The Alaska Community Health Aide Program: An Integrative Literature Review and Visions for Future Research

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ABSTRACT

Content:
This publication review documents the existing literature regarding Alaska's Community Health Aide program (CHAP), updating aspects of the program that have evolved and are not documented in the literature, and proposing areas of research that may be beneficial for CHAP and similar programs throughout the country.

Purpose:
The Alaska Community Health Aide program (CHAP) is a unique program that employs local, indigenous peoples as primary care non-physician providers in extremely remote, frontier communities. The program's inception is an important piece of rural public health policy. The purpose of this publication review is to provide integration of the existing literature regarding the program and documentation of areas that are not currently provided for in the literature.

Methods:
Published articles from 1968-Present were identified and analyzed into an integrative literature review. Studies on CHAP were identified through a review of existing computerized databases. A codebook was developed to document the variables captured in each study. Studies were analyzed and examined for content, with special focus given to the aspects of the program described in greatest frequency. In order to update aspects of the program not currently documented in the literature, research staff conducted key informant interviews and reviewed relevant policies and reports.

Findings:
The literature review found 27 citations of published secondary materials directly related to CHAP. Twelve (44percent) were general articles providing a basic overall description of the program. Only 8 (30 percent) utilized some sort of scientific methodology, while the remaining 19 (70 percent) were generally descriptive in nature – either of the program as a whole, or of some specific aspect of it. Features of the program that have been fairly well documented in the literature include: program history; Community Health Aide/Practitioner (CHA/P) roles and responsibilities; CHA/P training; supervision; liability issues; roles of the IHS, native corporations, village, and State; and existing outcome data. Evolving aspects of

the program that are not yet adequately documented in publications are also addressed in this publication. They include certification, reimbursement, and the new Alaska dental health aide program.

Conclusions:

The Community Health Aide Program (CHAP) has been fairly well documented in the published literature. However, this unique program for providing primary health care in frontier areas could benefit from more extensive outcomes studies. Research looking into the replicability of the program would benefit other frontier areas interested in pursuing programs based on the CHAP model.

Key Words: community health aide, community health worker, rural primary care, frontier health

INTRODUCTION:

Concerns regarding the supply of specific health workers is a nationwide problem, and it is particularly pronounced in rural communities. The maldistribution of health workers remains a considerable public health issue.[1] The nursing shortage is evident in rural communities,[2] and problems relating to physician distribution in rural areas have been well documented. The greatest dilemma relating to physician supply continues to be in rural communities with less than 10,000 people that are not adjacent to larger metropolitan areas. Physician supply in these areas remains only slightly higher than it was in the 1940's.[3]

While rural areas face harsh difficulties in guaranteeing access to primary care, the challenge is even more pronounced in extremely remote or "frontier" communities as much of the State of Alaska could easily be defined. While the concept of frontier has been widely recognized, definitions vary. The Department of Health and Human Services (DHHS) has used at least two different definitions of frontier. In 1986 the Bureau of Primary Health Care (BPHC) defined frontier as counties that included less than six people per square mile. In 1988 Congress passed legislation administered by the Bureau of Health Professions (BHPr) that defined frontier as an area with less than seven people per square mile. However, even conservative definitions of frontier still seem quite dense when describing Alaska. Alaska has an overall population density of only 1.1 people per square mile, about 70 times smaller than the national average.[4] Outside of the State's three largest communities, the population density quickly drops to about .5 persons per square mile. In fact, over 31 percent of all frontier land in the U.S. is located in Alaska.[5]

Providing adequate access to health providers to such a diffuse population is a difficult proposition. A 1997 study by the University of Washington School of Medicine found evidence of generalist physician shortages throughout Alaska – even in urban parts of the State – when compared to accepted national physician-to-population ratios. After conducting surveys with all generalist physician practices in the State, the researchers concluded that Alaska had a 30 percent overall shortage of generalist physicians.[6]

Amidst this background, Alaska's tribal health care system has developed a unique program to address the problem of ensuring access to primary health services in its most remote, or frontier communities serving Alaska Natives. The Alaska Community Health Aide Program (CHAP) is now celebrating almost 35 years in existence. The program trains local residents – mostly Alaska Native women – to act as non-physician primary care providers in the remote communities where they reside. By training local residents, the issue of recruitment to practice in frontier communities that plagues many other health professions becomes less of an issue. Further, local residents are more likely to speak the native language, provide culturally sensitive services, and be considered acceptable by the local community. Community Health Aide Practitioners (CHA/Ps) are often the sole source of medical care in their communities and have become the backbone of Alaska's rural and remote health system for Alaska Native people.

The purpose of this publication is to provide documentation regarding the historical development and current state of CHAP. This is done through a variety of methods, including an extensive integrative literature review documenting the existing scholarly literature on the program, as well as key informant interviews, which help to update aspects of the program that have either changed since previous publications or have not been well-documented through past research.

METHODS:

Integrative Literature Review

The goal of an integrative literature review, as described by Cooper is "to present the state of knowledge concerning the relation(s) of interest and to highlight important issues that research has left unresolved."[7] Such reviews provide an important service, as the growing volume of science and publications requires new methods for building an orderly description of knowledge on a given subject.

For this integrative literature review, research studies on Alaska's CHAP were identified through existing computerized databases. Additional resources were identified through a review of reference lists from articles found through the computerized database search. A wide variety of databases were searched; however, it should be noted that the vast majority of articles identified through computerized databases

were found through Medline and Worldcat. Search terms included “Alaska,” “Community Health Aide,” “Community Health Worker,” and “Alaska Native.” A complete list of databases searched is found in Table 1.

TABLE 1: Databases Utilized in Computerized Search for Articles

Database	Dates
Medline	mid-1960’s-2002
World Cat	mid-1960’s-2002
Sociological Abstracts	1963-2002
Social Sciences Abstracts	1983-2002
Social Work Abstracts	1977-2002
PAIS International	1972-2002
Alaska and Polar Regions Index	1980-2002
Health Reference Center Academic	1980-2002

Identified studies were reviewed for their applicability, and if they included the Alaska Community Health Aide Program (CHAP) as part of their study focus, the article was included in this project. After an initial reading of the studies, a coding sheet was developed to document variables captured in each publication. The studies were categorized based on specific variables, including: research methods and designs, types of publication, date of publication, author affiliation, and main thesis. Following categorization, studies were analyzed for content, with special focus given to the aspects of the program described in greatest frequency. These areas included program history, training, supervision, legal issues, outcomes, and the roles and responsibilities of individual CHA/Ps, the Indian Health Service (IHS), regional native health corporations, tribal village councils, and the State of Alaska.

Key Informant Interviews

In addition to the review of the literature, key informant interviews were conducted to provide supplementary information to complete a solid documentation of CHAP. This additional step was undertaken after noting that some aspects of CHAP had changed while other new activities had taken place since the last published review of the program. Key informants were selected through consultation with CHAP staff and stakeholders with criteria based on the individual’s history and knowledge of the program. Ten key informant interviews were undertaken to further document the program’s current certification program, CHA/P reimbursement through the State’s Medicaid program, and the new, emerging dental health aide program.

FINDINGS:

Integrated Literature Review

General Statistics Regarding Publications
In general, the Alaska Community Health Aide Program is more documented and described in the existing scholarly literature than had been previously expected. The review found 27 journal articles, books, published dissertations, and Federal reports describing some aspect of the CHAP program in considerable depth, and they are discussed through the remainder of this publication.

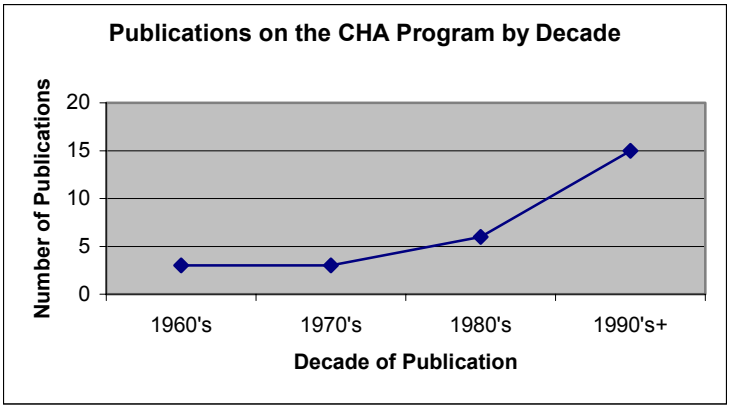
Twenty-three (87 percent) of the 27 documents were articles published in academic journals. The distribution of publications is described in Table 2.

Table 2: Publication Type for Citations on the Alaska CHA Program

# of Publications	% of Publications	Type of Publication
23	87%	Academic Journals
2	5%	PhD Dissertations
1	4%	Book
1	4%	Federal Report

Interest in the program as measured by the number of publications relating to the program appears to be on the rise, as seen in Table 3, with 16 (56 percent) of all CHA/P-related publications being published in the 1990's or later.

Table 3:



Of the 27 published citations, 12 (44 percent) were general descriptions of the CHAP concept, program, and operations. Other citations focused on specific issues related to the CHAP program, including training, communications, and supervision. The main theses of publications included in the study are classified in Table 4.

Table 4: Main Theses of Publications on the Alaska CHA Program

# of Publications	% of Publications	Main Thesis of Publication
12	44%	General Description
6	22%	Training
3	11%	Communications
2	7%	Perceptions of CHAs
2	7%	Outcomes
1	4%	Supervision
1	4%	Historical

As might be expected with the high percentage of publications offering general descriptions of the program, most of the citations of articles cited are descriptive analyses rather than explanatory analysis. In fact, only 8 (30 percent) of the publications offered a scientific methodology while the remaining 19 (70 percent) provided a more narrative description of some aspect of the program. Specific research designs employed by the explanatory analyses projects are provided in Table 5. Note that some of these publications included more than one type of design methodology.

Table 5: Types of Research Design Employed in Publications on the Alaska CHA Program

# of Publications	% of Scientific Publications	Methodology of Publications
3	30%	Survey
3	30%	Medical Record Review
1	11%	Key Informant Interviews
1	11%	Pre and Post Test
1	11%	Quasi Experimental Design

Authors of these publications have been fairly well split between different affiliations. While 13 (48 percent) of the primary authors show an affiliation with the Indian Health Service or a tribal organization, 10 (37 percent) of the primary authors are primarily affiliated with a University or research center. A complete distribution of author affiliations is provided in Table 6.

Table 6: Primary Author Affiliation Type

# of Publications	% of Publications	Primary Author Affiliation for Publications
13	48%	IHS/Tribal
10	37%	University
2	7%	Unknown
1	4%	Industry
1	4%	Other Federal Agency (Not IHS)

Documented Facts Regarding the Alaska CHAP Program

Program History:

The CHAP program's history has been well documented in the published literature[8] including the history of Alaska Native health issues beginning in the 19th century, and tracing CHAP's inception and evolution through the mid 1990's.

Many other publications[9-13] provide an abbreviated description of the program's history, highlighting what are perceived to be the most significant points in the program's past. They generally describe how CHAP emerged from a 1950's program of the Indian Health Service (IHS) that successfully employed the use of local, Native village workers to distribute medications to help combat the tuberculosis epidemic. This successful demonstration of the use of local, indigenous peoples as health care providers in the village directly led to the eventual formation of the CHAP concept and formalization of the CHAP program.

Several provide a more in-depth look at program history.[14-16] These authors generally describe the poor health of Alaska Natives in the 19th and early 20th century, and the publication of two reports – the Parran report (1953) and an AMA report (1947) that both drew nationwide attention to the deficient health status of Alaska Natives and led to the charge for improving Native health systems. They also provide additional information about discussions beginning in the 1960's regarding formalization of a program that would train and utilize non-physician, local village workers to act as frontline medical workers. While early discussions were somewhat controversial, with concerns expressed over quality of care and legal issues, successful pilot programs over a 7-year period led to the eventual formalization of the program and earmarked funding for the program in 1968. They also discuss program landmarks, such as the formalization of curriculum and training in the 1970's, challenges relating to attrition that began in the 1980's, and the addition of major new funding for the program in the early 1990's. Cordes[17] goes even further by discussing not only the program's history, but also the historical role of the Indian Health Service (IHS) and the Indian Self-Determination Act (P.L.93-638), the development of Federal obligations to Native Americans for health services, and the formation of the Alaska Native health care system and these influences on the CHAP program.

Community Health Aide Role and Responsibilities:

Virtually all of the publications documented some aspect of the unique role of the CHA/P within Alaska's villages. CHA/Ps serve slightly different roles in different villages, depending on the extent of other medical professionals in the community, the expectations of supervising physicians, and policies of individual regional native health corporations.[17 (p.108)] Caldera et al[18] suggest that in many Alaskan communities, the CHA/P plays a number of roles that in urban communities would be split out between a variety of medical personnel -- combining the roles of Physician Assistant, public health nurse, health educator, clinic administrator, mental health counselor, nutrition aide, and even travel agent since the CHA/P helps coordinate travel for patients requiring a higher level of medical care in a neighboring community. Quick and Bashshur[19] recognize the CHA/Ps distinctive role as the provider of preventive, acute, chronic, and emergency care services for both children and adults. The exact role played by each CHA/P depends on the village – both in terms of the local needs, local resources, and the competence of the individual CHA/P.

Caldera[15 (p.169)], Dixon et al, [16(p.921)] the GAO[11 (p.2)] and Sherer[10 (p.56)] describe the CHA/Ps as the backbone of a village's health system and the secret to Alaska's success in providing health services in remote areas. These authors observe that CHA/Ps are in charge of maintaining regular clinic hours, while providing on-call and emergency services 24 hours a day, 7 days a week, 365 days a year. CHA/Ps are trained in patient assessment, and with the aide of remotely located IHS/tribal physicians and standing orders found in the Community Health Aide Manual (CHAM), they develop and implement patient care plans. Caldera[15 (p.168)] and Cordes[17 (p.108)] cite an unpublished review of clinic records from five villages over a 6-month period in 1983 that found that CHA/Ps were able to independently handle approximately 85 percent of the cases that presented to them using medical standing orders found in the CHAM, while the remaining 15 percent required consultation with a physician. This degree of functionality from community health workers is truly unique. According to Berner[12 (p.90)] "other nations, especially third-world countries, have systems that are constructed in a manner similar to the Community Health Aide Program, but none allow the workers to deal with the magnitude of problems that the CHA/Ps must handle."

CHA/P Training:

The unique role that CHA/Ps play in the Alaska rural health system has garnered substantial interest in their training programs. As noted earlier, training was a popular focus for many of the CHAP article authors. In fact, training was the second most common topic area for articles relating to CHAP, with 6 (22 percent) of the 27 articles focusing on training issues. In addition, many of the general articles describing CHAP as a whole also included broader descriptions of their training program.

Haraldson[20] Dixon et al[16 (p.921)], O-Hara-Devereaux et al[14 (p.77)], and Berner[12 (p.92)] all reflect that CHA/P training sessions were specifically designed to accommodate the unique needs of health aides. The training sessions were designed to be fairly short in duration. Each session lasts between 3-4 weeks with the health aides returning to their village to practice in limited scopes between sessions, and health aides assume responsibilities in their positions prior to the completion of their basic training program.[15 (p.169)] This distinctive feature of the training program serves several purposes. Most health aides have family commitments that make it difficult to leave the village for long periods of times. Also, returning to the village allows health aides to practice their new skills between training sessions and provide necessary services in the community that would otherwise be unavailable. Finally, the training scheme helps to minimize "brain drain" where indigenous people are sent to urban areas for training and never return to their community to practice.[20 (p.62)]

Training methods for CHA/Ps include a combination of didactic and clinical methods with instructors employing a wide variety of approaches including classroom lectures, skills practice sessions, and practical clinical experience.[11 (p.4)] Training sessions are tightly organized and scheduled to oblige the large curriculum that CHA/Ps must learn in a relatively short period of time to perform their duties. As a comparison, Brickell[21] notes that CHA/Ps receive training in a wide field of primary and emergency care in a very short period (currently approximately 520 hours), while paramedics receive training in the more narrow clinical scope of emergency care in over 1000 hours.

While the training centers have flexibility in how they train students, [14(p.76-77)] the actual curriculum is standardized statewide.[16 (p.921)] Because of the limited time for training, the content is geared primarily at

patient assessment, with special emphasis given to the diseases most prevalent in rural Alaska.[20 (p.62)] The specifics of curriculum taught in each training session have changed through the years and are documented in the literature based on what was accurate for the time of publication. Current training curriculum is summarized in Table 7.

Table 7: Current CHA/P Training Curriculum Goals

Session	Body of Knowledge	Learning Goal	Duration
Session I	Basics of problem-oriented visit Vital signs Lab procedures Medicine skills Some body systems Use of the CHAM Clinics emphasize acute care	Familiarity and awareness	4 weeks + 20 patient encounters after session
Session II	Remainder of body systems Additional lab skills Charting and reporting skills Dental care Mental health	Performing skills and understanding concepts with guidance of an instructor	4 weeks + 200 hours/60 patient encounters
Session III	Maternal and Child Health Substance abuse	Independent performance of skills and understanding of concepts	3 weeks + 200 hours/60 patient encounters
Session IV	All body systems reviewed Elder care and chronic care Environmental/injury control	Independent performance of skills and understanding of concepts	4 weeks + 200 hours/60 patient encounters

Health aides are taught to distinguish between routine and minor disease and those that are more complex requiring follow-up from a higher-level provider. They are also trained to treat routine and minor illnesses, and to stabilize patients with complex needs while preparing them for referral and/or transfer to a higher level of care.[12 (p.91)] College credit for training courses is provided through the University of Alaska for those wishing to pursue a degree, with the entire basic training program usually requiring 2-3 years to complete.[8 (p.43)]

Some of the published articles that are focused specifically on CHA/P training provide more in-depth perspectives. Harrison[22] specifically describes one of the early training sessions implemented in conjunction with the pre-CHA/P demonstration projects and the evaluation of that training session, while

Shook[9 (p.62)] discusses the current state of training at the time the program first became institutionalized. Rounds-Riley[23]provides information on the use of Objective Structured Clinical Examinations (OSCEs) in CHA/P training and evaluation, while Kelly[24] discusses the importance of continuing education for CHA/Ps and the difficulties encountered with delivering level-appropriate, culturally relevant Continuing Medical Education (CME) in distant locations. Hummel et al[25] discuss programs aimed at encouraging CHA/Ps to build on their CHA/P training to become licensed Physician Assistants. Brickell[21 (p. 66)] shows results from a survey used to improve and update the community health aide basic training curriculum.

CHA/P Supervision:

While CHA/P supervision was only the focus of one of the CHAP articles,[26] the basics of supervision were discussed in almost all the articles focusing on general descriptions of the program. Medical supervision is a particularly important element of the program. Physicians employed by the IHS or a tribal organization provide medical supervision of CHA/Ps and have the legal responsibility for care provided by CHA/Ps under their supervision.[12 (p.89)] The physicians are generally physically located in a "hub" rural community and have telephone contact with CHA/Ps on a systematic, scheduled basis –at least weekly and sometimes daily. Physicians advise CHA/Ps on patient care plans and determine which patients should be transferred to the regional hub for additional diagnostic treatment.[26 (p.357), 11(p.4)] Caldera et al[27]note that the importance of this physician link cannot be overemphasized. CHA/Ps begin treating patients at a certain level after completing their first 4-week training course and physician involvement is critical to quality assurance and helping the newly trained CHA/P improve her skills and gain confidence. The technical infrastructure allowing for CHA/Ps to maintain close communication ties to remotely located physicians has improved dramatically since the program's early inception, when unreliable radio traffic was the only technology for communication.[28,29]

Medical supervision is slightly different between physicians and tribal organizations in different regions, although the CHA/P's relationship with a physician forms the crux of the CHA/P's authority to practice. Some tribal organizations require CHA/Ps to gain the authorization of a physician before administering any medications. Other regional organizations and their physicians provide greater leeway to CHA/Ps to treat common illnesses using standing orders under protocols provided in the Community Health Aide Manual, or CHAM.[17 (p. 180)] The CHAM is an important resource for CHA/Ps in the field, serving as a

combination of training manual, standing orders, practical reference guide, and protocols.[12 (p.91)] The CHAM was developed specifically to meet the needs of the working CHA/P in the village and is written at the educational level of the average health aide. Haraldson[20 (p.62)] cites the CHAM as one of the key elements that has made the CHAP program a success

In addition to medical supervision, each health aide is also provided with a coordinator/instructor or supervisor/instructor (CI/SI) who provides day-to-day supervision and support to health aides in his or her region. A midlevel provider generally occupies this position, [12 (p.92)] although some regional health corporations have found that promoting CHA/Ps into this position brings unique and valuable characteristics to the role.[26 (p.358)] The CI/SI makes fairly frequent, scheduled visits to each village to observe the CHA/P in the field to provide field instruction to help them improve their clinical skills and confidence. They also act as a liaison and advocate for the CHA/P within the village or at the regional corporation headquarters, provide ongoing emotional support to CHA/Ps.[18 (p.159)] The State of Alaska provides funding to support additional personnel for this function.[17 (p.98)]

Legal Issues:
Liability and certification issues are two of the most pressing legal issues relating to CHAP. Other States that have tried to institute similar programs based on the CHAP model have stumbled over precisely these two issues. Liability issues are fairly well documented in the literature, but changes in the certification process have occurred since the latest publications and are, therefore, not current within the literature. Current certification procedures will be discussed later in this article under “new developments.”

In terms of liability and malpractice coverage, CHAP has benefited from being a federally funded program. CHA/Ps are employees of tribal organizations acting as contractors to the Indian Health Service under the auspices of P.L. 93-638 as amended, or the Indian Self-Determination and Education Assistance Act (ISDEAA). As such, CHA/Ps are covered for liability through the Federal Tort Claims Act.[15 (p.169)] As noted by both the GAO[11(p.9)] and Sherer, [10 (p.60)] liability issues was one of the main barriers halting at least one other community that had tried to institute a program using elements of the CHAP program. A Florida county EMS had sought to utilize paramedics during non-peak times to provide more routine

primary health care services to the medically underserved. Two issues hampered implementation: (1) State licensing laws did not allow paramedics to provide routine primary care services as part of their scope of practice; and (2) the question of who would assume medical liability. The workers in question were not Federal employees and, therefore, ineligible for coverage under the umbrella of the Federal Tort Claims Act.

Roles of IHS, Regional Native Health Corporations, the Village, and the State:
A number of the published documents emphasize that CHAP is a collaborative effort between the Federal government through the IHS, local regional Native health corporations, individual villages, and the State of Alaska – with each partner playing an important and crucial role in the program's success. The IHS plays a significant role both by funding the CHAP program,[30] and by funding the Native health system in Alaska that provides the referral system and medical supervision essential for the CHA/Ps to do their work.[14 (p.72-73)] During the 1990's, IHS transferred Alaska's health programs to local regional Native health corporations, who manage their own tribal programs under the provisions of the ISDEAA. The IHS now acts more as a contracting agent than as a direct provider of care. However, because budget and funding comes through the IHS, they still remain an important player in the provision of care of Alaska Natives, including the CHAP program.[16 (p.921)]

The regional Native health corporations use monies coming through IHS contracts to manage their own local CHAP programs, including the duties of hiring, firing, and supervising CHA/Ps in their region. The regional corporation hires the CHA/Ps, pays their salaries and benefits, helps assure that CHA/Ps receive training and support, and in many cases provides operation and maintenance funds for the village clinics.[31] They also employ the CHA/P SIs, who provide daily on-going supervision of CHA/Ps, and the physicians who exercise medical control and clinical supervision of CHA/Ps.[16 (p.139), 13(p.237), 15(p.167)] Many health corporations also manage the regional Native hospitals under the authority of ISDEAA. Because each regional corporation administers their own CHAP program, there are some regional differences in CHA/P salaries, hiring procedures, and medical supervision. [13(p.237),]

Local villages and village councils also play an important role in the CHAP program. In an effort to make sure that the CHA/P is acceptable to the village where they will practice, the native village council selects the CHA/P that is to be hired and working locally.[10 (p.62), 13(p.236), 20(p.61), 12(p.92), 11(p.3)] In addition, some villages have elected to administer their own CHAP programs, rather than having them administered by their regional health corporation. In these cases, the village is in charge of hiring, firing, supervision, and funding for the local health clinic.[15 (p.168)]

While the CHAP program is primarily funded through Federal appropriations, the State of Alaska also provides ongoing financial support. The State has traditionally provided approximately $2 million in annual funding to regional health corporations for the purpose of CHA/P training and supervision.[10 (p.64)] They also provide support to CHA/Ps in more discrete ways. They provide funding for clinics which have at least one midlevel provider, which include some clinics where CHA/Ps work, and funding for the State Public Health nurses who provide ongoing support in the field to CHA/Ps and who provide complementary services to those provided by the CHA/P for rural Alaska.[17 (p.114)]

Outcomes:
Almost all of the published articles note circumstantial evidence that CHA/Ps positively impact the health of rural Alaskans. The GAO[11 (p.1)] notes that there are no rigorous studies measuring the overall effect of the program, but that available data indicates that CHA/Ps are accepted by the communities they serve and playing a role in the improvement of the health status of rural Alaska Natives. Overall health for Alaska Natives has improved dramatically since the inception of the CHAP program. The neonatal infant mortality rate has decreased by 27 percent in the last decade, while the accidental death rate decreased by 40 percent. [11(p.6)] In addition, there are reportedly significant improvements in infant mortality, life expectancy, hospitalization rates, and hospital length of stay.[12 (p.93), 15(p.167), 14(p.82)] Many of the authors point out that these health improvements are likely due to a number of factors, including improved housing and sanitation in the villages that has occurred over the last several decades, in addition to the introduction of local health providers through the CHAP program. In an article published only 2 years after the program's inception, Ivey[32] tried to make a more focused correlation between improved health status and the CHAP program. He pointed out that the Alaska IHS programs had seen an overall

decrease in their inpatient census and lower lengths of stay during the two years that the program had been running. The author speculated that the decrease was due to better local care in the community provided by health aides, with fewer people needing transfer into the medical centers, and fewer severely ill people due to earlier intervention and prevention.

The few studies that have looked at specific, focused health outcomes from CHA/P interventions have found generally positive results. Sox et al[33] found that specific training provided to CHA/Ps to perform Pap tests resulted in high quality cytological tests and increased pap rates among women who were overdue for such testing in eight remote villages. Baldwin et al[31 (p.628-629)] found that the utilization of a medical team that included local CHA/Ps helped to significantly increase the number of pregnant women accessing prenatal care during the first trimester.

Quick & Bashshur[19 (p.161-162)] used another type of outcome measure to monitor the CHAP program. Utilizing satisfaction surveys, they simultaneously polled health aides, consumers, and CHA/P supervising physicians to determine perspectives on satisfaction with health aide services within the Yukon-Kuskokwim Delta region in Western Alaska. All CHA/Ps and non-CHA providers were surveyed, with response rates of 96.7 percent and 87.8 percent respectively. Consumers were surveyed using a two-stage probability sample; the response rate for that group was 74.7 percent. The survey showed that 74 percent of supervising physicians rated the CHA/Ps work as good or excellent. Consumers also showed satisfaction with their local CHA/Ps, rating the quality of care they received from CHA/Ps as similar to care provided by other types of medical professionals. Importantly, 40 percent of respondents stated that their local CHA/P clinic was their preferred source of medical care, compared with 36 percent who selected the Bethel hospital with access to midlevel and physician providers.

DISCUSSION:
New Developments --Documenting Recent Changes:
Certification:
While CHA/Ps have always had a certification process, that process has changed substantially since the last published articles. Previously, CHA/Ps were considered “certified” after they had completed all four sessions of basic training, a 30-week minimum preceptorship of supervised clinical experience, completion of a critical skills list, completion of both a written and practical exam, documentation of the

completion of at least 15 patient encounters as the primary provider, and an evaluation of the CHA/P's clinical performance by an approved evaluator. This process is still in place, but is now referred to as credentialing rather than certification. This credential is bestowed by the CHA/P training centers to qualified health aides and must be renewed every six years.

The new CHA/P certification process is an additional layer of quality assurance that does not decrease any of the earlier CHA/P requirements. The new system developed in 1998 as tribal management under the "Indian Self-Determination Act" progressed. One impact of tribal management was the administrative decentralization of the CHAP program away from the IHS. The creation of the certification board and the concept of ongoing certification were developed to provide a form of centralized quality assurance. Under the new system, a CHA/P may pursue certification along each step of the training process instead of waiting until completing all basic training requirements. CHA/Ps are now eligible to begin the certification process after completing Session 1 of their training course. The CHA/P and her employer may apply to the CHA/P Certification Board, pay a fee, and document that the applicant meets all standards for certification at the requested level. As the CHA/P progresses through the training process, she may upgrade her certification at no additional fee, at which time she will be certified to the higher level of practice. Certification lasts for 2 years, after which the health aide must be re-certified. To be re-certified the CHA/P must have at least 48 hours of continuing education credits over the past 2 years.

This certification process is managed and overseen by a Certification Board that was established in 1998 under the authority of 25 U.S.C. Section 1616, and directives and circulars of the US Department of Health and Human Services, Indian Health Service and the Alaska Area Native Health Service. It is a Federal board comprised of 11 permanent members representing different aspects of the statewide CHAP. The board meets approximately three times a year to review applications with the purpose to assure that each applicant is in compliance with program standards for the level at which the CHA/P is applying.

This process for CHA/P certification is unique from the way most other medical professionals are certified. Most other professionals are overseen by a State licensing board. For most other health professions the

applicant completes their schooling, takes a test, submits paperwork, is approved by a State board, and gets a job. The CHAP program takes the reverse approach, which corresponds with the unique hiring and training processes employed by the program. CHA/Ps are hired for the position first, put on the payroll, and begin working in their position before training begins. They are then trained while continuing to do their job and certified at each stage along their training by a Federal board. There is no State licensing required for CHA/Ps to practice.

Reimbursement:
The Alaska State Division of Medical Assistance, which operates the State's Medicaid program, began reimbursing tribal organizations for services provided by eligible CHA/Ps beginning in 1998. In order to be eligible for reimbursement, CHA/Ps must meet the following guidelines:

a). Retain current certification as a level III or IV CHA or CHP by the Community Health Aide Program Certification Board.
b). Be employed by the Indian Health Service (IHS) or a tribal organization who is operating a community health aide program under the auspices of a contract or compact with the IHS through the Indian Self-Determination Act;
c). Be supervised by a currently enrolled Medicaid physician who assumes professional responsibility for the services provided by the CHA/P and assures that services are medically necessary.

CHA/P services are billed in a manner similar to other medical professional services. Tribal organizations are authorized to submit a CMS-1500 billing form using the Provider Identification number of the CHA/P's supervising physician, who must be an enrolled Medicaid provider. A list of authorized services is provided within a published CHA/P fee schedule. For each service provided by an eligible CHA/P, the Current Procedural Terminology (CPT) code on the bill must show an appropriate modifier. Separate modifiers are required for services provided by a level III or IV CHA or for services provided by a credentialed CHP. Once submitted, services are generally reimbursed at 85 percent of the physician fee schedule amount, or billed charges, whichever is lower. There are several exceptions to this rule. Early and Periodic Screening, Diagnostic, and Treatment (EPSDT) services, lab services, and supplies not incidental to the visit are reimbursed at 100 percent of the physician fee schedule. [34] The Alaska Dental Health Aide Program (DHAP), described below, will also be eligible for reimbursement by Medicaid within the State of Alaska. Following a similar procedure, services provided by a dental health aide will be reimbursable at 100 percent of the Medicaid Physician Fee Schedule.

Dental Health Aide Program:
An emerging corollary to the CHAP program is the Dental Health Aide program (DHAP). Just as the impetus for the original CHAP program was the dearth of primary care providers in frontier Alaska, so the DHAP emerged due to the high rate of dental disease and low number of providers in rural Alaska. Out of the State's 27 boroughs, 17 qualify as Dental Health Professional Shortage Areas (HPSAs).[35] The idea for basing a program geared specifically to oral health promotion and disease prevention and treatment using the CHAP model first appeared during a 1999 statewide meeting of dental chiefs within the Alaska Native health system. It was included as one of a series of approaches being recommended for improving dental access for Alaska Natives statewide and won statewide approval by the dental chiefs as a model to pursue.

Using grant monies from the IHS to support coordination, training, and curriculum development the program has quickly moved from a suggestion to reality. The effort has now also gained the financial support of a number of local and national philanthropic foundations. The DHAP gains authority from the same enabling federal legislation as other CHA/Ps, and follows a similar model in terms of care delivery, liability, certification, supervision, and oversight. DHAs will be hired and supervised by a local regional native health corporation and receive training and certification to practice at a given level. A dental academic review committee (DARC) has developed training regimens for each level of dental health aide and standards are in place to govern qualifications and scope of work at each practice level. A dental provider has been added to the CHAP Certification Program Board allowing dental health aides to be certified by the same body as CHA/Ps. A remote dentist located in a hub community will clinically supervise village-based dental health aides. Some dental health aides will also practice in the regional hub facilities with dental support provided locally. Like CHA/Ps, certified dental health aides have been approved for reimbursement for eligible services by Alaska's Medicaid program and are covered for medical liability under the umbrella of the Federal Tort Claims Act (FTCA).

Although the dental health aide program has a different clinical focus from the CHAP program, the programs are expected to intersect in many ways. In some regions, the CHAP Coordinator/Instructor or Supervisor/Instructor (CI/SI) will provide support and oversight of the DHAs in addition to the CHA/Ps.

Standards for the two programs have been integrated, and one certification board will govern both types of health aides. Importantly, CHA/Ps will also continue to receive training in dental care and provide services to patients with emergency dental issues in villages without higher-level dental health aides. For instance, a patient in a village who has a dental abscess requiring emergency evacuation would likely utilize the village CHA/P unless there is an appropriately trained local DHA.

There are currently six levels of dental health aides, each with their own scope of work and standards. The levels of dental health aides, their scopes of work, and the current training and deployment status of each are summarized in Table 8 below:

Table 8: Dental Health Aide Program

Level and Title	Scope of Work	Status of Training
PDHA I – Primary Dental Health Aide I	A PDHA-1 provides primary preventive services and will be village based. These services include: toothbrush prophys, oral hygiene instruction, dietary education, oral cancer screening, and topical fluoride applications.	6 students trained with an additional 4-6 students expected to complete June 2003 training.
PDHA II – Primary Dental Health Aide II	A PDHA-II may provide all the services of a PDHA-1 and may also provide sealants, dental prophylaxis, oral x-rays, and atraumatic ART. They will also perform dental triage and manage dental emergencies in the village.	12 students with previous experience as dental assistants have begun training
EFDHA I – Expanded Function Dental Health Aide I	Dental Health Aides with this training function under direct or indirect supervision of the dentist or DHT in the clinic. This training enables them to provide basic restorations after the dentist/DHT has prepared the teeth and may also perform dental prophylaxis.	25 students have completed training at this level and are working on skills consolidation.
EFDHA II – Expanded Function Dental Health Aide II	Dental Health Aides with this training are able to perform complex restorations	No students have begun training at this level.
DHAH – Dental Health Aide Hygienist	These are Dental Health Aides who enter the program with training from a recognized Hygiene program. This training makes it possible for them to perform services under general supervision as opposed to direct/indirect supervision working in the same office with the dentist.	No students have begun training at this level
DHAT – Dental Health Aide Therapist	This is a dental midlevel provider who can provide services such as dental diagnosis and treatment planning. They may also perform fillings, simple extractions, and simple prophylaxis under general supervision.	6 students entered this training in New Zealand; six more are likely to begin in Feb. 2004. Graduation is scheduled for Nov. 2004. The IHS and the University of Kentucky are interested in making this training available in the U.S. Their grant applications to offer the training locally are currently unfunded.

Conclusion and Recommendations:

For over 35 years, CHA/Ps have worked to improve access to health services for remote Alaska Native populations. The uniqueness of CHAP and the way that it has increased the availability of health services to frontier communities makes it a worthy subject of additional rigorous study. Some suggested areas of future research include:

- **Health Outcomes –** Targeted studies on specific health indicators could show the clinical impact health aides have on their communities.
- **Impact of Technology** –Hudson & Parker[28 (p.1352)] documented improved communications between CHA/Ps and remote supervising physicians as a result of new satellite communications capabilities that were groundbreaking in the early 1970s. Alaska's health aides are now experiencing first-hand the next wave of technology. Village clinics have all received telemedicine equipment and are now part of the largest telehealth network in the world. What impact will this make on health aides, job satisfaction, and their ability to provide services in remote areas? Other new technologies, including training CD-ROMs and distance learning capabilities to name a few, are also bringing modern technology to Alaska's frontier but the impact and potential of these technologies in relation to CHAP have not been explored.
- **Training** – In-depth studies of the diagnostic characteristics of health aide encounters could provide useful information for re-designing training curriculum and designing methodologies to better support and prepare CHA/Ps for their duties.
- **Decentralization** – As tribal governments have begun managing the native health system in Alaska through self-determination contracts with the IHS, parts of the CHAP have become more decentralized. What parts of the program have changed due to these contracts and how has it helped or hindered the program?
- **Replication** – The program's longevity and uniqueness have made it a magnet of interest for communities with similar issues. Several authors[20 (p.62), 12(p.94), 10(p.56)] recommend CHAP as a model for other regions. Some barriers with replicating the model are noted [10(p.57), 11(p.2)] including liability and licensure issues. However, no study looks specifically to the issue of replicability. What are all the barriers to reproducing the program in other locales? Can they be overcome? What would be required to overcome them?

- **CHA/P Workforce Issues** – Attrition and turnover are major concerns for CHAP program staff. In-depth reviews of specific factors that relate to CHA/P attrition could be useful. Questions regarding where CHA/Ps go when they exit the profession, and the impacts on differences in recruitment techniques between regional health organizations for CHA/Ps could all be beneficial.
- **Dental Health Aide Outcomes** – As the new dental health aide program gets underway, health outcomes studies related to this offshoot of CHAP are recommended.

By employing and training local, indigenous members of remote communities, the CHAP program has successfully improved the availability and accessibility of primary and emergency health care services in frontier areas. The unique partnership between federal, tribal, state, and local organizations have helped to make the program a success. The program's apparent success within Alaska is evidenced by the expansion of the program into new and different clinical areas, such as the emerging Dental Health Aide program. The financial sustainability of the program is manifested not only through it's longevity but also by the development of new financial resources, such as state Medicaid reimbursement, which should help the program continue for years to come.

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