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Chronic Disease and Impairment among Alaska Native Elders: The Alaska Education and Research Towards Health (EARTH) Study

This May 2010 issue of *THE IHS PROVIDER*, published on the occasion of National Older Americans Month, is the fifteenth annual issue dedicated to our elders. We are grateful for the opportunity to honor our elders with a collection of articles devoted to their health and health care. Indian Health Service, tribal, and urban program professionals are encouraged to submit articles for the May 2011 issue on elders. We are also interested in articles written by Indian elders themselves giving their perspective on health care issues. Inquiries can be addressed to the attention of the editor at the address on the back page of this issue.

We wish to express our gratitude for the hard work done by Kay Branch, Elder Care Program Coordinator, Alaska Native Tribal Health Consortium, Anchorage, Alaska, in coordinating the assembly of the fine articles we have included in this issue.

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Abstract

Background: Chronic diseases and impairments are prevalent among older Americans. However, prevalence data for Alaska Native (AN) elders are limited, with estimates usually extrapolated from national studies in which AN elders may not be well-represented. The aim of this study was to describe the prevalence of selected chronic diseases, impairments, and measured medical risk factors among a large community sample of AN elders.

Methods: Design, setting, and participants. A community-based cross-sectional study of baseline information from 656 AN elders aged 55 years or over who participated in the Alaska Education and Research Towards Health (EARTH) Study, March 2004 to August 2006. Measurements. Self-reported lifetime prevalence of 17 doctor-diagnosed chronic diseases, and point prevalence of vision, hearing, oral, and general health impairment were estimated from data collected using audio computer-assisted self-administered questionnaires. In addition, height, weight, blood pressure, fasting blood lipids, and fasting blood glucose levels were measured.

Results: The four most prevalent chronic diseases among AN elders were high blood pressure (55%), arthritis (49%), high cholesterol (42%), and adult bone fracture/break (35%). The median number of chronic diseases reported was three (inter-quartile range, 2 to 5). The prevalence of self-reported vision impairment was 15%, hearing impairment 18%, and

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having had all natural teeth removed 25%. Almost 50% were obese. High blood pressure (systolic ≥ 140 mm Hg and/or diastolic ≥ 90 mm Hg) was measured in 23%, high low density lipoprotein (LDL) cholesterol (≥ 130 mg/dL) in 39%, and high fasting plasma glucose (> 125 mg/dL) in 9%. Obesity was more prevalent among women than men. There were also significant regional differences in rates of obesity and high LDL cholesterol.

Conclusion: These data may be useful in public health programs and health services planning.

Background

Chronic diseases are prevalent among older Americans, resulting in death, disability, reduced quality of life, and great economic cost.[1] Indeed, chronic diseases, such as heart disease, cancer, and stroke, are now the leading causes of mortality among older Americans.[1,2] Monitoring the prevalence of these diseases and associated risk factors is necessary for allocating appropriate resources, developing interventions, and achieving the national health goals outlined in Healthy People (HP) 2010[3] -- to increase quality and years of healthy life, and eliminate health disparities.

Prevalence estimates for all sectors of the population are important. However, limited data are available for Alaska Native (AN) elders (aged 55 years or older.[4] Prevalence rates are usually extrapolated from national studies,[5] but may be inaccurate as AN elders may not be well-represented in such studies. Although estimates are also available from the Indian Health Service (IHS), data are often aggregated for American Indian (AI) and AN groups and may not reflect regional differences in health.[4]

The National Cancer Institute recently supported a pilot study, Education and Research Towards Health (EARTH), to begin to investigate protective and risk factors for multiple chronic diseases among AI/AN people.[6] Alaska was one of several major study sites. The main purpose of this report is to describe the health status of AN elders utilizing baseline EARTH study data to estimate the prevalence of chronic diseases, sensory impairments, oral health, general health impairment, and selected measured medical risk factors.

Methods

Study population. The study population, data collection methods, and measurement instruments for the EARTH Study have been described elsewhere.[6] Briefly, AN participants were recruited from 26 communities, in three geographic areas of Alaska (Southcentral [SC]; Southeast [SE]; and Southwest [SW]), each served by a regional tribal health organization. SC region included primarily an urban area (Anchorage) with one small community; SE and SW regions included only small communities and villages. The study was open to all eligible tribal members, as requested by tribal councils. In each community, attempts were made to enroll all residents who met the following criteria: AI/AN person eligible for care in the Alaska Tribal Health System; age 18 years or over; resident of study area; able to complete the interview and medical tests; and able to give informed consent. From March 2004 through August 2006, 3,828 adults were enrolled in Alaska. Here, we report on baseline data collected from 656 AN elders, defined as age 55 years or over.[4]

Data collection. Participants completed an interviewer-administered intake questionnaire (demographic, socioeconomic, and cultural information), and comprehensive audio computer-assisted self-interview questionnaires on health and lifestyle (medical history, health-related quality of life, physical activity, diet, health risk behaviors, environmental risks, and cultural factors). AN participants also completed questions on vision, hearing, oral health, depression, and care-giving. Questionnaires were adapted from several existing instruments or developed by study staff in collaboration with tribal members and pilot tested for clarity and understanding. In addition to reading the questionnaires on computer screen, AN participants were given the option of hearing the questionnaires in English or Yup'ik. Following the questionnaires, selected medical measurements were made. The study protocol was approved by the Alaska Area Institutional Review Board (IRB), the Navajo Nation Human Research Review Board, National Indian Health Service IRB, the University of Utah IRB, the research and ethics committees and governing boards of each of the participating regional tribal health organizations, and the tribal councils of each participating community. All people enrolled gave written informed consent prior to participation.

Demographic, socioeconomic and cultural variables. Demographic and socioeconomic variables included age, sex, marital status, education, employment, annual household income, and region of residence. Cultural variables included ethnic group, language spoken at home, identification with own tribal tradition, and food obtained from subsistence.

Chronic disease and impairment measurements. The medical health questionnaire (based on questions from the Behavioral Risk Factor Surveillance System [BRFSS] survey[7] and the National Health Interview Survey [NHIS]),[8] included the following 17 chronic diseases: arthritis (including osteoarthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia), asthma, adult bone fracture/break, cancer, cataract, chronic obstructive pulmonary disease (COPD; including chronic bronchitis or emphysema), depression (requiring medication), diabetes (excluding gestational diabetes), gallbladder disease, glaucoma, heart disease (including congestive heart failure, heart attack or other heart problem), high blood pressure, high cholesterol, kidney failure, liver disease (including cirrhosis or hepatitis), stroke, and thyroid disease. Using stroke as an example, questions were worded as follows: "Did a doctor or other health care provider ever tell you that you had a stroke, yes or no?"

Vision, hearing, oral health, and general health questions were also selected from the BRFSS and NHIS.[7,8] Vision

impairment was defined as a response of "poor," "very poor," or "completely blind" to the question, "At the present time, would you say your eyesight using both eyes, with glasses or contact lenses if you wear them, is excellent, good, fair, poor, very poor, or completely blind?" Hearing impairment was defined as a response of "a lot of trouble," or "deaf" to, "Which statement best describes your hearing, without a hearing aide? Would you say your hearing is good, have a little trouble, a lot of trouble, or deaf?" Oral health impairment was defined as having had all teeth removed based on, "How many of your permanent teeth have been removed because of tooth decay or gum disease, 1 - 5, 6 or more but not all, all, or none? Do not include teeth lost for other reasons, such as injury or orthodontics." Overall general health impairment was defined as a response of "fair" or poor" to the question, "In general, would you say your health is excellent, very good, good, fair, or poor?" For every question, "don't know/not sure" and "refuse/skip" were provided as possible response options.

Medical measurements. Medical measurements included height, weight, blood pressure, fasting blood lipids, and fasting plasma glucose levels. Participants were asked to fast for at least nine hours prior to measurements. Height and weight were measured twice, with averages used to calculate body mass index (BMI). Blood pressure was measured using the automated Omron® IntelliSense™ Blood Pressure Monitor (Hem-907/907XL; Omron Healthcare Inc., Vernon Hills, Illinois).[9] After five minutes in a seated position, three measurements were made one minute apart, with the average of the final two used in analyses. To measure fasting lipids and glucose levels, a finger stick blood sample was obtained and analyzed using the Cholestech LDX® System (Cholestech, Hayward, California).[10] These measurements were used to estimate the percent of participants with or at risk for chronic diseases based on national guidelines. Obesity was defined as BMI $\geq$ 30 kg/m^2,[11] high blood pressure as systolic $\geq$ 140 mm Hg and/or diastolic $\geq$ 90 mm Hg,[12] high total cholesterol as $\geq$ 200 mg/dL,[13] high low density lipoprotein (LDL) cholesterol as $\geq$ 130 mg/dL,[13] low high density lipoprotein (HDL) as < 40 mg/dL,[13] high triglycerides as $\geq$ 150 mg/dL,[13] and diabetes as high fasting plasma glucose > 125 mg/dL.[14]

Statistical analysis. Analyses were conducted with the Statistical Packages for the Social Sciences (v. 15.0, SPSS Inc., Chicago, IL, 2007). Descriptive statistics were calculated to provide an overview of the demographic characteristics of participants. To evaluate the representativeness of the sample, comparisons were made with US Census 2000 data,[15] for all AI/AN residents in Alaska aged 55 years or older. Also, the proportion of participants out of all AI/AN residents aged 55 years or older was calculated for each region. SC region was compared with US Census 2000 data for Cook Inlet Alaska Native Regional Corporation (ANRC) geographic area, SE region with Sealaska ANRC, and SW region with Calista ANRC.[15]

For a given chronic disease, impairment, or medical variable, participants with missing data or who responded "don't know/not sure" or "skip" were excluded from analyses. Differences between included and excluded participants were evaluated using the Student's t test and chi-square test for continuous and categorical data, respectively. Overall prevalence rates and corresponding 95% confidence intervals (CI) were calculated for self-reported chronic diseases, sensory impairments, oral health impairment, general health impairment, and medical measurements. In addition, age-specific and sex-specific rates were calculated. Age-group and sex differences were evaluated using the chi-square test. All analyses were 2-tailed and $P < 0.05$ was considered statistically significant. To account for the younger age of the AN elder population compared with the general US elder population,[15] the high proportion of females in the study sample, and for comparison with other US studies, prevalence estimates were age adjusted or age-sex adjusted to the 2000 US Standard Population by direct standardization using the age groups 55 to 64 years, 65 to 74 years, 75 to 84 years, and 85 years and older.16

Multivariate logistic regression analysis was used to model prevalence of obesity, high blood pressure, high cholesterol, and high fasting plasma glucose, based on the cut point criteria given above. Odds ratios (ORs) and corresponding 95% CIs were calculated for the following predictors of interest: age (continuous), sex, level of formal education, and region of residence. The models included all predictors of interest. Possible modification of the effect of region by sex was also evaluated by the addition of an interaction term.

Results

Participant demographic, socioeconomic, and cultural characteristics. All 656 AN elder participants completed age, sex, and region of residence questions, 654 (99.7%) completed marital status questions, 648 (98.8%) education questions, 618 (94.2%) employment questions, and 518 (79.0%) completed household income questions.

Demographic and socioeconomic characteristics of the sample compared with US Census 2000 data for all AN people aged 55 years or over in the State of Alaska are given in Table 1 (see page 89).[15] Compared with Census data, AN elders aged 55 - 64 years were over-represented and those aged 75 years or over were somewhat under-represented. Of the 656 participants, 37% were men and 63% were women (compared to almost equal proportions in the state). Although education and employment characteristics were similar to Census data, the sector with annual household income less than $15,000 was over-represented and the sector with greater than $50,000 was under-represented in the sample. However, 136 (21%) participants did not provide income data. Based on regional Census data, the sample represented 5% of AN elders residing in SC, 10% in SE and 13% in SW region (Table 1), see page 89.

The majority, 56%, identified with the Cup'ik, Inupiaq,

Siberian Yup'ik, and Yup'ik groups (Census classification "Eskimo"), 35% identified with the Tlingit, Haida, and Tsimshian groups (Census classification "Tlingit-Haida"), 6% Aleut, 6% Athabascan, and 4% AI, where participants selected all applicable groups. Almost 13% spoke a Native language only, approximately one-third spoke both a Native language and English, and over half spoke English only. More than 82% identified with their own tribal tradition to "some" degree or "a lot," and 62% reported obtaining "half," "mostly all," or "all" of their diet from subsistence foods.

Estimated prevalence of chronic disease and impairment. Of the 656 participants, 646 (98.4%) completed the medical health questionnaire. At least 95% responded "yes" or "no" to 14 of the 17 specific medical conditions. For the other three conditions, glaucoma, COPD, and high cholesterol, at least 90% responded "yes" or "no," (37 [5.6%], 43 [6.6%] and 67 [10.2%] responded "don't know/not sure" or "skip" to the glaucoma, COPD, and high cholesterol questions, respectively).

The median number of doctor-diagnosed chronic diseases reported by study participants was three (inter-quartile range, 2 to 5). Estimated lifetime prevalence rates of the chronic diseases surveyed are given in Table 2 (see page 90). The most prevalent self-reported chronic disease among all elders was high blood pressure. Other leading causes with an estimated prevalence greater than 25% were arthritis, high cholesterol, and bone fracture/break. Several diseases were more prevalent among those aged 65+ years compared with those aged 55 - 64 years (Table 2); in particular, arthritis (57.0% vs. 43.7%, P = 0.001), cataract (36.7% vs. 14.6%, P < 0.001), gallbladder disease (29.1% vs. 18.8%, P = 0.003), and heart disease (27.1% vs. 17.6%, P = 0.01). In contrast, depression was less prevalent among those aged 65+ years than among those aged 55 - 64 years (13.2% vs. 23.5%; P = 0.001).

Of the 656 participants, 641 (97.7%) gave a positive response (other than "don't know/not sure" or "refuse") to the vision question, 638 (97.3%) the hearing question, 568 (86.6%) the oral health question, and 655 (99.8%) the general health question. Estimated point prevalence rates of self-reported vision, hearing, oral health, and general health impairment are given in Table 2. Prevalence of self-reported vision impairment was 15.1% and hearing impairment 18.3%. Over one quarter reported having had all teeth removed, with prevalence increasing from 18.7% among those aged 55 - 64 years to 34.7% among those aged 65+ years (P < 0.001). Overall general health was rated fair or poor by 31.9%.

Sex-specific estimated prevalence rates are given in Table 3 (see page 91). Among men, the leading causes of self-reported chronic disease with prevalence greater than 25% were high blood pressure, high cholesterol, arthritis, bone fracture/break, and heart disease. In comparison, the leading chronic diseases among women were arthritis, high blood pressure, high cholesterol, bone fracture/break, gallbladder disease, and cataract. Indeed, several conditions were significantly more prevalent among women than men: arthritis (55.3% vs. 38.4%, P < 0.001), gallbladder disease (31.6% vs. 7.8%, P < 0.001), and thyroid disease (9.0% vs. 2.7%, P = 0.002). However, prevalence of heart disease was greater among men than among women (27.0% vs. 18.3%, P = 0.01), as was hearing impairment (26.6% vs. 13.6%, P < 0.001).

Measured medical factors. Weight, height, and blood pressure measurements were obtained for 653 (99.5%) participants. Over 90% (594) reported fasting for nine hours or more prior to measurement, as requested. The final number included in the analysis of each fasting blood measure was: total cholesterol 594 (90.5%); LDL cholesterol 548 (83.5%); HDL cholesterol 589 (89.8%); triglycerides 593 (90.4%); and glucose 593 (90.4%). Missing data (due to not fasting, measurement errors and/or refusal), was associated with older age (P ≤ 0.03).

Estimated prevalence rates of obesity, high blood pressure, fasting cholesterol, and fasting plasma glucose are given in Table 4 (see page 92). Almost 50% were obese, with obesity being more prevalent among women than men (54.3% vs. 41.8%, P < 0.01). Also, there were regional differences in obesity (P < 0.001), with a prevalence of 64.4% in the SE compared with 45.7% in the SC and 41.7% in the SW. The total sample prevalence of high blood pressure was 23.3%, increasing from 19.0% among those aged 55-64 years to 29.4% among those aged 65+ years (P < 0.01). Prevalence of high total cholesterol was 57.4%; again higher among women than men (61.6% vs. 49.8%, P = 0.01), with significant regional differences (71.0% SW vs. 47.5% SC vs. 47.0% SE, P < 0.001). Prevalence of high LDL cholesterol was 38.7%, with no significant difference between the sexes; however, regional differences were consistently significant, with SW again having the highest prevalence (53.5% SW vs. 34.5% SE vs. 20.5% SC, P < 0.001). Low HDL cholesterol was less prevalent among women than men (9.2% vs. 26.9%, P < 0.001) and most prevalent in the SE (26.3% SE vs. 13.3% SC vs. 9.1% SW). With regard to high triglycerides, prevalence was higher among women compared with men (36.4% vs. 27.0%, P = 0.02), and although regional differences were significant (P < 0.001), prevalence of high triglycerides was lowest in the SW (17.3% SW vs. 45.9% SE vs. 43.7% SC). The prevalence of high fasting plasma glucose was 9.3%, with observed demographic differences not statistically significant.

Multivariate logistic regression models of obesity, high blood pressure, lipids, and high fasting plasma glucose are given in Table 5 (see page 93). Sex and region of residence were associated with obesity. The odds of obesity among women were 1.77 times the odds among men, and the odds among SE (primarily rural) residents 2.51 times the odds among SC (primarily urban) residents. High blood pressure was associated with increasing age (adjusted OR = 1.04) and being a high school graduate (adjusted OR = 1.76). The odds of high total cholesterol among women were 1.87 times the odds among men, and the odds among SW (rural) residents

3.53 times the odds among SC residents. For high LDL cholesterol, the odds among both SW and SE residents were greater than among SC residents (5.16 and 2.27 times, respectively). The odds of low HDL cholesterol among women were less than among men (adjusted OR = 0.25), and higher among SE compared with SC residents (adjusted OR = 2.12). Again, there were sex and regional differences in the prevalence of high triglycerides, with the odds among women 1.56 times the odds among men, and the odds among SW residents 0.38 times the odds among SC residents. Significant associations were not observed in the multivariate model of high fasting plasma glucose. Region-sex interaction was not significant in any model.

Discussion

Chronic diseases and impairments are widespread public health concerns associated with great personal, societal, and economic costs. The burden is expected to increase over the coming decades, as these health issues are associated with advancing age and the older sector of the population is growing.[17] Prevalence estimates are required to understand the magnitude of these problems in the AN elders population, for whom accurate local data are lacking. This is important for planning and delivering health care, developing prevention strategies, and eliminating health disparities for more than 12,800 AN elders who live in Alaska.[15] We have presented self-reported data on the prevalence of 17 doctor-diagnosed chronic diseases, sensory impairments, oral health, and overall general health impairment, as well as selected measured medical risk factors among 656 AN elders living in three regions of Alaska.

The four most prevalent self-reported chronic diseases among all AN elders were high blood pressure, arthritis, high cholesterol, and adult bone fracture/break. This was the case for both men and women. However, high blood pressure was the most prevalent chronic disease among men, whereas arthritis was the most prevalent among women. Gallbladder disease and thyroid disease were significantly more prevalent among women than men; whereas the prevalence of heart disease was higher among men.

To evaluate possible disparities, findings from this study may be compared with similar self-reported findings from the NHIS. NHIS findings have been published for some of the conditions investigated, with data most commonly specified for older adults in the age group 65 years or over. For self-reported high blood pressure, the prevalence among AN elders aged 65 years or over estimated from this study (61%) was higher than the NHIS estimated prevalence among the US general population of older adults aged 65 years or over (52%).[18] For, arthritis, the prevalence was again higher than estimates for the older US general population (57% vs. 50%).[18] The higher prevalence of arthritis among AN women elders compared with men was consistent with sex-specific rates for the general population. In contrast, the prevalence of heart disease was slightly less among AN elders compared with the older US general population (27% vs. 32%).[18] However, the higher prevalence of heart disease among AN men elders compared with women was consistent with findings for the general population. Asthma rates were high and the disparity considerable (23% vs. 9% among AN elders and US general population aged 65 years or over, respectively).[18] Rates for diabetes and stroke among AN elders were similar, whereas the prevalence of cancer was lower among AN elders compared with the older US general population (12% vs. 21%).[18]

Sensory impairment was prevalent, with 15% of AN elders aged 55 years or over reporting vision impairment and 18% reporting hearing impairment. Hearing impairment was more prevalent among men than women, as is the case among the US general population of older adults.[19] More than 25% of AN elders reported having had all their natural teeth removed, slightly greater than the HP 2010 national target of 22%.[20] Almost one-third (31%) of AN elders in this study rated their overall general health as fair or poor. In comparison, the nation-wide prevalence of self-reported fair or poor general health, based on 2002 BRFSS data, was estimated to be 38% among AI/AN elders and 24% among US White elders.[5] The disparity in Alaska may be in part due to the higher prevalence of some chronic diseases among AN elders, including high blood pressure, arthritis, and asthma, as indicated above.

Obesity is a known risk factor for several chronic diseases (e.g., high blood pressure, type 2 diabetes, heart disease, stroke, osteoarthritis, gout, gallbladder disease, sleep apnea, respiratory dysfunction, and some types of cancer), worsening of disease status and mortality.[3,20] Rates of obesity were high among AN elders (adjusted overall prevalence 49%), particularly women (adjusted prevalence 55%). These rates are considerably greater than nation-wide estimates for AI/AN elders (29% overall and 32% among women) and US Whites (22% overall and 21% among women) aged 55 years or older,[5] and far in excess of the 15% HP 2010 target.[3] Although we found that SE residence, as well as female sex, was associated with obesity, the importance of possible underlying factors, such as diet and physical activity, is unknown.

High blood pressure and cholesterol levels are each risk factors for heart disease and stroke.[3] In almost one quarter of participants, measured blood pressure was high. However, it was not clear from this study if high blood pressure was previously undiagnosed, diagnosed but uncontrolled, or due to lack of medication adherence. Regardless, the HP 2010 target is to reduce the proportion of adults with high blood pressure to 14%.[20] The adjusted prevalence of high LDL cholesterol was 36%, with the odds among SW and SE (rural) residents over twice the odds among SC (more urban) residents. Regional differences in cardiovascular risk factors have also been found in comparing populations of AI/AN older adults across the US.[21] However, the relationship between region of residence and cholesterol measures appears complex and may be due to both genetic and lifestyle factors. The adjusted

prevalence of high fasting plasma glucose was 11%, with no significant differences in demographic and socioeconomic factors. As for high blood pressure, the role of medication in observed cholesterol and high fasting plasma glucose levels was not clear from this study.

A number of study limitations require consideration. First, the sample was not a random sample of AN elders. AN elders aged 75 years or over were under-represented. In the future, oversampling of this age group may provide more accurate estimates of prevalence. In addition, there was a higher proportion with annual income less than $15,000 in the study sample compared with Census data. It is likely that non-ambulatory and impaired persons were under-represented. Also, prevalence rates were based on self-report. Furthermore, older adults were likely to have made response errors, for which many reasons have been proposed, including low levels of comprehension, reduced concentration, fear of interacting with strangers, and cognitive impairment.[22] Overall, the findings very likely under-represent actual prevalence rates. However, given the lack of available data on AN elders, we suggest these findings are important. This is the first study to provide substantial local data on disease prevalence and medical risk factors for a population with a high mortality rate[23] and difficult access to care.

Conclusions

The findings of this study indicate that chronic diseases and sensory impairments are prevalent among AN elders. Moreover, there is a higher prevalence of several of these problems among AN elders than among their counterparts in the general US population. In addition, regional variations in medical risk factors were observed within Alaska. In the future, we suggest prospective cohort studies on the complex relationships between genetic, lifestyle, and environmental factors, and chronic diseases are warranted. The role of medication and health services utilization in the control of high blood pressure, cholesterol levels, and high plasma glucose should be investigated. Research on the specific causes of vision impairment, hearing impairment (particularly among men), and loss of natural teeth would also be useful.

Given the high rates of several chronic diseases and sensory impairment, there is considerable room for health improvement among AN elders. AN elders would benefit from additional culturally and age sensitive public health programs that address the leading problems of high blood pressure, arthritis, high cholesterol, and obesity. We suggest the data obtained from this study will be useful in developing such programs and planning health care services to reduce the burden of chronic disease and sensory impairment among AN elders in the future.

Competing interests

The authors declare that they have no competing interests.

Authors' contributions

SAH carried out the statistical analysis, participated in the interpretation of data and preparation of manuscript. EDF participated in the acquisition of data, analysis, interpretation of data, and preparation of manuscript. DAD participated in the interpretation of data and preparation of manuscript. APL participated in the development of the study concept, design, acquisition of data, analysis, interpretation of data, and preparation of manuscript. All authors read and approved the final manuscript.

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Table 1. Demographic and socioeconomic characteristics of Alaska Native elders aged 55 years or over - Alaska EARTH Study compared with State of Alaska US Census 2000 data

Characteristic	EARTH Study n	EARTH Study %	U.S. Census* %
All	656	100.0	100.0
Age, years			
55-64	385	58.7	50.5
65-74	199	30.3	31.4
75-84	66	10.1	14.5
≥ 85	6	0.9	3.7
≥ 65	271	41.3	49.5
Sex			
Male	240	36.6	46.7
Female	416	63.4	53.3
Marital status†			
Married	339	51.8	47.6
Not married	315	48.2	52.4
Education‡			
Less than high school	279	43.1	38.9
High school graduate (or equiv.)	134	20.7	28.9
Some college or Associate degree	190	29.3	24.6
Bachelor's degree or higher	45	6.9	7.6
Employment§			
Employed	170	27.5	24.6
Annual household income¶			
≤ $15,000	249	47.9	25.1
$15,001-$25,000	91	17.5	18.5
$25,001-$35,000	64	12.3	13.6
$35,001-$50,000	52	10.0	13.4
≥ $50,001	64	12.3	29.4
Alaska region of residence#			
Southcentral	173	26.4	44.8
Southeast	204	31.1	27.2
Southwest	279	42.5	28.1

*Data set: Census 2000 American Indian and Alaska Native Summary File – Sample Data; Geographic Area: Alaska; Tribes alone or in any combination: American Indian and Alaska Native alone or in any combination. Data for 12,878 American Indian and Alaska Native people aged 55 years or over residing in the State of Alaska, except as noted for education, annual household income and region of residence.
†Married = now married or living as married; not married = separated, widowed, divorced or never married.
‡Less than high school = grade 1-11 or never attended; some college or Associate degree = some vocational / technical school, technical school degree/certificate, some college but no degree or Associate degree; Bachelor's degree or higher = Bachelor's degree or graduate of professional degree (Master's, Doctorate, JD, DDS etc.). Census 2000 data is for 24,844 people aged 45 years or over.
§Employed = currently employed for wages or self-employed.
¶Census 2000 data is for 8,249 householders aged 55 years or over.
#Southcentral region compared with Census 2000 data for Cook Inlet Alaska Native Regional Corporation (ANRC) geographic area; Southeast region compared with Census 2000 data for Sealaska ANRC geographic area; Southwest area compared with Census 2000 data for Calista ANRC geographic area. Data sets: Census 2000 American Indian and Alaska Native Summary File – Sample Data; Geographic Area: Cook Inlet ANRC / Sealaska ANRC / Calista ANRC, Alaska; Tribes alone or in any combination: American Indian and Alaska Native alone or in any combination. Denominator used to calculate U.S. Census percentages was total number of American Indian and Alaska Native people aged 55 years or over in the three ANRC regions (7,524).

Table 2. Estimated prevalence of self-reported chronic diseases and impairments among Alaska Native elders aged 55 years or over by selected age groups - Alaska EARTH Study

	age 55+ years, unadjusted n = 656	age 55+ years, age-sex adjusted* n = 656	age 55-64 years, unadjusted n = 385	age 65+ years, unadjusted n = 271
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Chronic disease				
High blood pressure	54.8 (50.9-58.8)	53.9 (49.9-57.8)	50.9 (45.8-56.1)	60.6 (54.3-66.7)
Arthritis†	49.1 (45.2-53.1)	51.3 (47.4-55.3)	43.7 (38.6-48.9)	57.0 (50.7-63.1)
High cholesterol	42.4 (38.4-46.6)	44.8 (40.7-48.9)	39.9 (34.8-45.3)	46.1 (39.6-52.6)
Bone fracture or break	35.2 (31.5-39.0)	34.7 (31.1-38.5)	34.7 (30.0-39.8)	35.8 (30.1-41.9)
Cataract†	23.5 (20.2-27.0)	27.3 (23.9-31.0)	14.6 (11.1-18.6)	36.7 (30.7-42.9)
Gallbladder disease†	23.0 (19.8-26.5)	24.1 (20.9-27.6)	18.8 (15.0-23.1)	29.1 (23.7-35.0)
Heart disease†	21.4 (18.3-24.8)	27.5 (24.0-31.1)	17.6 (13.9-21.8)	27.1 (21.7-33.0)
Asthma	21.0 (17.9-24.4)	20.4 (17.3-23.7)	19.5 (15.7-23.9)	23.1 (18.2-28.7)
Depression†	19.3 (16.3-22.6)	15.5 (12.8-18.6)	23.5 (19.3-28.1)	13.2 (9.3-18.0)
Diabetes	14.8 (12.1-17.9)	16.7 (13.9-19.9)	14.4 (11.0-18.5)	15.4 (11.2-20.4)
COPD‡	13.7 (11.1-16.7)	12.8 (10.0-15.4)	14.6 (11.2-18.7)	12.3 (8.5-17.1)
Cancer	9.6 (7.4-12.1)	9.8 (7.6-12.3)	7.9 (5.4-11.0)	12.1 (8.4-16.6)
Liver disease	8.7 (6.6-11.1)	7.7 (5.8-10.1)	9.8 (7.0-13.2)	7.0 (4.2-10.9)
Stroke	8.2 (6.2-10.6)	8.8 (6.8-11.3)	6.0 (3.9-8.9)	11.3 (7.8-15.8)
Glaucoma	8.2 (6.2-10.7)	12.8 (10.2-15.7)	6.2 (3.9-9.1)	10.3 (7.7-16.0)
Thyroid disease	6.8 (4.9-9.0)	6.6 (4.8-8.8)	5.3 (3.3-8.1)	8.9 (5.6-13.1)
Kidney failure	3.9 (2.6-5.7)	4.4 (2.9-6.3)	2.1 (0.9-4.1)	6.6 (3.9-10.4)
Impairment				
Vision (poor / v. poor / blind)	15.1 (12.4-18.1)	18.1 (15.2-21.3)	13.3 (10.0-17.1)	17.8 (13.4-23.0)
Hearing (lot of trouble / deaf)	18.3 (15.4-21.6)	22.8 (19.5-26.2)	16.3 (12.7-20.4)	21.3 (16.5-26.7)
Oral (all teeth removed)†	25.4 (21.8-29.1)	31.2 (27.4-35.1)	18.7 (14.6-23.3)	34.7 (28.7-41.2)
General health (fair / poor)	31.9 (28.4-35.6)	31.3 (27.8-35.0)	30.9 (26.3-35.8)	33.3 (27.7-39.3)

*Direct method of adjustment using the 2000 U.S. Standard Population.
†Difference between age group 55-64 years and 65+ years significant ($P \leq 0.01$).
‡COPD = chronic obstructive pulmonary disease.

Table 3. Estimated sex-specific prevalence of self-reported chronic diseases and impairments among Alaska Native elders aged 55 years or over - Alaska EARTH Study

	Men		Women	
	unadjusted n = 240	age-sex adjusted* n = 240	unadjusted n = 416	unadjusted n = 416
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
Chronic disease				
High blood pressure	54.9 (48.1-61.5)	56.2 (49.5-62.8)	54.8 (49.8-59.7)	52.0 (47.1-57.1)
High cholesterol	44.8 (38.0-51.8)	49.3 (42.6-56.5)	41.1 (36.1-46.3)	42.0 (40.6-48.8)
Arthritis†	38.4 (32.1-45.1)	37.4 (31.3-44.2)	55.3 (50.2-60.2)	60.9 (56.0-65.8)
Bone fracture or break	34.2 (28.1-40.7)	30.5 (24.5-36.7)	35.8 (31.1-40.6)	37.0 (32.3-41.9)
Heart disease†	27.0 (21.3-33.2)	31.8 (25.8-38.2)	18.3 (14.6-22.4)	23.6 (19.4-28.0)
Cataract	18.2 (13.4-23.9)	24.3 (19.0-30.6)	26.4 (22.2-31.1)	30.8 (26.2-35.5)
Asthma	18.1 (13.5-23.7)	20.3 (15.3-25.9)	22.7 (18.7-27.0)	20.9 (17.1-25.2)
Depression	17.1 (12.5-22.5)	13.3 (9.2-18.3)	20.6 (16.8-24.9)	17.2 (13.6-21.2)
Diabetes	13.6 (9.3-18.8)	17.8 (12.9-23.3)	15.5 (12.1-19.4)	16.4 (12.8-20.2)
COPD‡	12.6 (8.5-17.6)	13.5 (9.6-18.6)	14.4 (11.0-18.2)	12.3 (9.2-16.0)
Liver disease	10.0 (6.4-14.6)	7.3 (4.4-11.5)	7.9 (5.5-11.0)	7.6 (5.3-10.7)
Stroke	8.4 (5.2-12.7)	9.1 (5.6-13.2)	8.1 (5.6-11.1)	8.7 (6.2-12.0)
Gallbladder disease†	7.8 (4.7-12.0)	7.5 (4.3-11.5)	31.6 (27.2-36.4)	36.1 (31.6-41.1)
Cancer	7.2 (4.2-11.2)	10.1 (6.6-14.7)	11.0 (8.1-14.4)	10.3 (7.5-13.6)
Glaucoma	6.7 (3.8-10.9)	10.5 (6.7-15.1)	9.1 (6.4-12.4)	14.0 (10.6-17.7)
Kidney failure	3.9 (1.8-7.3)	5.2 (2.7-8.9)	3.9 (2.3-6.3)	4.0 (2.3-6.3)
Thyroid disease†	2.7 (1.0-5.8)	3.1 (1.3-6.4)	9.0 (6.4-12.3)	9.4 (6.6-12.6)
Impairment				
Vision (poor / v. poor / blind)	17.4 (12.8-22.9)	18.7 (13.9-24.3)	13.8 (10.6-17.5)	16.8 (13.2-20.7)
Hearing (lot of trouble / deaf)†	26.6 (21.1-32.3)	26.6 (21.1-32.3)	13.6 (10.4-17.3)	18.2 (14.6-22.4)
Oral (all teeth removed)	24.9 (19.2-31.2)	30.6 (24.4-37.2)	25.6 (21.2-30.5)	31.3 (26.5-36.4)
General health (fair / poor)	30.1 (24.4-36.4)	32.2 (26.3-38.5)	32.9 (28.4-37.7)	30.6 (26.1-35.2)

*Direct method of adjustment using the 2000 U.S. Standard Population.
†Difference between men and women significant ($P \leq 0.01$).
‡COPD = chronic obstructive pulmonary disease.

Table 4. Estimated prevalence of medical measures of chronic disease among Alaska Native elders aged 55 years or over by selected demographic characteristics - Alaska EARTH Study.*

Characteristic	obesity	high blood pressure	high total cholesterol†	high LDL cholesterol†	low HDL cholesterol†	high triglycerides†	high fasting plasma glucose†
	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)	% (95% CI)
All	49.8 (45.9-53.7)	49.8 (45.9-53.7)	49.8 (45.9-53.7)	49.8 (45.9-53.7)	49.8 (45.9-53.7)	49.8 (45.9-53.7)	49.8 (45.9-53.7)
age-sex adjusted‡	49.0 (45.1-52.9)	49.0 (45.1-52.9)	49.0 (45.1-52.9)	49.0 (45.1-52.9)	49.0 (45.1-52.9)	49.0 (45.1-52.9)	49.0 (45.1-52.9)
Age, years							
55-64	51.8 (46.7-56.9)	51.8 (46.7-56.9)	51.8 (46.7-56.9)	51.8 (46.7-56.9)	51.8 (46.7-56.9)	51.8 (46.7-56.9)	51.8 (46.7-56.9)
65+	46.8 (40.8-53.0)	46.8 (40.8-53.0)	46.8 (40.8-53.0)	46.8 (40.8-53.0)	46.8 (40.8-53.0)	46.8 (40.8-53.0)	46.8 (40.8-53.0)
Sex							
Male	41.8 (35.5-48.4)	41.8 (35.5-48.4)	41.8 (35.5-48.4)	41.8 (35.5-48.4)	41.8 (35.5-48.4)	41.8 (35.5-48.4)	41.8 (35.5-48.4)
age adjusted‡	40.6 (34.3-47.1)	40.6 (34.3-47.1)	40.6 (34.3-47.1)	40.6 (34.3-47.1)	40.6 (34.3-47.1)	40.6 (34.3-47.1)	40.6 (34.3-47.1)
Female	54.3 (49.4-59.2)	54.3 (49.4-59.2)	54.3 (49.4-59.2)	54.3 (49.4-59.2)	54.3 (49.4-59.2)	54.3 (49.4-59.2)	54.3 (49.4-59.2)
age adjusted‡	55.1 (50.1-59.9)	55.1 (50.1-59.9)	55.1 (50.1-59.9)	55.1 (50.1-59.9)	55.1 (50.1-59.9)	55.1 (50.1-59.9)	55.1 (50.1-59.9)
Education§							
Less than H.S.	43.7 (37.8-49.7)	43.7 (37.8-49.7)	43.7 (37.8-49.7)	43.7 (37.8-49.7)	43.7 (37.8-49.7)	43.7 (37.8-49.7)	43.7 (37.8-49.7)
H.S. graduate (or equiv.)	56.0 (47.1-64.5)	56.0 (47.1-64.5)	56.0 (47.1-64.5)	56.0 (47.1-64.5)	56.0 (47.1-64.5)	56.0 (47.1-64.5)	56.0 (47.1-64.5)
Some college or Assoc. deg.	54.0 (46.6-61.2)	54.0 (46.6-61.2)	54.0 (46.6-61.2)	54.0 (46.6-61.2)	54.0 (46.6-61.2)	54.0 (46.6-61.2)	54.0 (46.6-61.2)
Bachelor's deg. or higher	48.9 (33.7-64.2)	48.9 (33.7-64.2)	48.9 (33.7-64.2)	48.9 (33.7-64.2)	48.9 (33.7-64.2)	48.9 (33.7-64.2)	48.9 (33.7-64.2)
Alaska region of residence							
Southcentral	45.7 (38.1-53.4)	45.7 (38.1-53.4)	45.7 (38.1-53.4)	45.7 (38.1-53.4)	45.7 (38.1-53.4)	45.7 (38.1-53.4)	45.7 (38.1-53.4)
Southeast	64.4 (57.3-71.0)	26.5 (20.6-33.1)	47.0 (39.5-54.5)	34.5 (27.5-42.1)	26.3 (20.0-33.3)	45.9 (38.4-53.4)	11.0 (6.9-16.5)
Southwest	41.7 (35.9-47.8)	22.7 (17.9-28.1)	71.0 (65.0-76.5)	53.5 (46.8-60.1)	9.1 (5.9-13.4)	17.3 (12.9-22.5)	7.5 (4.6-11.4)

*n = 656. Obesity = body mass index ≥ 30 kg/m2; high blood pressure = systolic ≥ 140 mm Hg and/or diastolic ≥ 90 mm Hg; high total cholesterol ≥ 200 mg/dL; high LDL cholesterol = low density lipoprotein ≥ 130 mg/dL; low HDL cholesterol = high density lipoprotein < 40 mg/dL; high triglycerides ≥ 150 mg/dL; high fasting plasma glucose > 125 mg/dL.
†After fasting for 9 hours or more.
‡Direct method of adjustment using the 2000 U.S. Standard Population.
§H.S. = high school; equiv. = equivalent; Assoc. = Associate; deg. = degree.

Table 5. Multivariate associations with medical measures of chronic disease among Alaska Native elders aged 55 years or over - Alaska EARTH Study.*

Characteristic	obesity	high blood pressure	high total cholesterol†	high LDL cholesterol†	low HDL cholesterol†	high triglycerides†	high fasting plasma glucose†
	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)	OR (95% CI)
Age, years							
55+ (continuous)	0.99 (0.97-1.02)	1.04 (1.02-1.07)#	0.98 (0.96-1.01)	0.98 (0.95-1.01)	0.99 (0.96-1.03)	0.97 (0.95-1.00)	0.98 (0.94-1.03)
Sex							
Male (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Female	1.77 (1.26-2.48)#	1.33 (0.89-1.98)	1.87 (1.30-2.69)#	0.94 (0.65-1.37)	0.25 (0.15-0.41)**	1.56 (1.05-2.32)¶	0.78 (0.44-1.40)
Education							
Less than H.S. (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
H.S. graduate (or equiv.)	1.45 (0.91-2.31)	1.76 (1.04-2.98)¶	1.29 (0.77-2.14)	1.10 (0.65-1.87)	0.99 (0.49-2.00)	1.69 (1.00-2.87)	0.44 (0.17-1.12)
Some college or Assoc. deg.	1.25 (0.80-1.96)	1.03 (0.60-1.78)	1.23 (0.75-1.99)	1.02 (0.61-1.71)	0.95 (0.49-1.86)	1.53 (0.93-2.53)	0.86 (0.41-1.82)
Bachelor's deg. or higher	0.98 (0.49-1.99)	0.85 (0.35-2.05)	1.92 (0.43-1.97)	1.26 (0.55-2.88)	1.47 (0.56-3.81)	1.10 (0.51-2.39)	0.54 (0.14-2.05)
Alaska region of residence							
Southcentral (reference)	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Southeast	2.51 (1.61-3.91)**	1.19 (0.71-1.99)	1.15 (0.73-1.81)	2.27 (1.34-3.85)#	2.12 (1.15-3.90)¶	1.37 (0.87-2.17)	1.05 (0.50-2.18)
Southwest	1.05 (0.68-1.64)	1.08 (0.63-1.85)	3.53 (2.16-5.76)**	5.16 (3.00-8.85)**	0.56 (0.27-1.17)	0.38 (0.23-0.63)**	0.62 (0.28-1.38)

* OR = odds ratio adjusted for all other variables in the model (i.e. all listed characteristics). n = 656. Obesity = body mass index ≥ 30 kg/m2; high blood pressure = systolic ≥ 140 mm Hg and/or diastolic ≥ 90 mm Hg; high total cholesterol ≥ 200 mg/dL; high LDL cholesterol = low density lipoprotein ≥ 130 mg/dL; low HDL cholesterol = high density lipoprotein < 40 mg/dL; high triglycerides ≥ 150 mg/dL; high fasting plasma glucose > 125 mg/dL.
†After fasting for 9 hours or more.
‡Direct method of adjustment using the 2000 U.S. Standard Population.
§H.S. = high school; equiv. = equivalent; Assoc. = Associate; deg. = degree.
¶P < 0.05.
#P < 0.01.
**P < 0.001.

VBAC: NIH Consensus Conference Supports Appropriateness of Trial of Labor for Low Risk Women and Calls for Removal of Barriers to Care

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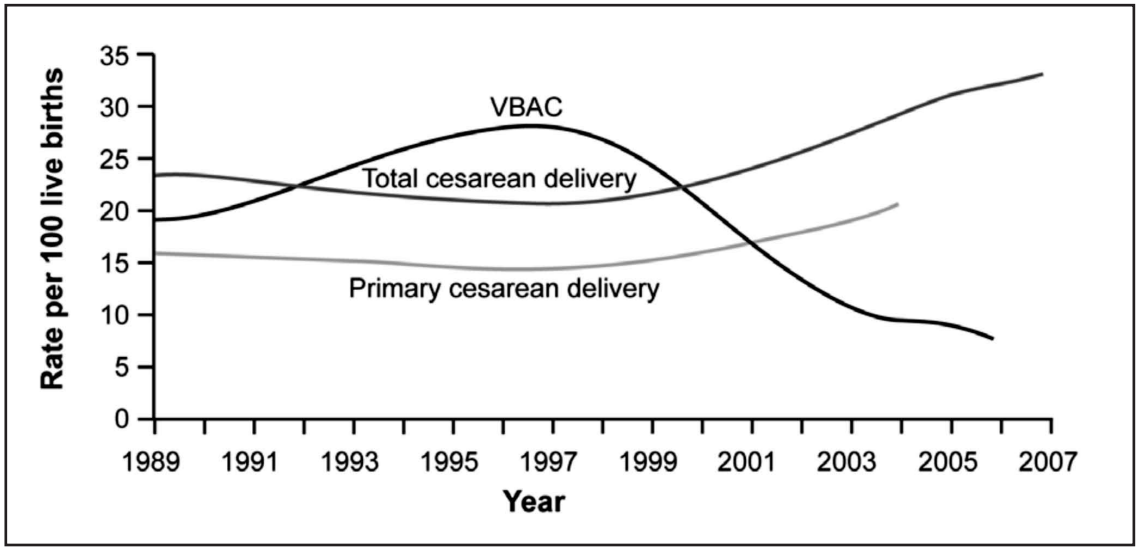
The rate of cesarean birth has increased steadily in the United States and now accounts for nearly one-third of all deliveries. For women who have undergone a cesarean delivery, decisions about birth for future pregnancies may be challenging. For many years, the dictum was "once a cesarean, always a cesarean." But over time, evidence accumulated that vaginal birth after cesarean (VBAC) is a safe alternative for many women. In 1980, the National Institutes of Health (NIH) issued a consensus statement outlining situations in which VBAC could be considered. VBAC rates increased gradually and peaked in 1996 with 28% of women with a history of cesarean birth delivering via VBAC. Since 1996, the rate has steadily decreased and is now under 10% nationally. A major factor in this change is the decision by many physicians and hospitals, citing medico-legal concerns, to stop offering VBAC services. Currently many women who would prefer a trial of labor for a possible VBAC are unable to find physicians and/or hospitals willing to provide this care.

Given this dramatic shift, the NIH convened a consensus conference in early March to assess the role of VBAC in US birth. In preparation for the conference, an evidence report was commissioned. This was prepared by the Oregon Evidence-Based Practice Center, which is affiliated with the Agency for Healthcare Research and Quality (AHRQ). The evidence report reviewed 963 papers and included 203 that met criteria for data quality. The authors noted that the overall rates of maternal harms were low for both trial of labor (TOL) and elective repeat cesarean delivery (ERCD). However, the risk of maternal mortality was significantly increased with ERCD (13.4 per 100,000 with ERCD vs. 3.8/100,000 with TOL). The rate of uterine rupture was 4.7/1,000 for women undergoing a trial of labor (vs. 0.3/1,000 undergoing ERCD). Six percent of uterine ruptures were associated with perinatal (fetal/neonatal) death. Perinatal mortality was significantly increased with TOL at 1.3/1,000 (vs. 0.5 per 1,000 with ERCD); this is comparable to the perinatal mortality rate observed among laboring nulliparous women.

The evidence review assessed the escalating risk to mothers associated with multiple cesarean deliveries (CD); this risk increased dramatically for those who underwent three or more cesarean births. Increased risks include higher rates of placenta previa and accreta, and hysterectomy. Placenta

Rates of Total Cesarean Deliveries, Primary Cesarean Deliveries, and VBAC, 1989-2007
(From the NIH Draft Consensus Statement on VBAC; based on data from National Center on Health Statistics)



previa, which poses risks to any woman regardless of prior birth history, confers a markedly increased risk for those with a history of multiple prior cesarean births. Comparison data for previa in women without a prior cesarean birth vs. those with three or more cesareans demonstrated a risk of accreta of 3.3 - 4% vs. 50 - 67%; a risk of hysterectomy of 0.7 - 4% vs. 50 - 67%; and composite maternal morbidity of 15 vs. 83%. Previa occurs in 1.2 percent of women with any prior cesarean section and 2.8 percent of women with three or more prior cesarean births. Given the risks associated with multiple cesarean births and the challenges of accurately predicting the number of future pregnancies, decisions about the mode of delivery after a single cesarean birth may have repercussions years later when the third, fourth, or higher number of repeat cesarean section is performed.

The evidence report also highlights a critical gap in knowledge to inform obstetric practice; data available for review is primarily based on actual mode of delivery. Data based on *intended* mode of delivery is largely unavailable. Without this inception cohort, the equivalent of the "intention to treat" cohorts for randomized controlled trials, information to guide care remains inadequate.

The conference was structured to address questions about rates of TOL, VBAC, and repeat cesarean section, factors influencing successful trial of labor, short and long-term benefits and harms to the mother and to the newborn, non-medical factors influencing the patterns and utilization of TOL, and critical gaps in evidence and priority investigations to address these gaps. The expert panel covered material relevant to each of these questions and responded to questions from the audience. Many childbirth activists participated and protested the lack of choice caused by "VBAC bans" imposed by physicians and hospitals. Risk stratification and labor management were also reviewed. The work of the Northern New England Perinatal Quality Improvement Network was also discussed as a model for rural and community hospitals.

At the conclusion of the conference, a draft consensus statement was issued. This statement recognizes the difficult decision faced by a woman and her caregivers about how to proceed, given the different risks faced by the mother and the fetus. The statement underscores the safety of VBAC for the majority of low risk women and calls for the removal of barriers to availability of VBAC services for these women. Additional research is needed to better predict which women will have a successful TOL and outline optimal labor management for women with a history of prior cesarean birth. The final statement will be released soon. In a press briefing after the conference, the panel chair, Dr. F. Gary Cunningham, was quoted as follows: "Declining VBAC rates and increasing cesarean delivery rates over the last 15 years would seem to indicate that planned repeat cesarean delivery is preferable to a trial of labor. But the currently available evidence suggests a very different picture: a trial of labor is worth considering and may be preferable for many women." Continuing, he said, "There's still a lot we don't know about which women will be successful in having a VBAC, but we believe it's essential that women's desires and preferences be respected throughout the decision making process."

Despite the national trends outlined above, many sites within the Indian health system have maintained low cesarean delivery rates and continue to offer VBAC services. Just prior to the conference, the Sunday edition of the New York Times featured one such site, Tuba City Regional Health Care Corporation. Midwifery care, salaried providers, and patient preference for vaginal birth were all noted as likely factors contributing to high vaginal delivery rates for women receiving care at Tuba City.

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Denise Grady, Lessons at Indian Hospital for Births after C-Sections, New York Times, March 6, 2010 (on-line), March 7, 2010 (print). *http://www.nytimes.com/2010/03/07/health/07birth.html* (Look for the multimedia link on the left of the page for an audio slideshow accompanying the article.)

Resources

NIH VBAC Consensus Conference Website: *http://consensus.nih.gov/2010/vbac.htm*

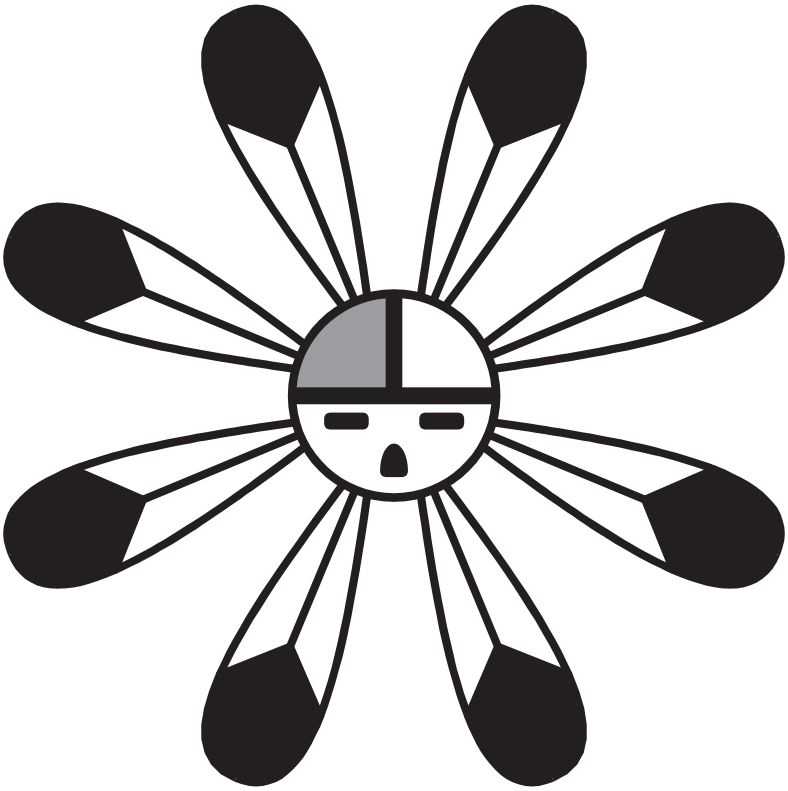
The Northern New England Perinatal Quality Improvement Network (NNEPQIN): *http://www.nnepqin.org/*

The NNEPQIN VBAC project, a collaborative effort to preserve VBAC services at rural sites in New Hampshire and Vermont, has a variety of resources on risk

stratification, safety, and model VBAC consents, available here: *http://www.nnepqin.org/ViewPage?id=3*

The ***Women's Health Notes***, an online newsletter for those working in women's health at IHS, Tribal, and Urban sites, is available for **subscription** through the IHS listserv:
http://www.ihs.gov/cio/listserver/index.cfm?module=list&option=list&num=87&startrow=76

Current and past issues, and many other resources, are available at the **IHS MCH Website**:
http://www.ihs.gov/MedicalPrograms/MCH/index.cfm?module=whn_home



Tohono O'odham Nursing Facility Fullfills Goals and Dreams of Tribal Members, and Then Some

Lee Olitzky, Executive Administrator, Tohono O'odham Nursing Care Authority, Archie Hendricks, Sr. Skilled Nursing Facility, Tohono O'odham Hospice, Sells, Arizona

The doors to the Archie Hendricks, Sr. Skilled Nursing Facility (AHSSNF) opened in November 2002. From that day forward, the Tohono O'odham Nursing Care Authority (TONCA) has worked to insure that the mission of the facility was, is, and continues to be fulfilled and successful. The dream of a "nursing home" where elders and adults would receive care on the Nation's land was a primary goal. This goal is further embodied within the mission statement of TONCA.

> "Guided by Tohono O'odham values and traditions, it shall be the mission of the Tohono O'odham Nursing Care Authority to **take a leadership role in providing a continuum of care and services**, designed to enhance the physical, spiritual, emotional, social, and intellectual qualities of life **for aging O'odham and other members of the Nation."**

AHSSNF is a 60 bed, Medicare certified, skilled nursing facility. AHSSNF provides elder tribal members and their families short and long term care, rehabilitation, and post hospital care. Importantly, in response to the significant need for diabetic wound care, AHSSNF established a comprehensive wound care program of excellence to respond to this unfortunate but increasing need of tribal members.

However, AHSSNF is much more than a skilled nursing facility. AHSSNF is an economic driver providing more than 100 tribal members employment, training, skills development, and housing.

Of critical importance is the role tribal members play in delivering care to tribal elders (and adults). At the present time, more than 80% of staff is tribal members. Tribal members lead all but one department. Tribal elders and adults receive hands on care from fellow tribal members. Language, culture, and tradition are interwoven throughout the fabric of the nursing facility. O'odham language classes are conducted weekly, as are inservices from tribal cultural specialists.

An important element in the care structure of the facility is the integration of allopathic and traditional medicine. Staff works with traditional medicine people to insure that their directions are integrated into the care and comfort of residents. This may range from one-on-one traditional healing, to changes in foods, to advice about who may provide care to the elder based on the medicine person's direction.

AHSSF is a working partner with the Sells IHS Hospital and staff. Staff from both facilities work together to address the health care needs of tribal members. The AHSSNF medical director has medical privileges at Sells Hospital. Hospital and nursing home staff meet regularly to address care, services, and discharge planning. This environment of open communication and cooperation has lead to improved patient care.

The TONCA board believed that a combination of quality improvement, staff training, and the newest technology were important elements in the evolution of quality care. To that end, the staff and board have established numerous practices and programs to support the preceding elements. For example, AHSSNF was an early adopter of electronic medical records (EMR). The facility is in its third year of using EMR. A comprehensive, ongoing training program supports staff development. These programs range from IV training, to first aide, to customer service. The AHSSNF Quality Improvement Program is one of the most comprehensive programs of its type. In addition to expected quality measures, a cross section of vital care elements is monitored for quality.

The preceding efforts have resulted in the remarkable accomplishments of this very "young" facility. Key metrics of AHSSNF include:

- Full resident occupancy (98% ongoing occupancy)
- Low turnover of employees (2% annually)
- Annual inspection surveys demonstrate highest quality of care (5 Star Rating)
- Third party billing est. (35% of income)
- Independent financial audits have been unqualified and "clean"
- Facility has received recognition in Indian country and nationally

AHSSNF is very proud of its recent accomplishments. The TONCA Board believes that it is important to have outside, third party recognition, which instills a sense of pride amongst tribal members, staff, residents, and the community. Recent outside recognition includes:

- *Centers for Medicare & Medicaid 5 Star Rating*. Only 14% of nursing homes in the United States received 5 stars.
- *Winning Workplaces, Small Business Award, Wall Street Journal*. Awarded to 15 businesses nationally that provide competitive wages, superior benefits, opportunities for employee growth and development, training and education. Sept 28, 2009
- *Tucson Area, IHS, Area Director's Award*. Awarded

to programs that have partnered with and enhanced health care within the IHS service Area, with special recognition of employee housing, tuition reimbursement for training in skills needed by the facility, and O'odham culture training.

- *Frances Stout, Community Health Leader Award, Robert Wood Johnson Foundation*. Awarded to only ten individuals nationally who overcame daunting obstacles to improve health and health care in their communities.

Not content with the status quo, the TONCA board recognized that hospice care simply did not exist in any meaningful way on the Nation's land. What very limited hospice services that were delivered to tribal members were delivered without any cultural understanding of traditions and practices. After conducting a thorough evaluation and investigation into this service, the TONCA Board established the Tohono O'odham Hospice (TOH). One of but a handful of Medicare certified hospices under American Indian sponsorship, TOH provides care in tribal members' homes. If needed, short term respite and inpatient care is provided at AHSSNF.

The TOH is in its second full year of operation. Tribal members have begun to understand and embrace the program. TOH staff has provided care and support to many tribal member families. Importantly, they have assisted families at very difficult times.

The Tohono O'odham Nation determined that providing long term care on the Nation's land was a cultural priority. They determined that the care that would be provided to their elders would be of the highest quality. They determined that they would employ tribal members. Finally, they were determined to make AHSSNF and TOH successful.

We are very pleased to report that through the combined efforts of the Tohono O'odham Nation, The Tohono O'odham Nursing Care Authority, the staffs of the Archie Hendricks, Sr. Skilled Nursing Facility and the Tohono O'odham Hospice, and their IHS partners, more than 350 tribal members have received the highest quality care. Yes, indeed they have been successful.

Understanding the Healing Hands of the Maniilaq Tribal Doctor: A Short History of The Program's Development

Carl Hild, Associate Professor, Director Health Services Administration Program, Alaska Pacific University, Anchroage, Alaska; and Leland Barger, Sr., Inupiaq Tribal Doctor, NANA Regional Corporation and Aqqaluk Trust, Kotzebue, Alaska

Over a quarter of a century ago, in 1983, the images in the production described below were recorded. The effort was a collaboration between the Maniilaq Health Services and Northwest Arctic Instructional Television Services of Kotzebue, Alaska. The production is comprised of 24 one-hour recordings of Inupiaq healers and Community Health Aids. The original videos are referred to generally as "the Della Keats' Collection." These are now housed within the holdings of the Alaska Moving Images Preservation Association at the University of Alaska Anchorage (UAA)/Alaska Pacific University (APU) Consortium Library. The Indian Health Service is also a partner in the Consortium Library, as it provides medical information for all of the hospitals in Alaska.

Early investigators documented some of the healing traditions of the indigenous people of Alaska's northwest, the Inupiat (Hild, 2007). Others conducted and documented anthropological investigations that included the spiritual aspects of healing. In the 1970s the *Timimun Mamirrutit* was produced by the Maniilaq Association, the Alaska Native regional non-profit corporation of northwestern Alaska, in order to document traditional healing knowledge of the area. About the same time, the North Slope Borough produced two documents that were in part efforts to combat substance abuse, enhance culture, and utilize traditional health knowledge. In the 1980s there were a number of other publications and articles that sought to provide insights into and documentation of traditional healing knowledge and skills.

Della Keats, a renowned Inupiaq traditional healer, died in 1986, and an era passed. Her death, however, may have sparked new activities to document traditional Inupiaq healing skills. During the late 1990s, Phil Chen of the National Institutes of Health and Steven Phillips of the National Library of Medicine, initiated discussions about documenting and collecting Alaska Native traditional healing materials as part of the eight-nation endeavors of the Arctic Council and its Indigenous Peoples' Secretariat.

In 1999 Mary Schaffer of Kotzebue contacted Lyn Freeman and Carl Hild regarding the preparation of a proposal for the National Center for Complementary and Alternative Medicine to investigate the renowned traditional healing techniques that the Tribal Doctors continue to use in the treatment of chronic pain. The request was not funded, but a project to document the traditional skills was initiated by the community in partnership with an academic institution.

In fall 2000, the National Library of Medicine (NLM) committed to develop an Arctic Health website to help organize and disseminate pertinent health information pertaining to the Arctic. This website serves as part of the United State's legacy to the Arctic Council. The Arctic Health website was released to the public in 2001, and NLM contracted with the University of Alaska Anchorage (UAA), Health Sciences Information Services (HSIS), at the UAA/Alaska Pacific University (APU) Consortium Library to continue the development and day-to-day management and maintenance of the website in May 2002. The intent of this arrangement was to ensure ongoing development and management activities were carried out by an organization having experience with and knowledge of Alaska and the Arctic region, and with indigenous peoples and their health issues. This website is one of several focused on special populations. The goal is to bring together, in one location, information for and about that population group. It includes consumer health information, as well as research and clinical information about that group. One of the topics of interest is Alaska Native traditional healing.

The Maniilaq Association supported a 2003 proposal to the National Center of Minority Health and Health Disparities (NCMHD) that included engagement with the Tribal Doctors to investigate areas of interest to them. Carl Hild, the Principal Investigator of Project EXPORT (award R24 MD 000499), worked with the Tribal Doctors to learn about their concerns, and to begin to document their knowledge, as well as their traditional healing skills and practices. Support was offered to a group of Kotzebue junior high school students who had conducted a series of experiments on the antibacterial properties of the essential oils from plants, identified by the elders, which are traditionally used in the region for healing. The abstract for that work was accepted and they presented their work to the National Microbiological Society meeting in Atlanta, Georgia.

Through the meetings and discussions in Kotzebue, it was learned that the Tribal Doctors did not have copies of the 1983

videos of Della Keats. Bertha Jennings, Maniilaq's Inupiat Ilitqusiat (Cultural Living Values) Coordinator, provided initial permission to access the materials for copying and editing for educational purposes. Not only were new videotape copies made, but the materials were digitized, and CDs were produced for both the Archives and for Maniilaq. The CD format should hold up better over time and allowed for digital editing of the materials, rather than working with magnetic tapes.

It was also learned that the Maniilaq Tribal Doctors had been reporting each contact they had with individuals seeking traditional healing. As part of the NCMHD program, those paper files were put into a database that now contains nearly 5,000 entries. A Maniilaq staff person was trained to keep the database current. That database can now be used for gaining insight as to the types of treatments offered and their effectiveness.

In addition, the Tribal Doctors requested that they be able to continue to access and utilize a very important place of ancient traditional healing, Serpentine Hot Springs. The Maniilaq Board of Directors referred this request to the Regional Elders' Council for northwestern Alaska, who then referred the matter to the Shishmaref IRA Council (Hild, 2007). These groups have become involved with the documentation of traditional healing practices and cultural use of this site that is now under National Park Service management. With the financial support of the National Park Conservation Association, the National Park Service, and the Rasmuson Foundation, site visits and documentation were secured in 2008. The Tribal Doctors and Shishmaref Elders Council have provided interviews that were documented through a computer-based mapping project that led to the completion of an APU graduate student's thesis (Alf, 2009).

This work is important, as much of the video footage within the Della Keats' Collection was shot at Serpentine Hot Springs, which healing waters, plants, and resources have been used for millennia. Governmental reports have documented a number of these features. The Tribal Doctors know the importance of documenting the attributes of the site as they know it will be important for their continued use. Not only do we know that hot spring algae is used for traditional healing, we have visuals of how it was applied and narrative on its use (Hild & Schenck, 2009b). Cody Alf's (2009) Rasmuson-supported work documented where and how the algae are collected, and that information now resides under the authority of the Shishmaref IRA Council.

The Tribal Doctors specifically requested that they have educational materials that they can use to practice, use as references, and use as instructional tools for trainees. In 2007 the Maniilaq Association's CEO/President, Helen Bolen, and the Board of Directors supported a request for funding to the National Library of Medicine for the editing of the raw Della Keats' Collection, into two programs. One program is for health professionals who do not know about Inupiaq traditional healing (Hild & Schenck, 2009a). A second program is for use by the Tribal Doctor Program for training (Hild & Schenck, 2009b).

It is important to note that the Arctic Health website (*www.arctichealth.org*) is one of a series that NLM is developing that target special population groups, health issues, or geographic areas. Despite the fact that the website currently resides on servers at the UAA, the website must maintain quality and format of content that adhere to Health and Human Services (HHS), National Institutes of Health (NIH), and NLM policies for content, linking, privacy, and security. NLM has the oversight of the website and provides regular guidance and direction for the contractor. In addition to NLM, both NIH and HHS security may examine and test the website during the course of the contract. It is for these reasons that these valuable materials on Inupiaq traditional healing were edited with the review of the currently practicing Maniilaq Association Tribal Doctors and the active involvement of Leland Barger Sr., the Inuunialiqput Director of the Inupiaq language program for NANA, so that they are of the quality that will allow the orientation product to be accessible through the website (Hild & Schenck, 2009a). The orientation program is now available under the section on Sharing and Teaching on the Traditional Healing page at *http://www.arctichealth.org/tm.php*.

What took far longer and was much more complex than any of the production team initially realized was the translation. There were four aspects to the translation. First, what scenes and camera angles shot 25 years ago would best portray the traditional skills being demonstrated? Many hours of screening the raw footage resulted in the selection of the clearest and best images, which were later reprioritized by what was being said during the scene. Second, it had to be determined how the scenes were to be organized to communicate the Inupiaq worldview of healing, especially the importance of calling for divine assistance through prayer. Third, what was being demonstrated as a traditional skill needed to be translated for medically trained personnel. Dr. Byron Perkins, an Osteopathic Physician who knew Della Keats, provided commentary based on his medical training to interpret her actions.

Fourth, the Inupiaq to English translation had many components. We needed someone who knew Inupiaq, who knew the specialized healing terms of Inupiaq, who knew the "old" Inupiaq that was spoken, and who knew the English translations to make sure that the meaning was correct. We were extremely fortunate to learn that Leland Barger Sr., the Inuunialiqput Director of the Inupiaq language program for NANA, Director of the Regional Elders' Council of northwestern Alaska, and Della Keats' grandson, was a trained Tribal Doctor. He was of critical importance in understanding the full context of the scenes. He had visited Serpentine Hot Springs as a boy with his grandmother and so knew first-hand about many of the healing treatments for which he was now translating for her. He was a direct link to the elders, and

brought their knowledge to the project.

In October 2009, Leland Barger Sr. and Carl Hild were invited to present the short program to the Alaska Native Elder Health Advisory Committee of the Alaska Native Tribal Health Consortium. In April 2010, Leland Barger Sr. and Carl Hild were invited to present on traditional healing at the Second International Telehealth Symposium on Current Issues in Palliative Care, a global, three-day event.

What has been documented thus far is a wonderful foundation for expanding the Tribal Doctor Program, developing future training activities, fostering a multicultural, engaged approach to the delivery of health services, and the raising the potential for enhancing the learning and understanding of some remarkable traditional healing knowledge and skills.

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Faye's Story: Life's Circle

Katina Dugger, Community Education Liaison, and Kathy Shoemake, Executive Administrative Assistant, both with the Cherokee Elder Care Program, Tahlequah, Oklahoma

Faye Richardson likes to be involved at the beginning of new medical programs, which became evident while recounting the story of her life. Her early adult years were spent serving her country. Then in her late 30s, she became the 47th employee hired by Cherokee Nation to work as a community health nurse, where she worked for the next 31 years. After retirement from Cherokee Nation, she worked as a nurse for Cherokee Nation Home Health.

In October 1970, Faye was one of the first to enter into training for American Indians and Alaskan Natives called Cycle 11. The Cycle 11 training grounds were at Desert Willow in Tucson, Arizona. Faye said that the Cherokee Nation flew her and others in the program to and from Tucson for the training. The training lasted a month, provided them with more in-depth knowledge in all the health fields, and prepared them to become community health nurses.

Faye said that the first Cherokee Nation community health building she worked in was located in Tahlequah, Oklahoma in an office on Northeastern University campus. She and her co-workers began hearing talk that Cherokee Nation was going to open small satellite clinics in the area. Faye said, "It did not seem possible at that time. But the next thing I knew, they had moved trailers and old buildings into small communities and converted them into clinics." Faye worked at the Salina clinic for several years, which was moved to Locust Grove and then back to Salina. She then became a supervisor of community health workers for some of the tribal clinics that were located in Delaware, Mayes, Rogers, Adair, Sequoyah, and Cherokee counties.

As a community health nurse, Faye worked in the small community clinics and went to patients' homes. She did a lot in women's health. She assisted with pregnancy checkups, women's preventative health, and in family planning. When she went to individuals' homes, she would do everything from check blood pressures to family planning. But mostly she just listened. She listened to the people talk about their needs. Some needs were health-related but many times, they were not. Faye made all kinds of referrals to try and assist the individuals in need. Faye would contact the Department of Human Services if someone needed Food Stamps or Medicaid services. She made referrals to Cherokee Nation's Housing Department in order to help the individual move into a safer home. She said that her job as a community health nurse was fun and rewarding. Faye said, "I still see families today that I worked with or helped when I was working as a community health nurse. Some of the individuals that I did family planning with have grown children now." Faye said she followed her mother's example; her mother was a midwife. One of Faye's daughters is also walking this trail; she is one of the community health nurses at the Cherokee Nation AMO Health Clinic in Salina, Oklahoma (a newer version of the Salina Clinic where Faye worked).

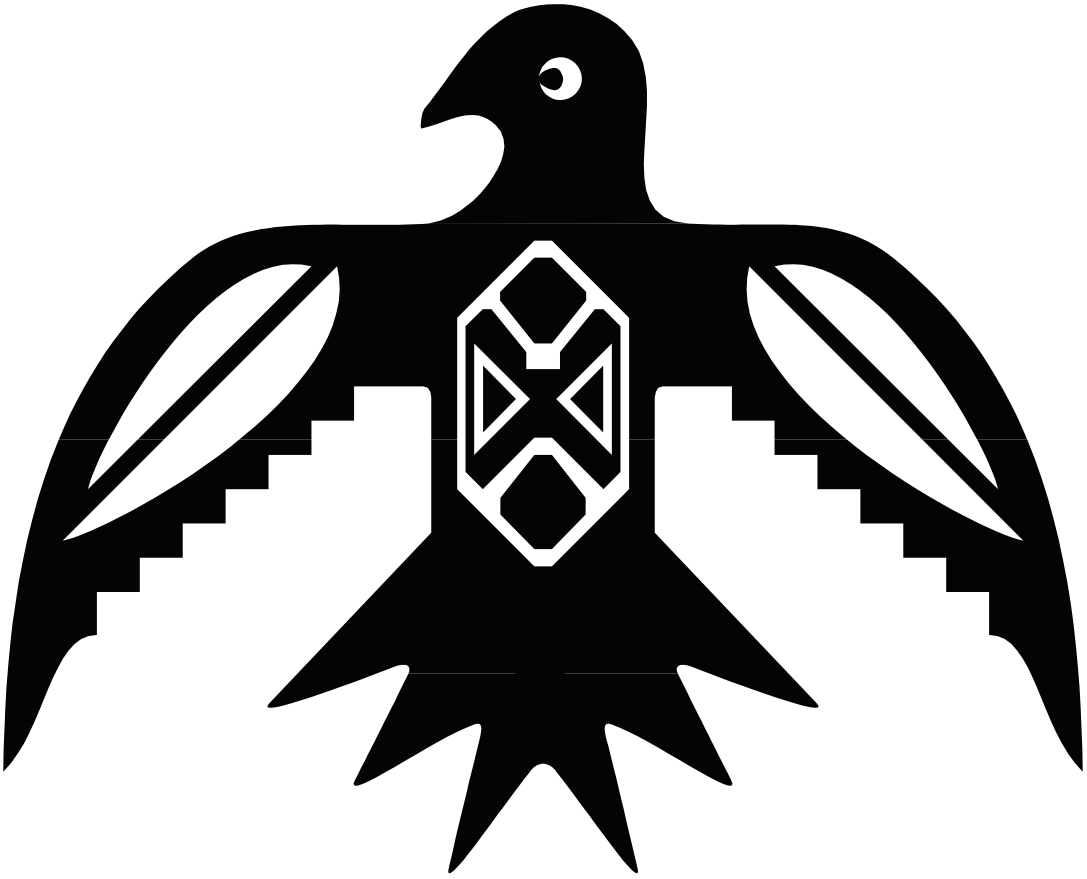
Faye has many good memories of working in the Indian Health Service and Cherokee Nation. But when she became suddenly ill, her role was switched to the receiving side of health services. She always tried to receive her own health care from Indian Health Service or Cherokee Nation Health Care. Faye spent almost a year in a nursing home. She finally returned home, with some help through the state Medicaid Advantage program and Cherokee Nation Home Health. However, these services were very limited so she received much help from her family.

At the time that all of these home services were being arranged for Faye, her daughter learned that Cherokee Nation was in the process of completing an application for a PACE program. The Program for All-inclusive Care for the Elderly (PACE) is a long-term care program offered through the Centers of Medicare and Medicaid Services (CMS) for individuals 55 or older who need nursing home level of care, as certified by the state Department of Human Services, and who can live safely in a home environment within the program's service area. Located in Tahlequah, the Cherokee Nation PACE program is the first in Oklahoma and the first in Indian Country; however, individuals do not have to be Cherokee Nation citizens or Native American to enroll. The name of the facility is Cherokee Elder Care (CEC). Remember, Faye likes to be involved at the beginning of new medical programs, so she became the first individual to enroll in the new PACE program!

Faye was one of two individuals to start at CEC on August 1, 2008. Since PACE is an all-inclusive care program, those enrolling must agree to Cherokee Elder Care becoming their primary medical provider. As such, the center will provide all prescribed medications, physical therapy, occupational therapy, nutrition counseling, home health services, social activities, transportation, laboratory services, social services, medical equipment, hospitalization, nursing care, and adult day health care. Faye enjoys coming to the center two days a week. In the beginning, the center was quiet and Faye enjoyed a lot of one-on-one time with the CEC staff. CEC now has over 50 participants enrolled. Faye enjoys coming to the CEC center to visit her many friends, some of whom she once met when she was a community health nurse, bringing her life full circle.

If it was not for Cherokee Nations support of the Cherokee

Elder Care/PACE program, there would not be a PACE program in Oklahoma. Cherokee Elder Care is a non-profit, separate entity of the Cherokee Nation. Cherokee Nation is the sponsor of Cherokee Elder Care/PACE. They graciously gave Cherokee Elder Care the land and assisted in starting the facility. They continued to help with the day-to-day cost of the program for the first year, so that Cherokee Elder Care could grow to support itself. We at Cherokee Elder Care are very thankful for the support we received and continue to receive from Cherokee Nation.



Do We Need a Tribal LTC Association?

Brigg Reilley, MPH, HIV Surveillance Coordinator, Indian Health Service; Albuquerque, New Mexico

Long term care (LTC) services are provided in so many different ways throughout Indian Country and Alaska Native Villages; congregate and home delivered meals, caregiver services, personal care, and home health are important LTC services that help elders stay at home. Other LTC services such as assisted living and nursing homes are residential settings. Do you think there is a need for a tribal LTC association to support people working so hard to develop tribal long-term care resources? We invite you to ask yourself the following questions:

- Have you wondered how folks providing tribal long term care services can connect and provide support to each other?
- Is your tribe considering starting a LTC program, and wondering where to go for information?
- Are you interested in joining a tribal long term care group? Would you be willing to help support the group through annual membership dues?

Why are we asking now?

After the last AI/AN LTC conference, in November 2007, a group of us met to search for possible ways to continue the conference at least bi-annually and how to help tribes seeking information about LTC services. We knew it wouldn't be possible to have it under one of the Federal agencies, as there were no funds to support the association. We looked to other organizations and advocacy groups that might have a mission similar to tribal LTC providers. We heard about the American Association of Homes and Services for the Aging (AAHSA) from Rick Richards of the Cherokee Nation. Cherokee Nation Home Health has been a member of the Oklahoma affiliate of AAHSA since 2006, and Rick said that the goals and values of the AAHSA membership align well with those of tribal long-term care programs and agencies.

Rick contacted AAHSA leadership and began the discussion; they have been very enthusiastic about the possibility of working with us. They are interested in having tribal leadership and direction, and they have expressed interest in supporting us through a dedicated staff member who could help with a website, newsletter, logo, conference planning, and marketing the association to tribal communities interested in long term care.

How a Tribal LTC Association Might Work

- *Governance*
  - Board of directors selected by you, the AI/AN members. Develop and implement our own governance structure for the tribal LTC association.
- *Membership Dues*
  - Yearly dues based on size and revenue of LTC service programs, between $100 -$350 annually to support staff and conference development.
- *Examples of Possible Member Services*
  - Communication/Networking
    - Website – a core communication tool for members and others seeking information about aging and LTC in Indian Country.
    - Newsletter – e-mail newsletter providing news about AI/AN LTC, references to resources, reports of interest, etc.
    - A tribal LTC blog – a quick, simple communication tool to keep members connected.
  - Education
    - Tribal LTC association will sponsor the biennial conference for professional development of its members (the AI/AN LTC Conference)

We Want to Hear from You

Please let us know if you would be interested in joining an association. We look forward to hearing from you and welcome your opinions. If you have questions, or would like to offer comments, please contact Kay Branch by e-mail at *pkbranch@anthc.org*, telephone (907) 729-4498; Yvonne Jackson by e-mail at *Yvonne.jackson@aoa.hhs.gov*, telephone (202) 357-3501; Lee Olitzky by e-mail at *leezky@comcast.net*, telephone (520) 444-4109; or Shelly Zylstra by e-mail at *ZylstRA@dshs.wa.gov*, telephone (360) 676-6749.

Who/What is AAHSA?

AAHSA is a non-profit organization whose members serve millions of elders and their families every day through mission-driven, not-for-profit agencies. Member organizations provide all kinds of long term care services: adult day, home health, senior housing, personal care, assisted living, and nursing homes. AAHSA already has a few other affiliated groups such as the International Association of Homes and Services for the Aging (IAHSA). Please browse their website for more information at *http://www.aahsa.org/*.

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Kathy Correa, Laguna Pueblo
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Open Door Forum on Colorectal Cancer Screening to be Held on June 2

The next Indian Health Service Open Door Forum will be held on June 2, 2010, from 1:00-2:30pm EDT. During this WebEx forum, presenters from Forest County Potawatomi, Warm Springs, and Tuba City will highlight strategies and screening modalities being used to increase colorectal cancer screening rates at their facilities. The forum agenda, along with notifications on how to participate using WebEx and the teleconference line, will be sent out through IHS email and listservs during the week preceding the event.

Free Trial for IHS: FirstCONSULT

An Evidenced-Based Clinical Information Tool for Use at Point-Of-Care

Diane Cooper, MSLS, AHIP, Biomedical Information Consultant, National Institutes of Health, Bethesda, Maryland

FirstCONSULT is designed for use by busy clinicians at the point of care, i.e., in the clinic or office where the patient is actually seen. Up-to-Date seems more for academic settings, where those in training must present to attendings. FirstCONSULT is crisp and to the point. From the producers of MD CONSULT, it provides authoritative, continuously updated, evidence-based information.

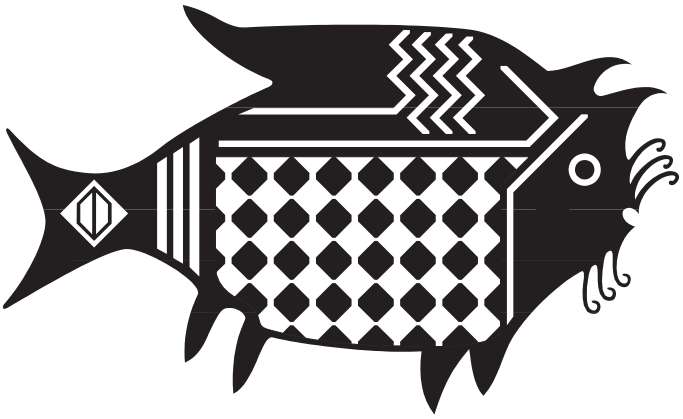
Information is based on multiple sources including respected textbooks, peer-reviewed articles, evidence-based databases, drug alerts, practice guidelines, and position papers reviewed and edited by leaders in clinical practice. Evidence is summarized where possible from systematic reviews of primary research from the Cochrane Collaboration. Evidence-based guidelines from the National Guideline Clearinghouse and the websites of relevant learned societies, professional associations, and government organizations are also included.

It's easy to search for information by medical topic, differential diagnosis, or procedure. *Medical topics* are broken down into easy-to-navigate pages for background, diagnosis, treatment, outcomes, and prevention. A summary is given at the beginning of the text, and evidence-based references and guidelines are part of the resources listed at the end. *Differential Diagnosis* provides a rapid evaluation of your patient's complaint with interactive access to potential diagnoses ordered by age and prevalence. *Procedures* provide clear, systematic guidance about procedures integral to the practice of medicine across many specialties. Videos and animations are included.

You're Urged To Give It A Try

If you work in an IHS facility, access FirstCONSULT at *www.mdconsult.com* and click on the second tab labeled "FirstCONSULT." If you work in a tribal facility or if you are unable to obtain access using the direct link listed above, access FirstCONSULT through your online library (*http://hsrl.nihlibrary.nih.gov/login.htm*). Scroll down the right side panel of the website to *HHS Login* and enter in the "Library Provided Account" section the username and password that you have used in the past for accessing the library's online resources. The page will refresh back to the online library main page. Now go across the top of the webpage to: *RESEARCH TOOLS* and wait for the drop down box to appear and then select *DATABASES*. Next select M from the alphabetical listing and click on *MD Consult*. FirstConsult will be on the second tab at the top of the page. Click to enter.

For questions, comments, or help in using FirstCONSULT, e-mail Diane Cooper, Informationist/Biomedical Librarian for IHS, National Institutes of Health Library, at *cooperd@mail.nih.gov*.



Spirit of EAGLES

American Indian/Alaska Native Leadership Initiative on Cancer

Artwork Designed by: Chholing Taha

Eighth National Conference

"Changing Patterns of Cancer in Native Communities: Strength Through Tradition and Science"

September 11-14, 2010
Westin Hotel
Seattle, WA

Watch for details coming soon @ http://www.nativeamericanprograms.org/

This is a page for sharing "what works" as seen in the published literature, as well as what is being done at sites that care for American Indian/Alaskan Native children. If you have any suggestions, comments, or questions, please contact Steve Holve, MD, Chief Clinical Consultant in Pediatrics at sholve@tcimc.ihs.gov.

IHS Child Health Notes

Quote of the month

"In politics a community of hatred is almost always the foundation of friendships. "

Alexis de Tocqueville

Article of Interest

Step-up therapy for children with uncontrolled asthma receiving inhaled corticosteroids. Lemanske RF, et al. *NEJM*. March 18, 2010 *http://content.nejm.org/content/vol362/issue11/index.dtl*

For children with uncontrolled asthma on low dose inhaled corticosteroids, evidence to guide step-up therapy is lacking. The authors randomly assigned 182 children ages 6 through 17 years to one of three step-up regimens in random order for 16 weeks in a triple cross over design. At baseline all children were on fluticasone 100ug twice a day. Step-up therapies included 1) Increase of fluticasone to 250ug twice a day; 2) 100ug fluticasone twice a day and a long acting beta agonist; or 3) 100ug fluticasone and a leukotriene receptor antagonist.

Regardless of which regimen was used, 97.5% of patients got better on step-up therapy. Overall the best response was with the addition of a long acting beta agonist. However, many children did better on an increase of corticosteroids or the addition of a leukotriene antagonist, highlighting the need to regularly monitor and adjust each child's therapy.

Editorial Comment

The good news is almost everything works. The bad news is we can't predict ahead of time which step-up therapy will be best for each patient. The end result of a very complicated and expensive study is that "trial and error" works best. The accompanying editorial points out that even though long acting beta agonists had the best response for many patients, they also have the worst safety profile. The editorialist recommends adding increased inhaled corticosteroids or leukotriene antagonists as an efficacious and safer choice.

Infectious Disease Updates

Rosalyn Singelton, MD, MPH

Meningococcal Disease Prevention: New Options -- at What Cost

Meningococcal infections strike fear in any health care provider's heart. However, meningococcal infections are very rare. Since 2006, quadrivalent Men ACYW135 (MCV4-D) conjugate vaccine, Menactra® (Sanofi) has been licensed and recommended for healthy children 11 - 18 years of age and high-risk children 2 - 10 years. Recently, the ACIP recommended that high risk children originally vaccinated at age 2 - 6 years be revaccinated after 3 years, and high risk children vaccinated at age 7+ years be revaccinated after 5 years.

A new quadrivalent conjugate vaccine, Menveo® (MenACWY-CRM $_{197}$(Novartis), was recently licensed for 11 - 18 year olds. Menveo® covers the same strains as Menactra® but has a different protein conjugate, elicits higher antibody levels, and requires reconstitution of the lyophilized A strain with CYW_{135} strains.

Both Menactra® and Menveo® are under review for extending the age range of the vaccine to infants. In addition, there is a new GSK meningococcal/Hib combination vaccine (HibMenCY) nearing licensure for use in infants. In preparation for pending licensure of infant meningococcal vaccines, there was considerable discussion around whether ACIP should make a routine recommendation for the use of this vaccine in infants once it is licensed. The working group felt that because of the low burden of disease, lack of coverage of serotype B, and the likelihood that a booster dose would be required, they should not issue a routine recommendation but rather a permissive one. There will be further discussion of this once the vaccines are licensed.

Recent literature on American Indian/Alaska Native Health

Michael L. Bartholomew, MD

Franks PW, Hanson RL, Knowler WC, Sievers ML, Bennett PH, Looker HC. Childhood obesity, other cardiovascular risk factors, and premature death. *N Engl J Med*. 2010 Feb 11;362(6):485-93. *http://www.ncbi.nlm.nih.gov/pubmed/20147714*

The association of obesity, glucose intolerance, hypertension, hypercholesterolemia, and increased morality in adults is well known. In contrast, the effect of these risk factors in childhood on adult mortality is poorly defined. The authors of this study sought to assess whether obesity, glucose intolerance, hypertension, and hypercholesterolemia in children without diabetes are predictors of premature death in American Indians in Arizona.

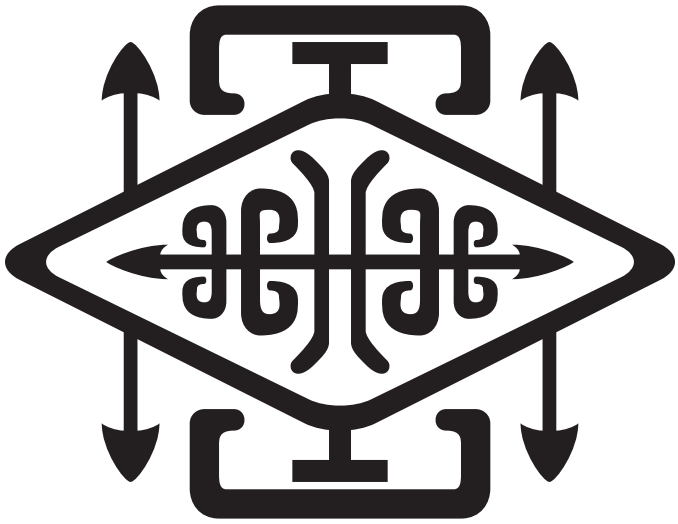
Body mass index (BMI), glucose level, blood pressure, and cholesterol levels were measured in a cohort of 4,857 American Indian children and adolescents without diabetes, who were between 5 to <20 years of age and born between 1945 and 1984. Risk factors were standardized for age and sex. Proportional hazard models were developed to determine the association of the risk factor and premature death, defined as death occurring before age 55.

During the follow-up period, 559 (11.5%) participants died prior to age 55 of which 166 of these deaths were from endogenous causes (defined as those in which the proximate cause was disease or self-inflicted injury). BMI was significantly associated with premature death from endogenous causes. After age and sex standardization, children in the highest quartile for BMI had significantly higher death rates than those in the lowest quartile. Of the 4,857 children examined, 28.7% were defined as obese. Comparing obese children and non-obese children, the incidence rate ratio was 1.31 (95%CI, 1.10-1.57) for premature death from all causes and 1.90 (95%CI: 1.37-2.65) for endogenous causes. Despite glucose intolerance not being associated with premature death from endogenous causes, those children in the highest quartile for glucose level had a 73% higher risk of premature death than the lowest quartile. In regards to childhood cholesterol levels and premature death from all causes, external and endogenous, there were no significant associations. Although there were no associations between the death rate (all causes and external causes) and blood pressure, childhood hypertension was strongly associated with premature death from endogenous causes (incident rate ratio 1.57:95% CI 1.10-2.24).

The authors conclude that "obesity in children who do not have diabetes is associated with increased rate of death from endogenous causes during early adulthood, an association that may be partially mediated by the development of glucose intolerance and hypertension in childhood." This emphasizes the need for early effective childhood obesity prevention programs.

A Final Word from Michael L. Bartholomew, MD

Since Dr. Doug Esposito offered up a final word on his last contribution to the *IHS Child Health Notes*, I feel compelled to do the same. Like Dr. Esposito, I feel very privileged to have worked with the Navajo people and hope that my reviews of articles focusing on indigenous child health have underscored the importance of addressing the health disparities that affect American Indian and Alaska Native peoples. I have thoroughly enjoyed my time reviewing the recent AI/AN literature and contributing to the *Notes* over these past two years. I would like to personally thank Dr. Holve, Dr. Esposito and Dr. Margaret Bartholomew for the opportunity and their guidance and support. The torch will again be passed to an excellent colleague and friend, Dr. Jeff Powell. I am sure he will provide stellar reviews for all of us to read and enjoy.



MEETINGS OF INTEREST

Advancements in Diabetes Seminars
Monthly; WebEx

Join us monthly for a series of one-hour WebEx seminars for health care program professionals who work with patients who have diabetes or are at risk for diabetes. Presented by experts in the field, these seminars will discuss what's new, update your knowledge and skills, and describe practical tools you can use to improve the care for people with diabetes. No registration is necessary.

The accredited sponsors are the IHS Clinical Support Center and IHS Nutrition and Dietetics Training Program.

Upcoming seminars include:

Date and Time	Topic	Speaker
April 26 at 1 pm MDT	Recent Controversies and "Hot Topics" in Diabetes	Dr. Kelly Acton
May 18 at 1 pm MDT	Peripheral Artery Disease	Scott Gaustad, PT
June 8 at 1 pm MDT	Self-Monitoring of Blood	Dr. Marie Russell
July: TBA	Glucose	

For Information on upcoming seminars, go to *www.diabetes.ihs.gov*, (*http://www.ihs.gov/MedicalPrograms/Diabetes/index.cfm?module=home*) and click on **Advancements in Diabetes Seminar**.

For information about previous seminars, including the recordings and handouts, click on the following link and visit Diabetes Seminar Resources: *http://www.diabetes.ihs.gov/index.cfm?module=trainingSeminars*.

Available EHR Courses

EHR is the Indian Health Service's Electronic Health Record software that is based on the Resource and Patient Management System (RPMS) clinical information system. For more information about any of these courses described below, please visit the EHR website at *http://www.ihs.gov/CIO/EHR/index.cfm?module=rpms_ehr_training*. To see registration information for any of these courses, go to *http://www.ihs.gov/Cio/RPMS/index.cfm?module=Training&option=index*.

Centering Parenting and Lifecycle Training
June 4 - 5, 2010; Zuni, New Mexico

Sharon Schindler Rising from the Centering Healthcare Institute will be leading a two-day workshop in Zuni, New Mexico June 4 - 5,, 2010. The goal of the training is to acquaint participants with the concept of group care throughout the life cycle and focus on the skills needed to provide facilitative group leadership. The course will focus on applying group visits to well-child, postpartum, diabetes, and end-of-life care. An optional evening session June 3 may be added for those who have not yet completed training in Centering Pregnancy. Registration is free for IHS employees, but is limited to 25 people on a first-come, first-served basis. Participants will be responsible for their own travel, meals, and lodging expenses. Please contact Dr. Nerissa Koehn, Director, Women's Health Program, Zuni Comprehensive Community Health Center, if you are interested in attending or would like more information, at (505) 782-7541 or e-mail *nerissa.koehn@ihs.gov*.

The IHS Southwest Regional Pharmacy Continuing Education Seminar (the "Quad"),
June 6 - 8, 2010; Scottsdale, Arizona

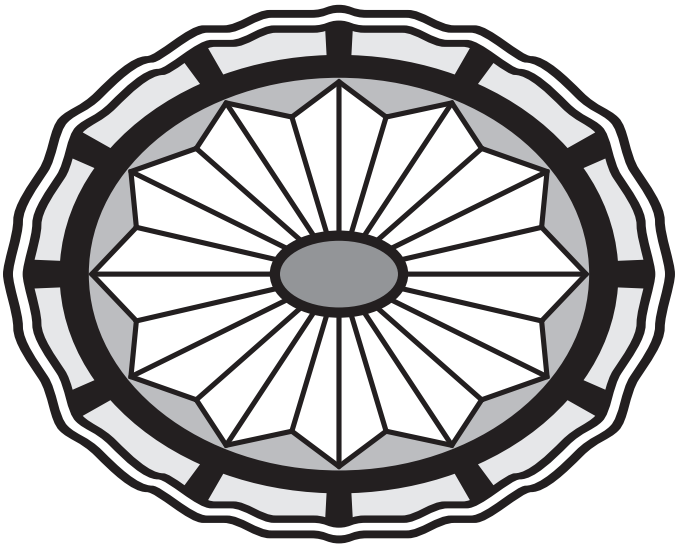
The largest annual meeting of Public Health Service pharmacists and technicians, and pharmacists from tribally operated programs, this seminar provides up to 15 hours of ACPE approved pharmacy continuing education credit. Hosted by the IHS Phoenix and Navajo Areas, the target audience is made up of pharmacists and technicians working in Indian health system clinics and hospitals. It will be held at the Chaparral Suites Hotel, 5001 North Scottsdale Road, Scottsdale, Arizona 85258. For more information, look for "Event Calendar" at *http://www.csc.ihs.gov/* or contact CDR Ed Stein at the IHS Clinical Support Center by e-mail at *ed.stein@ihs.gov*.

Introduction to Social Marketing
June 25 - 29, 2010; Santa Fe, New Mexico

The American Indian Institute will be offering the "Introduction to Social Marketing" training in Santa Fe, New Mexico, June 25 - 29, 2010. This training is designed for tribal health administrators and directors who are interested in the field of social marketing. The course will include an overview of social marketing, focus group research, program design, and implementation. This is the first course in a series of four that will include 1) Introduction to Social Marketing; 2) Advanced Social Marketing, for those who are in the process of implementing a project; 3) Program Evaluation; and 4) Focus Group Research. Continuing education units will be offered by the University of Oklahoma. For more information, please contact *Chelsea-Southerland@ou.edu* or visit *www.aii.ou.edu*.

The Pharmacy Practice Training Program: a program in patient-oriented practice (PPTP)
August 2 – 5 or August 23 - 26, 2010; Scottsdale, Arizona

The goal of this four-day training program for pharmacists employed by the Indian Health Service or Indian health programs is to improve the participant's ability to deliver direct patient care. This program encompasses the management of patient care functions in the areas of consultation, communication, interviewing techniques, laboratory test interpretation, conflict resolution, physical assessment, and disease state management. The course is made up of case studies that include role playing and discussion and provides 27 hours of pharmacy continuing education. It will be held at the Chaparral Suites Hotel, 5001 North Scottsdale Road, Scottsdale, Arizona 85258. For more information, look for "Event Calendar" at *http://www.csc.ihs.gov/* or contact CDR Ed Stein at the IHS Clinical Support Center by e-mail at *ed.stein@ihs.gov*.



NEW MEXICO GERIATRIC EDUCATION CENTER
JUNE 4, 2010

Information/Registration at: http://hsc.unm.edu/som.fcm/gec OR Call: 505-272-4934

"Is This Really Alzheimer's Disease?"
Recognizing, Diagnosing & Treating Dementia

*This hands-on training is designed for **Physicians, Nurses, PAs, OTs and PTs, Social Workers, Dietitians** and other health care professionals in the early recognition, diagnosis and treatment of dementia.*

ACCREDITATION: The Indian Health Service (IHS) Clinical Support Center is accredited by the Accreditation Council for Continuing Medical Education to sponsor continuing medical education for physicians.

The IHS Clinical Support Center designates this educational activity for a maximum of 4¾ ***AMA PRA Category 1 Credit(s)™***. Physicians should only claim credit commensurate with the extent of their participation in the activity.

This Category 1 credit is accepted by the American Academy of Physician Assistants and the American College of Nurse Midwives.

The Indian Health Service Clinical Support Center is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

This activity is designated **4.75 contact hours for nurses**.

Janice Knoefel, MD
Neurologist/Geriatrician
UNM SOM/Albuquerque Area VA

John Adair, MD
Neurologist
UNM SOM/Albuquerque Area VA

Shelly Leiphart, PsyD
Fellow, Neuropsychology
Albuquerque Area VA

POSITION VACANCIES

Editor's note: As a service to our readers, THE IHS PROVIDER will publish notices of clinical positions available. Indian health program employers should send brief announcements as attachments by e-mail to john.saari@ihs.gov. Please include an e-mail address in the item so that there is a contact for the announcement. If there is more than one position, please combine them into one announcement per location. Submissions will be run for four months and then will be dropped, without notification,, but may be renewed as many times as necessary. Tribal organizations that have taken their tribal "shares" of the CSC budget will need to reimburse CSC for the expense of this service ($100 for four months). The Indian Health Service assumes no responsibility for the accuracy of the information in such announcements.

Family Practice Physician
Warm Springs Health and Wellness Center; Warm Springs, Oregon

The Warm Springs Health and Wellness Center has an opening for a board certified/eligible family physician. Located in the high desert of central Oregon, we have a clinic that we are very proud of and a local community that has much to offer in recreational opportunities and livability. Our facility has been known for innovation and providing high quality care and has received numerous awards over the past ten years. We have positions for five family physicians, one of whom recently retired after 27 years of service. Our remaining four doctors have a combined 62 years of experience in Warm Springs. This makes us one of the most stable physician staffs in the IHS. Our clinic primarily serves the Confederate Tribes of Warm Springs. We have a moderately busy outpatient practice, with our doctors seeing about 15 - 18 patients per day under an open access appointment system. We were a pilot site for the IHS Innovations in Planned Care (IPC) project and continue to make advances in how we provide care to our patients. We fully utilize the IHS Electronic Health Record, having been an alpha test site for the program when it was created. We provide hospital care, including obstetrics and a small nursing home practice, at Mountain View Hospital, a community hospital in Madras, Oregon. Our call averages 1 in 5 when fully staffed. For more information, please call our Clinical Director, Miles Rudd, MD, at (541) 553-1196, ext 4626. (4/10)

Family Physician
SouthEast Alaska Regional Health Consortium; Juneau, Alaska

The SEARHC Ethel Lund Medical Center in Juneau, Alaska is searching for a full-time family physician with obstetrics to join a great medical staff of 14 providers (ten physicians and four midlevels) at a unique clinic and hospital setting. Have the best of both worlds by joining our practice where we share hospitalist duties one week every 6 - 8 weeks, and spend our remaining time in an outpatient clinic with great staff and excellent quality of life. We have the opportunity to practice full spectrum family medicine.

Work in Southeast Alaska with access to amazing winter and summer recreational activities. Live in the state capital with access to theater, concerts, annual musical festivals and quick travel to other communities by ferry or plane. Consider joining a well rounded, collegial medical staff at a beautiful clinic with generous benefits. For more information, contact Dr. Cate Buley, Assistant Medical Director, Ethel Lund Medical Center, Juneau, Alaska; telephone (907) 364-4485; e-mail *cbuley@searhc.org*; or go to *www.searhc.org* to learn more. (4/10)

Family Practice Physician
Yakama Indian Health Center; Toppenish, Washington

The Yakama Indian Health Center is recruiting for two positions in family practice, pediatrics, or internal medicine to join our staff of four physicians, three ARNP, and two PA-C. We are a modern facility with on-site pharmacy services, an open access appointment system, electronic health records, a moderately busy outpatient practice, and a user population of 18,000 members of the Confederated Tribes and Bands of the Yakama Nation.

Located 150 miles southeast of Seattle in the Yakima Valley, Toppenish has a lot to offer both the outdoor enthusiast and the urban sophisticate. Hunt, fish, or golf during the day, then attend a Broadway musical at the Capitol Theatre in Yakima. Skiing at White Pass or Crystal Mountain is only an hour away, and the Yakama Nation Museum and Cultural Heritage Center in downtown Toppenish stays open seven days a week.

Base salaries depend upon experience, and range from $155,000 to $177,000. Other benefits may include loan payback, retention or recruitment bonuses, and moving expenses. For more information, please call our CEO, Andrew Delgado, or our Clinical Director, Rex Quaempts, at (509) 865-2102. (4/10)

Family Physician
SouthEast Alaska Regional Health Consortium

The SEARHC Clinic in Juneau, Alaska has an excellent opportunity for a family physician with obstetrics skills to join a medical staff at a unique clinic and hospital setting. Have the best of both worlds in a practice where we share hospitalist duties and staff an outpatient clinic, all with an excellent quality of life. We have the opportunity to practice full

spectrum family medicine. Southeast Alaska has amazing winter and summer recreational activities. Enjoy Alaska's capital with access to theater, concerts, and annual musical festivals. Now a NHSC Loan Repayment Site. For information contact Dr. Cate Buley at (907) 364-4485; e-mail *cbuley@searhc.org*; or visit the website at *www.searhc.org*. (2/10)

Family Physician
Kodiak Area Native Association; Kodiak, Alaska

Come practice on Alaska's Emerald Isle. Looking for a board certified or board eligible family physician to join Kodiak Area Native Association in providing comprehensive family medicine. Coastal temperatures and endless outdoor recreation. Contact Robert Onders, MD with further questions or, to send a CV, at *Robert.Onders@kanaweb.org*. KANA is an EOE employer exercising Native preference in accordance with PL 93-638. For a complete list of job qualifications, description, and application, please contact Kodiak Area Native Association Human Resources Department by e-mail at *Samuel.towarak@kanaweb.org*; mailing address 3449 E. Rezanof Drive, Kodiak, Alaska 99615; telephone (907) 486-9805; or fax (907) 486-9896. (2/10)

Physician
Puyallup Tribal Health Authority; Tacoma, Washington

The Puyallup Tribal Health Authority is currently recruiting a full time physician to join a team of nine other physicians. PTHA is a tribally operated ambulatory clinic located in Tacoma, Washington, and is accredited by AAAHC, CARF and COLA. This position will evaluate, diagnose, and treat medical, obstetric, psychiatric, and surgical diseases and emergencies as credentialed and privileged; oversee the medical evaluation, diagnosis, and treatment of patients by other medical professionals, including precepting midlevel providers as needed; perform histories and physicals, and direct the evaluation, diagnosis, and treatment of PTHA patients in local hospitals, including participation in scheduled rounding; make referrals to specialists as per PTHA protocol and follow-up to assure quality care; provide on-site health education and counseling to patients and staff; participate in after-hours on-call duty as scheduled; provide back-up consultation to other on-call PTHA providers as scheduled; and participate in utilization review studies and quality improvement committee work as assigned.

Minimum requirements include a Doctorate of Medicine or Osteopathy from an accredited institution; board certified (or eligible to sit for exam) in family practice or appropriate field; licensed to practice medicine in the State of Washington; and current certification in ACLS.

PTHA offers a competitive salary, benefits, and a generous time off schedule. To apply, a completed PTHA employment application is required (resume optional). Please submit applications to the Human Resource Department prior to the closing date. Indian hiring preference by law. Telephone (253) 593-0232 ext 516; fax (253) 593-3479; e-mail hr@eptha.com; website, www.eptha.com. The mailing address is PTHA Human Resource Department, KCC bldg #4, 1st Floor, 2209 E. 32nd St.. Tacoma, Washington 98404. (2/10)

Family Medicine, Internal Medicine, Emergency Medicine Physicians
Sells Service Unit; Sells, Arizona

The Sells Service Unit (SSU) in southern Arizona is recruiting for board certified/board eligible family medicine or internal medicine physician to join our experienced medical staff. The SSU is the primary source of health care for approximately 24,000 people of the Tohono O'odham Nation. The service unit consists of a Joint Commission accredited 34-bed hospital in Sells, Arizona and three health centers: San Xavier Health Center, located in Tucson, Arizona, the Santa Rosa Health Center, located in Santa Rosa, Arizona, and the San Simon Health Center located in San Simon, Arizona, with a combined caseload of approximately 100,000 outpatient visits annually. Clinical services include family medicine, pediatrics, internal medicine, prenatal and women's health care, dental, optometry, ophthalmology, podiatry, physical therapy, nutrition and dietetics, social work services, and diabetes self-management education.

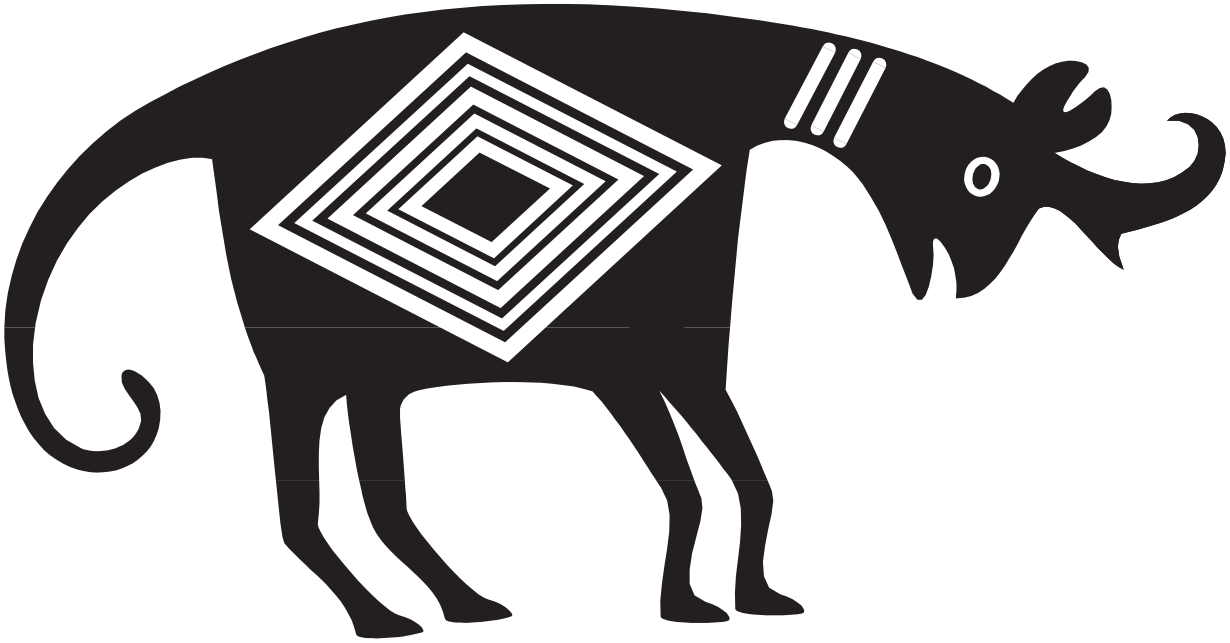
Sixty miles east of the Sells Hospital by paved highway lies Tucson, Arizona's second largest metropolitan area, and home to nearly 750,000. Tucson, or "The Old Pueblo," is one of the oldest continuously inhabited sites in North America, steeped in a rich heritage of Indian and Spanish influence. It affords all of southern Arizona's limitless entertainment, recreation, shopping, and cultural opportunities. The area is a favored tourist and retirement center, boasting sunbelt attributes and low humidity, with effortless access to Old Mexico, pine forests, snow sports, and endless sightseeing opportunities . . . all within a setting of natural splendor.

We offer competitive salary, relocation/recruitment/retention allowance, federal employment benefits package, CME leave and allowance, and loan repayment. Commuter van pool from Tucson is available for a monthly fee. For more information, please contact Peter Ziegler, MD, SSU Clinical Director at (520) 383-7211 or by e-mail at *Peter.Ziegler@ihs.gov*. (2/10)

Family Practice Physician
Jicarilla Service Unit; Dulce, New Mexico

The Jicarilla Service Unit (JSU) is a new, beautiful 65,000 square foot facility nestled in the mesas of northern New Mexico with views of the edge of the Colorado Rockies. We provide care to the Jicarilla ("Basket-maker") Apache community with a population of 3,500. Our clinic has an opening for a board certified/eligible family practice physician for purely outpatient care with a 40 hour work-week. Our site qualifies for IHS and state loan repayment programs. JSU has

a fully functional electronic health record system. Our pharmacy has a robust formulary including TNF-alpha inhibitors and exenatide. The clinic also has an urgent care clinic for acute walk-in cases. Our staff currently consists of a family practice physician, an internist, a pediatrician, a part-time FP physician (who focuses on prenatal care), three family practice mid-levels, an optometrist, and two dentists. We also have a team of dedicated public health nurses who specialize in home visits for elders and prenatal follow-up. The Jicarilla Apache Nation is self-sufficient with profits from oil and natural gas. Much has been invested in the infrastructure of the reservation, including a large fitness facility with free personal training, a modern supermarket, a Best Western Hotel and Casino, and more. We are also located 45 minutes from the resort town of Pagosa Springs, which has year-round natural hot springs and winter skiing at renowned Wolf Creek Pass. We welcome you to visit our facility in person. To take a video tour of the Nzh'o Na'ch'idle'ee Health Center online, go to *http://www.usphs.gov/Multimedia/VideoTours/Dulce/default.aspx*. Please call Dr. Cecilia Chao at (575) 759-3291 or 759-7230; or e-mail *cecilia.chao@ihs.gov* if you have any questions. (01/10)



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THE IHS PRIMARY CARE PROVIDER
A journal for health professionals working with American Indians and Alaska Natives

THE IHS PROVIDER is published monthly by the Indian Health Service Clinical Support Center (CSC). Telephone: (602) 364-7777; fax: (602) 364-7788; e-mail: *the.provider@ihs.gov*. Previous issues of THE PROVIDER (beginning with the December 1994 issue) can be found on the CSC Internet home page *(http://www.ihs.gov/Provider)*.

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Publication of articles: Manuscripts, comments, and letters to the editor are welcome. Items submitted for publication should be no longer than 3000 words in length, typed, double-spaced, and conform to manuscript standards. PC-compatible word processor files are preferred. Manuscripts may be received via e-mail.

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