial audiologic examinations using impedance and pure tone audiometry performed monthly on representative groups could for the first time give some solid indications as to what the seasonal variations of serous otitis are, how much hearing loss is involved, and what the duration of various stages of the condition are. A longer term study would be necessary to evaluate the functional impact of this disease upon language and educational abilities of the children so affected. Studies confirming the effectiveness or lack of effectiveness of various medications and surgical procedures necessitates the full cooperation of the medical community. One such study is being undertaken at this time by the Rural Alaska Community Action Program in eleven Head Start villages in the Bethel area. The Communicative Disorders Project has worked cooperatively with this agency to initiate this undertaking. It will be a demonstration project of the effectiveness of the utilization of polyethelene tubes in the treatment of serous otitis. (See Appendix C)

This outline is a description of the segments of the overall problem on which there appears to be lack of complete information that is quantifiable or lack of clearly defined and/or commonly known policy and procedure.

PHASE II

DEFINITION OF THE PROBLEM AND STATEMENT OF NEEDS

Otitis Media in Alaska

EPIDEMIOLOGY	NEEDS
age of onset projected course of pathology seasonal variation (sanitation) (housing) (nutrition)	With each of the areas of concern listed more intensive study needs to be undertaken to establish some quantifiable measures the parameters of the problem.
PREVALENCE	
by geographic area by size of village	The development of a functional and comprehensive data system should facilitate the gathering of data on specific geographic areas within the state and the grouping of high incidence areas according to village size, climate, frequency of medical care, etc.
DIAGNOSIS	
sereus acute chronic	A consensus of opinion needs to be developed among all health care providers concerning an operational definition with each type of pathology. There not only needs to be a consensus on the labels which are used with each condition but also specific observations which are necessary to classify the person in each category should be clarified to all health care providers.

MANAGEMENT CRITERIA

A. History	Documentation on representative population of health history.
B. Audiologic Evaluation	Extention of duties to PHN's and Health Aides (training and equipment needed).
C. Physical Examination	PHN and Health Aide training needed.
D. Medication	Agreement on medication needed for each condition.
E. Follow up	Use of data system for follow up. Coordination with AHEC.
F. Referral for Medical	Clarification of referral channels to all medical providers. Check at specific locale on effectiveness of referral channel.

IMPACT OF CARE

Effectiveness of medication	Course of pathology studies on the local level.
Effectiveness of surgery	Post surgical follow up results obtained via data system.

FUNCTIONAL IMPACT

Educational Speech, Language Psycho-social	Documentation of effect of otitis media on performance in each area by well controlled investigations. Coordination of efforts with: 1. Local and regional educational agencies (Regional Resource Center - Regional Educational Attendance Areas). 2. Speech pathology 3. Psychologist and social worker 4. Native Health Corporations

Otitis Media

U.S.P.H.S. - I.H.S.

Dr. Fleshman 279-6661

ext. 200 or 273

19 years service in Alaska

cannot be immune

1956 "McGrath Project"

RA18 Alaska
.C1 1962

~~earaches not treated~~ !!!!

10% → 3% Native kids

always scarred - always have abnormal ears unless surgery

geographic difference
Bristol Bay
Yukon - Kuskokwim
high prevelance of disease

Dr. Fleshman

"Otitis media"
inflamation
of the middle ear

rupture - pus runs
drum perforated - hearing loss

<u>machine</u> measures ear fluid

"serous" - fluid
otitis media

4-19-78 Dr. Gleskman
Otitis Media

Resolution

not really a problem

health of children improving in general

see where problem really is - statistics

Feds have envt $ now

more TB problems in Alaska

living conditions improve ↳ health improve

ear infections related to cold - related to general health

health aides
- knowledge doesn't always equal change -

Health - Nutrition - Anthropology

not contageous

Public Health Nurse

mothers care for children deal w/ the young family

people keep in tune w/ their bodies

damaged children → language disability

- problem is not a lack of money -
- poor communication -

Native Corps.

- no encourage breast feeding -

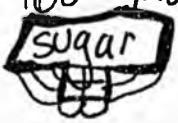
Wainwright

10,000 soda pop
214,000 soda pop

no increase in pupulation

Canadian Arctic high incidence of ear infection

diet was too much carbo.



many damaged people

need good health screening program -

possibly mandated by law -
done in Washington

drain fluid

get copy of Rural cwp contract -

HCR → wipe out Otitis Media

plan done by H&SS

complete w/ $ & time

get facts!!

McCabe

3100
Spence

ALASKA
STATE LEGISLATURE

MEMORANDUM

Dr. McCabe
-early treatment best -
not preventable
virus
bacteria

call I.H.S.
ask docs
where needs are -
Prompt diag & treatment

4500

common organism

X533-021864

6-1600

STATEMENT OF PROBLEM

For many years otitis media has been recognized as the major cause of morbidity in rural Alaska. Studies done in the middle and late 1950's reported unusually high incidence & prevalence rates of this disease among the Natives, (Haymen and Kaster 1957, and the McGrath Project 1962). An infant mortidity and mortality study begun in 1960 revealed that 38% of a cohort group of Alaskan Eskimo infants had at least one episode of draining ear during their first year of life (Maynard and Hammes 1970). By 1964 otitis media was recognized as the second highest cause of morbidity among Alaska Natives. In 1965, Reed, in a follow up on the Alaska Eskimo cohort group, found that 62% of the children had had one or more episodes since birth. In the same year, Reed and Dunn also found that 63% of the children examined in six Eskimo villages showed past or present evidence of otitis media.

In the most recent studies (1973), Kaplan, Fleshman, Bender, Baum and Clark studied 480 Alaska Eskimo children who had been followed through the first ten years of life; 76% had one or more episodes of otitis media since birth. Of these, 78% had their first attack during the first two years of life. Perforation and scarring of the tympanic membrane were present in 41%. A mild hearing loss of 26 decibels or greater was present in 16% and an additional 25% were in the normal range but had measurable conductive hearing loss. Children with a history of otitis media prior to two years of age and a mild loss (26 dB or greater) had a statistically significant loss of verbal ability and

were behind in total reading, total math and language development. In addition, children who had an early onset of otitis media but now had normal hearing with a conductive component were also adversely affected in verbal areas. The number of otitis media episodes was related to the tympanic membrane abnormality, hearing loss and low verbal ability in achievement scores.

Data collection during the first half of FY 1975 by the Communicative Disorders Project once again revealed the scope of the problem encountered. During that period of time, three specific groups were studied in detail. One group consisted of twelve preschool and Head Start classes located in Southeast Alaska. Of the 328 children tested using impedance audiometric techniques, 20% showed indications of tympanic membrane perforations or middle ear effusion, and 27% showed substantial negative middle ear pressure which indicates lack of eustacian tube functioning. This negative pressure is often a prelude to middle ear difficulties and these children could be considered at high risk.

A similar study was conducted in ten villages in the Bethel area where 211 children were seen. Of these, 33% were medical referrals, and 22% showed evidence of eustachian tube malfunctions. These two preschool studies indicate that there is still a substantial incidence of early occurance of middle ear pathology. This is especially significant since if uncorrected these hearing losses will undoubtedly affect school performance, cause emotional problems, and significant deficits in language ability. Such a hearing loss occurs at an age when speech and language readiness is at its peak.

The problem of ear pathology in rural Alaska is not a transitory one as is indicated by our third FY 197- study which included the total

Incoming population of new students to the BIA high school at Mt. Edgecumbe. A total of 256 students were evaluated with total diagnostic batteries. About 97, or 38% of those seen demonstrated a significant hearing loss. Of those 97 individuals, 63% were conductive losses, 30% were sensori-neural, and 7% mixed. The high incidence of sensori-neural losses found in this relatively young population (ages 14 through 16) indicates either that these impairments may be due to the secondary effects of otitis media, or to excessive noise exposure or perhaps both. Alaskan Natives are exposed to an incrdinate amount of high intensity noise originating from snowmobiles, rifle fire, light aircraft and motor boats. This is another problem which will receive more attention during the coming year. (For more detailed breakdown of these three specific studies, please refer to the progress report for FY 1975.)

Studies accomplished in the first half of Fiscal Year 1976 also confirm earlier findings. During that period of time, 617 Head Start children located in villages throughout the state were examined by impedance and pure tone testing procedures. Of these children, ages 3-5 years, 166 (27%) had middle ear conditions which necessitated medical referral. An additional 106 children (17%) demonstrated negative middle ear pressure, a condition associated with eustachian tube malfunction which often occurs prior to the development of serous otitis media. Another 34 children could not be tested. Only 311 (50%) were found to have no indications of middle ear problems. A summary of these findings is enclosed in Appendix C.

During Fiscal Year 1975 there were 1,745 individuals (mostly children) who were referred for medical attention by the Communicative Disorders

Program. During the first half of Fiscal Year 1976, 1,115 clients were referred for medical attention. While these referrals represent the full range of pathology, a great many of these suffer from serous otitis media. But a very large % of Chronic otitis with perforations also. (Dr. Allaska info.)
In addition to problems encountered in attempting to deliver services in a large geographic area with poor transportation availability, Alaska has multiple layers of state and federal governmental agencies operating. Many of these have services which are of value to communicatively handicapped individuals; however, fragmentation or geographic isolation has significantly reduced any impact they may have upon the state as a whole. The programs that have established services are usually restricted to relatively small geographic areas. Few attempts to reach the communicatively handicapped individual in rural Alaska have been made.

A child with a communicative disorder has been one of the most neglected of the many health and educational problems. (Otitis media is no doubt contributing to this problem significantly.) There are virtually no clinical speech pathologists who routinely serve children in rural Alaska. When such positions have been established they have been filled with inadequately trained individuals who soon become overwhelmed by the scope of the pathology with which they are confronted. Their tenure is consequently of short duration in most cases. Staff turnover in rural Alaska is a persistent problem because of the break thus created in the continuity of services. If quality personnel are acquired for programs within the state, staff retention problems persist because there is very little that can be done to obtain on going enrichment

professionally. Funds are restricted for out-of-state travel to short courses and seminars.

Examination of the scope of the problem, areas of need and possible approaches to amelioration of the situation have been discussed from various perspectives from time to time. Some fruitful activities have developed on the clinical level and efforts expended in the area of prevention and surgical management of acute and chronic otitis media have been outstanding examples of productivity by the Public Health Service field hospitals and the ear, nose and throat section of the Alaska Native Medical Center.

NEW INFO INDICATES THERE IS STILL A GREAT NEED IN THIS ESPECIALLY PREVENT

Answers to the problem of serous otitis media, however, remain unresolved. This condition, which is evident in a very high percentage of children in rural Alaska, has only become evident in the last several years. Whether this condition was previously overlooked in light of the presence of more severe pathology and less sensitive diagnostic tools, or whether this is a secondary effect of antibiotic treatment representing incompletely resolved bacterial infections of the middle ear is unknown. The following is an exerpt from the 10th edition of the Textbook of Pediatrics which refers to the condition of serous otitis media specifically.

> SEROUS OTITIS MEDIA. Serous effusions of the middle ear are believed to originate as a physical phenomenon secondary to blockage of the eustachian tube and negative pressure in the middle ear cavity. The inciting cause of the obstructing edema or lymphoid hyperplasia may be nasopharyngeal inflammation, allergy or barotrauma, as from rapid descent in a nonpressurized aircraft cabin. The increasing recognition of serous otitis in the antibiotic era suggests that some cases represent incompletely resolved bacterial infections of the middle ear, but proof of this hypothesis is lacking. Attempts to isolate

viruses from serous effusions have generally been unsuccessful, but viruses may play an indirect role by setting the stage for tubal dysfunction accompanying nasopharyngitis.

The serous fluid produces a sensation of fullness in the ear, decreased hearing and a popping or clicking sound with swallowing or jaw movement. The tympanic membrane is bulging and dull, with a few injected vessels or a diffuse, dusky hue, but there is much variation in the appearance, and pneumatoscopy may indicate fluid when the membrane looks almost normal. Later in the course when the fluid becomes viscous ("glue ear") there may be retraction, with the prominence of the short process of the malleus, and the drum may acquire a blue-white coloration.

Electroacoustic impedance testing procedures are a highly sensitive method of identifying and diagnosing this problem. However, the availability of such instrumentation is presently restricted to the audiologists in the state and needs to be extended to other health care providers. Since the condition of serous otitis is very difficult to diagnose by an otoscopic examination, the health care provider who is treating the case of serous otitis and does not have impedance instrumentation has no way to tell when the condition resolves. Consequently, the effectiveness of various remedial measures is poorly documented.

There is a lack of consensus among the medical community concerning what type of management is appropriate for serous otitis. Some individuals believe that this is a highly transient phenomena which is of short duration and do very little in the area of medical treatment of the condition. (Preliminary studies by the Communicative Disorders Project on Alaskan children indicate that it is often of longer duration. More study of this factor is needed, however.) Others believe that treatment with antihistamines and decongestants is a proper approach. Still others are quite uncertain as to whether or not these medications have any effect but use them nevertheless as a precautionary measure. There is

no unanimity concerning how long such decongestants should be administered and what should be done should the child fail to respond to such treatment.

There is also some disagreement concerning the advisability and the feasibility of using polyethelene tube insertions with persistent cases of otitis. This is relatively standard practice by otolaryngologists practicing in cities. It has never been utilized to any extent in bush Alaska.

MAY NOT BE FEASIBLE IN RURAL ALASKA USING LOWER 48 STDS.

A medical, audiological and educational policy for the treatment of serous otitis media is needed at this time. Multidisciplinary course of pathology studies on representative populations could answer some of these nagging questions. For example, serial audiologic examinations using impedance and pure tone audiometry performed monthly on representative groups could for the first time give some solid indications as to what the seasonal variations of serous otitis are, how much hearing loss is involved, and what the duration of various stages of the condition are. A longer term study would be necessary to evaluate the functional impact of this disease upon language and educational abilities of the children so affected. Studies confirming the effectiveness or lack of effectiveness of various medications and surgical procedures necessitates the full cooperation of the medical community. One such study is being undertaken at this time by the Rural Alaska Community Action Program in eleven Head Start villages in the Bethel area. The Communicative Disorders Project has worked cooperatively with this agency to initiate this undertaking. It will be a demonstration project of the effectiveness of the utilization of polyethelene tubes in the treatment of serous otitis. (See Appendix C)

FY 76-77 study nearly completed.

This outline is a description of the segments of the overall problem on which there appears to be lack of complete information that is quantifiable or lack of clearly defined and/or commonly known policy and procedure.

PHASE II

DEFINITION OF THE PROBLEM AND STATEMENT OF NEEDS

Otitis Media in Alaska

EPIDEMIOLOGY	NEEDS
age of onset projected course of pathology seasonal variation (sanitation) (housing) (nutrition)	With each of the areas of concern listed more intensive study needs to be undertaken to establish some quantifiable ~~baseline~~ parameters of the problem.
PREVALENCE	
by geographic area by size of village	THIS DATA SYSTEM HAS NOW BEEN DEVELOPED & IMPLEMENTED BY COMM. DIS. PROGRAM The development of a functional and comprehensive data system should facilitate the gathering of data on specific geographic areas within the state and the grouping of high incidence areas according to village size, climate, frequency of medical care, etc.
DIAGNOSIS	
serous acute chronic	IN PROCESS OF DEVELOPMENT A consensus of opinion needs to be developed among all health care providers concerning an operational definition with each type of pathology. There not only needs to be a consensus on the labels which are used with each condition but also specific observations which are necessary to classify the person in each category should be clarified to all health care providers.

MANAGEMENT CRITERIA

A. History	Documentation on representative population of health history.
B. Audiologic Evaluation	Extention of duties to PHN's and Health Aides (training and equipment needed). DONE
C. Physical Examination	PHN and Health Aide training needed.
D. Medication	Agreement on medication needed for each condition.
E. Follow up	Use of data system for follow up. Coordination with AIHC. DONE
F. Referral for Medical	Clarification of referral channels to all medical providers. Check at specific locale on effectiveness of referral channel. REF. CHANNELS CLARIFIED. BUT EFFECTIVENESS HASN'T BEEN CHECKED.

IMPACT OF CARE

Effectiveness of medication	Course of pathology studies on the local level.
Effectiveness of surgery	Post surgical follow up results obtained via data system.

FUNCTIONAL IMPACT

Educational Speech, Language Psycho-social	Documentation of effect of otitis media on performance in each area by well controlled investigations. Coordination of efforts with: 1. Local and regional educational agencies (Regional Resource Center - Regional Educational Attendance Areas). 2. Speech pathology 3. Psychologist and social worker 4. Native Health Corporations

of ALASKA

MEMORANDUM

DEPARTMENT OF HEALTH AND SOCIAL SERVICES

TO: The Record

DATE: December 9, 1977

FILE NO:

TELEPHONE NO:

FROM: David A. Spence, M.D., Chief
Section of Family Health

SUBJECT: Prevalence listing of otitis media with perforation.

The attached, unduplicated prevalence listing has been compiled by Cozzi Alward, R.N., and Michelle Riccardi, R.N., from the following sources: October and November, 1977, observations of perforations by field and ENT physicians, public health nurses, and audiologists (442) ears; and previous listings of persons awaiting tympanoplasties (501 ears). This is not a listing, per se, of persons for whom a tympanoplasty has actually been recommended, but it follows that a very significant number of them will be so classified once they have been evaluated by an ENT surgeon.

The bar chart shows the age distribution of the individuals under 21 years of age with chronic otitis media with perforation. In this disease, recurrent, closely-spaced or inadequately treated acute infections (which proceed to perforation and drainage) lead eventually to a rising prevalence of non-healing of the perforation. Below age five years there is inconsistent reporting since surgery has not been recommended for these ages. Further study and analysis will be required to reveal any changing incidence of perforation within the last five to ten years.

It must be noted that 119 persons have received tympanoplasty surgery at the Bethel Hospital within the last eight months and are thus not included in this listing.

Three conclusions seem warranted from this information: (1) consideration of an improved reporting format for otitis media, (2) a continued cooperative effort should be made to reduce this backlog of persons needing ear surgery, and (3) preventive measures should be undertaken to lower the incidence of new cases.

DISTRIBUTION:

Mr. James Armbrust
Tom Bender, M.D.
David Canterbury, PhD.
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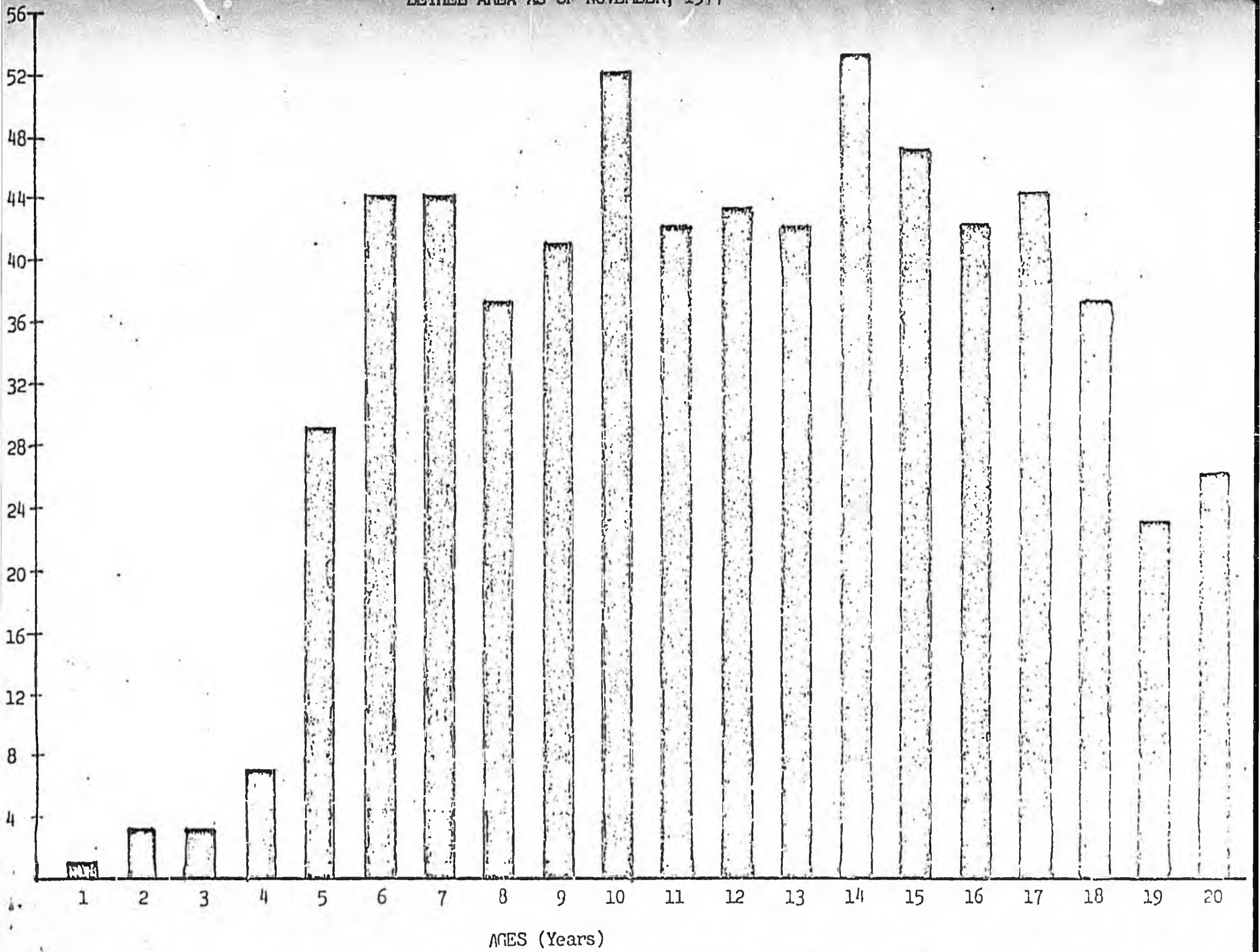
Mr. Don Hitchcock
Robert Hurwitz, M.D.
Ms. Lois Jund
Mr. Michael Morgan
Charles Nielsen, M.D.
Ms. Pat Shea
Carl Shewmake, M.D.
Marion Talbot, M.D.
Elizabeth Tower, M.D.
David Williams, M.D.

BETHEL AREA AS OF NOVEMBER, 1977



	Persons with birthdates of 1/1/56 or later (under 21 years of age)		Persons with birthdates Prior to 1956 (over 21 years of age)		
	Unilateral Perforation	Bilateral Perforations	Unilateral Perforation	Bilateral Perforations	Total Ears Perforated
Alakanuk	27	12	3	0	54
Akiachuk	18	15	0	0	51
Akiak	1	1	0	0	3
Aniak	9	1	0	0	11
Anvik	0	1	0	0	2
Atmautluak	3	1	0	0	5
Bethel	69	20	14	2	127
Chauthbaluk	3	0	0	0	3
Chefornak	9	3	1	0	16
Chevak	29	2	4	0	37
Eek	0	1	0	0	2
Crooked Creek	5	0	1	0	6
Emmonak	26	5	1	0	37
Greyling	0	0	0	0	0
Holy Cross	7	3	0	0	13
Hooper Bay	30	7	3	0	47
Kasigluk	8	1	2	0	12
Kipnuk	28	15	0	0	58
Kongiganak	11	7	2	0	27
Kotlik	18	2	3	0	25
Kwethluk	28	2	4	0	36
Lower Kalskag	2	2	0	0	6
Lime Village	"Several"	"Several"			
Kwigillingok	5	1	0	0	7
Marshall	5	2	2	0	11
Mekoryuk	13	0	0	0	13
Mountain Village	42	15	4	0	76
Napakiak	7	6	3	0	22
Napaskiak	7	3	0	0	13
Newtok	5	7	1	0	20
Nightmute	7	5	1	1	19
Nunapitchuk	4	0	0	0	4
Oscarville	6	0	0	0	6
Pilot Station	19	9	0	0	37
Pitka's Point	1	0	0	0	1
Quinhagak	8	6	0	0	20
Russian Mission	5	0	0	0	5
Scammon Bay	7	0	0	0	7
Shageluk	3	0	0	0	3
Sheldon's Point	9	0	0	1	11
Sleetmute	4	1	0	0	6
Saint Mary's	12	1	0	0	14
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

STATE OF ALASKA
ALASKA COMMISSION ON POSTSECONDARY EDUCATION

JAY S. HAMMOND, GOVERNOR

907-465-2855
Pouch F — State Office Building
Juneau 99811

M E M O R A N D U M

TO: Representative Charles Parr

FROM: Jane Byers Maynard, State Administrator for Title I-A, HEA
Alaska Commission on Postsecondary Education

SUBJECT: Otitis Media Proposal

DATE: April 17, 1978

Enclosed for your information is a copy of Kuskokwim Community College's Otitis Media proposal which was discussed at our Commission meeting last Friday. This proposal was approved for funding at a Federal level of $47,818.

If you have any questions regarding the proposed activities, please give me a call at 465-2855.

Enclosure

KUSKOKWIM COMMUNITY COLLEGE
P. O. BOX 368
BETHEL, ALASKA 99559

COMPARISON OF HEALTH EDUCATION APPROACHES TO THE REDUCTION OF COMPLICATIONS OF OTITIS MEDIA IN RURAL ALASKA

DRAFT
PROPOSAL

COMPARISON OF HEALTH EDUCATION APPROACHES TO THE REDUCTION OF THE COMPLICATIONS OF OTITIS MEDIA IN RURAL ALASKA

TABLE OF CONTENTS

1.0 BASIC PROGRAM DATA

1.1 Program Title

The program shall be entitled:

"Comparison of Health Education approaches to the reduction of the complications of Otitis Media in Rural Alaska."

1.2 Primary Higher education Institution involved:

Kuskokwim Community College
University of Alaska
P.O. Box 368
Bethel, Alaska, 99559

1.3 Cooperating institutions and/or agencies:

Yukon-Kuskokwim Health Corporation
RuralCAP
Alaska State Division of Public Health
Bureau of Indian Affairs
Lower Kuskokwim School District
Alaska Native Health Service (Indian Health Service)
Rural Education Affairs, University of Alaska

1.4 Program Director

John Rich
Director, Division of Health Sciences
Kuskokwim Community College

(907) 543- 2621

Kuskokwim Community College
University of Alaska
P.O. Box 368
Bethel, Alaska, 99559

1.5 Budgetary requirements:

Federal funds required	$50,000
Matching funds	$25,000
Total	$75,000

1.6 Source of Matching funds

Fees
Donations
Contributed time
Institutional funds
Indirect costs
Other

RuralCAP	$15,000
DPH	$ 5,000
YKHC	$ 5,000
Total	$25,000

2.0 GOALS AND OBJECTIVES

2.1 Identification of the priority area and community need:

This program is designed so as to respond to priority areas 2.1 (e) and 2.2 (e) of the Guide.

The plan is to design and implement various means of influencing community attitudes with regard to otitis media, with the aim of reducing widespread neglect of this health problem. In implementing the proposed plan, the relative effectiveness of methodologies used to influence community attitudes will be determined through the use of various evaluative methods.

Those methods found most effective will thus be identified and it is expected that such methods, singly or in combination can be:

1. Extended to other villages in the State with a view to reduction of the complications of otitis media.

2. Applied to other health education issues.

Otitis media was selected as a vehicle of testing methodologies for delivery of health education since:

1. It is a significatnt health problem, identified by both the Alaska State Division of Public Health and the Indian Health Service as being one of the major concerns in rural Alaska. In FY 1977, it was the third leading cause of ambulatory treatments in hospitals of the Indian Health Service.

   For example, in villages of the Bethel Service Unit, in October 1977, the incidence of ear problems identified and treated ranged as high as 30 per hundred population, with an overall incidence of 816 cases in the region. In addition, respiratory problems identified and treated - possible predisposing factors of otitis media, accounted for a further 12 per hundred population, with an overall total of 1347 cases.

   High those these figures are, they certainly represent only a part of the cases of otitis media that exist in the villages, since many cases go unidentified

   While great strides have been made in the last two decades in reducing the incidence of otitis media, the residual problem remains of prime concern.

2. Otitis media is the focus of attention for a number of agencies at the present time. Resources available currently for programs designed to approach the problem may not be available at some future date. It therefore seems opportune to harness present concern in an effort to improve communication channels between agencies involved in preventive and therapeutic work, in the hope and expectation that, in future, cooperative effort can solve other health problems.

3. Otitis media lends itself admirably to empirical methods of evaluation, since the scope and effects of treatment and prevention can be measured with relative ease.

Otitis media is a problem in rural Alaska, for the most part because much of the population does not as yet perceive it as a dangerous condition. Early symptoms of the disease are commonly ignored or considered as an inevitable part of growth and development, with the consequence that they are not brought to the attention of the primary care agent, even though early treatment is usually simple. The lack of timely intervention can result in hearing-loss that cannot be corrected by surgery or in other severe illnesses such as menigitis.

Since the primary health care of village communities is the responsibility of Community Health Aides, an essential prerequisite for the success of the program is that they be able to respond knowledgably and competently to any increased demand for care of ear problems. It is for this reason that the program includes credit courses for Community Health Aides. These courses, to be delivered by the Health Sciences Division of Kuskokwim Community College, fulfil the priority described in section 1 of the Guide and enhance the health aides' ability to detect otitis media in the early stages and to provide prompt and effective treatment.

Inter-agency efforts have already been applied in the initial planning phase of the project which is designed on a cooperative, resource-sharing basis between the college and other agencies involved in community education and service. As the program evolves, evidence will be forthcoming of the interaction and interdependency of the college with private and public service-oriented agnecies. Each agency will be contributing special expertise and resources and the ensemble of such efforts will provide a convincing model of cooperation which will accord with the emphasis given in Section 3 of the Guide.

2.2 Statement of goals and objectives

1. Overall program goal

To develop, implement and evaluate cost-effective health education approaches designed to reduce the complications of otitis media in rural Alaska through the promotion of early detection and improved care.

2. Overall program objective

To determine the relative cost-effectiveness and efficacy of three different health education approaches in obtaining a significant reduction in the ratio of late to early detection of otitis media in eight villages of rural Alaska.

3. Component objectives

Of the factors that influence early detection and improved care of cases of otitis media, some have been identified as being predisposing factors, some as being enabling factors and some as being reinforcing factors.

A. Predisposing factors are seen as those that affect the willingness and readiness of individuals to seek early treatment for otitis media on their own or their dependants' behalf.

B. Enabling factors are considered those that concern improvements of conditions and facilities for care of otitis media in the villages.

C. Reinforcing factors are those that confirm good attitudes and practices and strengthen predisposing and enabling factors.

Objectives in each of these categories are listed as follows:

A. On completion of the program, 75% of members of target groups will:

a) Demonstrate familiarity with the early signs and symtpoms of otitis media (i.e. URI, earache, fever, otorrhea)

b) Indicate willingness to seek care for themselves or children in their care, in the early stages of otitis media,

c) Regard otitis media NOT as an inevitable part of childhood development but as a condition that is dangerous and potentially disabling.

d) Shall know that:

- middle-ear infection can result in hearing-loss,
- a number of serious diseases can result from untreated otitis media,
- complications of otitis media are preventable through early detection and efficient treatment,
- treatment of otitis media is free, safe, effective, easily available and relatively pleasant,
- upper respiratory diseases predispose towards otitis media.

B. By the end of the program:

a) The Community Health Aide in each selected village shall have received basic training in primary health care and in addition shall have demonstrated at least 80% proficiency in written and practical tests given subsequent to advanced didactic and clinical instruction in the detection and care of otitis media.

b) The community Health Aides in each selected village shall have demonstrated satisfactory performance in the detection, assessment management and recording of cases of otitis media occurring in the village during the program period.

c) The clinic in each selected village shall have been so equipped as to permit the Community Health Aide to deal effectively with early detection and treatment of otitis media.

d) Documentary evidence will attest to the fact that in each selected village, otological examination has been routinely performed on ALL children attending the clinic for any cause, including well-baby clinic.

e) Patient records shall show that in each of the selected villages, appropriate treatment and follow-up care has been provided for at least 80% of patients attending for ear problems.

f) Village officials and the Yukon-Kuskokwim Health Corp.

will attest to the fact that for the duration of the program, the clinic in each selected village has been open at stipulated times and that the Community Health Aide was available at such times.

g) Patient records in each of the selected villages will show that adequate communication and referral took place between the Community Health Aide and other health professionals during the program period.

C. By the end of the program,

a) The Community Health Aide in each of the selected villages shall have demonstrated an understanding of and readiness to apply the principles of patient education in relation to otitis media. Documentary evidence will support the fact that in at least 80% of cases, patient education has been provided for those seeking care for ear problems.

b) In each of the selected villages, the Community Health Aide shall have shown evidence of reinforcing behavior and attitude towrds patients seeking care for ear problems.

c) Health professionals (i.e. physicians and public health nurses) visiting target villages shall have reinforced the program's educational message in a consistent manner in the course of at least 80% of patient encounters.

3.0 PROGRAM

3.1 Description of Program Content

The proposed program consists essentially of a unified and concerted approach to residual but important problems associated with otitis media.

There will be four components of the program:

a) School Health Program

b) Health Education Aide program

c) Media program

d) Community Health Aide Education program

The program is so designed as to permit comparison between different combinations of approaches and to determine the relative effectiveness of each. Thus, in the villages selected as targets for the program:

2 will be exposed to the School Health Program and the Media Program,

2 will be exposed to the School Health Program and the Health Education Aide program,

2 will be exposed to the Health Education Aide program and the Media program,

2 will be exposed to no other health education program than that provided by the Community Health Aide,

All Community Health Aides in the selected villages will receive advanced didactic and clinical instruction in the detection, assessment and care of otitis media.

Two additional villages will be selected as control sites. In these, no special program of health education or Health Aide instruction will be conducted in relation to otitis media.

For the sake of clarification, the different combinations of approach are set out in the following table:

Village	School Health	Health Education Aide	Media program	Advanced instruction for health aides
A	X	X	-	X
B	X	X	-	X
C	X	-	X	X
D	X	-	X	X
D	-	X	X	X
E	-	X	X	X
F	-	-	-	X
G	-	-	-	X
H	-	-	-	-
I	-	-	-	-

Program components

a) School Health Program

The School Health Program will be directed towards ALL children at school in the selected villages (Villages A,B,C, D.)

Activities that will be undertaken in this part of the program are:

1. Curriculum development

A curriculum will be developed to encompass those objectives listed under predisposing factors.

Elements of this curriculum will be adapted for delivery in the different grades.

2. Incorporation of curriculum

By agreement with school authorities, arrangements will be made to incorporate the school health curriculum into the regular school program in such a way that its delivery will be on-going, rather than consisting of an isolated episode.

3. Detection of ear problems

Teachers involved in the school health program will be encouraged to actively identify children who either show signs of hearing-loss

or who manifest signs of frank ear infection. Teachers will be encouraged to refer such children subsequently to their parents or guardians with the suggestion that they be presented to the Community Health Aide for assessment and treatment.

4. Children as educators

Although the extent of the activity will not be measured, it is expected that children will act as educators of their peers, siblings and even parents and thus play a definite, if unrecorded part in changing community attitude.

b) Health Education Aide Program

In the villages whete it is proposed to implant health education aides (Villages A & B, D & E) the target audience will be all those concerned with and primarily responsible for care of children. This audience could include persons ranging from adolescence to middle-age.

Activities to be conducted by the health education aides will also be directed to influencing the outcomes of those objectives listed under predisposing factors. Included will be house-to-house interviews and one-to-one or small group health education sessions.

The health education aides will be selected from among residents of target villages themselves. The Village Councils and the community at large will participate in the selection of the health education aides to ensure their acceptability to the population.

Upon selection, health education aides shall be given a short course and orientation to their function through the Division of Health Sciences, Kuskokwim Community College. Credit for such a course will be available.

c) Media Program

The target group for the media program will be all persons in villages selected for exposure, who are primarily responsible for the care of children (i.e. parents, foster-parents, grandparents and, in some cases, siblings)

In common with the school health program and the health education aide program, the purpose of the media program will be to favorably influence predisposing factors, ensuring that early care and treatment of otitis media is obtained.

It is proposed to design and develop a SERIES of informative and educational videotapes having the following specifications:

a) Materials should be highly relevant to and be specifically geared to life and culture in the selected villages.

b) Materials should be readily understandable to the target audience and be presented in the local vernacular.

c) The health education message should be delivered by a respected regional personage whose prestige and accepted authority can over-ride local authority and opinion networks.

In addition to the videotape series, it is proposed to design and develop a series of pamphlets, posters and other materials for the use of community members.

d) Community Health Aide Education program

For the last two years, the education of Community Health Aides in the Bethel Service Unit has been the responsibility of Kuskokwim Community College, in association with the Yukon-Kuskokwim Health Corporation and the Alaska Native Medical Center at Bethel.

The part of the program specifically concerned with the education of Community Health Aides with regard to otitis media is a natural extension of the college curriculum. The self-instructional and clinical courses to be offered will fulfil portions of the requirements for the Associate Degree in Applied Science that has been approved for health aides. Hitherto, it has not been possible to offer courses beyond the very basic part of the curriculum and the proposed program will offer the possibility of doing advanced work in the care of ear problems for the first time, since it will provide the first funds available for this purpose.

In this component of the proposed program, the target group in each of the selected villages will consist of primary and alternate Community Health Aides. A full description of these is appended.

Specific activities in this part of the program are as follows:

a) Provision of advanced theoretical instruction in the detection, assessment and management of otitis media and other ear problems by means of self-instructional materials.

b) Provision of advanced clinical instruction in the detection, assessment and care of otitis media.

c) Provision of advanced instruction in the principles and practices of patient education with regard to otitis media, by means of self-instrcutional materials.

The development of self-instructional materials for use by health aides in the Bethel area has been progressing slowly over the past two years and has given some indication that it is a successful way of supplementing outreach instruction. Until now, instructional units in Anatomy and Physiology and Physical Examination of the Eye have been produced and are undergoing evaluation. Funds have not permitted the application of the system to other subjects in the advanced portion of the curriculum. This program will offer the opportunity to test and refine new instructional units.

The self-instructional materials to be used in the course of this program incorporate the technology of the Microphonograph system, a full descrition of which is given at Appendix C. This innovative approach to outreach instruction has many potential applications, even beyond the sphere of health education.

e) Initial and final screening

In order to establish a data base and to permit evaluation of the program as a whole, the child population of each of the selected villages will be screened at the start and at the end of the program, to determine the number of ear problems actually in existence at those times.

A description of the screening process and its significance in the program is given later, at section 4.0 of this proposal.

f) Physicians and Public Health Nurses

An agreement will be reached with physicians of the Indian Health Service and itinerant nurses of the State of Alaska Department of Public health, whereby they will reinforce the program's health education message on a consistent basis in their encounters with patients and health aides.

In addition, they will render invaluable service by observing and apprasing health aide performance, as described in the section of this proposal concerning evaluation procedures.

Consumer participation in the planning and evaluation of the program is assured in the following ways:

1. Each of the participating agencies is mandated to provide educational or health services to village communities and are responding to needs that have been expressed by representatives of such communities, through such media as the Native Health Boards, Board of Directors of YKHC, Alaska Federation of Natives, etc.

2. Village councils will play an active part in the selection of villages as target sites. Prior to the commencement of the program in any given village, the informed consent of the village council will be sought.

3. Village councils will play an active part in the selection of health education aides. Since such health educators msut be acceptable to the community, it is fitting that they should be proposed by the community itself. Village councils will also play a role in evaluating the program's efficiency in any given village.

3.2 Program commencement date:

July 1, 1978

Program completion date:

June 30, 1979

3.3. Program status

This is a new program, not related to any previous Title 1 - A project.

3.4 Description of target groups

1. Primary target group

The primary target group of the program consists of members of the population of eight selected villages in Southwestern Alaska. This group comprises two broad categories:

a) school children - potential victims of otitis media and its complications,

b) older children and adults

- respnsible for child care in the home.

In the area of Bethel are concentrated twenty per cent of the Native population of Alaska. Of the 12,000 or so Native people, 10,000 are Yupik-speaking Eskimos and the remainder are Athabascan Indians. The attached table shows the estimated population distribution by race, age and sex.

Demographic statistics describing the area are subject to a number of reservations. Given the remoteness of the area, population counts tend to be inaccurate. Trasnportation and weather problems, in addition to regional patterns of periodic migration to fish camps, multiply the possibilities for error during census. Furthermore no very recent figures are available. Nevertheless, several salient facts emerge from examination of data derived from the U.S. Census in the past:

a) In the Kuskokwim area of the Bethel region - the area with the highest per capita income in the region - the per capita income is less than half the figure for the rest of the State as a whole.

b) While for the State of Alaska, median income was $12,300 in a given year, in the Bethel region it varied from a low point of $2,500 to $4,000 at the highest.

c) An estimated 42% of families have incomes below $3,000. 1,500 families, comprising nearly eight thousand individuals live below the Alaska poverty level.

d) Uneployment in the area is computed at 20%. It has been found, however that only about a third of the village workforce is employed consistently throughout the year. Employment tends to be seasonai and part-time. During the winter months of least activity, unemployment can reach as high as 80%.

It is apparent that educational programs have been less effective for the Native population of the region than programs available elsewhere in the United States. Although educational programs are steadily improving, there is an indication that relatively few Native students complete their work and continue to college. A recent study showed that about 40% of adult Natives living in rural parts of Alaska were unschooled - with less than five years of school or none at all. Only about 10% finished school. Median education was about three years.

Thus, the target population consists of about 1,000 to 1,500 Yupik-speaking Eskimos, suffering from the effects of socio-economic and educational disadvantage, living in eight villages within the Bethel Service Area.

2. Secondary target group

This is a two-step program. The secondary target group consists of the Community Health Aides currently serving the eight villages to be selected. It is intended that,on completion of the project, the clinical and theoretical instruction to be given to this target group will be capable of expansion at small additional cost to the other health aides in the area and eventually to other health aides in other parts of the State.

The ultimate beneficiary of the increased instruction given to health aides in this manner is, of course,, the primary target group described above.

Villages in the Bethel area vary considerably in size, geography, climate and population. However, a number of factors are common to most villages:

a) the villages are widely separated from each other and from the nearest hospital at Bethel,

b) small boats and snow-machines are used for local transportation, but are not suitable for travel over distances of hundreds of miles. Air travel is thus the only available means of transportation over long distances. Scheduled mail-planes serve most villages once or twice a week, otherwise planes must be chartered,

c) funding for air-travel, which is very expensive, is severely limited,

d) few villages have more than one telephone and many villages have no telephone. Verbal communication between the villages and the medical center at Bethel is therefore only possible by high-frequency short-wave radio. Because of the distances involved, bad weather and ionospheric interference, radio communications are often unreliable.

The Federal Government provides the hospital and outpatient facilities for use by Alaska Natives in the region. Physicians, dentists and other health workers make field trips to villages so that most villages receive one or a maximum of two visits per year.

The State Government provides Public Health Nurses who visit the villages usually three or four times a year, each nurse being assigned to a given district.

The regional Native Health Corporation (YKHC) provides some health services under contract with the Indian Health Service.

Most of the time, however, no physician or nurse is directly available to residents of villages in the area. Thus, it was out of necessity that the system of primary health care delivery by Community Health Aides came into being.

The problem of day-to-day care in the villages was recognized in the early 1950's. Since the schools were equipped with radios, BIA teachers found themselves conducting sick call and arranging evacuation of patients by radio. In other places, the storekeeper or other interested person would perform the intermediary function between the sick villager and the hospital-based physician.

In 1954, the first local aides were formally selected and given a small stipend. These were called "chemotherapy aides" since their function was to supervise the administration of antituberculous drugs for patients awaiting or returning from hospital. At about the same time, sanitation

aides were selcted, trained and paid to promote village sanitation. Informally, over the years, certain village residents responded to the need of providing on-the-spot, episodic health care. They might work with the teacher in consultation with the physician by radio and with the physician or Public Health Nurse at the time of their visits to the village. Some also served as "midwives". After a time, the programs supporting chemotherapy and saniation aides were phased out. Some of these individuals became known as "medical aides".

By the mid-1960's, pressure began to mount to give training, recognition and pay to the vilunteer medical aides. Without special support, sveral hospitals conducted training sessions for these aides. Finally, in 1967, Congress authorized funds fro the training and employment of 185 Native Health Aides. Formal training programs commenced in the following year.

Originally, all training was carried out is Anchorage. With the establishment of YKHC in Bethel, a Community Health Aide Program was initiated and implemented locally, under contract from the Indian Health Service. In 1974 a Planning and Advisory Committee for Health Aide Programs in Alaska (PAC-HA-PA) was organized with the participation of all entities involved in the training of health aides. Two of the major achievements of this committee have been the development and publication of a standard operating manual for health aides throughout the State and the development of a Curriculum, approved for the granting of an Associate Degree in Applied Science at the Univesity of Alaska.

Training is now consequently conducted at two levels, corresponding in content to the first and second year of an Associate Degree program. Health Aides become certified Community Health Aides on completion of the equivalent of one year's studies and are ther eligible to proceed to studies leading to the completion of the degree program. However, funding has never been available that would permit a consistent training effort in the "advanced" part of the curriculum and funds are, in fact barely adequate to allow the basic primary health care training.

The Community Health Aide is selected by the village coun il from among village residents. After selection, an introduction to primary health care is provided by means of three sessions each of three weeks' duration. Between each session, health aides receive on-the-job training from Public Health Nurses in the village, when feasible. Advanced training, where it has been possible, has been delivered in the form of special seminars and clinical workshops and through the development of self-instructional materials. Due to the lac of adequate funding, this aspect of the program has been conducted on a sporadic and piecemeal basis.

Community Health Aides range from the ages of 18 years to 60 years and may have none or as many as seven dependants. Their formal education can range from third grade up to twelfth grade or beyond.

TIME TABLE OF ACTIVITIES

Note:

YKHC = Yukon-Kuskokwim Health Corporation

KCC = Kuskokwim Community College

DPH = State of Alaska Dept of Public Health

BINS = Bethel Itinerant Nursing Service

BIA = Bureau of Indian Affairs

REA = Rural Education Affairs (U of A)

IHS = Indian Health Service

LKSD = Lower Kuskokwim School District

ACTIVITY	RESPONSIBILITY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
PLANNING:													
Selection of target villages	Program Director KCC B.O.D YKHC Staff YKHC Health Educator DPH Village Councils	———											
Negotiation of subcontracts	Program Director KCC	———											
SCHOOL HEALTH PROGRAM:													
Curriculum development	BIA/LKSD (subcontract)		———										
Development of testing instruments	BIA/LKSD (subcontract)			———									
Pre-testing of village schoolchildren	BIA or LKSD teacher in each selected village				———								
Incorporation of curriculum into school program	BIA or LKSD teacher in each selected village					———	———	———	———	———			
Post-testing of village schoolchildren	BIA or LKSD teacher in each selected village											———	
Evaluation of results and final report	Program Director KCC Health Ed. Coord. YKHC Health Ed. DPH												———
MEDIA PROGRAM:													
Development of video-tape outline	Health Ed. Coord. YKHC	———											

ACTIVITY	RESPONSIBILITY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Production of video-tape series	Health Ed. Coord. YKHC Health Ed. DPH	———											
Consultation and evaluation of videotapes	Health Ed. DPH		———										
Development of pamphlets and other materials	Health Ed. DPH Technical writer Technical artist (subcontracts)	———	———										
Production of pamphlets and other materials	(subcontract)			———	———								
Inspection of village video viewing facility	Health Ed. Coord. YKHC		———	———									
Organization of village group sessions	Community Health Aide in each selected village				———	———	———	———	———	———	———	———	———
Pre-testing of target group	Community Health Aide				———								
Post-testing of target group	Community Health Aide												———
Evaluation of results and final report	Program Director KCC Health Ed. DPH												———

ACTIVITY	RESPONSIBILITY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
HEALTH EDUCATION AIDES:													
Selection and hiring of health education aides	Health Ed. Coord. YKHC Village Councils	———											
Training of health education aides	Health Sciences KCC												
Development of lesson plans for village use	Health Ed. Coord. YKHC		———										
Pre-testing of target group (house-to-house)	Community Health Aide in each selected village (subcontract)			———									
Organization of health education sessions in villages	Health Education Aides				———	———	———	———	———	———	———	———	
Observation and appraisal of health education aide performance	Health Ed. Coord. YKHC				———		———		———		———		
Post-testing of target groups	Community Health Aide (subcontract)											———	
Evaluation of results and final report	Program Director KCC Health Ed. DPH												———

ACTIVITY	RESPONSIBILITY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
COMMUNITY HEALTH AIDE EDUCATION:													
Development of self-instructional materials	Program Director KCC	———											
Production of self-instructional materials	Johnson/Dole (subcontract)		———										
Clinical pre-test of CHA	Medical Director YKHC Instructors KCC			——									
Clinical training of CHA	Medical Director KCC Instructors KCC				——								
Clinical post-test pf CHA	Medical Director YKHC Instructors KCC					——							
Distribution of self-instructional units and self-paced use of units by CHA	Program Director KCC					———		———		———			
Pre-test (theory)	Program Director KCC					——							
Post-test (theory)	Program Director KCC											——	
Observation and appraisal of CHA performance in villages	Health Ed. Coord. YKHC Coord./Instructors YKHC IHS physicians BINS nurses	----------											

ACTIVITY	RESPONSIBILITY	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
Inspection of village clinics	Coord/Instructors YKHC	———	———										
Record audit (otitis media)	Coord/Instructors YKHC									———	———		
Initial village screening (ten villages)	Audiologist			———	———								
Final village screening (ten villages)	Audiologist										———		
Evaluation of results and final report	Program Director KCC Health Ed. DPH Consultants												———

LIST OF PROPOSED SUB-CONTRACTS

Contract #	Sub-Contractor	Principle activities
1	YKHC	Inspection of village facilities. Selection, hiring and supervision of part-time health educator and health education aides. Development of videotape outline.
2.	BIA or LKSD	School health curriculum development. Development of testing instruments
3.	Technical writer	Development of pamphlets
4.	Artist	Illustration of pamphlets.
5.	Actor	Participation in video presentation.
6 - 16	CHAs	Pre and post-testing target groups
17.	Johnson/Dole	Production self-instructional units.
18	Consultant	Statistical analysis.

GRANTOR: agrees to remit a monthly advance to the grantee unpon receipt of an advance request form.

GRANTEE: agrees to submit a monthly request (advance) for funds to be expended,

agrees to submit a quarterly billing, not later than 30 days after the end of each quarter,

agrees to maintain records and such records are open to the grantor during normal business hours an upon mutual agreement as to time of inspection.

Any questions as to allowable costs will be mutually considered.

3.6 GEOGRAPHIC AREA

The area surrounding Bethel comprises roughly 75,000 square miles of the western part of southwestern Alaska. It forms an approximate rectangle 400 miles long by 270 miles wide.

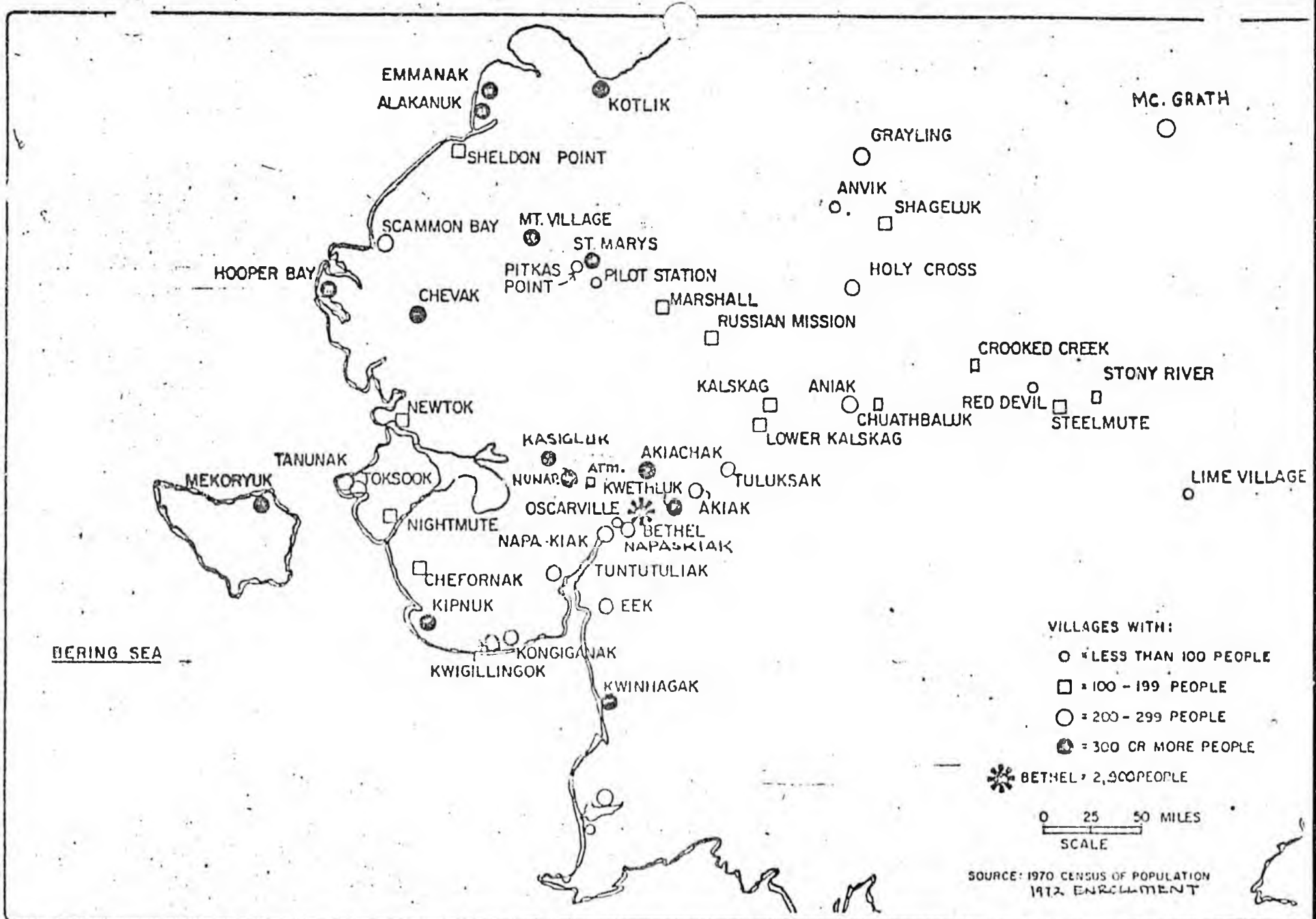
With a population of nearly 3,000, Bethel serves as the air transportation axis for the region. Situated some 400 miles from Anchorage, it caters to nearly sixty villages strung along the Yukon and Kuskokwim Rivers and the Bering Sea coast.

The village furthest away from the Alaska Native Medical Center at Bethel is Lime Village, at 225 miles. Examination of the accomapnying map will reveal that many other villages are between 100 - 200 miles away from the nearest hospital. Extreme disteances across the area are 332 by 460 statute miles. The area encompasses approximately one tenth of Alaska's land surface and i larger than the State of Washington.

The water, tundra and mountains of the region present a severe geographical barrier to physical communication with the outside world. There are no connecting roads, railroads or other normal means of surface transportation. Travel by air, which is prohibitively expensive, is the only viable means of gaining access to the hospital from the villages.

The climate of the region is another factor preventing ease of access and communication. The climate can be characterized as sub-arctic, with only lo3 frost-free days per year and a mean wind-velocity of 10 m.p.h. Seven months of the year, temperatures average well below freezing-point. Taking into consideration chill factors, it is common to experience conditions equivalent to minus 60 degrees F.

Muchof the region is treeless tundra. Flooding is the rule following break-up of river ice in Spring. In the Fall and Spring, not all villages are accessible, even by air. Fall freeze-up and Spring break-up prevent landing. These factors impede access and communications and as a result, the Community Health Aide becomes the key point of primary health care delivery and health education in the area.


EMMANAK
ALAKANUK
KOTLIK
SHELDON POINT
SCAMMON BAY
MT. VILLAGE
ST. MARYS
HOOPER BAY
PITKAS POINT
PILOT STATION
CHEVAK
MARSHALL
RUSSIAN MISSION
NEWTOK
TANUNAK
MEKORYUK
TOKSOOK
KASIGLUK
NUNAM ATM.
AKIACHAK
KWETHLUK
TULUKSAK
OSCARVILLE
AKIAK
NIGHTMUTE
BETHEL
NAPA-KIAK
NAPASKIAK
CHEFORNAK
TUNTUTULIAK
KIPNUK
EEK
KONGIGANAK
KWIGILLINGOK
KWINHAGAK
BERING SEA
MC. GRATH
GRAYLING
ANVIK
SHAGELUK
HOLY CROSS
CROOKED CREEK
STONY RIVER
KALSKAG
ANIAK
RED DEVIL
CHUATHBALUK
STEELMUTE
LOWER KALSKAG
LIME VILLAGE
VILLAGES WITH:
○ = LESS THAN 100 PEOPLE
□ = 100 - 199 PEOPLE
○ = 200 - 299 PEOPLE
● = 300 OR MORE PEOPLE
BETHEL = 2,900 PEOPLE
0 25 50 MILES
SCALE
SOURCE: 1970 CENSUS OF POPULATION
1972 ENROLLMENT

4.0 ANTICIPATED OUTCOMES AND BENEFITS

Early in the program, an initial screening will be performed on all pre-school and school children in the eight selected villages and in two control villages. The intent will be to identify the number of cases of ear problems existant in those villages at that particular time.

With this information, an audit of medical records in each village will be made, for the purpose of discovering how many of the cases identified by the audiologist have already been identified by the Community Health Aide and are receiving care.

The proportion of cases identified by the audiologist to those previously identified by the health aide will be noted in each case.

A second screening will be conducted towrds the end of the program for the same purpose. It is hoped and expected that there will be an improvement in the proportion of cases already identified by the Community Health Aide. If such is, in fact, the case, the program's overall objective will have been attained.

An improvement in the ratio of cases of ear problems detected and treated by the health aide to the number of ear problems detected by general screening, will, of course, indicate that patients are seeking earlier treatment. It is highly probable that under these conditions, complications will be fewer - an obvious and important benefit to the primary target population.

Less obvious benefits are nevertheless of great importance:

a) The program will produce an increased public awareness of otitis media as a dangerous and disabling condition and result in greater motivation to seek early treatment.

b) An indication will emerge as to the most appropriate health education approach (or combination of approaches) for use in isolated rural communities.

c) An indication of the cost-effectiveness of each approach will be given.

d) Experience will have been gained that will be useful in application of the program methodology to other health problems, its extension to other parts of the State or beyond.

e) The program will encourage consumer involvement in health care, since village communities will have participated in self-selection as a target of the program and will provide feed-back on its progress and implementation

f) An increased attitude of responsibility, both personal and community-wide will result with regard to otitis media.

g) A model of effective inter-agency cooperation will have been

provided. Communication links and operating agreements can then extend to expanding the program to greater segments of the population and against other serious and widespread health problems.

h) Increased knowledge and skill will accrue to Community Health Aides. As well as ensuring high quality primary care, this will lead to improved self-esteem and job-satisfaction.

i) The communities involved in the program will have a readier acceptance of the Community Health Aide as a primary health care agent.

j) With reduction of the complications of otitis media will come a corresponding reduction of typical learning disabilities due to hearing loss and serious illness.

k) Formative evaluation will give an indication of the effectiveness of the outreach instruction provided to Community Health Aides. Results can then be incorporated into planning of other outreach programs even outside the field of health.

l) The existence of the program will provide tangible evidence that the Community College and the participating agencies have a real concern for closer involvement in community education and service.

l) Program achievements can be convincing when approaching funding sources in connection with future programs or for expansion of the proposed program.

5.0 Evaluation Procedures

Specific program objectives are matched against appropriate evaluation procedures in the table appearing in the following pages:

5.0 EVALUATION PROCEDURES

OBJECTIVE	EVALUATION TECHNIQUES
1) Overall objective:	
To determine the relative effectiveness of three different health education approaches in obtaining a significant reduction in the ratio of late to early detection of otitis media in eight villages of rural Alaska	Initial and final otological screening of all pre-school and school children in each of the selected villages and in two control sites. Comparison of results of these screenings with patient records to determine the ratio of patients already identified and receiving care for otitis media, in each case.
2) Objectives (Predisposing factors)	
These objectives apply equally to: The School Health Program The Health Education Aide Program The Media Program	(Evaluation techniques listed in this column include also those designed to determine program efficiency.)
On completion of the program, 75% of the target group in each case will:	
a) demonstrate familiarity with the early signs and symptoms of otitis media,	School Health Program: 1. Pre-testing of all school children in the four selected villages, to determine the extent of knowledge of otitis media and their attitudes towards it.
b) indicate willingness to seek care for themselves or children for whom they are responsible, in the early stages of otitis media	2. Post-testing of all school children in these villages to determine knowledge gain and/or attitude change.

c) regard otitis media NOT as an inevitable part of childhood development but as a condition that is dangerous and potentially disabling,

d) shall know that:

- middle ear infection can result in hearing-loss,
- a number of serious diseases can result from otitis media,
- complications of otitis media are preventable through early detection and efficient treatment,
- treatment of otitis media is free, safe, effective, easily available and relatively pleasant,
- upper respiratory diseases predispose towards otitis media.

3. Inspection of records of attendance at health education classes for each grade.

4. Inspection of records of referral to parents of children with ear problems

5. Evaluation of curriculum by teachers in each selected village.

6. Comparison of expenditures with degree of knoweldege gain and/or attitude change

Health Education Aide Program:

1. Pre-testing of target group by means of house-to-house interview in order to determine extent of knowledge about otitis media and attitudes towards it.

2. Post-testing of target group to determine knowledge gain and/or change of attitudes.

3. Record of teaching sessions conducted by health education aides and attendance.

4. Observation and appraisal of health education aides during teaching sessions.

5. Comparison of expenditures in relation to knowledge gain and/or attitude change.

Media program:

1. Pre-testing of target group by means of house-to-house interview to determine extent of knowledge about otitis media and attitudes towards it.

2. Post-testing of target group to determine knowledge gain or attitude change.

3. Record of media sessions and attendance

4. Comparison of expenditures in relation to knowledge gain and/or attitude change.

3. Objectives (Enabling factors)

These objectives apply only to the Community Health Aide Education Program

By the end of the program:

a) The CHA in each selected village shall have recieved basic training in primary health care and in addition shall have demonstrated at least 80% proficiency in written and practical tests given subsequent to advanced didactic and clinical instruction in the detection and care of otitis media

1. Certification of the health aide by usual evaluative methods.

2. Clinical pre- and post-testing in connection with clinical training sessions.

3. Pre- and post-testing in connection with self-instructional materials.

b) The CHA in each of the selected villages shall have demonstrated satisfactory performance in the detection, assessment, managing and recording of cases of otitis media occurring in the village during the program period.

1. Observation and appraisal of the CHA by Coordinator/ Instructors, Public Health Nurses and visiting PHS physicians.

a) The Community Health Aide in each of the selected villages shall have demonstrated an understanding of and readiness to apply the principles of patient education in relation to otitis media. Documentary evidence will support the fact that in at least 80% of cases, pateint education has been provided for patients seeking care of ear problems	1. Pre and post-testing of CHAs in connection with self-instructional units covering patient education. 2. Observation and appraisal of benavior and attitude of CHA by Coordinator/Instructors. Public Health Nurses and Physicians of Indian Health Service. 3. Inspection of patient records by Instructors.
b) In each of the selected villages, the CHA shall have shown evidence of reinforcing behavior and attitude towards patients seeking care of ear problems.	1. Observation and appraisal of CHA by Coordinator/ Instructors, BINS and IHS.
c) Health professionals (i.e. physicians and piblic health nurses) visiting target villages shall have reinforced the program's educational message in a consistent manner in the course of at least 80% of patient encounters.	1. Reports from health professionals concerned. 2. Inspection of patient records.

6.0 INFORMATION DISSEMINATION

Information concerning the project will be disseminated initially through copies of the proposal being sent to participating agencies and to other interested orgainzations.

Similarly, copies of the project's final report will be dispatched.

Other means of disseminating information exist through the following bodies:

Bethel Region Native Health Board
Planning and Advisory Committee for Health Aide Programs in Alaska
Rural Education Affairs, Curriculum review Committee.
Policy Advisory Committee for Health Aide Education
Association of Health Educators in Alaska

Reports will be furnished to these groups on termination of the project.

Instructional and educational materials produced for the program will be made available at cost for institutions or agencies wishing to make use of them. These materials will include videotapes, pamphlets and self-instructional materials.

7.0 BUDGET

The proposed program budget is set out in the following pages:

NOTE: In addition to matching funds amounting to $25,000, additional in-kind contributions amount to a further estimated $21,552.

In view of this, payment of indirect costs is requested at 15% of the total direct project costs.

7.0 BUDGET (See Section 5.7 of the Guide.)

Title of Program: _____

	Proposed Budget		
	Federal 2/3	Institution 1/3	Total
Salaries and Wages:			
Director	-0-	-0-	-0-
Associate Director	-0-	-0-	-0-
Instructors & Lecturers	7,934	3,966	11,900
Clerical	-0-	-0-	-0-
Other (Identify Position Title) Community Health Aides supplement	4,666	2,334	7,000
Total Salaries & Wages	12,600	6,300	18,900
Operations:			
Payroll Costs (FICA, Retirement, etc.)	2,520	1,260	3,780
Materials and Supplies	9,033	4,517	13,550
Services (Mailing, Printing, etc.)	7,000	3,500	10,500
Consultants other than those on payroll (Detail on an attached sheet)	5,000	2,500	7,500
Rentals - space	-0-	-0-	-0-
Rentals - equipment	-0-	-0-	-0-
Miscellaneous (Identify category)			
Total Operations	23,553	11,777	35,330
Travel:			
(Detail on an attached sheet)	5,985	2,993	8,978
Equipment:			
(Detail on an attached sheet)	1,333	667	2,000
Total Direct Project Costs:	43,471	21,737	65,208
Indirect Costs*: (rate 10% 13%)	4347 ~~6,521~~	~~3,240~~ *	4347*** ~~9,781~~
TOTAL PROJECT COSTS:	47,818 ~~49,992~~	24,737 ** ~~24,997~~	~~74,989~~

*Total indirect cost to be limited to 10% of the Total Direct Federal Project Cost

* not allowed as part of match

** note match - must be at least ½ total federal project cost, i.e., $23,909

*** maximum total indirect cost allowed

PROPOSED BUDGET

		IN-KIND
1000 PERSONNEL		
1101 Instructional Staff		
Health Education Aides training		833
Community Health Aides training		1,666
Community Health Educator 50% for 4 months	4,900	
Staff benefits @ 20%	980	499
1201 Administrative staff		
Program Director 20% for 12 months		6,000
Staff benefits @ 20%		1,200
1251 Specialist/support staff		
Community Health Aides (pre and post testing: supplementary emolument) $700 X 10	7,000	
Health Education Aides (4) 4 @ $350/month X 5 months	7,000	

	Audiologist/otologist 100% X 2 months		3,132
	Instructional technologist (development self-instructional units)		2,500
	Coordinator/Instructors YKHC 16 days @ $40/day		640
	Staff benefits @ 20%	2,800	
2000	TRAVEL AND SUBSISTENCE		
2030	Staff training and development		
	Health Education Aides 4 trips VIL-BET-VIL @ $125/trip per diem 4 X $65 X 4	600 1,300	
	Community Health Aides 8 trips @ $125/trip per diem 8 x $65 X 5	1,000 2,600	
2010	Meetings		
	3 trips ANC-BET-ANC @ $150 1 trip JUN-ANC-JUN @ $160 per diem 6 X $65		450 160 390
2020	Field/Administrative		
	Coordinator, Health Education 6 trips @ $125 per diem 8X $47	500 252	

	Actor		
	1 trip BET-ANC-BET @ $150	150	
	per diem 4 X $50	200	
	Audiologist/otologist		
	16 trips @ $125		2,000
	per diem 16 X $47		752
	Consultation with Village Councils and community members		
	16 trips @ $125	2,000	
	per diem 16 X $47	376	
3000	CONTRACTUAL SERVICES		
3005	Professional Fees for Services		
	Technical writer (paphlet development)	1,000	
	Artist (pamphlet illustration)	500	
	Consultant (statistical analysis)	7,500	
	Media Development Specialist 2.5 months @ $1,500/month	3,700	
	Actor (VIdeo presentations) 20 hrs @ $20/hr	400	
	School curriculum specialist 1.5 months @ $1,500/month	2,250	
	Secretarial assistance 100% X 2 months	2,500	
3342	Long distance charges	100	

3351	Freight and Parcel Post		
	Shipping, videotapes and instructional materials		200
3444	Postage	50	
4000	COMMODITIES		
4010	Stationery and Office Supplies		100
4011	Educational and instructional supplies		
	Videotapes	200	800
	Pamphlets and other educational materials	3,500	
	Self-instructional units for Community Health Aides	9,350	
	Testing Instruments		200
5331	Educational Equipment		
	Pneumatic otoscopes 10 @ $100 ea.	1,000	
	Clinistrips 2,000 @ 50¢	1,000	
7000	OVERHEAD RECOVERY EXPENSES		
7811	Indirect costs @ 15% of $65,208	9,781	
	TOTALS	74,989	21,552

8.0 LETTERS OF SUPPORT. (Attach at least three letters of support from representatives of the program participant group, cooperating institutions, community leaders, governmental agencies, and associations or organizations with related programs or interests. See Section 5.8 of the Guide.)

9.0 CERTIFICATION. (This page must be signed prior to proposal submission by the appropriate institutional officials below to demonstrate compliance with the statutory requirements of Title I-A, HEA.)

This program has been coordinated with appropriate governmental and private agencies working in this particular field of community development. The program does not duplicate existent programs available in this area.

The conduct of the program or performance of the activity or service is consistent with the institution's overall educational program and is of such a nature as is appropriate to the effective utilization of the institution's special resources and the competencies of its faculty.

If courses are involved, such courses are extension or continuing education courses, and 1) they are fully acceptable toward an academic degree, or 2) they are of college level as determined by the institution.

The proposed program is not related to sectarian instruction or religious worship and is not provided by a school or department of divinity.

This proposal and attached budget have been coordinated with the Comptroller and other appropriate officials of the institution.

The institution will have available during fiscal year 1978 from non-federal sources for expenditure for extension and continuing education programs not less than the total amount actually expended by the institution for extension and continuing education programs from such sources during fiscal year 1965 (or the first operating year), plus an amount which is not less than the non-federal share of the costs of community service and continuing education programs for which Federal financial assistance is being requested.

Signed: _____
(Signature and Title of Program Director)

Approved: _____
(Signature and Title of Comptroller)

Approved: _____
(Signature and Title of Dean and/or Department Head)

Approved: Carol C. Ickes Acting Campus President, Kusko C.C.
(Signature and Title of Approving Institutional Official)

_____
(Date)

EXCERPT FROM THE CURRICULUM FOR COMMUNITY HEALTH PRACTITIONERS ASSOCIATE IN APPLIED SCIENCE, UNIVERSITY OF ALASKA

This lists the objectives and course content in connection with the "advanced" instruction of Community Health Aides with regard to ear problems.

Ear Problems II

Description: This unit provides students with increased skills in the management of ear problems; emphasizes the etiology and possible sequelae of diseases of the ear; familiarizes students with techniques for testing auditory acuity, including the use of the audiometer and audiogram; and instructs them in the resources available to the deaf and hearing impaired.

Objectives: Upon completion of the unit the student will be able to:

1. Demonstrate skill in removing foreign bodies or impacted cerumen from the external auditory canal and apply precautions.

2. Recognize the clinical manifestations of serous otitis media and describe its management.

3. Describe the etiology and symptoms of otitis media and explain appropriate treatment and preventive measures.

4. Recognize the clinical manifestations of noise trauma and list ways that such injuries can be prevented.

5. Describe the possible complications of ear disease, with particular reference to children.

6. Demonstrate irrigation and suctioning of the external auditory canal, using material and equipment available.

7. Describe familiar techniques for testing auditory acuity and demonstrate skill in the use of the audiometer and recording results of audiometric tests.

8. List resources available for the support and education of the deaf and partially deaf.

9. Record subjective findings on patients suffering from common ear problems.

10. Record objective findings on patients suffering from common ear problems.

11. Make intelligent assessments of patients' condition on the basis of subjective and objective findings.

12. Outline appropriate treatment or referral plans in connection with common ear problems on the basis of the assessment made.

13. Distinguish between ear problems susceptible to treatment at the village level and those necessitating referral to a secondary care agent.

14. Select drugs appropriate to the treatment of common ear problems, either on written or verbal instruction of a physician, or on own initiative if access to a physician is impossible.

15. Explain toxic effects and side effects of drugs to patients.

16. Describe the emergency management of overdose or reaction associated with drugs used in the treatment of common ear problems.

Content

I. Review of Anatomy and Physiology of the Ear

II. Common Ear Problems

A. Etiology
B. Types
1. serous otitis media
2. impacted cerumen
3. external otitis
4. acute otitis media
5. chronic suppurative otitis media
6. gross hearing loss

C. Symptoms and Evaluation
D. Management
E. Removal of Impacted Cerumen
1. method
a. ear drops
b. irrigation

2. precautions

F. Removal of Foreign Body
1. methods
a. irrigation
b. forceps

2. precautions

III. Noise Trauma

A. Causes
B. Symptoms
C. Audiogram
D. Management
E. Prevention

IV. Complications of Ear Disease

A. Types
1. mastoiditis
2. brain abscess or meningitis
3. cholesteatoma
4. destruction of middle ear bones
5. hearing loss
6. slow speech development

B. Manifestations and Treatment
C. Prevention

V. Treatment Procedures

A. Ear Irrigation
1. indications
2. equipment
3. technique
4. precautions

B. Suctioning
1. indications
2. equipment
3. technique
4. precautions

VI. Evaluation of Hearing

A. Simple Observation
1. voice pitch
2. poor speech
3. lip reading
4. perception of ticking watch or whisper
5. perception of sharp noise

VII. Use of Audiometer and Audiogram

A. Purpose
B. Elements
1. frequency
2. intensity

C. Audiograms
1. symbols
2. plotting
a. conductive
b. sensorineural

VIII. Procedure and Interpretation of Audiogram

A. Technique
1. earphone placement
2. oscillator placement
3. screening
4. threshold testing

B. Interpretation of Audiograms
1. type of loss
2. degree

IX. Resources for the Hearing Impaired

A. Services Available
1. complete evaluation for diagnosis and rehabilitation
2. hearing aids
3. training in lip reading, auditory training, speech conservation, speech therapy

B. Alaskan Agencies and Institutions
C. National Agencies and Institutions

APPENDIX "B"

RECENT STATISTICS RELATING TO PATIENT CONTACTS OF
COMMUNITY HEALTH AIDES IN THE BETHEL SERVICE UNIT

...am Branch — Leading Health Problems Seen by Health Aides — ...Month of ... 1977
In Bethel Service Unit By Community Of Residence

Rank Health Problem	Community of Residence									
	Total 11583		Akiachuk 381		Akiak 105		Alakanak 526		Ani... 269	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	
Total Patient Contacts	3951	37.27	100	26.24	42	21.55	302	57.33	150	
1. Respiratory	1247	11.23	20	5.24	15	7.69	112	20.89	46	
2. Ear, Nose, & Throat	817	6.83	46	12.59	1	0.51	61	11.33	21	
3. Skin	833	7.31	22	5.77	10	5.12	81	15.11	3	
4. Accidents & Injuries	127	1.06			4	2.05	7	1.30	13	
5. Castrointestinal	320	2.68	2	0.52	5	2.56	16	2.98	5	
6. Musculoskeletal	150	1.25	5	1.31	2	1.02	9	1.67	7	
7. Genitourinary & GYN	186	1.55	1	0.26	4	2.05	8	1.49	7	
8. Eye	104	1.02			1	0.51	5	0.65	11	
9. Circulatory & Blood	245	2.05	2	0.52			7	1.30	3	
10. Mental Health	26	0.21								
11. Mis. Comm. Diseases	37	0.30								
12. Neurology	15	0.10								
13. Deaths	2	0.01								
All Other	151	1.26					2	0.57	6	

*Rate per 100 population

Program [illegible]

Leading Health Problems Seen By Health Aides
In Bethel Service Unit By Community Of Residence

Month OCT. 19[illegible]

k Health Problem	Community of Residence									
	Anvik 85		Atmauthluak 160		Chefornak 192		Chevak 414		Chauthbaluk 129	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Total Patient Contacts	30	35.29	100	62.50	47	24.47	192	46.37	54	41.86
1. Respiratory	6	7.05	28	17.50	31	16.14	61	14.73	5	3.87
2. Ear, Nose, & Throat	2	2.35	48	30.00	5	2.60	28	6.76	20	15.50
3. Skin	3	3.52	4	2.50	4	2.08	12	2.89	27	20.93
4. Accidents & Injuries	0		1	0.62	1	0.52	10	2.41	1	0.77
5. Gastrointestinal	0		4	2.12	2	1.04	24	5.79		
6. Musculoskeletal	1	1.17	1	3.12	1	0.52	29	7.00		
7. Genitourinary & GYN	1	1.17	5	1.25	3	1.56	17	4.10		
8. Eye	1	1.17	5				5	1.20		
9. Circulatory & Blood	16	18.82	2				1	0.24		
10. Mental Health										
11. Mis. Comm. Diseases									1	0.77
12. Neurology										
13. Deaths										
All Other			2	1.25			5	1.20		

*Rate per 100 population

Program [illegible]

Leading Health Problems Seen By Health Aides
In Bethel Service Unit By Community Of Residence

Month OCTOBER

k Health Problem	Community of Residence									
	Crooked Creek 84		Eek 211		Emmonak 554		Grayling 177		Holy Cross 222	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Total Patient Contacts	22	26.19	36	17.06	274	51.31	72	40.67	56	25.22
1. Respiratory	9	10.71	13	6.16	34	6.36	36	20.33	25	11.26
2. Ear, Nose, & Throat	7	8.33	1	0.47	30	5.61	5	2.82	2	0.90
3. Skin	3	3.57	3	1.42	145	27.15	19	10.73	3	1.35
4. Accidents & Injuries	0		1	0.47	4	0.74				2.25
5. Gastrointestinal	1	1.19	5	2.36	29	5.45	2	1.12	5	2.25
6. Musculoskeletal	0		4	1.89	4	0.74			3	1.35
7. Genitourinary & GYN	0		2	0.94	7	1.31	3	1.69		
8. Eye	0		2	0.94	16	2.99			4	1.80
9. Circulatory & Blood	2	2.38	0				3	1.69	9	4.05
10. Mental Health	0		2	0.94	2	0.37	1	0.56		
11. Mis. Comm. Diseases	0		1	0.47			2	1.12		
12. Neurology	0									
13. Deaths	0									
All Other	0		2	0.94	5	0.94	1	0.56	5	2.25

*Rate per 100 population

Pro[illegible] Branch — Leading Health Pro[illegible] Seen By Health Aides In Bethel Service Unit By Community Of Residence — [illegible] 77

Rank	Health Problem	Community of Residence									
		Hooper Bay 600		Kalskag 174		Kasigluk 306		Kipnuk 397		Kongiganak 201	
		Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
	Total Patient Contacts	209	44.33	51	29.31	123	40.19	130	33.59	35	17.4
1.	Respiratory	97	16.16	17	9.77	38	12.41	62	16.02	17	8.45
2.	Ear, Nose, & Throat	92	15.33	2	1.14	11	3.59	17	4.39	7	3.48
3.	Skin	32	5.33	13	7.47	33	10.78	26	6.71	3	
4.	Accidents & Injuries	16	2.66	11	6.32	1	0.32				0.49
5.	Gastrointestinal	6	1.00	3	1.72	9	2.94	8	2.06	1	
6.	Musculoskeletal	3	0.50	2	0.67	6	1.96	5	1.29		0.49
7.	Genitourinary & GYN	7	1.16	1	1.14	3	0.98	1	.25	1	0.49
8.	Eye	2	0.33			7	2.28	3	.77	1	
9.	Circulatory & Blood	9	1.50			7	2.28	5	1.29		
10.	Mental Health	1	0.16								
11.	Mis. Comm. Diseases	3	0.50								
12.	Neurology			1	0.57						
13.	Deaths										
	All Other	1	0.16	1	0.57	8	2.61	3	0.77		

*Rate per 100 population

Program [illegible]ch

Leading Health Problems Seen by Health Aides
In Bethel Service Unit By Community Of Residence

Month OCT[illegible]

nk Health Problem	Community of Residence									
	Kotlik		Kwethluk		Kwigillingok		Lime Village		Lower Kalskag	
	302		450		194		20		205	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Total Patient Contacts	160	52.98	206	45.77	74	38.14	24	120.00	72	35.12
1. Respiratory	59	19.55	55	12.22	35	18.04	1	5.00	24	11.70
2. Ear, Nose, & Throat	33	10.92	56	12.44	13	6.70	1	5.00	11	5.36
3. Skin	25	8.27	64	14.22	5	2.57	1	5.00	16	7.80
4. Accidents & Injuries	5	1.65			7	3.60			1	.48
5. Gastrointestinal	10	3.31	5	1.11	3	1.54	18	90.00	7	3.41
6. Musculoskeletal	2	0.66	1	.22	5	2.57				
7. Genitourinary & GYN	7	2.31	10	2.22					2	0.97
8. Eye	8	2.64	5	1.11					4	1.95
9. Circulatory & Blood	4	1.32	4	0.88	6	3.09			5	2.45
10. Mental Health	4	1.32								
11. Mis. Comm. Diseases										
12. Neurology			3	0.66						
13. Deaths	1	0.33								
All Other	2	0.66	3	0.66			5	15.00	2	0.97

*Rate per 100 population

Program [redacted] Leading Health Problems [redacted] by Health Aides In Bethel Service Unit By Community Of Residence Month OCT 1[redacted]

k Health Problem	Community of Residence									
	Marshall 225		Mekoryuk 202		Mt. Village 540		Napakiak 293		Napaskiak 215	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Total Patient Contacts	155	68.90	18	8.91	448	82.96	87	29.69	68	31.62
1. Respiratory	32	14.22	8	3.96		25.11	35	11.94	7	3.25
2. Ear, Nose, & Throat	24	10.66			2	13.33	29	9.39	38	17.67
3. Skin	33	14.66	3		81	15.00	5	1.70	13	6.0
4. Accidents & Injuries	5	2.22			12	2.22	2	.68		
5. Gastrointestinal	14	6.22	2	.99	47	8.70	4	1.36		
6. Musculoskeletal	12	5.33	2	.99	19	3.51	3	1.02	1	0.46
7. Genitourinary & GYN	10	4.44	1	.49	29	5.37	2	.68		
8. Eye	4	1.77			11	2.03	2	.68	9	4.18
9. Circulatory & Blood	3	1.33			11	2.03	1	.34		
10. Mental Health	11	4.88					1	.34		
11. His. Comm. Diseases	2	.88			1	0.18	1	.34		
12. Neurology	1	.44			3	0.55	1	.34		
13. Deaths							1	.34		
All Other	2	.88	2	.99	21	3.88				

*Rate per 100 population

Program [redacted]en — Leading Health Problems [redacted] by Health Aides — Month Oct. 19[redacted]
In Bethel Service Unit By Community Of Residence

k Health Problem	Community of Residence									
	Newtok		Nightmute		Nunapitchuk		Oscarville		Pilot Station	
	151		153		312		51		311	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Total Patient Contacts	100	66.22	3	2.25	249	79.89	24	47.05	142	45.65
1. Respiratory	18	11.92		.75	54	17.30	1	1.96	47	15.11
2. Ear, Nose, & Throat			2		66	21.15			6	1.92
3. Skin	3	1.98			13	9.16	8	15.68	28	9.00
4. Accidents & Injuries					1	.32			4	1.28
5. Gastrointestinal	2	1.32			26	8.33	1	1.96	19	6.10
6. Musculoskeletal					7	2.24	1	1.96		
7. Genitourinary & GYN	4	2.64	2	1.50	5	1.60			15	4.82
8. Eye					2	.64				
9. Circulatory & Blood					71	22.75	13	25.49	7	2.25
10. Mental Health									1	.32
11. Mis. Comm. Diseases	17	11.25							6	1.92
12. Neurology									1	.32
13. Deaths										
All Other	56	37.03			4	1.28			8	2.57

*Rate per 100 population

Program: mch

Leading Health Problems ... by Health Aides
In Bethel Service Unit By Community Of Residence

Month: Oct 19..

nk Health Problem	Community of Residence									
	Pitkas Pt.		Quinhagak		Red Devil		Russian Mission		St. Mar's	
	88		395		36		169		425	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Total Patient Contacts	55	62.50	99	25.06	4	11.11	83	51.37	212	49.88
1. Respiratory	6	6.81	46	11.64	2	5.55	27	16.87	49	11.52
2. Ear, Nose, & Throat	12	13.63	11	2.78			4	2.50	17	4.00
3. Skin	9	10.22	20	5.06	1	2.77	6	3.75	50	11.76
4. Accidents & Injuries			3	.75			2	1.25	23	5.41
5. Gastrointestinal	16	18.18	7	1.77			6	3.75	19	4.47
6. Musculoskeletal	3	3.40	4	1.01			3	1.87	4	.94
7. Genitourinary & GYN	3	3.40	2	.50			2	1.25	7	1.64
8. Eye			4	1.01			3	1.87	18	4.23
9. Circulatory & Blood					1.	2.77	5	5.00	2	.47
10. Mental Health							1	.62	3	.70
11. Mis. Comm. Diseases	6	6.81					20	12.50		
12. Neurology							2	1.25	2	.47
13. Deaths										
All Other			2	.50			2	1.25	3	1.35

*Rate per 100 population

Progr[illegible]anch

Leading Health Proble[illegible]en By Health Aides
In Bethel Service Unit By Community Of Residence

Month OCT. [illegible]

ank Health Problem	Community of Residence									
	Scammon Bay 225		Shageluk 179		Shelsons Pt. 289		Sleetmute 113		Stony River 70	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate
Total Patient Contacts	42	18.66	35	19.55	61	21.10	29	25.72	10	14.2
1. Respiratory	17	7.55	5	2.79	13	4.49	11	9.32	5	7.
2. Ear, Nose, & Throat	10	4.44	4	2.23	10	3.46			2	2.
3. Skin	2	.88	11	6.14	14	4.84	3	2.54		
4. Accidents & Injuries	1	.44	1	.55			1	.84		
5. Gastrointestinal	6	2.66	2	1.11	7	2.42				
6. Musculoskeletal	1	.44			6	2.07				
7. Genitourinary & OB	1	.44	5	2.79	1	.34				
8. Eye	3	1.33			4	1.34	13	11.01		
9. Circulatory & Blood			4	2.23						
10. Mental Health					3	1.03				
11. Mis. Comm. Diseases									2	2.8
12. Neurology									1	1.4
13. Deaths										
All Other	1	.44	3	1.67	3	1.03				

*Rate per 100 population

Program Description

Leading Health Problems By Health Aides
In Bethel Service Unit By Community Of Residence

Month OCT. 1977

Health Problem	Community of Residence									
	Toksook Bay 330		Tuluksak 204		Tintutuliak 281		Tununak 283			
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Total Patient Contacts	83	25.15	59	28.92	110	39.14	96	33.92		
1. Respiratory	39	11.81	17	8.33	51	18.14	5	1.76		
2. Ear, Nose, & Throat	11	3.33	8	3.92	13	4.62	1	.35		
3. Skin	15	4.54	10	4.90	19	6.76	10	3.53		
4. Accidents & Injuries					9	3.20	3	1.06		
5. Gastrointestinal	6	1.81	4	1.96	3	1.06	7	2.47		
6. Musculoskeletal	3	.90	1	.49	5	1.77				
7. Genitourinary & GYN	3	.90	5	2.45	6	2.13	6	2.12		
8. Eye	2	.60	4	1.96	4	1.42	58	20.49		
9. Circulatory & Blood	2	.60	9	4.41			4	1.41		
10. Mental Health										
11. Mis. Comm. Diseases	1	.30								
12. Neurology	1	.30	1	.49						
13. Deaths										
All Other							2	.70		

*Rate per 100 population

APPENDIX "C"

DESCRIPTION OF THE MICROPHONGRAPH SYSTEM TO BE INCORPORATED INTO SELF-INSTRUCTIONAL UNITS FOR USE BY COMMUNITY HEALTH AIDES

THE MICROPHONOGRAPH SYSTEM

A pocket-sized, solid-state, protable electronic phonograph equipped with a rotating stylus, the microphonograph is placed by the user over a small, staionary record. The stylus rotates at 133 r.p.m.

The motor and integrated circuit are powered by two rechargabel batteries, good for over two years of normal use. The case is molded of high-quality, shock-resistant plastic.

Audio is provided by a built-in speaker. Speed control is automatic. Variable volume control is installed.

Microrecords used in conjunction with the microphonograph vary in duration from 8 to 70 seconds. They are non-rotating plastic discs containing a recorded message as long as a pargraph of about 165 words. The transparent records can be affixed permanently in any array on a printed page and will allow printed material or illustrations to show through them.

Some advantages of the system are:

Close association of audio with visual:

Sound is presented in discrete, distributed units in direct association with the visual text or graphics,

Significant commentary can be introduced to extend meaning of printed materials.

Optimum learning segments:

On a single microrecord, the sound may consist of as little as a single phrase, phoneme or word, or as much as 70 seconds of instruction. This provides felxibility to meet different learning situations.

Learner control:

The learner can proceed on a personalized path at his or her own pace, repeating the subject matter at his or her discretion.

Instructional material can be repeated without the need for tedious mechanical or electronic searching.

The system reinforces learning by incorporating sound in direct relationship to the printed materials and graphics. The learner can see a phrase, word setence, paragraph or illustration and have simultaneously available either the exact sound of the printed message, or appropriate commentary or instructions to reinforce and extend meaning. Properly planned and implemented, the system can promote faster learning with greater retention.

STATE OF ALASKA

JAY S. HAMMOND, GOVERNOR

DEPT. OF HEALTH AND SOCIAL SERVICES

DIVISION OF PUBLIC HEALTH, BETHEL ITINERANT NURSING SERVICE

KUSKOKWIM OFFICE BUILDING
P. O. BOX 188 – BETHEL 99559

March 7, 1978

Ms. Jane Maynard, State Administrator
for Title 1-A, HEA, Alaska Commission
for Postsecondary Education
Pouch F-State Office Building
Juneau, Alaska 99811

Dear Ms. Maynard:

Medical care and surgery are not the answers to reducing the incidence of Otitis Media. Only through appropriate health education approaches can attitudes be changed toward prevention.

The proposal called Comparison of Health Education Approaches to the Reduction of the Complications of Otitis Media in Rural Alaska, submitted to you by John Rich of Kuskokwim Community College is an effort toward ultimate prevention. Hopefully, such a project will determine the most effective methodology for influencing people to change. Please give this important proposal your consideration.

Sincerely,

Pat Shea

Pat Shea, Regional Nursing Supervisor
Bethel Itinerant Nursing Service

alc

DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE
HEALTH SERVICES ADMINISTRATION

March 6, 1978

Jane Byers Maynard
State Administrator
for Title 1-A, HEA
Alaska Commission for
Postsecondary Education
Pouch F-State Office Building
Juneau, Alaska 99811

Dear Mrs. Maynard,

Over the past several years that I have been on the staff of the USPHS Alaska Native Hospital in Bethel, I have noticed an increased awareness of the many problems relating to otitis media. Because of the extremely high incidence of this disease within our population here, it has been gratifying to see an intensification of efforts to reduce its incidence.

In working with State Public Health Nurses, Rural Cap, the ENT Department at the Alaska Native Medical Center, and our local health corporation, the need for an otitis media preventative health education program has been a recurrent theme. With otitis media, as with many other common conditions, it is apparent that increased public awareness would result in a reduction of morbidity, primarily through earlier treatment. What is not clear, however, is what constitutes the most effective and economical way to educate the public, especially in the villages.

Recently Mr. Gordon Harper spoke with me about a proposed study in which different modalities would be used to influence attitudes toward otitis media in selected villages. A comparison of the different health education approaches would then be done to determine which ones work best in this area.

The staff at the USPHS Hospital in Bethel wholeheartedly supports the outlined proposal, for we feel it will lend insight into the most effective method of health education in otitis media and most other health problems as well. Additionally, it seems very likely that the results of the study will be applicable to most of rural Alaska, rather than being limited to just the Yukon-Kuskokwim area. At a time when health care costs everywhere are rising, preventative medicine and health education are becoming increasingly important. The hospital staff would like to encourage efforts to implement this proposal, as it is an important step in upgrading the health care in the Yukon-Kuskokwim area and elsewhere.

Sincerely,

Raymond Shields

Raymond Shields, M.D.
Community Health Director
USPHS Alaska Native Hospital
Bethel, Alaska 99559

RS/sc

YUKON-KUSKOKWIM HEALTH CORPORATION

P. O. Box 528
Bethel, Alaska 99559
(907) 543-2506
(907) 543-2508

February 28, 1978

Jane Byers Maynard
State Adminstrator For Title 1-A, HEA
Alaska Commission of Post Secondary Education
Pouch F-State Office Building
Juneau, Alaska 99811

Dear Ms. Maynard:

I am glad to take this opportunity to acknowledge my support for the draft proposal titled "Comparsion of Health Education Approaches to the Reduction of the Complications of Otitis Media in Rural Alaska".

I have thoroughly reviewed it and find that the benefits during the proposal and the more important potential on going benefits after completion could, when applied to other health education issues, make this study of picking a working methodology the most important health work of the decade.

Sincerely,

David H. Blanchett

David H. Blanchett
Health Education Coordinator

Rural Alaska
Community Action Program, Inc.

March 22, 1978

Jane Byers Maynard
State Administrator for Title 1-A
Higher Education Act
Alaska Commission on Postsecondary Education
Pouch F - State Office Building
Juneau, Alaska 99811

Dear Ms Maynard

The former Director for Child Development of the Rural Alaska Community Action Program (RurAL CAP) had been working with the Division of Public Health in a collaborative effort to develop a community health education package dealing with the problem of otitis media in the Greater Bethel area of Alaska. With his resignation there has been a delay in RurAL CAP's participation in the preparation of a program proposal.

On March 10th I received a proposal entitled, "Comparison of Health Education Approaches to the Reduction of the Complications of Otitis Media in Rural Alaska." Having reviewed the proposal with staff from the Division of Public Health and Kuskokwim Community College, I feel that I can support the proposed program goals granted that the scope and objectives are more clearly defined, especially in relation to RurAL CAP's role as a cooperating agency.

In addition to an elaboration of those objectives, and as coordinator of this agency's Otitis Media Project, I would ask that the program address specific areas:

1. That the criteria for selection of the 10 villages be clearly laid out and when possible, existing pertinent variables be taken into account, such as the present village incidence of ear pathology, level of health aide delivery of care, and so forth.
2. That the "School Health Program" component include activities in the Head Start centers in the villages chosen which have such a preschool program.
3. That at least two of the villages selected for the program be ones with Head Start programs.

4. That participating health personnel (aides, nurses, doctors, health agencies) will be consulted for agreement to the program plan prior to its implementation.
5. That certain key phrases, such as "health care" be made more specific so that their interpretation in the overall goal is understood by all.

RurAL CAP's endorsement of the proposed Program Plan is, of course, contingent upon administrative review and the RurAL CAP Board of Directors' approval.

Sincerely,

Catherine V. Fleshman
Otitis Media Project Coordinator

CC: Dr. Robert Fraser
Susan Callan
Gordon Harper
John Rich

CVF/jo

STATE OF ALASKA

DEPT. OF HEALTH AND SOCIAL SERVICES

DIVISION OF PUBLIC HEALTH

JAY S. HAMMOND, Governor

Pouch H-06
Juneau, Alaska 99811

March 23, 1978

Jane Byers Maynard
State Administrator for
Title I-A HEA
Alaska Commission for
Postsecondary Education
Pouch F
Juneau, Alaska 99811

Dear Ms. Maynard:

The Alaska Division of Public Health recognizes that otitis media is a significant health problem in rural Alaska and would like to go on record in support of the project application "Comparison of Health Education Approaches to the Reduction of the Complications of Otitis Media in Rural Alaska" submitted by Kuskokwim Community College.

The Division of Public Health, Health Education Unit has worked closely with Kuskokwim Community College and other participating agencies in developing the program strategy and plan to provide consultation on a continual basis in the implementation of the project activities.

Sincerely,

Robert I. Fraser, M.D.
Director

RIF/jl

UNIVERSITY OF ALASKA, ANCHORAGE
RURAL EDUCATIONAL AFFAIRS OFFICE
2221 E. NORTHERN LIGHTS BLVD
SUITE 220
ANCHORAGE, ALASKA 99504

March 22, 1978

ADMINISTRATIVE SERVICES

Jane Byers Maynard
Director, Title 1A
Dept. of Education
Post Secondary Education Commission
State Office Building
Pouch F
Juneau, Ak. 99811

Dear Ms. Maynard:

I have been asked to draft a letter in support of the proposal to initiate a program to evaluate approaches to reduce complications of otitis media in rural Alaska, prepared by Kuskokwim Community College, et al.

I am glad to lend my support to this proposed project. I feel that the proposed combinations of approaches and the disease condition chosen are appropriate for such a test. Further, it would appear that this is an appropriate time to evaluate the methods of delivering health related information that will encourage people to take an active part in their own health status.

While I speak for myself in this matter, I will introduce this proposal to the next meeting of the Academic Review Committee for health aide education. I feel confident, from preliminary feedback, that this proposal and the training it will involve will be accepted on its merits and seen as a model for programs to follow.

Sincerely,

Haydn Widtfeldt, PA, MPH
Coordinator
Community Health Aide Education

HW:sm

cc: John Rich
Susan Callen
Gordy Harper

STATE OF ALASKA

JAY S. HAMMOND, GOVERNOR

DEPT. OF HEALTH AND SOCIAL SERVICES

DIVISION OF PUBLIC HEALTH, SOUTH CENTRAL REGIONAL OFFICE

ROOM 222, MACKAY BUILDING
338 DENALI STREET – ANCHORAGE 99501

March 24, 1978

Jane Byers Maynard
State Administrator for Title 1-A
Alaska Commission on Postsecondary Education
Pouch F
Juneau, Ak 99811

Dear Ms. Maynard:

At the May 1977 Annual Meeting of the Alaska State Division of Public Health, the decision was made that otitis media should be considered the priority concern of the division's health education effort in the forthcoming year. This decision was made because of the concern of both the citizens of western Alaska and the health providers in that area with the continued prevalence of serious ear disease, and with the amount of resources required to repair damaged ears.

The current grant proposal represents an attempt to involve several types of potential "educators" in this effort, including health aides, school teachers, and especially trained indigenous outreach persons by improving their respective capability to deliver pertinent information on good ear care to the target population of pre-school and school aged children and their parents.

It is hoped that his study will give some indication as to the comparative effectiveness of using these different categories of potential "health educators" in the rural Alaskan setting so that the information thus gained can be utilized in addressing other health problems such as: alcoholism, accident prevention, etc.

Other benefits that are anticipated as a result of this project are the development of an advanced health aide training module for rural Alaska and a school and pre-school health education curriculum unit dealing with good ear care. These curricula should be made available for widespread use in the future should they prove to be effective.

Although actual measurable improvement in ear health status should result, ultimately from this effort, it may be difficult to document immediately especially since other medical

and socio-economic factors will also be impacting the otitis media problem. Therefore, the primary thrust of this grant proposal is to test information acquisition and attitude change in the target group.

The Division of Public Health will have many opportunities to utilize the materials and approaches developed in this project in future health education efforts.

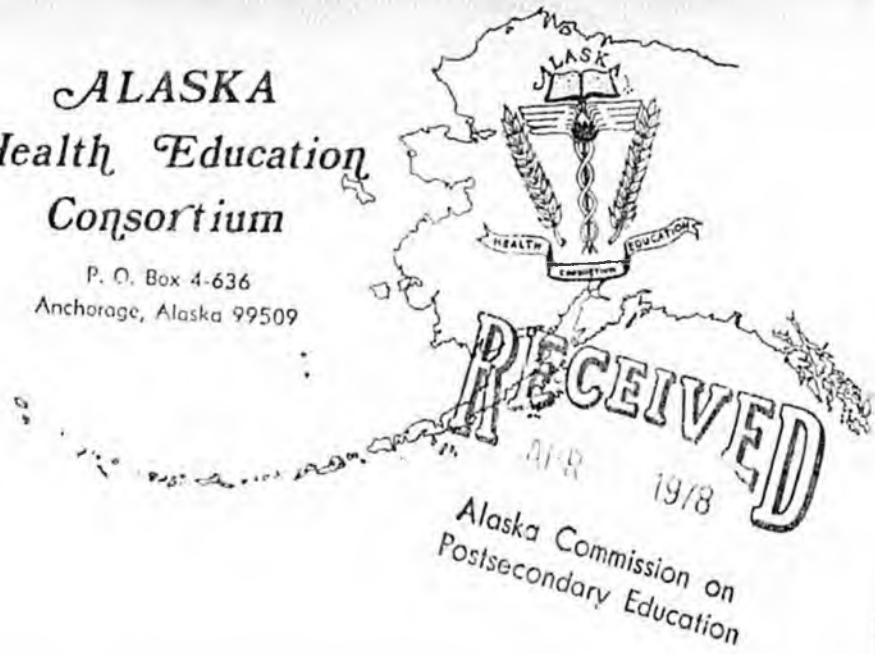
Sincerely yours,

Elizabeth A. Tower, MD

Elizabeth A. Tower, MD
South Central Regional
Health Officer

ALASKA
Health Education
Consortium

P. O. Box 4-636
Anchorage, Alaska 99509



April 4, 1978

Ms. Jane Byers Maynard
Director, Title IA
Commission on Post Secondary
Education
Pouch F
Juneau, Alaska 99811

Dear Ms. Maynard:

At a recent general meeting of the Alaska Health Education Consortium the Proposal Review Committee was directed to review the proposal entitled Comparison of Health Education Approaches to the Reduction of the Complications of Otitis Media in Rural Alaska. The committee was charged with reviewing not only the philosophy and intent of the proposal but also conducted a techical review.

It is the unanimous opinion of this committee that this proposal would be a valuable contribution to the delivery of health services to Alaska. The need for more information on the method of delivering health services to rural Alaska is great. The approach taken by this proposal to compare the relative effectiveness of a variety of delivery services indicates a valid need. Additionally, the selection of otitis media as a target health problem is important. As you know, otitis media is a serious health problem for rural Alaska and one that bears additional research.

The Alaska Health Education Consortium would like to extend its support for this proposal through the review conducted by this committee. If you have any questions, please do not hesitate to call me.

Yours very truly,

John H. "Jack" Knapp
Chairperson
Proposal Review Committee

JHK:kt

cc: Susan Callan,
Southcentral Planning and Development Commission

Marion D. Bowles,
Skip Widtfeldt,
Steve Alexander,
Proposal Review Committee

South Central Health Planning and Development, Inc.
1135 West Eighth Avenue Suite I Anchorage, Alaska 99501
(907) 278-3631

APR 3 1978

TO: Commission on Post Secondary Education

FROM: South Central Health Planning and Development, Inc.

SUBJECT: Project Review Committee Action and Comments Pertaining to the Application from Kuskokwim Community College entitled An Interagency Approach to Raise the Public Awareness of Otitis Media as a Health Problem.

DATE: March 31, 1978

At the March 23rd meeting of South Central Health Planning and Development, Inc.'s Project Review Committee, the Kuskokwim Community College's application "An Interagency Approach to Raise the Public Awareness of Otitis Media as a Health Problem" was set for review and comment. The following motion was ultimately made and unanimously passed.

> IT WAS MOVED, SECONDED AND PASSED TO RECOMMEND APPROVAL OF THE APPLICATION FROM KUSKOKWIM COMMUNITY COLLEGE ENTITLED "AN INTERAGENCY APPROACH TO RAISE THE PUBLIC AWARENESS OF OTITIS MEDIA AS A HEALTH PROBLEM".

This will be presented to the full Board of SCHPD for official action on April 8th. The decision of the Board will then be forwarded to both the funding agency and the applicant. However, since we understand the Commission will be deliberating on this application prior to the 7th, it was felt that the relevant action and comments should be made available to the Commission now. The statements that follow are summaries of comments and suggestions made by Project Review Committee members, staff, the applicant's representative, and interested members of the public.

SUPPORTING COMMENTS

- the intent of the proposal is consistant with the goals of the area's Health System Plan.
- coordination with other agencies throughout the project will benefit everyone involved.
- even though a lot of money has beer spent on otitis media in the past, most of it has been on surgical needs, almost none in education, and none in evaluating effectiveness of educational methodologies.

- there are several potential spinoffs from this project that could be beneficial. Some are mentioned in the application, others might be
  1) a clarification of most appropriate effective role for any one involved agency,
  2) a gained awareness of optimal educational methods for bush use on any subject,
  3) evental proof of cost effectiveness of education/prevention measures over curative/remedial actions.
- there is an assumed effectiveness of the chosen methodologies, actual effectiveness will be proven.

CONCERNS RAISED

- as a research design, there appear to be too many variables involved (perhaps too many overlapping methodologies in too many villages.)
- there is no literary search component in the proposal - a vital part for usable results (what has been done elsewhere, with what success?)
- what methodologies are being done now - couldn't an evaluation of existing methodologies be done?
- what are the existing responsibilities (regarding otitis media) of the agencies to be involved and how will this affect them.
- a one-year study won't change (or show any changes in) the health status- a change in incidence of disease or numbers of complications, and awareness is difficult to measure.
- the relationship between stated objectives and evaluation of outcomes is not clear.

SUGGESTIONS TO THE APPLICANT

- a greater coordination with the PHS hospital at Bethel is warranted.
- the first phase of the project could emphasize gathering as much baseline data as possible so that changes can be measured accurately in the future- either by the applicant or others.
- the evaluation section could be expanded to include each step that will be done and how the outcomes of each step will affect the next step.
- the roles of those involved in otitis media now could be defined. What is expected of them during the project could be made clear so that the roles can be evaluated for possible changes in the future. This could be part of the projects evaluation.

Some of the concerns and suggestions were raised during the pre-roview meeting between the applicant and SCHPD's Project Review staff. Attached is a copy of the applicant's proposed addenda as a result of that meeting.

If there are any questions about these comments or the review process, please don't hesitate to call the office.

Susan M. Callan

Susan M. Callan
Project Review Staff

SMC/ls

Enc.

Kuskokwim Community College Proposal Addendum

Statement of Problem:

Otitis media is a term that covers a medical problem with a number of forms affecting the middle ear. The general course of the disease is recognized sufficiently to make early intervention meaningful. Otitis media is relatable to upper respiratory infections (u.r.i.) and has a specific pattern, from early sporatic cases to permanent damage cause by one of the advanced forms.

A chronic perforated ear drum is one form. Because this is an open sore, individuals with the condition are exposed to serious diseases. Further, these individuals and others with other forms of otitis may have impaired hearing, and this can lead to learning difficulties. Actual dollar figures for lost hearing are, of course, incalculable. But DPH estimates that a slight to moderate hearing loss is present in the vast majority of perforated ears.

The USPHS has carried on an extensive program of restorative care for otitis media. A special emphasis will have resulted in over 300 tympanoplasties (the surgery for a perforated ear drum) having been performed this year. The cost of surgery for each tympanoplasty is between $1,500 and $2,000. This, however, is not a final solution to the problem, because the same events can be repeated exactly, if the cause or treatment are not altered.

Additionally, part of the problem identifying otitis media is the lack of reliable statistics. However, USPHS identifies otitis media as its third leading cause of outpatient visits in the Bethel Service Unit. The Alaska State Division of Public Health has identified it as a priority of 1978, and the YKHC Board of Directors has identified it as a significant health problem. The Alaska Legislature last year allocated $300,000 specifically for the treatment for otitis media (part of which has been included in this grant).

Evidence by the number of cases of advanced otitis, early detection and appropriate treatment of otitis has not occurred fully. Early cases of otitis (and some of the u.r.i's that may precede it)could be dealt with medically. There is no study available which documents the number of cases that could be dealt with at this stagebut are not being dealt with adequately. By their very nature, there are unreported cases and unavailable therefore to the standard health statistic systems.

A DPH study indicated that the causes of otitis were not clearly agreed upon by ptologists. Because the cause cannot be isolated (it may be due to nutrition or general living standards) this program seeks only to identify early cases of otitis and provide effective first-line medical care. It does not address primary prevention.

Health aides have exposure to the problem of ear care through their regular training. However, the advanced training necessary to meet the need of early diagnosis has not been available universally. This program will attempt to increase to a standard outlined by the health aide manual, the aides' in the selected villages ability to deal with otitis and the diseases that can lead to it.

Additionally, however, there has been a lack of attention to otitis historicaly, perhaps because of its prevalence. While this situation is starkly improving, draining ears, perforated, and swollen ear drums are far more common in the Bethel area than in the rest of the nation.

Early intervention for the disease, or intervention of U.R.I's is quick and effective. A good medical referral system, furthermore, would permit cases not solvable in the village to be referred when identified. This system exists presently and could be strengthened by agreement upon procedures and priorities in regard to otitis.

Because otitis is not regarded by many members of the population as a significant health problem, incentive to take advantage of the improved health services provided by the grant must be an essential feature. Presently, motivational messages aimed at increasing early intervention in the disease cycle is provided by the health aide, P.H.N.,(in RuralCAP villages) by ruralcap outreach workers, and others mostly through one-to-one patient encounters, but also by pamphlet and other audio visual methods. However, this education is largely sporadic and undocumented and not offered as a part of a coordinated effort including health care providers and educational techniques.

There are a variety of educational/motivational methods used by health care providers. No consistency of evaluation results. Among health education programs none have led to solid conclusions about the most cost-effective way to educate and motivate the bush population about a particular health problem.

Specific information of otitis prevalence, and severity, and the ultimate results of treatments provided is incomplete. This study has components for documentation in the test villages of these features, in order to test the reduction in the disease late complication and/or change in attitudes about the disease.

Note of explanation:

This project consists of two levels. Firstly, it will attempt to find the cost-effectiveness of a combination of approaches to health education delivery methods. To do so it will focus on a target group with its educational message. Because of the particular health problem chosen; the primary target group for all methods shall be older children and older women responsible for care of young children.

Because it is felt that school children can have a significant impact on the behavior of other individuals in the village, it shall be attempted to influence the primary target group in four villages by a school health program (for which program school children K - 12 are the education target group).

However, a second level of the program is that the effectiveness of the health education method or combination of methods is judged by its success at changing the health problem. Therefore, a medical target group is identified, all children through 10 years, in the selected villages, shall constitute the medical group.

Consumer Participation:

A two step process has been devised to ensure consumer participation in the program. Initial village selection will be accomplished by use of criteria set down by the interagency committee. However, self-selection into the program shall be done by villages themselves after having had the program outlined by itinerant YKHC personnel. The most cooperative ten villages will be chosen. No villages will coerced into program acceptance.

Future Funding:

The ability of the various combinations of approaches to change attitudes should be determined within one year. However a behavioral change to achieve a reduction in the health problem in one year may not be possible. Therefore, the funding source may be approached an additional year of support.

Five new positions will be created by this project:

A. One Community Health Educator to be hired half time for four months. Hired by YKHC under the direction of the Field Health Coordinator, this position is to assist in monitoring the progress of the media and health education aide programs.

B. Four Health Education Adies full-time for five months. These individuals will be hired by YKHC with the advice and consent of the village and will be located there. One week of training will be carried out in Bethel and performance will be monitored by the Field Health Coordinator by on-site visits and correspondence.

PERSONNEL

Because of the interlocking duties of the health agencies dealing with otitis, interagency cooperation is essential. The attached flow chart shows that the program depends on a variety of programs that are involved with otitis media in the Bethel area. Project goals were established by an interagency group (funding is derived from two sources that had monies designated for health education programs addressing otitis media).

The interagency committee shall be responsible for setting criteria for identification of villages to be invited to participate. Such factors as village size, socio-economic status, motivational level of the health aide, Headstart program presence, distance from Bethel or other characteristics will be isolated. Additionally, the interagency committee will approve the subcontracts to be let for the various facets of the program.

This committee will meet quarterly prior to and during project operation. In addition, it will be the responsibility of the Director to ensure that agencies know the work of team members related to their needs in the project.

Members of the committee shall include the following, or their designated representative, and any other interested participant:

KCC - John Rich, Project Director

YKHC - Dave Blanchett, Field Health Coordinator
- Robert Hurwitz M.D., Medical Director
- Mary Pavil, Health Aide Services Director

Division of Public Health --
- Elizabeth A. Tower, MD -- Southcentral Regional Health Officer
- Susan Clocke, Health Education Specialist
- Pat Shea, Superviser - Bethel Itinerant Nursing Service
- Gordon Harper, Assistant Health Education Specialist

RuralCAP --
- Cathy Fleshman, Otitis Media Project Coordinator

IHS - Ray Shields, MD -- Field Health Director

BIA/LKSD --
- Representative as designated by subcontract arrangements.

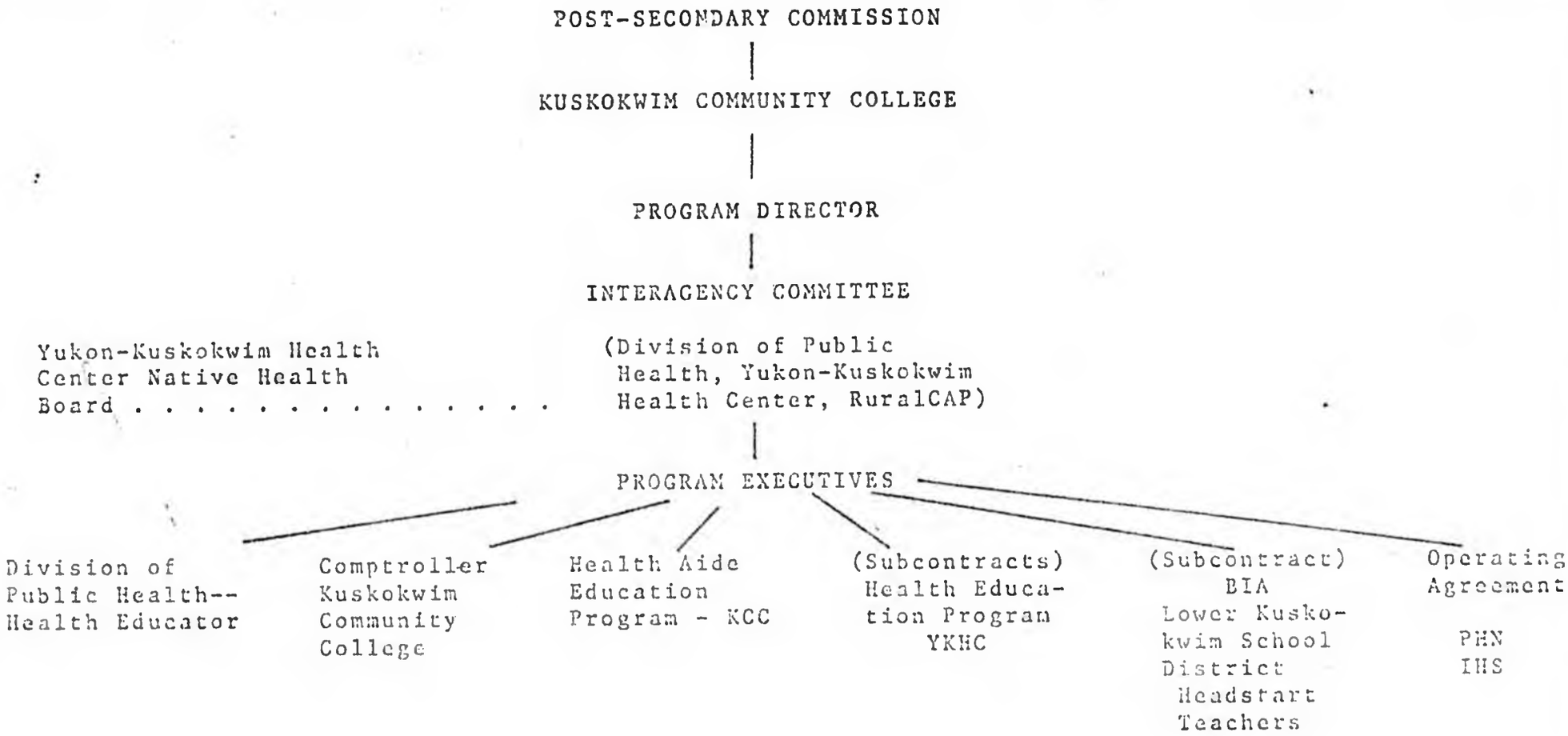
Rural Educational Affairs --
- Skip Widtfield

While these agencies would provide limited health education programs on otitis media, this proposal permits a unique opportunity to combine resources in a concerted, measurable project, and thereby expand eachs' benefit, as many fold.

The credentials of the project director are:

John Rich -- Director of the Health Sciences Division at Kuskokwim Community College for two years, responsible for the health aide education program and an annual budget in excess of $250,000 from federal and university sources.

Previously, he was the Director of Health Aide Training at Yukon-Kuskokwim Health Center for three years. He has a R.N. Degree and a B.A. in Allied Health Servies Education.


POST-SECONDARY COMMISSION
KUSKOKWIM COMMUNITY COLLEGE
PROGRAM DIRECTOR
INTERAGENCY COMMITTEE
Yukon-Kuskokwim Health Center Native Health Board . . . . . .
(Division of Public Health, Yukon-Kuskokwim Health Center, RuralCAP)
PROGRAM EXECUTIVES
Division of Public Health-- Health Educator
Comptroller Kuskokwim Community College
Health Aide Education Program - KCC
(Subcontracts) Health Education Program YKHC
(Subcontract) BIA Lower Kuskokwim School District Headstart Teachers
Operating Agreement
PHN
IHS

ADDENDUM:

Changes in the "Comparison of Health Education Approaches to the Reduction of the Complications of Otitis Media in Rural Alaska"

Pg. 4

3. Otitis Media lends itself admirably to empirical methods of evaluation, since the scope and effects of treatment can be measured with relative ease.

Pg. 5

A. (bottom of page) On completion of the program, members of target groups will.

Pg. 5

2.2 Statement of goals and objectives

1. To develop, implement, and evaluate cost-effectiveness of health education approaches designed to reduce the complications of health problems in rural Alaska through the promotion of prevention, early detection, and improved care.

5.0 EVALUATION PROCEDURES

OBJECTIVE	EVALUATION TECHNIQUES
1) Overall objective: To determine the relative effectiveness of three different health education approaches in obtaining a significant reduction in the ratio of late to early detection of otitis media in eight villages in rural Alaska.	Comparison of relative percentage change in KAP (Knowledge, Attitude, and Practice) pre- and post-surveys of each educational target group. Comparison of the cost of each method against the change in the pre-and post- KAP scores. Comparison of audiologic pre- and post- results. Comparison of results Comparison of ratio of early presenters to late presenters between the pre-test audiologic exam and the post-audiologic exam.