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Sickle Cell Disease and Native Americans: Overview and Long-Term Considerations for Delivery of Care

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Introduction:

Sickle cell disease is one of the most common fatal genetic diseases in the world, found in areas such as the United States, Africa, India, the Mediterranean, and the Middle East. Recently, the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Health Organization have classified sickle cell disease as a major public health priority, given the severe impact of the disease on patients, their families, and the community. This year, the first World Sickle Cell Day was celebrated on June 19 by the United Nations. Unfortunately, the distribution of the disease is such that it occurs among populations that are often poor, rural, or unable to seek comprehensive care due to social, economic, cultural, and geographical constraints.[1]

In the US, it is estimated that over 80,000 people suffer from sickle cell disease, predominantly African-Americans, Hispanics, and Native Americans. Around 1 in 12 African Americans and 1 in 100 Hispanics carry the sickle cell trait.[2,3] Unfortunately, it is also estimated that only 18,000/80,000 sickle cell patients have access to comprehensive care.[4] Indeed, the presence of the sickle cell gene in the US can be traced back to the slave trade and continued rich history of immigration into the US from India, Africa, Central America, the Middle East, and the Mediterranean.[2] Given the broad spectrum of patients affected by sickle cell disease, as exemplified through diversity in socio-economic status, geographical distribution, and cultural beliefs, health systems catering to sickle cell disease in the US face many challenges in the provision of comprehensive care that is accessible, acceptable, and effective. In a span of 100 years, survival rates for sickle cell disease in the US have increased dramatically, but much work needs to be done to assure that challenges in the current delivery of care in the US are addressed in a timely manner.[5,6]

The purpose of this article, therefore, is to provide a brief overview of sickle cell disease amongst American Indians and Alaska Natives (AI/AN) using existing but limited data, to discuss barriers to provision of continuous care, and to note the availability of resources created for IHS providers to help provide more continuous care to AI/AN sickle cell patients. I have also drawn upon some of our experiences in improving quality of care for sickle cell disease patients amongst indigenous populations in India as a means of exploring some core principles and barriers to delivering sickle cell care in rural areas.

Sickle Cell Disease and Native Americans

Sickle cell disease is a matter of concern among those of AI/AN descent, though there are limited sources of data and narratives to pinpoint areas of high prevalence of the trait and disease. Unfortunately, an accurate assessment of the burden of sickle cell disease amongst AI/AN is difficult due to lack of specificity in the newborn screening registry programs and in medical reports as to AI/AN ethnicity status of the mother. It is estimated that the incidence of sickle cell disease among

In this Issue...

309 Sickle Cell Disease and Native Americans: Overview and Long-Term Considerations for Delivery of Care
314 Naltrexone For Alcohol Dependence
316 Dental X-ray Imaging: Reducing Patient Radiation Exposure within the Bemidji Area Indian Health Service
320 Bariatric Surgery: Who Is a Candidate and Where to Refer
324 Measuring Gaps in Knowledge, Competence, and Performance
326 IHS Child Health Notes
328 The Birdfeeder (A Continuing Education Parable)
330 Meetings of Interest
332 Position Vacancies

those of AI/AN descent is around 36.2/100,000 live births, which makes it the third largest minority in the US affected by the disease, behind African-Americans (289/100,000 live births) and Hispanics living in the eastern states (89.1/100,000).[7] Historically, intermarriage between AI/AN and Blacks in the US, predominantly in the south, may have contributed to the gene prevalence.[8]

The Agency for Healthcare Research and Quality National Inpatient Sample data from 1993 - 2004, of which a portion is included below in Table 1, may provide some preliminary information on disease incidence, but it is of note that these data do not include Indian Health Service hospitals and will most probably greatly underestimate the incidence and geographic distribution of individuals with sickle cell disease.[9] More on-site data collection is important to fill in the current gaps and identify areas where care is needed most, and health care providers can play an active role in this task. Institutions and organizations working with AI/AN patients may be encouraged to collect sickle cell-specific incidence data for future use and to ensure that individuals are aware of their disease or carrier status.

Table 1. National Inpatient Sample for Native Americans with Sickle Cell Disease between 1993 - 2004

State	Frequency of Sickle Cell Hospital Discharges	% of Total Discharges
NJ	66	36.67
NC	42	23.33
FL	31	17.22
NY	11	6.11
MA	8	4.44
MD	6	3.33
PA	6	3.33
WI	4	2.22
SC	3	1.67
VA	2	1.11
CA	1	.56

Challenges and Long-Term Goals in the Provision of Care to Native Americans

The identification of individuals with sickle cell disease and sickle cell trait, and the subsequent provision of comprehensive and accessible care to AI/AN, is a major challenge. Some general ideas regarding implementation of comprehensive care systems for AI/AN affected with sickle cell disease are outlined below. Many of these ideas have been taken from our experience in developing a sickle cell management system for indigenous populations in rural south India.

1. Identify areas of high disease prevalence in AI/AN population areas. This may be through a combination of existing epidemiological and statistical data, personal narratives of health professionals working with AI/AN, feedback from organizations working with AI/AN, and community members themselves. Indian Health Service hospital and newborn screening data may be of use, though it is of note that 14 continental states are not included in the IHS catchment area and thus alternative data sources may be necessary. Tribal health corporations funded by the IHS may also be a potential source of data. Cultural, linguistic, economic, and geographical variations between tribes and Areas will have to be considered in planning the program and introducing awareness of the disease.
2. Engage with AI/AN community members regarding their perceptions of sickle cell disease. This may include patients, families, and providers who deal with sickle cell disease in existing health facilities. This is called delineating an explanatory model of illness, and requires asking members of the community their thoughts on the disease, its origins, endemic terminology for the disease, its mechanism, and any traditional strategies used for managing the disease. This will allow for planning of a culturally appropriate intervention strategy.
3. Assess potential sources of funding for the sickle cell program, including the Indian Health Service, Medicare/Medicaid, CHIPS programs, community-based health insurance, and NGOs working in the area. Provision of continuous care to those in the pediatric-adolescent transition may be difficult due to loss of Medicaid benefits for children 19 and over. Costs associated with transportation of patients and coverage of other incidental patient expenses may also have to be factored in to reduce barriers for patients seeking continuous follow-up care for the disease.
4. Identify members of the local AI/AN community to serve as community representatives of sickle cell management programs in the Area. Also identify health professionals, traditional healers, and facilities working in the Area and the nearest hospital providing acute management services for the disease to serve as a nodal center. A combination of local health facilities and larger hospitals will allow for propagation of a sickle cell disease program using an institutional approach. Plan for the presence of basic laboratory capabilities in the community to conduct neonatal and adult screening, and regular blood tests associated with sickle cell care.
5. Devise education materials including presentations, posters, banners, and flyers, in collaboration with

Table 2. Critical resource matrix for delivery of continuous care in indigenous areas: lessons from an Indian experience[11]

Physical Resources • Main clinic for coordination of rural activities (often in existing health centers, public health facilities, etc.) with inpatient and outpatient capability • Peripheral clinics in the field setting (often in existing health centers, public health facilities, etc.) with basic examination, lab sample collection, and medication dispensing capability • Paper or electronic data management system for patients, with information transfer ability between main and peripheral clinics • Basic laboratory facilities with ability to perform the sickle prep test, cord blood sampling, and hemoglobin electrophoresis • Basic pain medications and supplements including iron, folic acid, and B12 • Hydroxyurea, prophylactic penicillin, and 7 and 23-conjugate pneumococcal vaccines • Vehicle for transportation of providers and/or patients in the rural setting and for conducting screening activities • Internal or external access to blood transfusion facilities for patients in crisis	**Social Capital** • Basic acceptance of allopathic medicine • Community awareness of the program via efforts by the community health workers(s) and other forms of media • Trust between the community and both the providers and health workers, often achieved through use of longstanding health facilities and sustained work in the community • Gradual breakdown of misconceptions and stigma related to sickle cell disease in the community
Human Resources • Coordinating physician with intermediate knowledge of sickle cell management • Coordinating nurse for inpatient and outpatient examinations and main center education • Community health worker for main center and field-based education and counseling • Lab technician for conducting screenings and periodic blood tests for patients	**Intellectual Capital** • Intermediate knowledge of sickle cell disease management on part of the physician and nurse • Basic knowledge of sickle cell disease, its etiology, and counseling strategies on part of the community health worker • Basic knowledge of sickle cell laboratory and screening procedures on part of the lab technician

AI/AN community health workers, to propagate awareness of the disease and the availability of local services to manage it. Organize meetings and local fairs, led by the AI/AN community workers, to promote knowledge and identification of the disease, while continuously gaining feedback from community members on their perception of the disease in view of AI/AN beliefs.

6. Stock the local health center/sickle cell program with essential medications and laboratory equipment for sickle cell management. Ensure easy accessibility for community members in terms of distance. Explore the possibility of holding screening events in the community to identify patients and carriers.
7. Establish clear linkages between the local facilities and nearby hospitals for transfer of patients in crises or in need of transfusion. Develop a registry to keep track of sickle cell patients and carriers in the community. This also includes special medical forms for sickle cell patients who are on therapy and need frequent follow-up visits.
8. Train local health providers in management of sickle cell disease via development and distribution of updated clinical guidelines. Assure that AI/AN community health workers have proper resources to continue spreading awareness of the disease in their communities. Special emphasis will have to be placed on explaining long term care needs for sickle cell disease, particularly during the pediatric-adolescent transition, the importance of complying with any medication regimens prescribed, and the importance of quickly identifying and recording any disease-related complications.
9. Promote home-based identification of complications associated with sickle cell disease, involving parents and spouses, stressing the importance of early identification and care-seeking. Overt expressions of pain may be looked down upon in the AI/AN community, and it is important that the necessity of expressing painful episodes and seeking immediate care is conveyed.[10]
10. Explore the cultural appropriateness of genetic counseling in the AI/AN communities by training members of the community to function as genetic counselors. Should genetic counseling be feasible and acceptable, begin exploring linkages between the local sickle cell programs and prenatal diagnostic facilities in the vicinity. Direct and incidental costs must be explored to ensure that the services are accessible to patients who wish to avail themselves of them.

Available Resources

Identifying and providing comprehensive and continuous care for AI/AN sickle cell patients requires a team effort from providers all across the nation. Based on my conversation with a provider in Oklahoma who deals with AI/AN sickle cell patients, and his belief that a set of comprehensive and updated clinical guidelines for sickle cell disease would benefit IHS providers, I have compiled a clinical guidebook for delivery of care to AI/AN with sickle cell disease. Additionally, based on our experiences and observations internationally, we also have devised a primer on the delivery of care for sickle cell disease in rural areas. Both of these are available to IHS providers online at the Sickle Cell Information Center. Personal narratives from IHS providers dealing with sickle cell patients would also be of great benefit in further identifying the needs and challenges of delivering sickle cell care in AI/AN communities.

The hyperlinks to the clinical guidebook and primer on delivery of care in rural areas are as follows:

http://scinfo.org/scdnaguidelines.pdf (Sickle Cell Clinical Guidebook)

http://scinfo.org/ruralscdprimer.pdf (Primer on delivery of care in rural areas)

Conclusion

In conclusion, little formal data exist on the distribution of sickle cell disease in AI/AN communities; however, the burden of sickle cell disease on these patients and families cannot be ignored. Indeed, the socioeconomic, cultural, and geographical factors surrounding care delivery for AI/AN makes it a challenge to deliver comprehensive and continuous care for sickle cell disease. As such, a combination of greater disease surveillance, improved education for sickle cell disease patients and providers, enhanced linkages between health care facilities, and establishment of culturally competent community screening and education initiatives could be the start of a strong management system in affected AI/AN populations.

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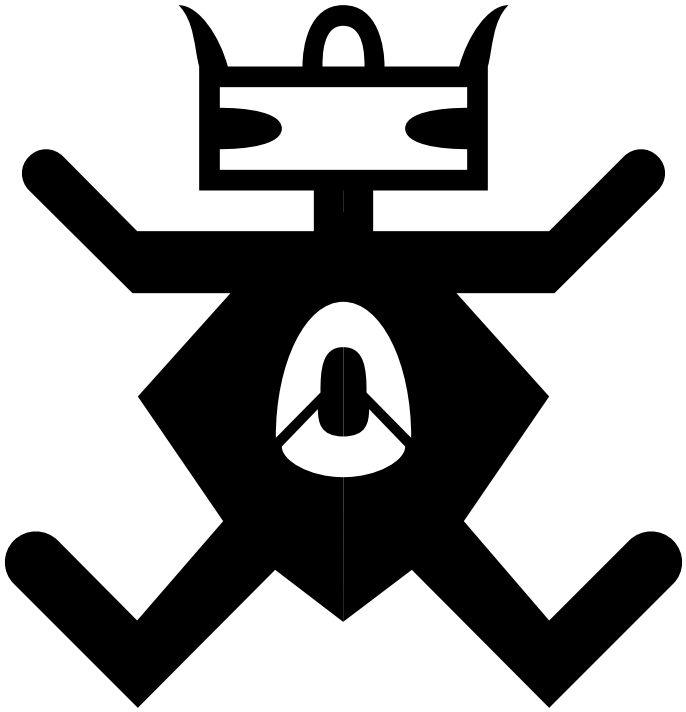

Naltrexone For Alcohol Dependence

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Arguably the greatest health and social hazard facing American Indians and Alaska Natives (AI/AN) continues to be alcohol abuse. With a public health problem of such magnitude, it would follow that if clinicians had a tool -- literally any tool that was "better than nothing" -- they would utilize it, in the hope of sparing whatever suffering they could. There are obviously lots of tools at our disposal that are better than nothing in combating alcoholism. One that remains perhaps underutilized is naltrexone, which has been demonstrated by numerous studies to be effective in mitigating alcohol dependence, and yet has not gained widespread use among clinicians. Naltrexone's limitations have less to do with the molecule itself than with the baffling complexities of substance use disorders in general, and certainly of the problems we face in treating alcohol dependence in AI/AN.

Naltrexone works by blocking opioid receptors in the brain. These receptors are involved with the rewarding effects of alcohol, and therefore naltrexone attenuates the "high" people experience from alcohol, and also seems to diminish craving for alcohol. Due to these effects on the brain, it has been shown in most studies to result in less drinking in treated subjects compared to placebo, particularly when combined with other forms of psychosocial treatment. But the overall effectiveness of naltrexone is modest, and clinicians expecting to engineer dramatic cures for severely afflicted patients may be tempted to abandon the use of naltrexone altogether if they experience a string of cases with unsatisfactory results. The question is, What constitutes a satisfactory result?

The two largest naltrexone studies, in fact, disagreed as to whether it is an effective treatment. A Veterans Administration (VA) study published in 2001, which enrolled 627 subjects (98% males), did not support the use of naltrexone for the treatment of men with chronic, severe alcohol dependence.[1] The more recent Combined Pharmacotherapies and Behavioral Interventions (COMBINE) study,[2] published in 2006, which enrolled twice as many subjects as the VA study (31% of whom were female), found that 16 weeks of treatment with naltrexone, along with medical management by primary care clinicians, was significantly better than placebo and medical management in increasing the percentage of days abstinent (from 75.1% to 80.6%); and in decreasing the percentage of heavy drinking days (from 73.1% to 66.2%). A specialized "combined behavioral intervention" delivered by behavioral health staff along with medical management and placebo, was also comparable with naltrexone/medical management in outcomes. (The COMBINE trial, surprisingly, did not find acamprosate to be effective.)

Even in the positive COMBINE study, it is obvious that we're not talking about a medicine with hugely impressive clinical efficacy. The effect size for the outcome of percent days abstinent in the trial comes out at 0.22 -- generally regarded as a small effect size. Admittedly, reasonable end points in alcohol treatment – ignoring the holy grail of continuous sobriety – are not always easy to define, which results in some obvious research/real world disconnect. In this regard, the COMBINE study came up with a secondary outcome measure for "good clinical outcome," which meant that the subject engaged in no more than moderate drinking, defined as the consumption of a maximum of 11 (women) and 14 (men) drinks per week, with no more than two days per week of *heavy* drinking – more than three drinks for a woman or four drinks for a man. Additionally to meet this "good clinical outcome" standard, participants would have to be free of social, psychological, or physical consequences of drinking during the last eight weeks of the 16 week clinical trial, based on a standardized questionnaire. Using these criteria, naltrexone showed statistically significant separation from placebo in the COMBINE study. The difference for the naltrexone group in terms of "good clinical outcome" vs placebo was 73.7% vs 58.3%. This would yield a Number Needed to Treat of 6.5. In most circumstances this would represent a very reasonable NNT in terms of efficacy. (By comparison, the NNT to achieve a 50% reduction in the Hamilton rating scale – a commonly used indicator of positive response in medication trials for major depression – is 3.) So one's comfort level with this NNT for naltrexone is dependent on how content one is with the concept that up to two days of hazardous drinking per week constitutes a satisfactory efficacy measure or treatment goal. Certainly in the first few weeks and months of treatment, when patients are generally most motivated and successful, this level of drinking would not bode well in terms of long-term improvement, a notion reflected in the fact that by the end of the first year post-treatment, the differential treatment effects in the COMBINE trial largely disappeared.

Back in 2000 (before the negative VA study was published) we did our own field testing of naltrexone here at the Winslow Indian Health Care Center. Over the course of about one year, we attempted to follow 32 patients with alcohol dependence treated with naltrexone. For the most part, we were not very favorably impressed. There were obviously a lot of limitations in trying to adequately interpret the results of our open, uncontrolled pilot, not the least of which is the fact that most patients do substantially better for a time by virtue of engaging in any form of treatment. This is a consistent finding in treatment studies for alcoholism. In the COMBINE trial, for

instance, all groups, regardless of treatment method, improved dramatically over the 16 weeks of the study, from a baseline rate of 25% days abstinent to 73% overall. In our experience at WIHCC, although a handful of patients treated with naltrexone experienced the significant improvement customarily seen in the first few weeks and months of treatment, long term outcomes were disappointing. And for many of our patients, naltrexone seemed to offer nothing at all: more than half abandoned naltrexone very early in the course and returned to drinking. (Admittedly, this outcome mostly owed to providers not rigorously applying our predetermined selection criteria, which required some sobriety and evidence of the ability to engage in treatment. But desperate providers resort to any available options.) It is also true that we harbored overly optimistic expectations, inasmuch as the earlier studies of naltrexone in the early to mid-1990s, prior to its FDA approval in 1995 – conducted over shorter time frames and with significantly smaller samples – reported decidedly more favorable outcomes. In retrospect, I would have to say that our experience here at Winslow fell somewhere between the negative study in 2001 by the VA and the more recent COMBINE study, with its relatively modest outcomes.

Still, naltrexone can be a significant tool in helping certain patients maintain sobriety and/or improve function and quality of life. As with any medication, patient selection is important. Virtually all studies on naltrexone argue for using it for motivated patients engaged in some form of treatment for alcoholism, who also have already attained at least 4 - 5 days of sobriety. (33% of subjects in the COMBINE study, in fact, already had 8 - 21 days of sobriety at randomization, although the inclusion criteria required only 4 days). Naltrexone is thus best viewed as an adjunct to effective self-help or psychosocial treatment. It can be very effective in helping a motivated patient who has a grasp of the problem and has some family or social support, but who may be in need of additional tools to maintain control over drinking. It is also frequently helpful for patients who are fighting to stay sober but are experiencing increased craving, or those who have had a temporary relapse. We have had several patients over the years who return periodically in such situations to enhance their efforts by getting back on naltrexone.

Still unclear are naltrexone's long term effectiveness and the optimal duration of treatment. Effectiveness does tend to wane significantly over time, even if the medicine is continued, and certainly after it is stopped. Again, this argues for naltrexone's use early in treatment to provide a stronger foundation for on-going improvement, or possibly for intermittent use over time as dictated by patient need. The question of long-term use remains unclear. There is a recently approved long-acting injectable form ($492 per month), but real-world experience is limited.

One factor that may account for some of the difference between that 2001 VA study and the more favorable COMBINE results is that the latter study used a dose of 100 mg naltrexone. Evidence points to the fact that this dose is more efficacious than the previously recommended dose of 50mg, without significantly increasing side effects.

Interestingly, a relatively small trial published last summer[3] included 68 Alaska Natives, and concluded that naltrexone was effective for this population. This study showed a very robust outcome in which 35% of naltrexone treated subjects achieved total abstinence over the 16 weeks of the study, as compared to 12% of the placebo group. Whether these results can be replicated in a larger study or will generalize to other AI/AN groups remains to be seen.

In the end, given the horrendous impact of alcohol at both an individual and population level, and balancing that against naltrexone's low cost ($17.66 for a month's supply of the 50mg tablet to IHS) and its relative paucity of safety concerns (primarily hepatotoxicity and blockade of opioid effects), one should not hesitate to use it in selected patients with alcohol problems. If, like me, your own personal NNT is somewhere around 1.5 before you are tempted to abandon use of a drug, you may have to "fake it till you make it" with naltrexone. I am often reminded of the extensive evidence[4] that recovery from alcoholism may depend almost entirely on factors other than specific treatment interventions. Most people who stop drinking don't stop because of treatment per se, but because of other more personal and often ineffable factors, like a religious or spiritual awaking; a new, supportive, close personal relationship; substitute dependencies (food, nicotine, exercise, other compulsive hobbies, or work); or self-help, like AA. In the context of treatment, a similar multiplicity of factors might serve alone or in combination to mitigate alcohol's stranglehold: clinicians' empathic support and encouragement; the mobilization of family and social network to help the patient; cognitive behavioral therapies such as social skills training, relapse prevention, or stress management techniques; effective treatment for co-morbid conditions (e.g., major depression, PTSD); or maybe even the value added of a medication like naltrexone.

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Dental X-ray Imaging: Reducing Patient Radiation Exposure within the Bemidji Area Indian Health Service

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History/Background

In 1895, the scientist Wilhelm Conrad Roentgen discovered the X-ray. In terms of medical significance, this is on par with the discovery and development of anesthesia and the germ theory of disease.[1] The application of X-ray in dentistry was quick to follow when Dr. Otto Walkoff of Braunshweig, Germany made the first dental radiograph of himself in 1895. This required a 25 minute exposure time to produce an image of limited diagnostic quality.[1] Later that same year the American dentist Dr. C. Edmund Kells administered a dental radiograph on his dental assistant. At this time, the hazards of radiation on biological systems were not yet appreciated, and many pioneers including Kells succumbed to cancer while researching and working to perfect X-ray techniques for medical diagnosis.[2] In 1911, the medical X-ray technician Franklin W. McCormack further refined the use of X-ray in dentistry when he opened a dental x-ray laboratory where he constructed and utilized hand made film packets. The hand-wrapped films were placed in black paper with a flat metal plate to provide rigidity and, unknowingly at the time, reduced back scatter radiation. The packet was then wrapped in waxed paper for placement in the patient's mouth.[3]

Since these early pioneers of radiology, there have been many advances in radiation safety and improvements in the diagnostic quality of dental radiographs. The prepackaged dental x-ray films produced in 1913 by Kodak required 60 times more radiation than their F-speed film introduced in 2000.[1] Today intraoral film (film packets placed inside the mouth) and digital radiology have allowed high quality diagnostic images and significant reductions in patient radiation exposure. These reductions have been observed by the Bemidji Area Indian Health Service (BAIHS) Division of Environmental Health Services (DEHS) staff while conducting radiation protection surveys of dental facilities.

It is estimated that 100 million dental radiographs are taken annually in the US.[4] When providing this common and essential diagnostic procedure, the dental provider can select from differing film speeds that require chemical processing, or digital sensors that create the image with the use of a computer and which can be viewed on a monitor. Common intraoral film speeds used today are D-speed (Ultra-speed), E-speed (Ektaspeed Plus) and F-speed (Insight). The selection made by the dental provider affects the amount of time the patient is exposed to radiation and the dose they receive. Faster film speeds and digital sensors require less radiation exposure to produce an image. The use of D-speed film results in a higher radiation dose than E-speed and even greater reduction when switching to F-speed film; yet the price and diagnostic quality are similar. This makes the switch to F-speed film beneficial to the patient, at no additional cost to the provider.[4,5,6,7]

Methodology

The IHS DEHS program certifies staff to conduct routine radiation protection surveys of dental and medical X-ray units. Within the BAIHS there are two certified X-ray surveyors that have conducted routine dental radiation protection surveys at least every three years within the tribal and federal dental clinics operating in the tri-state service region. We followed standard survey procedures developed by the Food and Drug Administration (FDA) Center for Devices and Radiological Health (CDRH) and the IHS. During these routine dental radiation protection surveys intended to assess patient and provider radiation exposure, we evaluated equipment performance, quality assurance measures, film speed, and most importantly, estimated entrance skin exposures (ESE). The ESE is an estimated amount of radiation delivered to the patient's skin when producing a radiograph and acts as a proxy for radiation exposure from intraoral x-ray equipment. In the absence of evidence suggesting a radiation exposure at which there are no health effects, recommendations and technical service were provided to reduce patient radiation exposures to levels as low as reasonably achievable (ALARA). This was done while maintaining diagnostic radiograph quality that was acceptable to the providers. X-ray meters were required to take several measures of radiation dose needed to evaluate intraoral X-ray performance. We used an MDH model 1015 until 2008 and then upgraded to an Unfors Xi X-ray meter. Both units were factory calibrated annually. From 2003 to 2009, we completed performance testing and patient radiation exposure estimates of 278 dental x-ray units located at 28 dental clinics.

Results

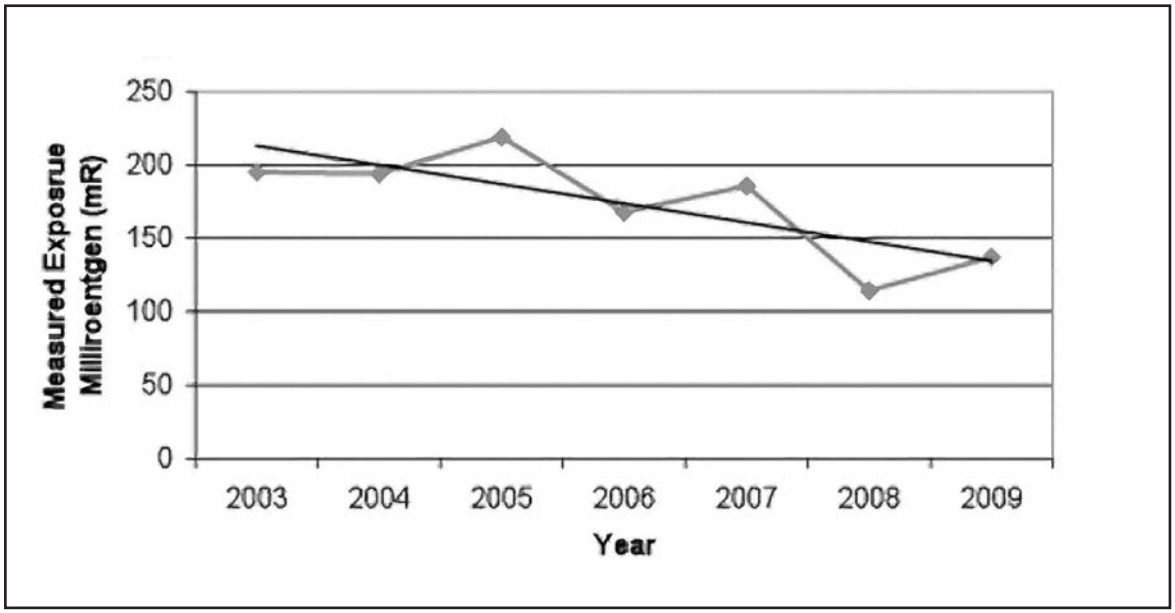
We observed an overall downward trend in yearly

averaged estimated entrance skin exposures. This indicates a decrease in the overall estimated patient dose from dental x-ray equipment at the 28 dental clinics (see Figure 1). Several conditions can lead to changes in patient radiation exposure from dental X-ray, including X-ray equipment selection; exposure time duration; frequency of exposure; and quality assurance aspects such as periodic film inspection, processing chemical "freshness" and temperature, exposure of film to light, and X-ray equipment performance. However, within the BAIHS it is recognized that the largest single factor for this reduction is the decreased exposure time needed when the switch is made from D-speed film to the faster E/F-speed film or digital sensors. As observed and reported by Kodak Dental Systems, changes from Kodak Ultra D-speed film to Kodak Insight E/F-speed film can reduce radiation exposures by as much as 60 percent.[7] Since 2003, at least three dental clinics within our service area switched from D-speed film to digital radiology, and the estimated patient radiation exposures have been reduced by a range of 57 - 97 percent. This was a direct result of reduced exposure time. In fact, Blendl et al found that the exposure time for digital radiology requires half the exposure time of the fastest intraoral films.[8]

Discussion

The 1999 Nationwide Evaluation of X-ray Trends (NEXT), dental survey indicated that 70 percent of dentists providing oral health care in the US choose D-speed film. This trend has quickly changed in our service area where we currently have most dentists using E-speed or F-speed film (68 percent) and some have made the switch to digital sensors (18 percent). This leaves 14 percent of the providers still using D-speed film. A decade ago the D-speed film was popular for high contrast, fine detail, and is still more tolerant to processor variations such as temperature and age of chemistry. However, in the presence of good processor quality assurance, evidence suggests D-speed and F-speed films are comparable in cost and diagnostic radiograph quality.[4-7]

Figure 1. Yearly average estimated patient radiation exposure from BAIHS dental X-ray units 2003 - 2009



* Note: Patient radiation exposure estimates were completed on 278 intraoral X-ray units and yearly average estimated patient radiation exposures calculated.

Conclusion

Dental procedures are typically repeated throughout life. Patients treated by providers using D-speed film receive a higher dose than the alternative faster films and digital sensors, which leads to a slight risk of excess cancers with today's children at greater risk.[3] In 2007, the International Commission on Radiological Protection (ICRP) calculated effective dose and determined that round aiming cylinders and D-speed film carries more than a 20-per-million risk of death. This led the American Dental Association (ADA) to recommend the use of F-speed film or digital sensors to reduce the risk to 2-per-million.[9,10] For those providers still using D-speed film, the time has come to make the switch to F-speed film or digital sensors. When such a change is made, exposure settings need to be reduced to maximize exposure quality while minimizing patient radiation exposure. The IHS biomedical technician, institutional environmental health specialist, or biomedical service contractor can assist you with selecting an appropriate exposure time.

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Spirit of EAGLES

American Indian/Alaska Native Leadership Initiative on Cancer

Artwork Designed by: Chholing Taha

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- To review advances in AIAN cancer research to determine future research priorities, exploring the science of translational research.
- To highlight effective cancer control activities and programs in AIAN communities. (community-focused).
- To highlight the strengths of AIAN traditions in promoting comprehensive cancer prevention and control.
- To publish selected papers presented at the conference so that this information can reach a wider audience.

Bariatric Surgery: Who Is a Candidate and Where to Refer

Hope M. Bulah, MD, Chief Clinical Consultant in Surgery, Cherokee Indian Hospital, Cherokee, North Carolina

The Scope of the Problem

Two thirds of the United States population is overweight and of these individuals, half are obese. The obesity epidemic has made the treatment and evaluation of this health problem even more pertinent for the primary care provider. Bariatric surgery is the most effective treatment available for morbid obesity.

Comorbidities

Obesity is the harbinger of a spectrum of diseases that can affect almost every organ system. Most commonly we see effects on the cardiovascular system with increased rates of hypertension, ischemic heart disease, and myocardial infarction. Obesity can lead to increased thrombotic disease in the cerebral system as well as in the venous system with pulmonary embolus and peripheral venous insufficiency. In the respiratory system there has been an escalation in cases of obstructive sleep apnea (OSA) and obesity hypoventilation syndrome, as well as asthma in the obese.

Within the Indian Health Service, metabolic problems associated with obesity predominate, including type II diabetes, glucose intolerance, and hyperlipidemia. Gastrointestinal manifestations include fatty liver disease, cholelithiasis, and gastro-esophageal reflux. We see obese females with polycystic ovarian syndrome and stress urinary incontinence. Musculoskeletal affects of obesity are commonly seen with back pain, disc disease, and osteoarthritic degeneration of the hips, knees, ankles, and feet. Many obese patients are afflicted with depression and body-image distortion.

The effects of obesity on longevity are equally disturbing, with only one out of every seven morbidly obese patients reaching the average life expectancy of 76.9 years. A morbidly obese female reduces her life expectancy by nine years, a male by 12 years.

Is My Patient a Candidate for Bariatric Surgery?

Determining who is and who is not a surgical candidate can help the gatekeepers get their patients on track to weight loss and a healthier lifestyle. The National Institute of Health (NIH) in 1991 developed a consensus statement regarding surgery for the morbidly obese. This statement described extreme or severe obesity as the criterion for bariatric surgery. This includes patients with a body mass index (BMI) of 40 kg/m^2, or a BMI of 35 kg/m^2 if the patient has significant comorbidities.

The American College of Surgeons in their consensus statement in 2004 recognized that extending the bariatric surgery option to an additional patient group, those patients with Class I Obesity (BMI 30 - 34.9 kg/m2) who have comorbid conditions that can be improved or cured with substantial weight loss may be warranted but requires additional data.

Selecting patients for the surgical option involves more than calculating their BMI. Not all patients who are obese or consider themselves overweight are candidates for surgical intervention. These procedures are not for cosmesis but for prevention of the pathological consequences of morbid obesity. Surgery is just one component of treatment, one tool. Patients must be committed to the appropriate preoperative work-up and ongoing medical management, and understand potential complications. In referring patients, providers should consider whether the patient is ready and well equipped for lifelong changes, what the optimal methods for preoperative assessment are, and which interdisciplinary care models are optimal for these patients.

Preoperative Assessment

Goals of preoperative assessment should include the evaluation of the patient's indications and contraindications to surgery. Comprehensive medical, dietary, and psychological evaluations should be completed. Comorbid states should be treated and optimized prior to surgery. The education of the patients and their support system about treatment options and risks of treatment is an important component of bariatric care. Setting realistic goals with the patient before medical and surgical treatments is helpful prior to interventions.

Most patients will have tried nonsurgical options prior to considering bariatric surgery; diet and drug therapy fail to result in sustained weight loss in the majority of patients. Many insurance companies require documentation of these nonsurgical methods prior to approval of bariatric surgical procedures. Some companies mandate medically supervised attempts; thus, it is important to document your and the patient's efforts at each encounter. These may include a nutritional history, weight loss or gain, physical activity, and behavioral health issues.

The patient's weight and BMI should be monitored and

documented. Comorbid conditions should also be documented and addressed. Secondary causes of obesity (e.g., Cushing's syndrome, hypothyroidism) should be assessed and ruled out when clinically suspected. Routine screening for these conditions has not been proven to be beneficial in view of there incidence relative to the incidence of exogenous obesity.

There are a few contraindications to bariatric surgery such as mental or cognitive impairment, active cancer, advanced liver disease with portal hypertension, and severe uncontrolled obstructive sleep apnea with pulmonary hypertension. Age is no longer a contraindication to bariatric surgery.

Obstructive sleep apnea is particularly prevalent in the bariatric surgical population, is associated with significant morbidity, and is a major risk factor for perioperative events. Approximately 7 of every 10 patients undergoing bariatric surgery may have OSA. Despite this alarming incidence, most cases are not diagnosed before surgery. Primary care providers may refer patients to be tested and treated prior to surgery. Preoperative initiation and perioperative use of continuous positive airway pressure (CPAP) or bilevel positive airway pressure (BiPAP) can reduce hypercarbia, hypoxia, and pulmonary hypertension. It is important to initiate treatment preoperatively.

Preoperative cardiac evaluation can be particularly challenging in the morbidly obese. Full evaluation may be hampered by the patient's body habitus and weight limits of diagnostic equipment. The accuracy of thallium scanning can be diminished in patients with a BMI greater than 30 kg/m2. Transesophageal dobutamine stress testing may be superior. Diagnostic testing and additional consultations should be obtained when clinically indicated.

How Do I Choose a Surgeon or Program for My Patients?

The decision to recommend bariatric surgery for a patient often involves multidisciplinary input for preoperative evaluation and perioperative management of comorbidities. Facilities offering weight loss surgery should have a level of commitment, organization, human resources, and physical resources to provide optimal care. The American College of Surgery has established an accreditation process that recognizes not only high volume centers but also centers with fewer patients having lower levels of both obesity and comorbidities. Becoming familiar with resources in your area is important prior to making referrals.

What Are the Surgical Options?

There is an array of surgical procedures that have been utilized to induce weight loss. In general there are two mechanisms: malabsorbtive procedures and restrictive procedures, or combinations of both. Currently gastric bypass is the most common procedure in the US and combines a restrictive element, which involves creation of a small gastric pouch, with a gastrointestinal bypass as the malabsorbtion element. Adjustable gastric banding is another common procedure, and is purely restrictive. Gastric sleeve resections and biliopancreatic diversions are additional procedures, although they are not utilized as commonly. All these procedures can be done by open or laparoscopic techniques. Some surgeons perform an array of procedures; some perform one operation exclusively.

What About Complications?

There is potential for serious complications with any of the surgical options. Operative morbidity can result from pulmonary emboli, anastomotic leak, infection, cardiovascular complications, or respiratory problems. This underscores the reasons preoperative assessment and multidisciplinary input are so important in this patient population.

Summary

Bariatric surgery is the most effective weight loss therapy currently available for patients with morbid obesity. Surgery can result in improvement or elimination of many obesity related medical complications. Primary care providers can be instrumental in helping their bariatric patients decide if surgery is appropriate and indicated in their situation. The primary care provider can often initiate the medical therapies available and document the results, and when applicable become part of the multidisciplinary team that cares for this challenging group of patients.

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The Advances in Indian Health (AIH) Conference is Indian Country's Primary Care Conference and is offered for primary care physicians, nurse practitioners, physician assistants, nurses, pharmacists and other clinicians who work with American Indian and Alaskan Native (AI/AN) populations at federal, tribal and urban sites.

Both new and experienced attendees will learn about advances in clinical care specifically relevant to AI/AN populations, with special emphasis on diabetes, substance abuse and mental health issues. Opportunities to learn from experienced career clinicians who are experts in Native people's health will be emphasized. Indian Health Service Chief Clinical Consultants and disease control program directors will be available for consultation and program development.

The conference format includes three and a half days of lectures and workshops. To view the 2009 brochure and, when available, the 2010 brochure go to the UNM CME web site at http://hsc.unm.edu/cme . For additional information please contact the course director, Dr. Ann Bullock at (828) 497-7455, annbull@nc-cherokee.com or Kathy Breckenridge, University of New Mexico Office of Continuing Medical Education at (505) 272-3942, or email the UNM Office of Continuing Medical Education to request a brochure at CMEWeb@salud.unm.edu. If you have attended the conference in the past *two years*, you are already on our mailing list and a brochure will be mailed to you.

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The IHS Chief Clinical Consultants

The IHS Chief Clinical Consultants (CCC) are senior Indian health clinicians with valuable experience and expertise in their respective fields. They are available to answer your questions about clinical practice and policy. In order to make sure that those practicing in the field know who they are and how to reach them, we are publishing the following list of these individuals and their contact information. In future issues of *The Provider*, we will offer them the opportunity to publish articles about priority issues in their specialty areas. Some, such as Drs. Steve Holve and Jean Howe have been regular contributors for some time, and our readers are appreciative of their willingness to do this, usually on their own time.

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Measuring Gaps in Knowledge, Competence, and Performance

The following is excerpted from "CME as a Bridge to Quality" from the Accreditation Council for Continuing Medical Education. This booklet describes a new strategy to link CME to improved health care. Although it addresses physician CME, continuing education for other professions, including nursing and pharmacy is moving is similar directions.

The ACCME 2006 Updated Accreditation Criteria provide the algorithm that links CME to our collective efforts for quality improvement. As a partner in the national discourse to identify strategies to improve United States health care, ACCME accreditation requirements are evolving CME so that it is more effectively addressing current and emerging public health concerns. To make this commitment to quality improvement evident, our system asks accredited providers to embody the same dynamic of "learning and change" that they expect of their physician learners.

Supported by the Updated Criteria, accredited providers state their CME mission in terms of changes in competence (i.e., knowing how to do something, "knowledge in action"), performance (i.e., what actions are taken), or patient outcomes that will result from their efforts. An accredited provider's program of CME is determined by the professional practice gaps of its own learners. These gaps reflect the health care delivered.

Therefore, compliance with the Updated Criteria provides the assurance that accredited CME is synonymous with practice-based learning and improvement where, 1) the content of CME matches the scope of the learner's practice, 2) learning activities are linked to practice-based needs, and 3) changes in physician competence, performance, or patient outcomes are measured.

The important "take home messages" from this are two. We need to use objective measures to discover gaps in professional knowledge, competence, and performance, as well as patient outcomes to show us where to focus our continuing education efforts. We then need to use our evaluations of our activities to measure improvements in knowledge, competence, and performance to assess the impact of our efforts.

For more information, go to www.accme.org.

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If you also want to discontinue your hard copy subscription of the newsletter, please contact us by e-mail at *the.provider@ihs.gov*. Your name will be flagged telling us not to send a hard copy to you. Since the same list is used to send other vital information to you, you will not be dropped from our mailing list. You may reactivate your hard copy subscription at any time.

Proposed Changes in *The IHS Provider*

As most of our readers know, there are still persistent issues with the timely distribution of paper copies of *The Provider*. We want to be sure information gets to our readers in a more timely manner; therefore, we propose the following changes. Your input will help us better serve our readers in the future.

We will continue to publish monthly issues with all articles, meetings, announcements, position vacancies and so on, but we will distribute these electronically, using the Provider listserv to let those subscribed to that service know when issues are published to the website. This will assure that all who are interested can receive all of this information in a timely manner. Currently, about 15% of our readership has subscribed to the listserv (see the instructions elsewhere in this issue about how to do this) and the list has been growing at an annual rate of about 20 percent.

We will publish and mail paper issues on a quarterly basis, and these will contain only the *articles* for the past three issues. This will assure that those without Internet access will still be able to see all of the clinical information, although these paper issues will not include the time-sensitive information described above.

A significant proportion of the cost of publishing *The Provider* is the postage needed to distribute the 6000 copies that go out monthly, and so, by mailing only quarterly issues, we will be able to save the agency money, as well.

We are interested to hear feedback from readers to know if this idea poses any hardships, or if there are suggestions about how to revise this plan to better meet the needs of our readers. We anticipate making the switchover in January, so please send us your ideas now, so that we have time to consider them and incorporate them into our plans. Send these by e-mail to *john.saari@ihs.gov*.

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

"If 50 million people say a foolish thing, it is still foolish."

Anatole France

Articles of Interest

Pediatric specialized transport teams are associated with improved outcomes. Orr RA, Felmet KA, Han Y, et al. *Pediatrics*. 2009 Jul;124(1):40-8.

Speed isn't everything in pediatric medical transport. McPherson ML, Graf JM. *Pediatrics*. 2009 Jul;124(1):381-3.

This article and accompanying editorial compare the rate of adverse events and mortality for children transported by teams that specialize in pediatric care versus general transport teams. Though this was an observational study, bias was eliminated as all patients went to a single pediatric ICU and transport consultation was provided by a single group of intensivists: the choice of whether a general or specialized team was called was based on which team was available.

The results were striking. The adverse event rate (e.g., dislodged endotracheal tube) was much higher for the non-specialized teams. Most notable was that the mortality rate for the pediatric teams was 9% versus 23% for non-specialized teams. To quantify the difference most bluntly: every seven times a general transport team was used rather than a pediatric team, an additional child died unnecessarily. The article notes that pediatric teams often take twice as long to arrive on scene and often stay on-site twice as long to stabilize the patient. The authors note that it may be the extra time and attention to detail that accounts for the better outcome for specialized teams.

The accompanying editorial points out that while hospitals are strictly regulated, there is relatively little oversight of free-standing emergency transport services. The Federal Aviation Administration has oversight over pilot training and aircraft but none over the quality of medical care in transports. States license emergency transport teams but provide almost no oversight. The sole accrediting body for medical transports is the Commission on Accreditation of Medical Transport Systems (CAMTS). However, participation in the CAMTS system is voluntary and currently only about 20% of transport programs have achieved certification. In the marketplace of emergency transport, it is truly "buyer beware."

Editorial Comment

Pediatric transport is especially important for those of us who care for AI/AN children, as many federal and tribal sites are geographically remote. Practitioners face two issues; their own anxiety in caring for critically ill children and the contracting system in their facility. Practitioners must temper their desire to be rid of a critically ill patient as soon as possible with the realization that the best care may take longer to arrive on scene. Secondly, practitioners need to make sure that contracts at their facility state that only neonatal and pediatric teams are qualified to transport seriously ill children. Failure to put this in the bid for emergency transportation contracts means that non-specialized teams, if cheaper and more readily available, must be called first.

Infectious Disease Updates

Rosalyn Singleton, MD, MPH

2009 Redbook: Major Changes in Palivizumab (Synagis®) Recommendations for RSV Prophylaxis.

American Indian and Alaska Native (AI/AN) children from the southwest and Alaska have RSV hospitalization rates 3 - 5 times higher than the US general population. Palivizumab has been associated with a 3-fold decrease in RSV hospitalizations among high risk premature AN children.

The Redbook contains a statement about AI/AN children who may experience more severe RSV disease and a longer RSV season:

- While RSV hospitalization for Navajo and White Mountain Apache infants and young children may be 2 to 3 times those of children of similar ages in the US, the timing and duration of the season is similar, so the Redbook advocates "standard recommendations" for palivizumab in these children.
- Since Alaska Native children experience not only higher RSV hospitalization rates but also a longer RSV season, the Redbook recommends that "Pediatricians from the YK Delta may wish to use CDC-generated RSV hospitalization data to assist in determining the onset and offset of RSV season for the appropriate timing of palivizumab administration."
- The 2009 Redbook just came out with major cutbacks in palivizumab (Synagis®, Medimmune) recommendations driven by cost considerations.

- The main change is for children of 32 - 35 weeks gestation with risk factors. This is the largest group in terms of numbers but was felt to be at lower risk for severe complications of RSV disease. Children are recommended to receive Synagis® only up to three months during the RSV season instead of throughout the RSV season as previously recommended. For example, a 32 week infant born in November would receive Synagis® at discharge from the nursery, and then in December and January, but not the rest of the winter.
- Other at risk groups will continue to receive five doses total between November and March

Comment

In an effort to balance costs and risks the State of Alaska has recommended palivizumab for infants 32 - 35 weeks gestation born during Oct 15 - May 15 with risk factors of 1) lack of running water and 2) household crowding (>7 per house or >3 per bedroom. Alaska Medicaid will reimburse for six doses in a season. This is far more than the three doses of Synagis® recommended for the rest of the country but less than the seven doses covered in past years in Alaska.

Providers who care for AI/AN children should advocate for adequate reimbursement for palivizumab and maintain surveillance for RSV hospitalizations in high-risk children to evaluate the impact of the new recommendations.

Recent literature on American Indian/Alaskan Native Health
Michael Bartholomew, MD

Banerji A, Greenberg D, White LF, et al. Risk factors and viruses associated with hospitalizations due to lower respiratory tract infections in Canadian Inuit children. *Pediatr Infect Dis J*. 2009;28: 697-701.
http://www.ncbi.nlm.nih.gov/pubmed/19461554?ordinalpos=1&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_DefaultReportPanel.Pubmed_RVDocSum

The leading cause of hospitalizations, evaluations, and expenditures for Inuit children of Baffin Island, located in Nunavut, Canada (Canadian Artic), is lower respiratory tract infection (LRTI). Previous studies have illustrated high rates of mechanical ventilation for admitted Baffin Island children with LRTI. Many risk factors associated with admission for LRTI in Canadian children have been identified in urban tertiary care centers in prior studies and are often extrapolated to Inuit children, remote populations, or other indigenous groups. The purpose of this matched case control study is to identify 1) the association between potential risk factors for LRTI admission among children less than two years of age residing on Baffin Island and 2) the viruses associated with these admissions.

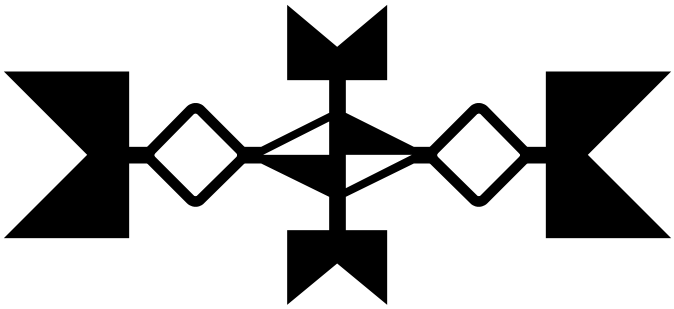
Between January 2002 and March 2003, 101 enrolled cases (of 110 children age two years or less, admitted with LRTI) accounting for 124 admissions were matched with 101 age matched controls. Primary demographic risk factors including prematurity, full Inuit race, smoking in pregnancy, adoption, breast-feeding, overcrowding, and residing in the communities/place of residence outside Iqaluit (the Capital of Nunavut) were assessed via questionnaire. Nasopharyngeal aspirates were collected. Smoking in pregnancy (OR = 4.4; 95% CI: 1.12-14.6), full Inuit race (OR = 3.8; 95% CI: 1.1-12.8), overcrowding (OR = 2.5; 95% CI: 1.1-6.1), and residing in a rural location or community (OR = 2.7; 95% CI: 1.0-7.2) were independently associated with admission for LRTI for Inuit children less than two years of age. Non-breast fed infants were 3.6 times more likely to be admitted for LRTI.

Viral specimens were obtained in 121 case admissions (of the 124 total admissions) and 119 of the age matched controls. Viruses were identified in 88 admissions (33 negative specimens.) and in 16 controls (103 negative specimens). RSV (sole infection) was identified in nearly half of the identified viruses. Co-infection/multiple viruses accounted for approximately 15% of case admissions.

Inuit and other First Nations indigenous populations should continue to identify and promote prevention strategies to address these risk factors associated with LRTI admissions, especially those groups residing in isolated and remote locations.

Locums Tenens and Job Opportunities

If you have a short or long term opportunity in an IHS, tribal or urban facility that you'd like us to publicize (i.e., AAP Web site or complimentary ad on Ped Jobs, the official AAP on-line job board), please forward the information to *indianhealth@aap.org* or complete the on-line locum tenens form at *http://www.aap.org/nach/locumtenens.htm*.



The Birdfeeder (A Continuing Education Parable)

John F. Saari, MD, Physician Educator, IHS Clinical Support Center, Phoenix, Arizona

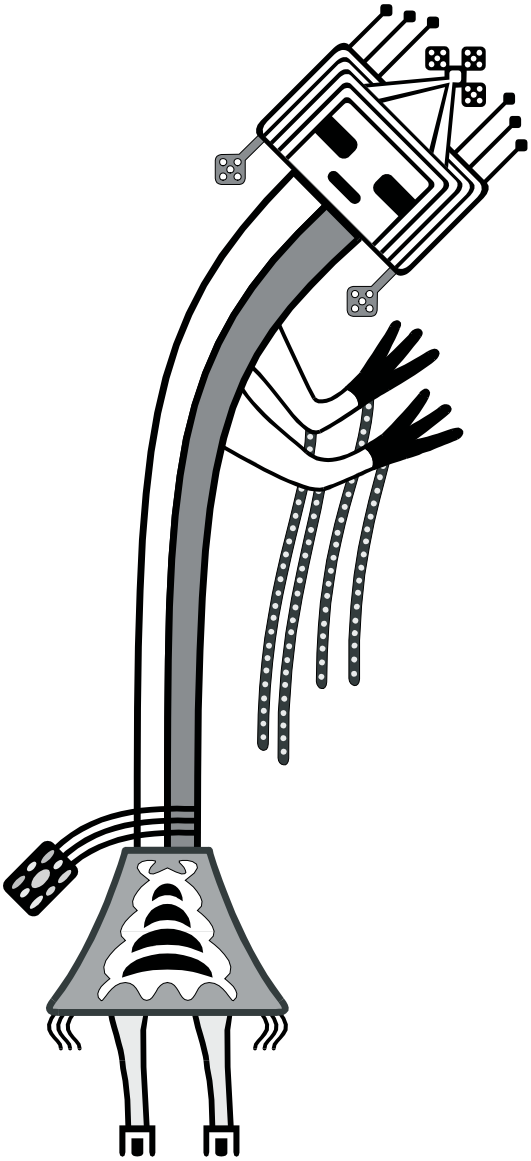
My nieces said they needed a birdfeeder. The birds living in their yard were hungry. Our goal, then, was to build a birdfeeder while they were visiting, and, ultimately, to feed the birds.

Now, as we climbed down the stairs to my dusty shop, I asked them if they knew how to screw things together, among other tasks, and they said they did (*they did not know what they did not know*). When I showed them the tools and raw materials, though, they said they generally knew what they were for (*knowledge*), but they did not feel that they could actually do it all (competence). When I let them try, it was clear that they could not (*performance*). Our needs assessment was complete.

Our component objectives could have been described in terms of teaching objectives (*"I would demonstrate the techniques of screwing two pieces of wood together"*) or in terms of the theoretical *("They would be able to discuss the principles of the assembly and list the steps of putting the wood together"*). More to the point, however, I thought the objective should be that, "by the time we were done, they would be able to use a #8 flathead wood screw to hold two pieces of wood firmly together, with the head flush to the surface, all while under supervision" (*what they would be able to do, by when, how well, and under what conditions*).

I demonstrated; they practiced, and by the time we were done, they were able to do this and other tasks quite on their own. They said they now knew how to do it (*knowledge*), could do it on their own with their dad watching when they went home (*competence*), and that they intended to do so when they built a birdhouse to go along with the feeder (*intention to change practice*). They had also demonstrated that they were able to do the component tasks quite well (*performance*). Our evaluation of the day was that it was a success; this was confirmed by their parents' approval of the final product.

They took the feeder home, and it was a big hit with the birds (*follow-up evaluation*); our goal was accomplished. However, when I saw them next, they said they had not, in fact, built a birdhouse, because they did not have the birdhouse plans they needed (*barriers to change*). We talked about it, and we found some plans on the Internet; now the birds have a home as well as a place to eat.



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*** Law ***
*** Integrity and Ethics ***
*** Negotiation ***

Session One: March 15 - 19, 2010
Session Two: April 19 - 23, 2010
Session Three: May 24 - 28, 2010

You can be a part of the 2010 Class of the Executive Leadership Development Program (ELDP)!

The purpose of the Executive Leadership Development Program is to provide a forum where participants learn new skills and encounter different approaches to reduce barriers, increase innovation, ensure a better flow of information and ideas, and lead change. The goal is to provide essential leadership training and support for Indian health care executives, whether they work in Federal, tribal, or urban settings.

Look for the registration material in January on *http://www.ihs.gov/nonmedicalprograms/eldp/* .

ELDP Coordinators:
Gigi.Holmes@ihs.gov* and *Wesley.Picciotti@ihs.gov

MEETINGS OF INTEREST

Available EHR Courses

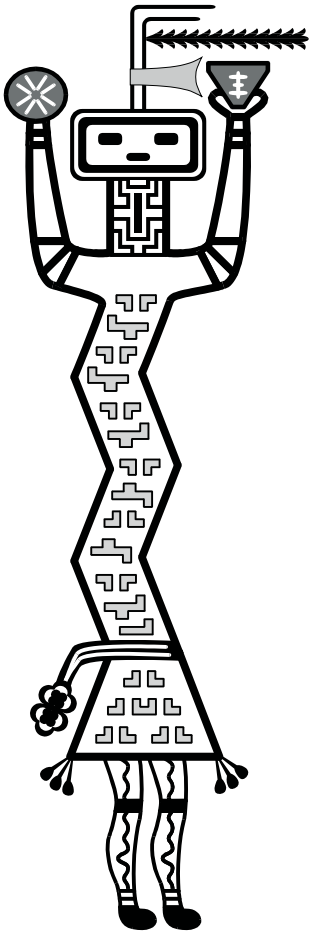
EHR is the Indian Health Service's Electronic Health Record software that is based on the Resource and Patient Management System (RPMS) clinical information system. For more information about any of these courses described below, please visit the EHR website at *http://www.ihs.gov/CIO/EHR/index.cfm?module=rpms_ehr_training*.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

The 2010 Meeting of the National Councils for Indian Health
March 21 - 26, 2010; Phoenix, Arizona

The National Councils (Clinical Directors, Chief Executive Officers, Chief Medical Officers, Oral Health, Pharmacy, and Nurse Consultants) for Indian health will hold their 2010 annual meeting March 21 - 26, 2010 in Phoenix, Arizona. Engage in thought-provoking and innovative discussions about current Indian Health Service/tribal/urban program issues; Identify practical strategies to address these health care issues; Cultivate practical leadership skills to enhance health care delivery and services; Share ideas through networking and collaboration; and receive accredited continuing education. Indian health program Chief Executive Officers, clinico-administrators, and interested health care providers are invited to attend. The meeting will be held at the Hyatt Regency Phoenix, 122 North Second Street, Phoenix, Arizona 85004. Please make your hotel room reservations by March 1, 2010 by calling 1-(800) 233-1234 or (602) 252-1234. Be sure to ask for the "Indian Health Service" group rate. On-line registration and the conference agenda will be available late December at the Clinical Support Center web page at *http://www.csc.ihs.gov*. The IHS Clinical Support Center is the accredited sponsor for this meeting. For more information, contact Gigi Holmes or CDR Ed Stein at (602) 364-7777; or e-mail *gigi.holmes@ihs.gov*.

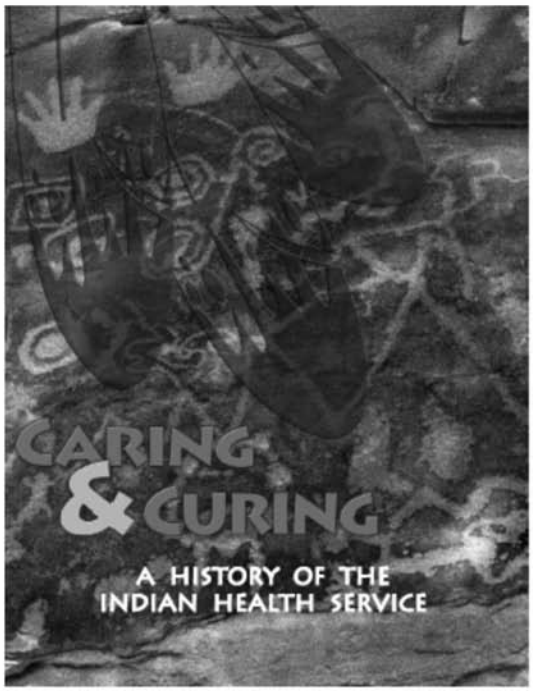
Advances in Indian Health
April 27 - 30, 2010; Albuquerque, New Mexico

The Advances in Indian Health Conference, April 27 - 30, 2010 will be held at the Sheraton Uptown in Albuquerque, New Mexico. "Advances" is IHS's primary care clinical conference and attracts over 350 clinicians from across the Indian health system. The conference covers many primary care topics with special emphasis on diabetes, mental health, substance abuse, women's health, geriatrics, pediatrics, and the EHR. With low tuition and a government rate available for the conference hotel, Advances is a low cost way for clinicians to receive up to 28 hours of CME/CE on issues of particular importance to Indian health patients and practices. The conference brochure will be available in early 2010 on the UNM Office of CME website: *http://hsc.unm.edu/som/cme/2010_Conferences.shtml*. For more information, contact the course director, Ann Bullock, MD, at *ann.bullock@ihs.gov*.



Caring & Curing: A History of the Indian Health Service

The PHS Commissioned Officers Foundation is pleased to announce the publication of our third book, ***Caring & Curing: A History of the Indian Health Service***, by James P. Rife, a senior historian with History Associates, and Captain Alan J. Dellapenna, Jr., USPHS of the Indian Health Service. This thoroughly researched volume chronicles the history of Indian Heath Service (IHS) from its earliest beginnings, as part of the Department of the Interior, through multiple reorganizations including the 1955 transfer to the U.S. Public Health Service. Focusing upon the intense, often shifting political, tribal, and healthcare dynamics; *Caring & Curing* traces IHS's evolution over time. The book follows the agency through myriad trials and triumphs in its long-running fight to elevate Indian health to a level comparable to that of the rest of the nation. Brought to life through compelling personal stories, a crisp narrative, and archival imagery, the book not only looks at past successes and failures of Indian health care, but keeps an eye towards the future and the remaining work to be done by the agency in consultation and cooperation with American Indians and Alaska Natives.



In addition to the riveting story, this full color book includes hundreds of historical photographs, many never before published, documenting key moments in Native American health care. *Caring & Curing* is an important link documenting the rich legacy of the PHS Commissioned Corps in protecting and improving the health of all Americans and will surely rank with *Plagues and Politics* as a "must have" addition to the library of every public health professional.

Caring & Curing will have a retail price of $34.95 plus shipping and $2.00 standard handling per order. The Foundation is pleased to offer a pre-publication discount of 15% ($29.71) per book to COA members who order copies of *Caring & Curing* before December 15, 2009. For information on how to order, visit www.phscof.org.

Caring & Curing: A History of the Indian Health Service

- Authors: James P. Rife and CAPT Alan Dellapenna, Jr., USPHS
- Publisher: PHS Commissioned Officers Foundation for the Advancement of Public Health
- This Book Is: 170 Pages, Hardcover, Full Color, 8 ½ by 11 inches
- Wholesale Price (17 or more copies): $29.71 per book (15% discount) plus shipping and $2.00 standard handling per order

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
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. (11/09)

Family Physician
SouthEast Alaska Regional Health Consortium Clinic; Juneau, Alaska

The SEARHC (SouthEast Alaska Regional Health Consortium) 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, with excellent quality of life. We have the opportunity to practice full spectrum family medicine. Juneau is a National Health Service Corp Loan Repayment Site. Southeast Alaska has amazing winter and summer recreational activities. Enjoy Alaska's capital with access to theater, concerts, and annual musical festivals. Join a well rounded, collegial medical staff, with generous benefits. For information, contact Dr. Cate Buley, telephone (907) 364-4485; e-mail *cbuley@searhc.org*; or go to www.searhc.org. Job Requirements are a board certified family physician who has completed an accredited family medicine residency. (11/09)

Mid-Level Provider
Aleutian Pribilof Islands Association, Inc.

Provide health care services to whole generations of families. We are recruiting for a mid-level provider based in beautiful and interesting St. Paul Island or Unalaska, Alaska. Duties include primary care, walk-in, urgent care, and emergency services; treatment and management of diabetes a plus. Must have the ability to make independent clinical decisions and work in a team setting in collaboration with referral physicians and onsite Community Health Aide/Practitioners. Sub-regional travel to other APIA clinics based on need or request. Minimum experience: 2 - 3 years in a remote clinical setting to include emergency care services and supervisory experience. Indian Health Service experience a plus. Will be credentialed through Alaska Native Tribal health Consortium. Positions available immediately. Work 37.5 hours per week.

Qualifications/required knowledge and skills include the following: graduate of an accredited ANP, FNP, or PA-C program; requires a registration/license to practice in the State of Alaska; credentialing process to practice required; knowledge of related accreditation and certification requirements; three to five years experience (two years of supervision preferred) or an equivalent combination of education and/or experience; ability to perform medical examinations using standard medical procedures; knowledge of patient care charging to include "superbill" coding, patient histories, clinical operations and procedures, primary care principles and practices; ability to observe, assess, and record

symptoms, reactions, and patient progress; ability to react calmly and effectively in emergency situations; up-to-date CPR and ACLS certifications; knowledge of drugs and their indications, contraindications, dosing, side effects, at proper administrations; knowledge of emerging trends in technologies, techniques, issues, and approaches in area of expertise; ability to clearly communicate medical information to professional practitioners and the general public; ability to educate patients and/or families as to the nature of disease and to provide instruction on proper care and treatment; ability to maintain quality, safety, and/or infection control standards; ability to self-manage assigned patient caseload, including organizing, prioritizing, and scheduling appointments, services, and work assignments; ability to make administrative and procedural decisions; computer literate; ability to give oral and written reports; willingness and means to travel on rotation throughout the Aleutian Pribilof Islands Region; valid Alaska driver's license; willing to take training and attend workshops and meetings periodically to enhance job performance and knowledge.

Salary DOE, includes benefits. Contractual commitment. Job description available upon request. Open until filled. Submit resumes with at least three professional references to Aleutian Pribilof Islands Association, Inc., Attn: Human Resources Director, 1131 E. International Airport Road, Anchorage, Alaska 99518; e-mail *nancyb@apiai.org*; telephone (907) 276-2700; fax (907) 279-4351. Native preference will be given to qualified applicant pursuant to P.L. 93-638. (11/09)

Family Practice Physician/Medical Director
Carl T. Curtis Health Education Center
Omaha Tribe of Nebraska, Macy, Nebraska

The Omaha Tribe of Nebraska is seeking a full-time, permanent physician medical director for the Carl T. Curtis Health Education Center. The CTCHEC is a comprehensive, tribal community-based ambulatory family medicine facility. Services include primary care, dental, behavioral health, substance abuse treatment, and diabetes. The physician medical director functions as the supervisor of the outpatient clinic, ambulance service, and a 25-bed long term care facility. A 12-chair hemodialysis unit operates within the facility with a contracted nephrologist as medical director. Specialty consultants with regular clinics operating include podiatry, optometry, psychiatry, audiology, endocrinology, physical therapy, and occupational therapy.

The people of the Omaha Tribe are the descendents of the original first Nebraskans. Their ancestral home is their current home and lies among beautiful timber filled rolling hills following the Missouri River. Abundant wildlife with hunting and fishing available is a bonus benefit for the outdoors person. Driving times to nearby cities are 40 minutes to Sioux City, Iowa and 70 minutes to Omaha, Nebraska.

The physician that we are looking for in this position will appreciate a comprehensive, patient and family-first philosophy of practice. Our physician medical director will be interested in the broad, rural, "frontier" medical experiences. He/she will have daily access to behavioral health professionals, certified diabetes educators, and an energetic, multi-disciplinary team of colleagues anxiously awaiting his or her arrival. Hopefully, you are looking for us if you are a compassionate highly skilled physician. You practice medicine according to adopted evidence-based standards and are an exceptional listener and diagnostician. The Carl T. Curtis Health Education Center and the staff members are seeking a physician leader who is interested in excellence with experience in managing resources. If you are our physician medical director, a competitive salary; a full health, vision, and dental benefits package; student loan repayment; four weeks of paid vacation plus 20 paid holidays per year; and a retirement plan await you.Please help us find you by contacting Jessica Valentino, Administration by e-mail at *Jessica.valentino@ihs.gov* or Kelly Bean, Medical Staff, at *Kelly.bean@ihs.gov*. (10/09)

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

The Warm Springs Health and Wellness Center will have an opening for a board certified/eligible family physician starting April 1, 2010. 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, of which one is retiring 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 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. (10/09)

Family/Pediatric Nurse Practitioner for School Health Program
Nurse Practitioner for San Simon Health Center
Sells Service Unit; Sells, Arizona

The Sells Service Unit (SSU) in southern Arizona is recruiting for a family/pediatric nurse practitioner for our school health program. 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, the Santa Rosa Health Center, located in Santa Rosa, 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*. (9/09)

Family Practice Physician
SouthEast Alaska Regional Health Consortium; Juneau, Alaska

The SEARHC (SouthEast Alaska Regional Health Consortium) Clinic in Juneau, Alaska has an excellent opportunity for a family physician with obstetrics skills to join a medical staff in 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 with 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. Join a well rounded, collegial medical staff with generous benefits. For information contact Dr. Cate Buley, (907) 364-4485; *cbuley@searhc.org* or *www.searhc.org*. (9/09)

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, internal medicine, and emergency medicine physicians to join our experienced medical staff. The Sells Service Unit 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, the Santa Rosa Health Center, located in Santa Rosa, and the San Simon Health Center located in San Simon, 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.

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Internal Medicine Hospitalists
Physicians Assistants/Nurse Practitioners
Pine Ridge Service Unit; Pine Ridge, South Dakota

The Pine Ridge Service Unit is seeking enthusiastic health care practitioners to come work with their current staff on the Pine Ridge Indian Reservation. The Pine Ridge Service Unit consists of a hospital located in Pine Ridge and two independently-staffed satellite clinics in Kyle and Wanblee, South Dakota.

The hospital is a multidisciplinary facility that includes inpatient, outpatient, urgent care, emergency, dental, behavioral health, pharmacy, ob/gyn, surgery, optometry, podiatry, pharmacy, and physical therapy services. The facility is currently seeking to strengthen the services and staff to ensure quality care for our population of 45,000 beneficiaries.

Pine Ridge is located just south of both the Black Hills and

Badlands of South Dakota so the outdoor activity possibilities are unlimited. There are two colleges within fifty miles, and Rapid City, with its variety of cultural opportunities, is within ninety miles.

If you are interested in a challenging position with the opportunity to have a positive effect on developing and building health care services, please contact Jan C. Colton, DMD, PhD, Acting Clinical Director, Pine Ridge PHS Hospital, 1201 E. Highway 18, Pine Ridge, South Dakota, 57770; telephone (605) 867-3019. (9/09)

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, physicals, and direct the evaluation, diagnosis, and treatment of PTHA patients in local hospitals including participation in rounding schedule; 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; participate in utilization review studies and quality improvement committee 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 generous time off schedule.

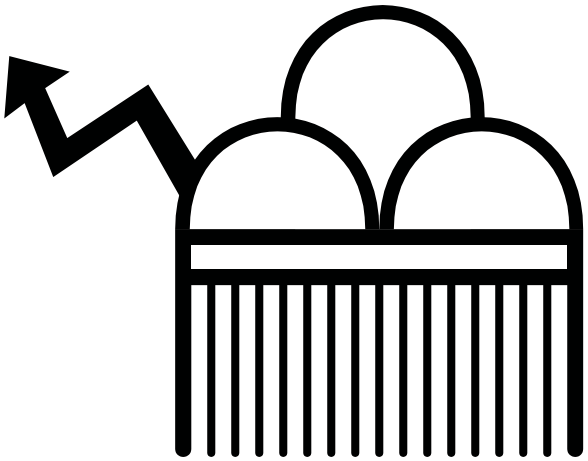
To apply, a PTHA employment application is required (resume optional). Please submit completed applications to the Human Resource Department prior to the closing date. Indian hiring preference by law. Telephone (253) 593-0232, ext 516; fax (253) 593-3479; e-mail *hr@eptha.com*; website *www.eptha.com*. The address is PTHA Human Resource Department, KCC bldg #4, 1st Floor, 2209 E. 32nd St. Tacoma, WA 98404. (8/09)

Family Practice Physician
Pharmacist
PHS Clinics; Wind River Service Unit, Wyoming

This is the primo IHS opportunity. Two family physicians will be retiring in January to split a position between them, leaving a hiring opportunity for this progressive and stable seven-physician group (six FP and one pediatrician). We admit patients to the Lander Regional Hospital on a 1/7 on-call basis and staff two clinics on the reservation, along with four nurse practitioners. The Wind River Reservation is home to the Northern Arapaho and Eastern Shoshone Tribes. Local cultural opportunities abound, and the medical practice is fascinating and challenging.

The physicians tend to live in Lander, which is located adjacent to the Wind River Indian Reservation. Lander was featured in Sunset Magazine as one of "The West's Twenty Best Small Towns" and has been featured in the book "Best Small Towns in America." It is located next to the Wind River Mountains, which offer a spectacular chance for world class climbing, hiking, outfitting, fishing, and hunting. Lander is progressive and is the world headquarters for the National Outdoor Leadership School. Next fall, Lander High School graduates will attend MIT, Duke, and Princeton. The IHS physicians enjoy a great relationship with the private physicians in town, and the hospital sports the latest generation MRI, CT, and nuclear medicine capabilities. This is the kind of IHS medical staff that physicians join and end up staying for ten to twenty years. Board eligible/certified applicants only, please. E-mail CV to Paul Ebbert, MD at *paul.ebbert@ihs.gov* or call him at work at (307) 856-9281 or at home at (307) 332-2721.

The Wind River Service Unit also has an opening for a pharmacist. Pharmacists at Wind River enjoy a close professional relationship with the medical staff. There is interest and opportunity for pharmacists to expand their skills into enhanced patient education and management. Interested candidates should contact Marilyn Scott at *marilyn.scott@ihs.gov* or call (307) 332-5948. (6/09)



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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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Opinions expressed in articles are those of the authors and do not necessarily reflect those of the Indian Health Service or the Editors.

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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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