THE IHS PRIMARY CARE PROVIDER

A journal for health professionals working with American Indians and Alaska Natives

December 2007 **Volume 32 Number 12**

Community-Associated MRSA: Disparities and Implications for AI/AN Communities

David Mark, MD, Medical Officer, Crow-Northern Cheyenne Indian Health Service Hospital, Crow Agency, Montana

Summary

Infection caused by community-associated methicillin-resistant Staphylococcus aureus *is a recently-emerged epidemic disproportionately borne by AI/AN communities in the US. This review traces the roots of this epidemic, and highlights relevant clinical features so that IHS providers may be better equipped to respond to this evolving threat.*

An Old Foe Develops New Fangs[1]: Resistance and Virulence

With the selective pressures introduced by the increasing use of penicillin in the 1940s, resistance to β-lactam antibiotics began to emerge in *Staphylococcus aureus* strains. Methicillin resistant *Staphylococcus aureus* (MRSA) was first reported in the early 1960s,[2] and by the 1980s had become a common nosocomial pathogen.[3] Since the 1999 publication of a report of four deaths of pediatric patients that resulted from MRSA infection,[4] including an American Indian girl in North Dakota, growing attention became focused on the role of MRSA as a community-associated pathogen. Increasingly, otherwise healthy individuals living in the community with no identifiable risk factors for nosocomial pathogens were being reported as having MRSA infections. These infections became categorized as community-associated MRSA (CA-MRSA) infections, and the Centers for Disease Control and prevention (CDC) developed criteria to distinguish CA-MRSA infections from the health care-associated type (HA-MRSA).[5]

A pathogen that represents a unique convergence of resistance and virulence,[6] CA-MRSA emerged *de novo* in the community, exhibiting genetic origins and a phenotype distinct from those of HA-MRSA[7] (Table 1). CA-MRSA primarily causes skin and soft tissue infections (SSTI; prevalence, 77%); it can also cause traumatic wound infection (prevalence, 10%), urinary tract infection, sinusitis, bacteremia, and pneumonia (prevalence, <5% each).[3] The gene encoding the Panton-Valentine Leukocidin (PVL) toxin has been implicated in its virulence, although controversy exists over whether PVL is necessary for pathogenesis or simply a marker for other virulence factors.[8] The enhanced virulence of CA-MRSA compared with HA-MRSA is demonstrated by more severe skin infections[9] and association with poor patient outcomes and serious complications.[10,11]

Table 1. Characteristics of healthcare-associated and community-associated MRSA Strains [6,35,41]

	Healthcare-associated (HA-MRSA)	*Community-associated (CA-MRSA)*
Genotype (SCC[a] mec type)	I, II, or III	IV
Common strains	USA 100 USA 200	USA 300 USA 400
Usual Antibiotic susceptibility		
Clindamycin	R	S[c]
TMP-SMZ[b]	S	S
Fluorquinolones	R	Geographic variability
Erythromycin	R	R
Tetracyclines	R	S
Glycopeptides	S	S
Panton-Valentine Leukocidin (PVL) exotoxin	Uncommon	Common

[a] Staphylococcal cassette chromosome mec
[b] Trimethoprim/sulfamethoxazole
[c] Inducible clindamycin resistance has been documented

PVL-producing CA-MRSA strains have a high transmission and clinical attack rate,[12] not only within families, but also on a larger scale in community settings (e.g., prisons, schools, sport teams) and among certain high risk groups (Table 2). Primary modes of transmission include skin-to-skin contact (including

In this Issue…

unabraded skin) and indirect contact with contaminated shared objects (e.g., towels, sheets, sports equipment). Where there are shared contaminated items, poor hygiene, and crowded living conditions, transmission appears more likely.[13] Of concern is the observation that these strains are now showing the propensity to not only spread through the community, but also into hospitals, undermining efforts at infection control in these settings.[13,14,17]

Table 2. Risk Factors for CA-MRSA infection [21,23,34]

- High local prevalence
- Personal history of MRSA infection or colonization
- Report of a "spider bite"
- Close contact with infected individual
- Young age
- Crowded and/or unsanitary conditions
- Immunocompromised
- Participation in contact sports/ sharing athletic equipment or towels
- Intravenous drug abuse
- Men who have sex with men

Further, while most CA-MRSA infections involve the skin and soft tissue, severe and sometimes fatal infections have been observed even in healthy patients, including sepsis, necrotizing pneumonia, purpura fulminans, pyomyositis and necrotizing fasciitis.[15,16] A recent study of invasive MRSA infections in 2005 found that almost 95,000 patients in the US developed an invasive infection (31.8 per 100,000), and nearly one in five died (standard mortality, 6.3 per 100,000).[17]

The etiologic role of CA-MRSA in post-influenza community-acquired pneumonia is of growing concern in light of preparations for the next influenza pandemic.[3] During the 2003 - 2004 US influenza season, 15 of 17 cases of community-acquired staphylococcal pneumonia that were reported to the CDC were caused by MRSA, and death occurred in 5 of the patients (4 with MRSA).[18]

CA-MRSA Goes Global

Outbreaks of CA-MRSA infections have been described in numerous communities throughout North America[19,20] and the world.[21] Multiple individual hospitals have reported increased occurrence of CA-MRSA infections. One hospital emergency department reported that among patients presenting with SSTI, the prevalence of MRSA isolates increased from 29% in 2001 - 2002 to 64% in 2003 - 2004.[22] A prospective population-based surveillance found that 8 to 20 percent of all MRSA isolates were CA-MRSA, with incidence varying geographically and between ethnicities.[23]

An Epidemic Among AI/AN Communities

While the prevalence of CA-MRSA varies according to geography and ethnicity,[23] high rates of CA-MRSA have been observed among American Indian/Alaska Native (AI/AN) communities since its first description as a unique pathogen.

Beginning in the 1980s and 1990s, reports surfaced of methicillin-resistant strains of *S. aureus* present in indigenous communities in Canada,[24] Australia,[25] and Alaska[26]; and a 1996 national survey of IHS facilities found that already 40% (600/1490) of *S. aureus* isolates tested from the Midwest and Northern Plains were MRSA.[27] As early as 2000, it was reported that CA-MRSA was an issue disparately represented among AI/AN, and that at some rural clinics serving AI/AN, over 60% of *S. aureus* isolates were methicillin-resistant.[28]

Subsequently, numerous studies have documented the disproportionate burden of CA-MRSA among AI/AN communities.[29-33] A seminal paper published in 2001 documenting work in a rural midwestern IHS clinic reported the spread of MRSA beyond the nosocomial setting, first suggesting that CA-MRSA was replacing community-acquired methicillin-sensitive *S. aureus* as the dominant strain in the community.[27] A study of Minnesota health facilities examining MRSA infections during 1996 - 1998 found disproportionately high rates of CA-MRSA among AI/AN patients, with Native Americans comprising 40% of the cases, whites 21%, and blacks 18%.[30] A study of a large outbreak of community-onset MRSA infections among AN in southwestern Alaska determined that most (77%) of the patients with MRSA skin infections had community-acquired MRSA.[31] A study of the prevalence of and risk factors for CA- MRSA nasal carriage in AI patients of a rural IHS clinic in Washington found prevalence of CA- MRSA colonization to be approximately 1%; colonization was associated with recent antimicrobial use and larger household.[32]

Increased prevalence of CA-MRSA among AI/AN communities likely reflects the ontogeny of the pathogen, as socioeconomic and demographic factors present in AI/AN communities may have provided necessary selective pressure to foster the initial emergence of CA-MRSA. Studies in Wisconsin demonstrated that CA-MRSA was found to have emerged largely in Native American communities. During 1989 - 1999, 581 MRSA isolates were collected, 17.2% of which came from patients who were treated at five Native American clinics.[33] Subsequent molecular characterization of the CA-MRSA strains suggested that CA-MRSA in Wisconsin likely first originated in Native American communities in the early 1990s and subsequently became widespread throughout the state.[34]

As they have chronicled this important health disparity among AI/AN communities, multiple IHS-affiliated researchers have significantly advanced scientific understanding of the evolving CA-MRSA epidemic. Among others, particularly noteworthy contributions have been made by Drs. Jim Cheek, Tim Naimi, Amy Groom, and Richard Leman.

Clinical Implications for Providers

The emergence of MRSA in the community has several significant therapeutic implications for clinical providers, particularly for those working in AI/AN communities (Table 3). First, CA-MRSA should figure prominently in the differential diagnosis of all SSTIs. A presenting chief complaint of "spider bite" should heighten one's suspicion of *S. aureus* infection.[35] Given the high documented prevalence rates of CA-MRSA among

AI/AN communities, a reasonable approach to complicated community-acquired infections may be to assume the presence of CA-MRSA, unless evidence suggests the local prevalence to be particularly low.[36] If antibiotics are indicated (see below), appropriate empiric choices for SSTI treatment should therefore include trimethoprim-sulfamethoxazole and clindamycin.

Table 3. Clinical implications for providers

1. Be aware of local prevalence of CA-MRSA
   - *Include CA-MRSA in your in your differential diagnosis, especially with "spider bites"!*
2. Always obtain material for culture whenever possible
   - *Tailor antibiotic choices accordingly*
3. Surgical incision and drainage is the priority intervention
   - *"never let the sun set on an undrained abscess…"*
4. With severe infections, include vancomycin for CA-MRSA coverage
   - *Sepsis syndrome, osteomyelitis, septic arthritis, severe pneumonia, necrotizing fasciitis, purpura fulminans*
5. Community awareness and broad-based infection control measures are key!
   - *Reduce unnecessary antibiotics, improve community surveillance*

Second, in light of evolving antibiotic resistance patterns among CA-MRSA strains,[37] specimens should be collected and cultured whenever possible so that results of culture and sensitivity testing can appropriately guide treatment regimens. Importantly, if the isolate is resistant to erythromycin but susceptible to clindamycin, the clindamycin D-zone test should be performed if clindamycin therapy is being considered.[38]

Third, surgical drainage and debulking of SSTIs should be considered the priority intervention.[38] If unconvinced by the surgical aphorism, "*never let the sun set on an undrained abscess,*" consider some recent evidence. In a randomized trial of cephalexin for treatment of uncomplicated skin abscesses in a population at risk for CA-MRSA, the 90.5% cure rate observed in the placebo arm (84.1% cure rate, cephalexin arm) suggests that antibiotics may be unnecessary after surgical drainage of uncomplicated SSTIs caused by CA-MRSA.[39] The observation that after adequate surgical drainage, SSTIs severe enough to warrant hospitalization resolved regardless of whether the antimicrobial agent given to the patient had in vitro activity[40] is further reminder of the primacy of this intervention.

Fourth, CA-MRSA should be included in the differential diagnosis for patients with clinical signs of serious infection (including sepsis syndrome, osteomyelitis, septic arthritis, pneumonia that is severe or follows an influenza-like illness, necrotizing fasciitis, and purpura fulminans), and these patients should receive aggressive therapy including empiric coverage for CA-MRSA with vancomycin. Unfortunately reports of treatment failure associated with vancomycin have become increasingly common;[41] for now, alternate agents do exist, if necessary, including linezolid, daptomycin, and quinupristin-dalfopristin,[42] each of which has shown clinical efficacy in CA-MRSA therapy.

Finally, containing the CA-MRSA epidemic in our communities will require much more than appropriate antibiotics. Efforts to raise awareness among community members and health care personnel, to reduce unnecessary antibiotic use, improve community surveillance, and to bolster infection control measures will be required to help mitigate the effect of this evolving pathogen in our midst.

References

1. Hinrichs JH. CA-MRSA: An old foe develops new fangs. *Mo Med*. 2006;103:129-32.
2. Lowy FD. *Staphylococcus aureus* infections. *N Engl J Med*. 1998;339:520-32.[PMID: 9709046].
3. McDonald LC. Trends in antimicrobial resistance in health care-associated pathogens and effect on treatment. *Clin Infect Dis*. 2006 Jan 15;42 Suppl 2:S65-71.
4. Centers for Disease Control and Prevention. Four pediatric deaths from community-acquired methicillin-resistant Staphylococcus aureus — Minnesota and North Dakota, 1997–1999. *JAMA*. 1999; 282:1123–5.
5. Centers for Disease Control (CDC). Community-associated MRSA Information for Clinicians. Available at: *http://www.cdc.gov/ncidod/dhqp/ar_mrsa_ca_clinicians.html#4* (accessed October 22, 2007).
6. Chambers HF. Community-associated MRSA — resistance and virulence converge. *N Engl J Med*. 2005 Apr 7;352(14):1485-7.
7. Boyle-Vavra S, Daum RS. Community-acquired methicillin-resistant *Staphylococcus aureus*: the role of Panton-Valentine leukocidin. *Lab Invest*. 2007 Jan;87(1):3-9. Epub 2006 Dec 4.
8. Voyich JM, Otto M, Mathema B, et al. Is Panton-Valentine leukocidin the major virulence determinant in community-associated methicillin-resistant *Staphylococcus aureus* disease? *J Infect Dis*. 2006 Dec 15;194(12):1761-70. Epub 2006 Nov 2.
9. Del Giudice P, Blanc V, Durupt F, et al. Emergence of two populations of methicillin-resistant *Staphylococcus aureus* with distinct epidemiological, clinical and biological features, isolated from patients with community-acquired skin infections. *Br J Dermatol*. 2006 Jan;154(1):118-24.
10. Maltezou HC, Giamarellou H. Community-acquired methicillin-resistant *Staphylococcus aureus* infections. *Int J Antimicrob Agents*. 2006 Feb;27(2):87-96. Epub 2006 Jan 19.
11. Davis SL, Rybak MJ, Amjad M, et al. Characteristics of patients with healthcare-associated infection due to SCCmec type IV methicillin-resistant *Staphylococcus aureus*. *Infect Control Hosp Epidemiol*. 2006 Oct;27(10):1025-31. Epub 2006 Sep 19.
12. Gould IM. Community-acquired MRSA: can we control it? L*ancet*. 2006;368:824–826.
13. Bloomfield SF, Cookson B, Falkiner F, et al. Methicillin-resistant *Staphylococcus aureus*, *Clostridium difficile*, and extended-spectrum beta-lactamase-producing *Escherichia coli* in the community: assessing the problem and controlling the spread. *Am J Infect Control.* 2007 Mar;35(2):86-8.

14. Seybold U, Kourbatova EV, Johnson JG, et al. Emergence of community-associated methicillin-resistant *Staphylococcus aureus* USA300 genotype as a major cause of health care-associated blood stream infections. *Clin Infect Dis*. 2006 Mar 1;42(5):647-56. Epub 2006 Jan 25.
15. Moellering Jr RC. The growing menace of community-acquired methicillin-resistant *Staphylococcus aureus*. *Ann Intern Med*. 144 (2006), pp. 368–370.
16. Miller LG, Perdreau-Remington F, Rieg G, et al. Necrotizing fasciitis caused by community-associated methicillin-resistant *Staphylococcus aureus* in Los Angeles. *N Engl J Med*. 2005 Apr 7;352(14):1445-53.
17. Klevens RM, Morrison MA, Nadle J, et al. Active Bacterial Core surveillance (ABCs) MRSA Investigators. Invasive methicillin-resistant *Staphylococcus aureus* infections in the United States. *JAMA*. 2007 Oct 17;298(15):1763-71.
18. Hageman JC, Uyeki TM, Francis JS, et al. Severe community-acquired pneumonia due to *Staphylococcus aureus*, 2003-04 influenza season. *Emerg Infect Dis*. 2006 Jun;12(6):894-9.
19. Naimi TS, LeDell KH, Como-Sabetti K, et al. Comparison of community- and health care-associated methicillin-resistant *Staphylococcus aureus* infection. *JAMA*. 2003 Dec 10;290(22):2976-84.
20. Moran GJ, Krishnadasan A, Gorwitz RJ, et al. EMERGEncy ID Net Study Group. Methicillin-resistant *S. aureus* infections among patients in the emergency department. *N Engl J Med*. 2006 Aug 17;355(7):666-74.
21. Vandenesch F, Naimi T, Enright MC, et al. Community-acquired methicillin-resistant *Staphylococcus aureus* carrying Panton-Valentine leukocidin genes: worldwide emergence. *Emerg Infect Dis*. 2003 Aug;9(8):978-84.
22. Moran GJ, Amii RN, Abrahamian FM, Talan DA. Methicillin-resistant *Staphylococcus aureus* in community-acquired skin infections. *Emerg Infect Dis*. 2005 Jun;11(6):928-30.
23. Fridkin SK, Hageman JC, Morrison M, et al. Active Bacterial Core Surveillance Program of the Emerging Infections Program Network. Methicillin-resistant *Staphylococcus aureus* disease in three communities. *N Engl J Med*. 2005 Apr 7;352(14):1436-44. Erratum in: *N Engl J Med*. 2005 Jun 2;352(22):2362.
24. Taylor G, Kirkland T, Kowalewska-Grochowska K, et al. A multistrain cluster of methicillin-resistant *Staphylococcus aureus* based in a Native community. *Can J Infect Dis*. 1990;1:121-6.
25. Maguire GP, Arthur AD, Boustead PJ, et al. Emerging epidemic of community-acquired methicillin-resistant *Staphylococcus aureus* in the Northern Territory. *Med J Aust*. 1996;164:721-723.
26. Landen MG. An Outbreak of Boils Associated with Steambathing, 1996. State of Alaska Epidemiology Bulletin, 1997 Jul:27.
27. Groom AV, Wolsey DH, Naimi TS, et al. Community-acquired methicillin-resistant *Staphylococcus aureus* in a rural American Indian community. *JAMA*. 2001 Sep 12;286(10):1201-5.
28. Butler JC, Crengle S, Cheek JE, et al. Emerging infectious diseases among indigenous peoples. *Emerg Infect Dis*. 2001;7(3 Suppl):554-5.
29. Shareef R, Stancilou F, Ahmed S. MRSA in American Indians and Alaska Natives. *IHS Primary Care Provider*. 2007. Aug; 32(8): 232-233.
30. Naimi TS, LeDell KH, Boxrud DJ, et al. Epidemiology and clonality of community-acquired methicillin-resistant *Staphylococcus aureus* in Minnesota, 1996-1998. *Clin Infect Dis*. 2001 Oct 1;33(7):990-6. Epub 2001 Sep 5.
31. Baggett HC, Hennessy TW, Leman R, et al. An outbreak of community-onset methicillin-resistant *Staphylococcus aureus* skin infections in southwestern Alaska. *Infect Control Hosp Epidemiol*. 2003 Jun;24(6):397-402.
32. Leman R, Alvarado-Ramy F, Pocock S, et al. Nasal carriage of methicillin-resistant *Staphylococcus aureus* in an American Indian population. *Infect Control Hosp Epidemiol*. 2004 Feb;25(2):121-5.
33. Shukla SK, Stemper ME, Ramaswamy SV, et al. Molecular characteristics of nosocomial and Native American community-associated methicillin-resistant *Staphylococcus aureus* clones from rural Wisconsin. *J Clin Microbiol*. 2004 Aug;42(8):3752-7.
34. Stemper ME, Shukla SK, Reed KD. Emergence and spread of community-associated methicillin-resistant Staphylococcus aureus in rural Wisconsin, 1989 to 1999. *J Clin Microbiol*. 2004 Dec;42(12):5673-80.
35. Dominguez TJ. It's not a spider bite, it's community-acquired methicillin-resistant *Staphylococcus aureus*. *J Am Board Fam Pract*. 2004 May-Jun;17(3):220-6.
36. Caplan E. Community-Acquired MRSA — identification and treatment. *Spectrum*. 2007 Sept; 2:4-8.
37. King MD, Humphrey BJ, Wang YF, et al. Emergence of community-acquired methicillin-resistant *Staphylococcus aureus* USA 300 clone as the predominant cause of skin and soft-tissue infections, *Ann Intern Med*. 144 (2006), pp. 309–317.
38. Grayson ML. The treatment triangle for staphylococcal infections. *N Engl J Med*. 2006 Aug 17;355(7):724-7.
39. Rajendran PM, Young D, Maurer T, et al. Randomized, double-blind, placebo-controlled trial of Cephalexin for treatment of uncomplicated skin abscesses in a population at risk for community-acquired methicillin-resistant *Staphylococcus aureus* infection. *Antimicrob Agents Chemother*. 2007 Nov;51(11):4044-8. Epub 2007 Sep 10.
40. Young DM, Harris HW, Charlebois ED, et al. An epidemic of methicillin-resistant *Staphylococcus aureus*

soft tissue infections among medically underserved patients. *Arch Surg*. 2004 Sep;139(9):947-51; discussion 951-3.
41. Jones RN. Microbiological features of vancomycin in the 21st century: minimum inhibitory concentration creep, bactericidal/static activity, and applied breakpoints to predict clinical outcomes or detect resistant strains. *Clin Infect Dis*. 2006 Jan 1;42 Suppl 1:S13-24.
42. Drew RH. Emerging options for treatment of invasive, multidrug-resistant *Staphylococcus aureus* infections. *Pharmacotherapy*. 2007 Feb;27(2):227-49.

Low Prevalence of Asthma Among American Indian Youth in Southeastern Montana

David Mark, MD, Medical Officer, Crow-Northern Cheyenne Indian Health Service Hospital, Crow Agency, Montana; and Melissa Roberts, BS, Medical Student (third year), School of Medicine, University of Washington

Abstract

Objectives: To highlight the variability in asthma prevalence among American Indian children, the authors determined the period prevalence of current asthma in youth accessing care at the Crow Service Unit (CSU) in southeastern Montana from 1987-2006.

Methods: The authors performed retrospective electronic and manual chart review to identify patients aged 0 - 20 years, stratified by age and gender, with a diagnosis of asthma who had at least one clinic visit during the preceding three calendar years.

Results: Prevalence of diagnosed asthma among youth aged 0 - 20 years at the CSU was low, and increased during 1987 - 2006 from an age-adjusted 2.8 per 100 to 5.1 per 100, by an average of 3.5% per year. Age adjusted prevalence of diagnosed asthma was higher in males than females, and decreased with age for both sexes.

Conclusion: Contrary to published data, the asthma prevalence rate in our population is lower than previously cited rates for all races and for AI/AN populations, likely due to local environmental factors. Future research should include focused analysis of elements of the social and environmental microclimate to determine which factors predispose and protect against the development of asthma in our population.

Introduction

Asthma is the most common chronic disease of childhood,[1-7] afflicting approximately 6.2 million American children in 2004,[1,2] and posing significant burdens of morbidity, mortality and economic costs worldwide.[1-3,7] Myriad studies describing disparities in disease prevalence among different populations highlight variable contributions of environmental, social, and innate (i.e., genetic and biologic) factors to the distribution of this disease.[8-13]

Recent years have witnessed marked progress in describing the prevalence and severity of asthma among American Indian and Alaska Native (AI)/AN) children,[14,16-21] and while early reports noted asthma among AI/AN groups to be rare,[22,23] more recent studies suggest much higher prevalences.[14-21,39] However, there is broad social and biological heterogeneity among the ethnic category of AI/AN.[24,25] Given the marked regional differences in local factors that may play a significant etiological role in asthma prevalence within a given AI/AN subgroup (i.e., tribe, band, village, urban), there is a need for ongoing epidemiological investigation within these subgroups. A recent study of asthma hospitalization rates for the AI/AN population revealed that there were wide regional variations in the hospitalization rates in the AI/AN population.[21] Understanding population and regional variances in the prevalence of asthma is important for optimal design of local interventional strategies as well as for elucidating important insights into the social and biologic determinants of asthma.

Located in rural southeastern Montana, the Crow Service Unit is a subset of the Indian Health Service (IHS) comprising one hospital and two satellite clinics whose estimated user population in 2006 was approximately 13,936.[26] Children receiving care at these facilities are predominantly enrolled members of the Crow and Northern Cheyenne tribes, although 20% of pediatric patients seen in 2006 were from a variety of other tribes. The Apsáalooke (Crow) reservation is located in southeastern Montana and had a 2000 census AI population of 6890, 44% of whom were under 21 years of age. The Northern Cheyenne reservation (home of the Tsitsistas and So'taa'eo'o People), which is immediately adjacent to the east of the Crow reservation, had a 2000 census AI population of 4,470 persons, of whom 48% were under 21 years of age. The two reservations span a collective area of 4300 square miles.

Multiple factors that may play a significant role in asthma epidemiology are common among the two reservations, including low income levels,[26,28,31] obesity,[27,33] poor housing condition,[29,30] and high rates of tobacco smoking.[32] Conversely, several protective factors are also locally prevalent: point sources of concentrated industrial air pollution are relatively few in number over a wide geographic distribution[34,35]; children have ready access to health care through the IHS system[36]; and most children live in families with multiple siblings.[28]

This study seeks to define the prevalence of asthma among the children receiving healthcare at the Crow Service Unit over the past 20 years.

Methods

We sought to establish the prevalence rate of current asthma among children age 20 or younger receiving care at the Crow Service Unit during the years 1987 - 2006. Permission

for the study was obtained from the Crow Tribal Chairman, the Crow Tribal Health Department; the Institutional Review Board, Billings Area Indian Health Service; and the Institutional Review Board, University of Washington, Seattle.

We defined current asthma as a visit diagnosis of asthma (International Classification of Diseases, Ninth Revision, Clinical Modification, code 493) during the past 12 months. We analyzed data from an electronic health record system (Resource and Patient Management System, RPMS), a database that includes unduplicated case reports from patients who visited the service unit one or more times during each of the years studied. Using an approach employed in previous studies using RPMS,[37] we calculated prevalence using the AI/AN population age <21 years that received health care services at the Crow Service Unit at least once during the preceding three years. We used these overall population data and the number of persons age <21 years identified in RPMS as persons with diagnosed asthma to estimate the age-specific prevalence of diagnosed diabetes among children in four age groups: 0 - 4, 5 - 10, 11 - 15, and 16 - 20 years. We age adjusted prevalence by the direct method, on the basis of the 2000 US standard population, and modeled average annual percentage changes (APCs) using regression analysis[38] (Joinpoint Regression Program, National Cancer Institute).

Results

Among all youth age <21 years receiving care at the Crow Service Unit, prevalence of diagnosed asthma during 1987 - 2006 increased from an age-adjusted 2.8 per 100 to 5.1 per 100, increasing by an average of 3.5% per year (Table). Prevalence of diagnosed asthma decreased with age, and in 2006, ranged from 6.0 per 100 population among youth aged 0 - 4 years to 2.8 per 100 population among those aged 16 - 20 years. In 2006, the age-adjusted prevalence of diagnosed asthma was 5.6 per 100 among males and 4.7 per 100 among females (Table).

During 1987 - 2006, prevalence of diagnosed asthma was greater among males than females in age groups 0 - 4 years and 5 - 10 years (Figure). Gender differences in prevalence rates were not present among age groups 11 - 15 and 16 - 20 years.

During 1987 - 2006, prevalence of diagnosed asthma increased steadily for both sexes and in all age groups, with the exception of males and females age 0 - 4 years (Figure). Among males and females in this age group, there was a non-significant trend towards decreased prevalence (Table). Among all age groups, females aged 11 - 15 years had the highest APC (9.4%).

Discussion

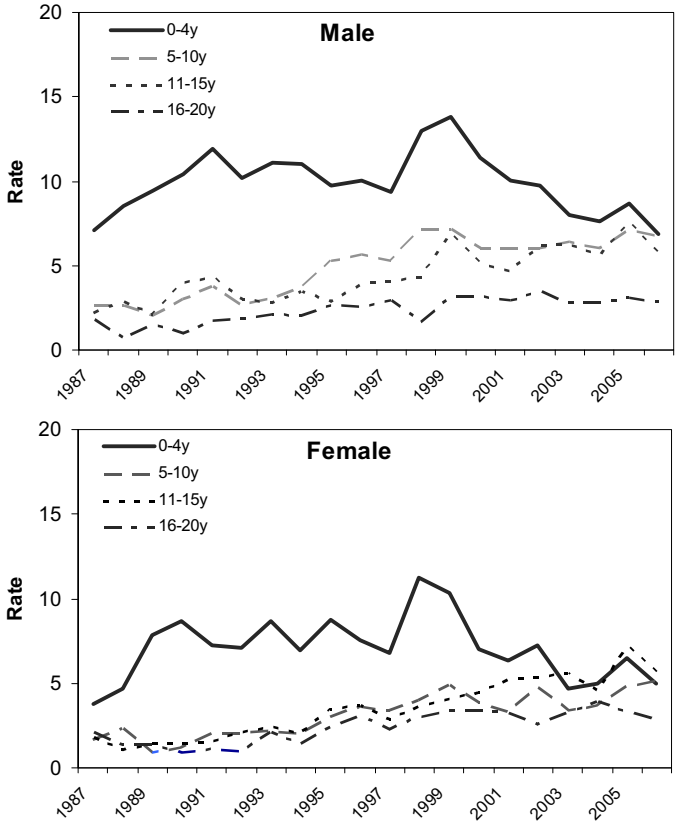
Our study demonstrates that the prevalence of diagnosed asthma at the Crow Service Unit among youth age <21 years has been increasing over the past two decades, paralleling a similar nationwide trend.[1-3] Our results corroborate national trends in gender distribution of asthma as well.[1-3,21,40] In the

Table. Prevalence* and annual percentage change (APC) of diagnosed asthma during the previous 12 months among children aged <21 years, by sex and age group--Crow Service Unit, 1987-2006

Age Group (yrs)	Rate		Trend	
	1987	2006	APC	(95% CI†)
Male				
0-4y	7.1	6.8	-0.5	(-2.1, 1.0)
5-10y	2.6	6.7	6.4	(4.7, 8.2)
11-15y	2.2	5.6	5.6	(3.9, 7.3)
16-20y	1.8	2.9	5.7	(3.3, 8.1)
<21	3.8	5.6	2.2	(1.1, 3.3)
<21‡	3.4	5.6	3.1	(1.9, 4.2)
Female				
0-4y	3.8	5.0	-0.3	(-2.6, 2.0)
5-10y	1.7	5.1	7.1	(4.8, 9.4)
11-15y	1.8	5.6	9.4	(7.8, 11.1)
16-20y	2.1	2.8	6.4	(3.8, 9.0)
<21	2.4	4.6	3.4	(2.2, 4.6)
<21‡	2.3	4.7	4.1	(2.9, 5.4)
Both sexes				
0-4y	5.5	6.0	-0.5	(-2.2, 1.3)
5-10y	2.2	5.9	6.6	(4.8, 8.3)
11-15y	2.0	5.6	7.0	(5.9, 8.1)
16-20y	2.0	2.8	5.9	(3.9, 7.9)
<21	3.1	5.1	2.7	(1.6, 3.8)
<21‡	2.8	5.1	3.5	(2.4, 4.6)

* Per 100 population in age group
† Confidence interval
‡ Age adjusted to the 2000 US standard population

Figure. Prevalence* of diagnosed asthma during the previous 12 months among children aged < 21 years, by sex and age group--Crow Service Unit, 1987-2006.



* per 100 population in age group

younger age groups, males had higher rates of asthma than their female counterparts, though this effect decreased with age. However, contrary to previously-reported studies, the overall prevalence rate in our population is lower than most previously cited rates,[1,3,14-17,19,20] both for all races and for AI/AN populations. Further, also distinct from published data,[1,3] we found a decreasing prevalence of asthma with age for both males and females.

Our data indicate an average annual asthma prevalence during the previous 12 months among children aged <21 years of 5.1% for 2006. Comparable investigations, although involving different geographic areas and different tribes, report significantly higher prevalence rates for AI/AN children. Examining data from the National Health Interview Survey, Akinbami[1] reported nationwide current asthma prevalence (2004 - 2005) for all races of 8.7%, with a rate of 9.9% for AI/AN children. A survey of children in three non-IHS community health centers in Montana[39] noted an asthma prevalence (2000 - 2002) of 5.0% for all races, with a rate of 12.1% for AI/AN children. A review of patient encounters for children age 18 and under at the Fort Peck IHS Service Unit in northeastern Montana[19] demonstrated a prevalence rate of 15.5% during the period 1996 - 1999. Conversely, a study of pediatric AI/AN patients age less than 21 years at an IHS site in North Dakota[18] found a prevalence rate of 3.6% during 2001 - 2002.

There are several possible explanations for our apparently discordant results. First, we note that the marked biological, social, and environmental heterogeneity among and between various AI/AN groups would be expected to result in a broad distribution of asthma prevalence, and that studies of individual subgroups may yield divergent results. Recognizing that race/ethnicity is a social, not a biological, category,[43-45] we submit that the prevailing social and ecological microclimate would be most relevant in determining the local asthma prevalence. In our population, where there is a high degree of homogeneity in socioeconomic position,[26,28,31] history and culture, the social determinants of health, while not completely uniform, are relatively constant.

Likewise, the outdoor ambient air quality, which is low in particulate matter and other air pollutants, is similar across the geographic area of our study.[34,35] Anecdotal reports suggest that indoor air quality is low, and that exposure rates to indoor allergens linked to development of asthma are high (CSU, unpublished data, 1996). Previous studies suggest that exposure to indoor air pollutants may have a more important effect on the development of childhood asthma and on promoting asthma exacerbations than may exposure to outdoor air pollutants.[46] One possibility, then, for the inverse relationship between prevalence and age is that excessive indoor allergen exposure promotes high rates of asthma exacerbations in the youngest children. Older children, who are more mobile and spend more time in higher quality ambient outdoor air, may have less frequent asthma exacerbations; it is possible that those with quiescent asthma would present less often to the clinic between asthma flares, giving the appearance of diminishing prevalence with age. A similar decreasing rate of asthma hospitalizations with age was also demonstrated[21] among AI/AN children under 19 years old, with the highest hospitalization rates found among children ages 1 to 4 years.

The relatively low overall rate of pediatric asthma in our study may reflect the protective effect of more communal living styles observed in our community. Housing shortages in our study area result in conditions of widespread overcrowing in households. Previous studies indicate that higher levels of household crowding mitigate against the development of asthma, likely via timing and mode of endotoxin exposure.[42] Similarly, larger family size has also been identified as correlating with lower rates of asthma.[47]

Potential confounders in our study include reliance on physician diagnosis for case ascertainment of asthma. The high prevalence observed in young children may represent overdiagnosis, including diagnostic substitution of asthma in place of bronchiolitis or recurring wheezing after bronchiolitis within the first year of life. Conversely, low rates in older children may be due to underdiagnosis. Evidence exists to suggest that AI/AN populations are at risk for underdiagnosis of asthma.[41] However, given the consistency of our data over a 20-year period of analysis, during which time multiple physicians comprised the diagnosing provider, these biases are less likely. The possible confounding role of diagnostic transfer cannot be elucidated by our data.

Areas for future research include focused analysis of elements of the social and environmental microclimate to determine which factors predispose and protect against the development of asthma in our population. In particular, elucidating the contribution of type and timing of exposures to specific indoor allergens, in addition to evaluating factors such as low birth weight/gestational age, BMI, breast-feeding, and antecedent viral infections would be useful to guide strategies of asthma prevention and health promotion.

Acknowledgments

The authors would like to thank the Crow Tribal Health Board, the Crow Tribal Health Department, Crow Tribal Chairman Carl Venne, Jennifer Giroux, and the Rocky Mountain Tribal Epidemiology Center for their support of this project.

References

1. Akinbami LJ. The State of childhood asthma, United States, 1980–2005. Advance data from vital and health statistics; no 381, Hyattsville, MD: National Center for Health Statistics. 2006.
2. Trends in asthma morbidity and mortality, American Lung Association, Epidemiology & Statistics Unit,

Research and program services, July 2006; available at *http://www.lungusa.org/atf/cf/%7B7A8D42C2-FCCA-4604-8ADE-7F5D5E762256%7D/ASTHMA06FINAL.PDF*, accessed 2/28/07.
3. Akinbami LJ, Schoendorf KC. Trends in childhood asthma: Prevalence, health care utilization, and mortality, *Pediatrics*. 2002:110;315-322.
4. Mannino DM, Homa DM, Pertowski CA, et al. Surveillance for asthma – United States, 1960-1995. *MMWR*. CDC Surveill Summ. 1998;47:1-27.
5. Centers for Disease Control and Prevention. Measuring childhood asthma prevalence before and after the 1997 redesign of the National Health Interview Survey – United States. *MMWR*. 2000;49:908-911.
6. Weitzman M, Gortmaker SL, Sobol AM, Perrin JM. 1992. Recent trends in the prevalence and severity of childhood asthma. *JAMA*. 268:2673–2677.
7. CDC, National Center for Health Statistics. Asthma Prevalence, Health Care Use and Mortality, 2000-2001. Available at *http://www.cdc.gov/nchs/products/pubs/pubd/hestats/asthma/asthma.htm. Accessed 2/28/07*.
8. Claudio L, Tulton L, Doucette J, Landrigan PJ. Socioeconomic factors and asthma hospitalization rates in New York City. *J Asthma*. 1999;36:343-350.
9. Schwartz J, Gold D, Dockery D, et al. Predictors of asthma and persistent wheeze in a national sample of children in the United States: association with social class, perinatal events, and race. *Am. Rev. Respir. Dis*. 1990.142:555–562.
10. Lieu TA, Lozano P, Finkelstein JA, et al. Racial/ethnic variation in asthma status and management practices among children in managed medicaid. *Pediatrics*. 2002. May;109(5):857-65.
11. Smith LA, Hatcher-Ross JL, Wertheimer R, Kahn RS. Rethinking race/ethnicity, income, and childhood asthma: racial/ethnic disparities concentrated among the very poor. *Public Health Rep*. 2005 Mar-Apr;120(2):109-16.
12. Akinbami LJ, LaFleur BJ, Schoendorf KC. Racial and income disparities in childhood asthma in the United States. *Ambul Pediatr*. 2002 2(5):382–387.
13. Morello-Froscha R, Lopez R. The riskscape and the color line: Examining the role of segregation in environmental health disparities. *Environmental Research*. 2006 Oct; 102(2):181-196.
14. Clark D, Gollub R, Green WF, et al. Asthma in Jemez Pueblo school children. *Am J Respir Crit Care Med*.1995; 151:1625-1627.
15. Stout JW, Sullivan M, Liu LL, et al. Asthma prevalence among American Indian and Alaska Native children. *Public Health Rep*. 1999;114:257–261.
16. Liu L, Stout J, Sullivan M, et al. Asthma and bronchiolitis hospitalizations among American Indian children. *Pediatrics and Adolescent Medicine*, October 2000,154:10.
17. Yeh F, Eichner JE, Rhoades ER: Asthma prevalence and risk factors among American Indian youth. *Am J Epidemiol*. 2001 (Suppl);153:S168.
18. Holzman G, Muus K, Haugland B, et al. Asthma prevalence and care for American Indian youth in North Dakota. *The IHS Primary Care Provider*. 2003:220-223.
19. Hendrickson RM, Bresette BJ, Bremer J. High Frequency of asthma in Native American Children among the Assiniboine and Sioux Tribe of northeast Montana. *IHS Primary Care Provider*. 2003;28:38-39.
20. Lewis TC, Stout JM, Martinez P, et al. Prevalence of asthma and chronic respiratory symptoms among Alaska native children. *Chest*. 2004; 125:1665-73.
21. Singleton RJ, Holman RC, Cobb N, et al. Asthma hospitalizations among American Indian and Alaska Native people and for the general US population. *Chest*. 2006 Nov;130(5):1554-62.
22. Herxheimer H. Asthma in American Indians [letter]. *N Engl J Med*. 1964; 270:1128–1129.
23. Slocum R, Thompson F, Chavez C. Rarity of asthma among Cheyenne Indians [letter]. *Ann Allergy*. 1977;34:201–202.
24. Eshleman JA, Malhi RS, DG Smith. Mitochondrial DNA studies of Native Americans: conceptions and misconceptions of the population prehistory of the Americas. *Evolutionary Anthropology*. 2003.12:7-18.
25. Harris DR, Sim JJ. 2002. Who is multiracial? Assessing the complexity of lived race. *American Sociological Review*. 67:614–27.
26. Indian Health Service. Trends in Indian health, 2000–2001. Rockville, MD: Indian Health Service, 2004.
27. US Department of Health and Human Services, Indian Health Service. Regional Differences in Indian Health, 1998–99. Washington, DC: US Department of Health and Human Services, Indian Health Service, Office of Public Health; 1999.
28. Census 2000a U.S. Department of Commerce, Bureau of the Census. Census 2000 Profile of General Demographic Characteristics for 2000: State of Montana and Crow Reservation and Off-Reservation Trust Land, MT. Table DP-1.
29. Tribal Housing Authority 2002, Indian Housing Plan, Crow Indian Reservation. Crow Tribal Housing Authority. March 2002.
30. Northern Cheyenne Housing Authority (NCHA), 2001, Indian Housing Plan.

31. US Department of Commerce, Bureau of the Census, 2002. Money Income of Households, Families, and Persons in the United States, Washington, D.C.
32. Montana Department of Health and Human Services, The Montana American Indian Behavioral Risk Factor Surveillance System Survey Results About Commercial Tobacco 2001, 2003, and 2005. 2006.
33. Zephier E, Himes J, Story M, Zhou X. Increasing prevalences of overweight and obesity in Northern Plains American Indian children. *Arch Pediatr Adolesc Med*. 2006;160:34-39.
34. Argonne National Laboratory, Air Quality Impact Assessment Technical Support Document, Montana Statewide EIS/RMP Amendment of the Powder River and Billings Resource Management Plans. Prepared for the U.S. Department of the Interior, Bureau of Land Management, Montana State Office. 2002.
35. National-Scale Air Toxics Assessment, 1999, Environmental Protection Agency, available at URL: *http://www.epa.gov/ttn/atw/natamain/*, accessed 2/28/07.
36. Cunningham PJ. Access to care in the Indian Health Service. *Health Aff*. (Millwood) 1993; 12:224–233.
37. Acton, K, Burrows, N, Wang, J, Geiss, L. Diagnosed Diabetes Among American Indians and Alaska Natives Aged <35 Years — United States, 1994 - 2004 Vol 55, No MM44;1201 (Nov 10, 2006).
38. Kim HJ, Fay MP, Feuer EJ, Midthune DN. Permutation tests for joinpoint regression with applications to cancer rates. *Stat Med*. 2000;19:335-51 (correction: 2001;20:655).
39. Montana Department of Health and Human Services, Childhood Asthma Program, 2002.
40. Chen Y, Stewart P, Johansen H, et al. Sex difference in hospitalization due to asthma in relation to age. *J Clin Epidemiol*. 2003; 56:180–187.
41. Gergen P. Social class and asthma-distinguishing between the disease and the diagnosis [editorial]. *Am J Public Health*. 1996; 86:1361–1362.
42. Cardoso MA, Cousens SN, Siqueira LF, et al. Crowding: risk factor or protective factor for lower respiratory disease in young children? *BMC Public Health*. 2004;4:19.
43. Krieger N. Stormy weather: race, gene expression, and the science of health disparities. *Am J Public Health*. 2005; 95: 2155-2160.
44. Kaplan JB, Bennett T. Use of race and ethnicity in biomedical publication. *JAMA*. 2003;289:2709-2716.
45. Sankar P, Cho M, Condit C, et al. Genetic research and health disparities. *JAMA*. 2004;291:2985-2989.
46. Institute of Medicine, Committee on the Assessment of Asthma and Indoor Air. Clearing the Air: Asthma and Indoor Air Exposures. Washington, DC: National Academy Press; 2000.
47. Ball TM, Castro-Rodriguez JA, Griffith KA, Holberg CJ, Martinez FD, Wright AL. Siblings, day-are attendance, and the risk of asthma and wheezing during childhood. *N Engl J Med*. 2000;343:538–543.

SAVE THE DATE

*** Challenges in Indian Health Care ***
*** Health Care Budgets & Financing ***
*** Data and Information Technology ***
*** Law ***
*** Integrity and Ethics ***
*** Negotiation ***

Session One: May 5 - 9, 2008
Session Two: June 16 - 20, 2008
Session Three: July 21 - 25, 2008

You can be a part of the 2008 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*

8th Annual Advances in Indian Health

UNM Continuing Education Building
1634 University Blvd., NE, Albuquerque, New Mexico
April 29 – May 2, 2008

The 8th Annual Advances in Indian Health Conference is offered for primary care physicians, nurses, and physician assistants who work with American Indian and Alaskan Native populations at federal, tribal and urban sites. Medical students and residents who are interested in serving these populations are also welcome.

Both new and experienced attendees will learn about advances in clinical care specifically relevant to Native American Indian populations with an emphasis on southwestern tribes. 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 case discussion workshops. In early spring, the brochure will be posted on the UNM CME website at http://hsc.unm.edu/cme. For additional information please contact Kathy Breckenridge, University of New Mexico Office of Continuing Medical Education at (505) 272-3942, or email our the UNM CME Office to request at 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.

We do not have a room block secured for this conference; however, the four hotels listed below, are just a couple of miles from the conference site.

Albuquerque Hilton Hotel
1901 University Boulevard, NE
Albuquerque, NM 87102
Phone: (505) 884-2500

Embassy Suites
1000 Woodward Place, NE
Albuquerque, NM 87102
Phone: (505) 245-7100

MCM Eleganté Hotel
2020 Menaul NE
Albuquerque, New Mexico 87107
Phone: (505) 884-2511

Motel 6
1701 University Blvd., NE
Albuquerque, NM 87102
Phone: (505) 843-9228

These hotels are several miles from the UNM Health Sciences Center Campus, where the conference is being held. **Participants are responsible for their own transportation between the two sites.**

Presented by:

Indian Health Service & The University of New Mexico • Health Sciences Center SCHOOL OF MEDICINE Office of Continuing Medical Education

The National Combined Councils Meeting
February 3-8, 2008
San Diego, California

"Improving Healthcare Services and Delivery through Multi-Disciplinary Collaborations"

The Combined Annual Meeting of the National Councils of Clinical Directors, Chief Executive Officers, Chief Medical Officers, Oral Health and Nurse Consultants

LOCATION: The Bahia Resort Hotel
998 West Mission Bay Drive
San Diego, California 92109
TEL: (858) 488-0551
FAX: (858) 488-1512

Room Rates*: $146.00 + Tax (single)
$166.00 + Tax (double)
*FY08 rates
*Federal Travelers: Ask for the tax-exempt statement when checking in at hotel lobby.

Call 1-800-576-4229 to make your room reservation by **January 3, 2008.** Be sure to ask for the "Indian Health Service" group rate. Reservation requests received after the cut-off date will be accepted on a space- and rate-available basis. Make your reservations now!

Airport transportation available through Cloud 9 Shuttle at $12.00 each way.

Register for the conference in advance! On-line conference registration will be available in October at *http://www.ihs.gov/MedicalPrograms/ClinicalSupportCenter/*
*On-line pre-registration and ticket sales to the Awards Luncheon and the CME Luncheon will close January 11, 2008.

CONTACT: Dora Bradley, MPH, RN or Gigi Holmes, Program Coordinator
IHS Clinical Support Center
Two Renaissance Square
40 North Central Avenue, Suite 780
Phoenix, Arizona 85004
TEL: (602) 364-7777
FAX: (602) 364-7788
EMAIL: *gigi.holmes@mail.ihs.gov*

The meeting provides an opportunity to get together with your colleagues for: networking and business activities, to update your knowledge of current health issues, and receive accredited continuing education.

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

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

ACCREDITED SPONSOR: Indian Health Service Clinical Support Center

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

"Logic is an organized procedure for going wrong with confidence and certainty."

C. F. Kettering

Articles of Interest

Stephen S. Hall. Small and Thin: The controversy over the fetal origins of adult health. *The New Yorker*, November 19, 2007.
http://www.newyorker.com/reporting/2007/11/19/071119fa_fact_hall.

Weight in infancy and death from ischemic heart disease. *Lancet.* 1989 Sep 9;2(8663):577-80.

Mother's weight in pregnancy and coronary heart disease in a cohort of Finnish men: follow up study. *BMJ.* 1997 Oct 4;315(7112):837-40.

Trajectories of growth among children who have coronary events as adults. *N Engl J Med.* 2005 Oct 27;353(17):1802-9.

The belief that maternal health in pregnancy can have life-long effect on chronic illnesses in their offspring has gone from heresy to orthodoxy in the past 20 years. The driving force behind this theory is David Barker, who was featured recently in an article in *The New Yorker.* Dr. Barker's original hypothesis was based on population studies in England. It was confirmed by similar work in Finland. This epidemiologic work has found correlates in the new field of epigenetics, which postulates that environmental factors can produce permanent changes in the activity of genes. Birth effects are not predestination but they do have measurable effects over a population. Dr. Barker argues we need to put more emphasis on maternal nutrition as a cost effective intervention for future health.

Editorial Note

What do skinny children born to skinny, poorly nourished mothers in England in the early 20th century have to do with AI/AN children today? Studies have shown that the children at greatest risk for coronary heart disease as adults are not fat babies: it is thin babies who gain unusual amounts of weight after birth. This perfectly describes infants born 20 to 40 years ago as many AI/AN populations went in one generation from under nutrition to over nutrition. We now have an epidemic of diabetes and coronary heart disease in young adults. It is unclear what will be seen 20 years from now in the current group of large for gestational infants being born to overweight mothers. We can only be sure that there will be epigenetic effects.

Infectious Disease Updates.
Rosalyn Singleton, MD, MPH
2008 Childhood Immunization Schedule: Few Changes Planned.

There were numerous changes to the Childhood (0 - 6 year) and Adolescent Immunization Schedules in 2007. Few additional footnote changes are proposed for the 2008 schedule:

1. Hep B. "If mother is HBsAg-negative, the birth dose can be delayed in rare cases with providers order and copy of mother's negative HBsAg lab report in infant's medical record."
2. Pneumococcal vaccine. "At ages 24 - 59 months, administer 1 dose of PCV to incompletely vaccinated healthy children and 2 doses of PCV at least 8 weeks apart to incompletely vaccinated children with certain high risk conditions. Administer Pneumovax to children 2 years and older with certain high-risk conditions."
3. Meningococcal vaccine. "Administer Menactra to children ages 2 - 10 years with terminal complement deficiencies or anatomic or functional asplenia or HIV infection."
4. Influenza vaccine.
   a. Yearly for children 6 - 59 months, close contacts of children 0 - 59 months
   b. Yearly for children 5 years + with certain risk factors
   c. FluMist can be used in healthy children 2 years and older (with out asthma or recurrent wheezing)
   d. Give 2 doses (separated by at least 4 weeks) to children <9 years receiving Flu vaccine for the first time; or who were vaccinated for the first time last season but only received 1 dose.

Summary: The biggest new change is that Menactra, currently recommended for 11 - 18 year olds, will be recommended for children down to 2 years of age with certain high risk conditions. Depending on the supply and finances, ACIP may eventually expand Menactra to one dose for any child 2 - 18 years. You can download the new schedules in January at: *http://www.cdc.gov/vaccines/recs/schedules/*.

Recent literature on American Indian/Alaskan Native Health

Doug Esposito, MD

Singleton RJ, Holman RC, Yorita KL, et al. Diarrhea-associated hospitalizations and outpatient visits among American Indian and Alaska Native children younger than five years of age, 2000-2004. *Pediatr Infect Dis J*. 2007;26(11):1006-1013.
http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=17984807&ordinalpos=14&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum

Editorial Comment

This study scrutinizes IHS hospital discharge and outpatient visit data for diarrhea in children <5 years of age for calendar years 2000 - 2004, inclusive. Hospitalization and outpatient visit rates (events/10,000 population) were constructed using the 2004 IHS service-population as the denominator, with statistical adjustments applied to earlier years. The data were analyzed on a regional basis; for the AI/AN population, Northern Plains, Southern Plains, Southwest, East, Alaska, and West designations were used, while the general US population was regionalized using Northeast, Midwest, South, and West. Additional analysis was made based on age (<12 months and 1 - 4 years), sex, and diarrhea etiology.

Childhood diarrhea hospitalization rates for the general US population were examined using the 2003 Kids' Inpatient Database (KID). Comparison outpatient visit data for the general US population derived from the 2000 - 2004 National Ambulatory Medial Care Survey (NAMCS) and the National Hospital Ambulatory Medical Care Survey (NHAMCS). Age-specific rates were constructed using 2003 US census and US natality data.

It appears that AI/AN children <5 years of age had similar or slightly lower rates of hospitalization for diarrhea than the general US population [65.9 (95% CI: 63.8 – 68) vs. 79.3 (95% CI: 74.9 – 83.6)/10,000], while rates of diarrhea hospitalization for AI/AN infants were almost two-fold higher [(262.6 (95% CI: 252.3 – 273.3) vs. 154.7 (95% CI: 145.6 – 163.8)/10,000]. Also of note is that the hospitalization rate for AI/AN infants was 10 times the rate for 1 - 4 year-old AI/AN children! This difference was not as striking among the general US population. Higher rates of outpatient visits for diarrhea were found for AI/AN children <5 years of age [2255.4 (95% CI: 2245.1–2265.7) vs. 1647.9 (95% CI: 1398.4 –1897.4)/10,000], with infants being seen at about twice the rate of the general US population.

The pattern of diarrhea-associated hospitalization and outpatient visits for AI/AN children varied by region, but the regions of highest and lowest burden did not completely match. Overall, hospitalization rates were highest in the Southwest and in Alaska and lowest in the Northern and Southern Plains while outpatient visit rates were highest for the East and the Southwest and lowest for the Southern Plains and the West. Please refer to the article itself for details of these differences and the regional variability based on age group. Seasonal variation occurred for both in- and out-patient events and mimicked what might be expected based on the known epidemiology of viral etiologies (especially rotavirus) of childhood diarrhea.

Given that these data reflect IHS hospital discharge and outpatient visit data, some inherent peculiarities exist that might reasonably be expected to have underestimated hospitalization rates overall and to have possibly impacted the variability observed by IHS region. For example, in regions where hospitalizations occur mainly outside the IHS or contract facilities (e.g., the Northern and Southern Plains), hospitalization rates would be expected to be biased lower (i.e., the disparity between AI/AN children and the general US populations is actually worse than it appears). Additionally, differences in hospital admission criteria, health care seeking patterns, diagnosis and coding issues, and issues with the denominator (user population) all could serve to skew the rate estimates. These issues are discussed by the authors both in the current article and in another article employing an identical methodology to investigate rates of hospitalization for a different condition.[1] Finally, given that AI/AN groups are known to be very diverse and not uniform with regard to traditions, lifestyle, health behaviors, socioeconomic factors, and others, variability in health status and health outcomes is to be expected. American Indian/Alaska Native is a highly diverse racial designation, which is reflected in the health statistics of individual band and tribal designations.

Although disparities in diarrhea still exist and are possibly even greater than demonstrated by this study, one cannot argue the impressive progress that has been made over the years with regards to the burden of diarrhea among AI/AN children. Substantial credit for this progress belongs to the IHS itself and to the dedicated individuals who have worked with and within the system to accomplish so very much with so very little.[2] These improvements are certainly the result in large part of the targeted deployment of the same basic public health interventions that have so positively impacted health status throughout the world, namely safe water systems, improved sanitation, and better hygiene practices.

According to the authors, further improvements and reductions in diarrhea-associated hospitalization and outpatient visit rates, especially for infants, might be expected as a result

of the newly available rotavirus vaccine. That, however, remains to be seen. At a minimum, continued deployment of technologies known to be effective should be a focus of our efforts. Significant proportions of AI/AN populations still lack basic systems of safe and available water and sanitation that most of us take for granted. Additionally, components of poverty that are widely know to adversely affect susceptibility and transmission of infectious disease (e.g., overcrowding, unhygienic living environments, nutritional integrity), must continue to be targeted. To me, disparities in diarrhea reflect basic and unacceptable societal inequities. Until we as a society address these fundamental facts, health equity and the complete elimination of health disparities will be a long time in coming.

References

1. Singleton RJ, Holman RC, Cobb N, et al. Asthma hospitalizations among American Indian and Alaska Native people and for the general US population. *Chest*. 2006;130(5):1554-62. *http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=17099037&query_hl=1&itool=pubmed_DocSum.*
2. Forty years in partnership: the American Academy of Pediatrics and the Indian Health Service. *Pediatrics*. 2006 Oct;118(4):e1257-63. *http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=17015514&query_hl=1&itool=pubmed_DocSum.*

Additional Reading

Holman RC, Parashar UD, Clarke MJ, et al. Trends in diarrhea-associated hospitalizations among American Indian and Alaska native children, 1980-1995. *Pediatrics*. 1999;103(1):E11. *http://www.ncbi.nlm.nih.gov/sites/entrez?Db=pubmed&Cmd=ShowDetailView&TermToSearch=9917491&ordinalpos=2&itool=EntrezSystem2.PEntrez.Pubmed.Pubmed_ResultsPanel.Pubmed_RVDocSum.*

The 13th Annual Elders Issue

The May 2008 issue of THE IHS PROVIDER, to be published on the occasion of National Older Americans Month, will be the twelfth annual issue dedicated to our elders. Indian Health Service, tribal, and Urban Program professionals are encouraged to submit articles for this issue on elders and their health and health care. We are also interested in articles written by Indian elders themselves giving their perspective on health and health care issues. Inquiries or submissions can be addressed to the attention of the editor at the address on the back page of this issue.

Electronic Subscription Available

You can subscribe to *The Provider* electronically. Any reader can now request that he or she be notified by e-mail when the latest issue of *The Provider* is available at the Clinical Support Center website (*http://www.ihs.gov/MedicalPrograms/ClinicalSupportCenter/*). To start your electronic subscription, simply go to *The Provider* website (*http://www.ihs.gov/publicinfo/publications/healthprovider/provider.asp*) and complete the subscription form. This address can easily be reached from the Clinical Support Center website by clicking the "Publications" link and then clicking the "How To Subscribe" link. You are encouraged to try downloading the current issue to see how well this works at your site.

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 often 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.

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 2008 Meeting of the National Councils for Indian Health
February 3 - 8, 2008; San Diego, California

The National Councils (Clinical Directors, Chief Executive Officers, Chief Medical Officers, Oral Health, and Nurse Consultants) for Indian health will hold their 2008 annual meeting February 3 - 8, 2008 in San Diego, California. An exciting and informative program is planned to address Indian Health Service/Tribal/Urban program issues and offer solutions to common concerns throughout Indian country. The focus this year will be *"Improving Health Care Services and Delivery through Multi-Disciplinary Collaborations."* Indian health program Chief Executive Officers and clinico-administrators are invited to attend. The meeting will be held at the Bahia Resort Hotel, 998 West Mission Bay Drive, San Diego, California 92109. Please make your hotel room reservations by January 3, 2008 by calling 1-800-576-4229. Be sure to ask for the "Indian Health Service" group rate. For on-line registration and the most current conference agenda, please visit the Clinical Support Center web page at *http://www.ihs.gov/MedicalPrograms/ClinicalSupportCenter/*. The IHS Clinical Support Center is the accredited sponsor for this meeting. For more information, contact Gigi Holmes or CDR Dora Bradley at (602) 364-7777; or e-mail *gigi.holmes@ihs.gov*.

Indian Health Midwinter Conference on Women's and Children's Healthcare
February 8 - 10, 2008, Telluride, Colorado

Mark your calendar! Ask for leave! Think snow! It's time to make plans to attend the annual Indian Health Midwinter Conference on Women's and Children's Healthcare. This conference will bring together health care providers and nurses from Navajo Area and throughout Indian country for three days of continuing education, networking, and winter recreation. Topics will include a wide range of timely issues important for ob/gyns, pediatricians, family physicians, NPs, CNMs, PAs, and RNs who care for Native American women and children.

It will be a fun and educational weekend if you ski, snowboard, or like to sit by the fire.

As always, no advance registration is needed. Details regarding times and location will be mailed later in the fall. If you need additional information in the meantime, please contact Alan Waxman, MD at *awaxman@salud.unm.edu*.

Share this announcement with a friend. See you there!

Clinical Update on Substance Abuse and Dependency (CUSAD)
(Formerly known as the Primary Care Provider Training on Chemical Dependency)
March 11 - 13, 2008; Phoenix, Arizona

This three-day intensive workshop includes both didactic and experiential training. The curriculum is updated annually with the most current nursing, addiction medicine, and prevention information. This training is available to Indian health providers (physicians, physician assistants, nurses, and advanced practice nurses). Enrollment is limited to 30 providers (preferably 2 - 3 person teams from the same facility representing the various disciplines targeted). The conference site expected to be announced in January; it will be in downtown Phoenix. Be sure to ask for the "Indian Health Service" group rate when the venue is confirmed. For more information or to register, contact Cheryl Begay at (602) 364-7777 or e-mail *Cheryl.Begay@ihs.gov*. To register online, go to the CSC website at *http://www.ihs.gov/MedicalPrograms/ClinicalSupportCenter/*.

Office Based Opioid Treatment Course
March 14, 2008; Phoenix, Arizona

The IHS invites all physicians and nurses to register for its upcoming Office Based Opioid Treatment (OBOT) Course to be held Friday, March 14, 2008 at the CUSAD venue in Phoenix. The course faculty features the top clinicians and researchers in the field. This new treatment modality reduces the regulatory burden on physicians who choose to practice opioid addiction therapy. It is open to all physicians and nurses, including federal, state, and military. For more information, contact Dr. Anthony Dekker at (602) 762-1908 or *anthony.dekker@ihs.gov*.

2008 Education in Palliative and End-Of-Life Care-Oncology/IHS (EPEC-O/IHS)
March 25 - 27, 2008; Bloomington, Minnesota

The 2008 Education in Palliative and End-Of-Life Care-Oncology/IHS (EPEC-O/IHS) will be held March 25 -

27, 2008 in Bloomington, Minnesota. This intensive, interactive training course is a joint effort between the IHS and the National Cancer Institute and is evolving into one of the best opportunities available to develop specific skills related to caring for patients and families who are facing cancer and other serious chronic illnesses, and those facing the end of life.

The faculty features the top clinicians in the field. Participation is open to all physicians, nurses, social workers, and pharmacists across the Indian health system. All Indian health facilities are encouraged to support interested physicians, nurses, social workers, pharmacists, and others to attend this course. If a facility wishes to send a team, that would be ideal.

The National Cancer Institute has provided funds to cover travel costs and the *per diem* for about 35 attendees for this course. We will accept applications on a first request, first served basis. Please contact Timothy Domer, MD by e-mail at *timothy.domer@ihs.gov*.

A second training session will be held in Flagstaff, Arizona April 22 - 24. The location of that training will be forthcoming shortly. You may apply to attend that course using the same e-mail address.

The March training will be held at the Holiday Inn Select International Airport, 3 Appletree Square, Bloomington, Minnesota 55425. Please make your hotel room reservations by March 3, 2008 by calling 1-800-465-4329 or (952) 854-9000. Be sure to ask for the "Indian Health Service" group rate. For online registration and the most current conference agenda, please visit the Clinical Support Center web page at *http://www.ihs.gov/MedicalPrograms/ClinicalSupportCenter/*.

The IHS Clinical Support Center is the accredited sponsor for this meeting. For more information on CME/CEU, contact Gigi Holmes or CDR Dora Bradley at (602) 364-7777 or e-mail *gigi.holmes@ihs.gov*.

Lifesavers 2008 National Conference on Highway Safety Priorities
April 13 - 15, 2008; Portland, Oregon

Lifesavers is the premier national highway safety meeting in the United States dedicated to reducing the tragic toll of deaths and injuries on our nation's roadways. The conference addresses a wide range of safety topics, from child passenger safety and occupant protection to roadway and vehicle safety and technology. It offers the state-of-the-art information on advances in highway safety, highlights successful programs, and draws attention to emerging safety. Conference attendees come from the public and private sectors representing a multidisciplinary audience including child passenger safety professionals, EMS, nurses, physicians, social workers, injury prevention advocates, researchers, law enforcement, judicial officials, and consumers. Each year, the Lifesavers Conference has become even more relevant and timely, providing a forum that delivers common-sense solutions to today's critical highway safety problems.

For more information visit *www.lifesaversconference.org*; telephone (703) 922-7944; fax (703) 922-7780.

8th Annual Advances in Indian Health
April 29 – May 2, 2008; Albuquerque, New Mexico

The 8th Annual Advances in Indian Health Conference is offered for primary care physicians, nurses, and physician assistants who work with American Indian and Alaskan Native populations at Federal, tribal, and urban sites. Medical students and residents who are interested in serving these populations are also welcome.

Both new and experienced attendees will learn about advances in clinical care specifically relevant to American Indian populations with an emphasis on southwestern tribes. Opportunities to learn from experienced clinicians who are experts in American Indian 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 (Tuesday, Wednesday, Thursday, and Friday morning) of lectures and case discussion workshops. In early spring, the brochure will be posted on the UNM CME website at *http://hsc.unm.edu/cme*. For additional information, please contact Kathy Breckenridge, University of New Mexico Office of Continuing Medical Education at (505) 272-3942, or e-mail the UNM CME Office to request at brochure at *CMEWeb@salud.unm.edu*.

If you would like to review a sample program, you can find it on the National Council of Chief Clinical Consultant's website at *http://www.ihs.gov/NonMedicalPrograms/NC4/nc4-fpAdvances.asp*.

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 on an organizational letterhead to: Editor,* THE IHS PROVIDER*, The IHS Clinical Support Center, Two Renaissance Square, Suite 780, 40 North Central Avenue, Phoenix, Arizona 85004. Submissions will be run for two months, 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. The Indian Health Service assumes no responsibility for the accuracy of the information in such announcements.*

Psychiatrist
SouthEast Alaska Regional Health Consortium; Sitka, Alaska

Cross cultural psychiatry in beautiful southeastern Alaska. Positions available in Sitka for BE/BC psychiatrist in our innovative Native Alaskan Tribal Health Consortium with a state-of-the-art EHR in the coming year. Join a team of committed professionals. Inpatient, general outpatient, telepsychiatric, C/L, and child/adolescent work available. Excellent salary and benefit pkg. Loan repayment option. Live, hike, and kayak among snow capped mountains, an island studded coastline, whales, and bald eagles. CV and questions to *tina.lee@searhc.org* or (907) 966-8611. Visit us at *www.searhc.org*.

Family Practice Physician
Sonoma County Indian Health Project; Santa Rosa, California

The Sonoma County Indian Health Project (SCIHP) in Santa Rosa, California is seeking a full-time BC/BE Family Practice Physician to join our team. SCIHP is a comprehensive community care clinic located in the northern Californian wine country. Candidates must currently hold a California Physician/Surgeon license. Inpatient care at the hospital is required. For the right candidate, we offer a competitive salary, excellent benefits, and an opportunity for loan repayment. For more information, please contact Bob Orr at (707) 521-4654; or by e-mail at *Bob.Orr@crihb.net*.

Family Practice Physician/Medical Director
American Indian Health and Family Services of Southeastern Michigan; Dearborn, Michigan

American Indian Health and Family Services of Southeastern Michigan (*Minobinmaadziwin*) (AIHFS) is a non-profit ambulatory health center, founded 1978. AIHFS provides quality, culturally integrated, medical and preventative dental care in addition to comprehensive diabetes prevention and treatment. All of AIHFS programs integrate traditional Native American healing and spiritual practices with contemporary western medicine in both treatment and prevention.

AIHFS is seeking a full time primary care and family practice physician/medical director. This involves the delivery of family oriented medical care services as well as general professional guidance of primary care staff. The incumbent will also function as the Medical Director, who will collaborate with fellow physicians and the Executive Director on administrative operations of the medical, dental, and behavioral health services.

Please send a cover letter (include the position that you are applying for, a summary of your interests and qualifications for position), minimum salary requirement, resume, and a list of three professional references with contact information to American Indian Health and Family Services of Southeastern Michigan, Inc., Attn: Jerilyn Church, Executive Director, P.O. Box 810, Dearborn, Michigan; fax: (313) 846-0150 or e-mail *humanresources@aihfs.org*.

Pediatrician
Nooksack Community Clinic; Everson, Washington

The Nooksack Community Clinic in Everson, Washington is seeking an experienced pediatrician to take over the successful practice of a retiring physician. The clinic provides outpatient care to approximately 2,000 members of the Nooksack Indian Tribe and their families. The position includes some administrative/supervisory duties as well as part-time direct patient care. We are seeking a dedicated, experienced pediatrician with a special interest in child advocacy and complex psychosocial issues. This is a full time position with a competitive salary and benefits. There are no on-call, no inpatient duties, and no obstetrics. We currently are staffed with one family practitioner, one internist, one pediatrician, and one nurse practitioner. Additionally we have three mental health counselors, a state-of-the-art four-chair dental clinic, a nutritionist, a diabetic nurse educator, and an exercise counselor. We provide high quality care in an environment that prides itself on treating our patients like family.

The clinic is located in a very desirable semi-rural area of Northwest Washington, renown for its scenic beauty, quality of life, and year 'round outdoor recreation. The beautiful city of Bellingham is 20 minutes away. Vancouver, Canada is less than 90 minutes away, and Seattle is approximately a two-hour drive away. St. Joseph Hospital in nearby Bellingham offers a wide range of specialist and inpatient services, an excellent hospitalist program, as well as emergency care, lab, and imaging services, all easily accessible for our patients.

For further information, please send your CV or contact Dr. MaryEllen Shields at *nooksackclinic a,gmail.com*, or write c/o Nooksack Community Health Center, PO Box 647, Everson, Washington 98247; telephone (360) 966-2106; fax (360) 966-2304.

Nurse Executive
Santa Fe Indian Health Hospital; Santa Fe, New Mexico

The Santa Fe Indian Hospital is recruiting for a quality, experienced nurse executive. The 39-bed Santa Fe Indian Hospital is part of the Santa Fe Service Unit providing services in the clinical areas of general medical and surgical care, operating room, urgent care, progressive care, and preventive health. The purpose of this position is to serve as the top level nurse executive for all aspects of the nursing care delivery. As Director of Nursing (DON) services, manages costs, productivity, responsibility of subordinate staff, and programs, as well as providing leadership and vision for nursing development and advancement within the organizational goals and Agency mission.

The Nurse Executive is a key member of the SFSU Executive Leadership Team and has the opportunity to coordinate clinical services with an outstanding, stable, and experienced Clinical Director and Medical Staff. The SFSU includes the hospital and four ambulatory field clinics primarily serving nine tribes. The SFSU earned 2006 Roadrunner Recognition from Quality New Mexico. The hospital is located in beautiful Santa Fe, New Mexico, filled with cultural and artistic opportunities.

Contact CAPT Jim Lyon, CEO at (505) 946-9204 for additional information.

Director of Nursing
Acoma-Canoncito Laguna Hospital; San Fidel, New Mexico

Acoma-Canoncito Laguna Hospital has an opening for a director of nursing. The Acoma-Cononcito Laguna Service Unit (ACL) serves three tribal groups in the immediate area: the Acoma Pueblo (population 3,500), the Laguna Pueblo (5,500) and the Canoncito Navajos (1,100). The ACL Hospital is located approximately 60 miles west of Albuquerque, New Mexico. The hospital provides general medical, pediatric, and obstetric care with 25 beds. The director of nursing is responsible for planning, organizing, managing, and evaluating all nursing services at ACL. This includes both the inpatient and outpatient areas of the service unit. The director of nursing participates in executive level decision making regarding nursing services and serves as the chief advisor to the chief executive officer (CEO) on nursing issues. Other responsibilities include management of the budget for nursing services. For more information about the area and community, go to *http://home.Abuquerque.ihs.gov/serviceunit/ACLSU.html*.
For details regarding this great employment opportunity, please contact Dr. Martin Kileen at (505) 552-5300; or e-mail *martin.kileen@ihs.gov*.

Primary Care Physician
(Family Practice Physician/General Internist)
Family Practice Physician Assistant/Nurse Practitioner
Kyle Health Center; Kyle South, Dakota

Kyle Health Center, a PHS/IHS outpatient clinic, is recruiting for the position of general internal medicine/family practice physician and a position of family practice physician assistant/nurse practitioner. The clinic is south of Rapid City, South Dakota, and is located in the heart of the Badlands and the Black Hills – an area that is a favorite tourist destination. It is currently staffed with physicians and mid-level practitioners. It provides comprehensive chronic and acute primary and preventive care. In-house services include radiology, laboratory, pharmacy, optometry, podiatry, primary obstetrics/gynecology, diabetic program, and dentistry. There is no call duty for practitioners. We offer competitive salary, federal employee benefits package, CME leave and allowance, and loan repayment. For further information, please contact K.T Tran, MD, MHA, at (605) 455-8244 or 455-8211.

Internist
Northern Navajo Medical Center; Shiprock, New Mexico

The Department of Internal Medicine at Northern Navajo Medical Center (NNMC) invites board-certified or board-eligible internists to interview for an opening in our eight-member department. NNMC is a 75-bed hospital in Shiprock, New Mexico serving Native American patients from the northeastern part of the Navajo Nation and the greater Four Corners area. Clinical services include anesthesia, dentistry, emergency medicine, family practice, general surgery, internal medicine, neurology, OB/Gyn, optometry, orthopedics, ENT, pediatrics, physical therapy, and psychiatry. Vigorous programs in health promotion and disease prevention, as well as public health nursing, complement the inpatient services.

The staff here is very collegial and unusually well trained. A vigorous CME program, interdepartmental rounds, and journal clubs lend a decidedly academic atmosphere to NNMC. Every six weeks, the departments of internal medicine and pediatrics host two medical students from Columbia University's College of Physicians and Surgeons on a primary care rotation. In addition, we have occasional rotating residents to provide further opportunities for teaching.

There are currently eight internists on staff, with call being about one in every seven weeknights and one in every seven weekends. We typically work four 10-hour days each week. The daily schedule is divided into half-days of continuity clinic, walk-in clinic for established patients, exercise treadmill testing, float for our patients on the ward or new admissions, and administrative time. On call, there are typically between 1 and 4 admissions per night. We also run a very active five-bed intensive care unit, where there is the capability for managing patients in need of mechanical ventilation, invasive cardiopulmonary monitoring, and transvenous pacing. The radiology department provides 24-hour plain film and CT radiography, with MRI available weekly.

The Navajo people suffer a large amount of diabetes, hypertension, and coronary artery disease. There is also a high incidence of rheumatologic disease, tuberculosis, restrictive lung disease from uranium mining, and biliary tract and gastric disorders. There is very little smoking or IVDU among the Navajo population, and HIV is quite rare.

Permanent staff usually live next to the hospital in government-subsidized housing or in the nearby communities of Farmington, New Mexico or Cortez, Coloado, each about 40 minutes from the hospital. Major airlines service airports in Farmington, Cortez, or

nearby Durango, Colorado. Albuquerque is approximately 3½ hours away by car.

The great Four Corners area encompasses an unparalleled variety of landscapes and unlimited outdoor recreational activities, including mountain biking, hiking, downhill and cross-country skiing, whitewater rafting, rock climbing, and fly fishing. Mesa Verde, Arches, and Canyonlands National Parks are within a 2 - 3 hour drive of Shiprock, as are Telluride, Durango, and Moab. The Grand Canyon, Capitol Reef National Park, Flagstaff, Taos, and Santa Fe are 4 - 5 hours away.

If interested, please contact Thomas Kelly, MD, by e-mail at *Thomas.Kelly@ihs.gov* or call (505) 368-7037.

Physician Assistant
Native American Community Health Center, Inc.; Phoenix, Arizona

The Native American Community Health Center, Inc. (dba Native Health) is a non-profit, community focused health care center centrally located in the heart of Phoenix, Arizona. Native Health has been providing health care services to the urban Indian community in metro Phoenix, since it was incorporated in 1978. Native Health is currently seeking a physician assistant (PA). The PA is a key element in providing quality health care services to patients of all ages. Native Health offers competitive and excellent benefits. For more information, contact the HR Coordinator, Matilda Duran, at (602) 279-5262 or *mduran@nachci.com*.

Family Practice Physicians
Medical Clinic Manager
North Olympic Peninsula, Washington State

The Jamestown Family Health Clinic is seeking two BC/BE full spectrum family practice physicians with or without obstetrical skills. The clinic group consists of five FP physicians, two OB/GYN physicians, and five mid-level providers. The clinic is owned by the Jamestown S'Klallam Tribe and serves tribal members and approximately 9,000 residents of the north Olympic Peninsula. The practice includes four days per week in the clinic and inpatient care at Olympic Medical Center. OMC is family medicine friendly with hospitalists who cover nighttime call and are available to assist with most hospital rounding. Our practice fully utilizes an electronic medical record system (Practice Partner) and participates in the PPRI net research affiliated with Medical University of South Carolina. The clinic serves as a rural training site for the University of Washington Family Medicine residency.

The Jamestown S'Klallam Tribe provides a competitive salary and unbeatable benefit package including fully paid medical, dental, and vision coverage of the physician and family. The north Olympic Peninsula provides boating opportunities on the Strait of San Juan de Fuca, and hiking, fishing, and skiing opportunities in the Olympic Mountains and Olympic National Park. Our communities are a short distance from Pacific Ocean beaches, a short ferry ride away from Victoria, BC, and two hours from Seattle.

Send CV to Bill Riley, Jamestown S'Klallam Tribe, 1033 Old Blyn Highway, Sequim, Washington 98382, or e-mail *briley@jamestowntribe.org*.

The Medical Clinic Manager is responsible for management and staff supervision of the multiple provider clinic in Sequim, Washington. Clinic services include primary care and OB/GYN. Send cover letter and resume to Jamestown S'Klallam Tribe, 1033 Old Blyn Highway; Sequim Washington 98382, Attn: Bill Riley; or fax to (360) 681-3402; or e-mail *briley@jamestowntribe.org*.
Job description available at (360) 681-4627.

Chief Pharmacist
Deputy Chief Pharmacist
Staff Pharmacists (2)
Hopi Health Center; Polacca, Arizona

The Hopi Health Care Center, PHS Indian Health Service, is located on the Hopi Indian Reservation in beautiful northeastern Arizona. HHCC is a critical access hospital with an inpatient unit consisting of four patient beds plus two labor and delivery suites, emergency room, and a large outpatient clinic. The HHCC serves the Hopi, Navajo and Kiabab/Paiute Tribes. Housing, sign-on bonus and/or moving expenses are available for eligible applicants. The Hopi people are rich in culture, customs, and traditions and live atop the peaceful mesas. Applications are available on-line at *www.ihs.gov*, or contact Ms. April Tree at the Phoenix Area Office at (602) 364-5227.

Nurse Practitioners
Physician Assistant
Aleutian Pribilof Islands Association (APIA), St. Paul and Unalaska, Alaska

Renown bird watcher's paradise! Provide health care services to whole generations of families. We are recruiting for mid-level providers for both sites, and a Medical Director for St. Paul and a Clinical Director for 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. Graduate of an accredited ANP or 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. 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.

Salary DOE + benefits. Contractual two year commitment with relocation and housing allowance. Job description available upon request. Please send resumes with at least three professional references to Nancy Bonin, Personnel Director, via email at *nancyb@apiai.org*.

Family Practice Physician
Dentist
Northeastern Tribal Health Center; Miami, Oklahoma

The Northeastern Tribal Health Center is seeking a full-time Family Practice Dentist and a Family Practice Physician to provide ambulatory health care to eligible Native American beneficiaries. The Health Care Center is located in close proximity to the Grand Lake area, also with thirty minute interstate access to Joplin, Missouri. The facility offers expanded salaries, excellent benefits, loan repayment options, no weekends, and no call. To apply please submit a current resume, certifications, and current state license. Applicants claiming Indian preference must submit proof with their resume. Applicants will be required to pass a pre-employment drug screen and complete a background check. To apply, send requested documents to Northeastern Tribal Health Center, P.O. Box 1498, Miami, Oklahoma 74355, attention: Personnel. The phone number is (918) 542-1655; or fax (918) 540-1685.

Internal Medicine and Family Practice Physicians
Yakama Indian Health Center; Toppenish, Washington

Yakama Indian Health Center in Toppenish, WA will soon have openings for internal medicine and family practice physicians. The current staff includes four family physicians, two pediatricians, one internist, five nurse practitioners, and a physician assistant. The clinic serves the 14,000 American Indians living in the Yakima Valley of south central Washington. Night call is taken at a local private hospital with 24/7 ER coverage. The on-call frequency is about 1 out of 7 nights/weekends. The area is a rural, agricultural one with close proximity to mountains, lakes, and streams that provide an abundance of recreational opportunities. The weather offers considerable sunshine, resulting in the nearest city, Yakima, being dubbed the "Palm Springs of Washington." Yakima is about 16 miles from Toppenish, with a population of 80,000 people. There you can find cultural activities and a college. For further information, please call or clinical director, Danial Hocson, at (509) 865-2102, ext. 240.

Family Practice Physician
Ilanka Community Health Center; Cordova, Alaska

The Ilanka Community Health Center has an immediate opening for a board certified/eligible family practice physician. Position is full-time or part-time with flexible hours.

Ilanka is a tribally-owned clinic that also receives federal Community Health Center funding. We serve all members of the community. Cordova also has a 10-bed Critical Access Hospital with on-site long-term care beds. Physicians and physician assistants provide services in the clinic and in the hospital emergency department, as well as inpatient and long-term care.

This is a very satisfying practice with a nice mix of outpatient, ER, and inpatient medicine. Sicker patients tend to be transferred to Anchorage. The clinic provides prenatal care to about 20 patients a year, but the hospital is currently not doing deliveries.

Cordova is a small, beautiful community situated in southeast Prince William Sound. It is a very friendly town. The population of Cordova is 2,500 in the winter and around 5,000 in the summer. The population is 70% Caucasion, 15% Alaska Native, and 10% Filipino, with an influx of Hispanic patients in the summer.

Most of the town is within easy walking distance to the clinic/hospital. The community is off the road system, but connects to roads by ferry and has daily flights to Anchorage and Juneau. This offers the advantages of remoteness with the benefits of connectivity.

We have tremendous access to outdoor sports and activities including excellent hiking, cross country skiing, alpine skiing, ice skating, boating, world class kayaking, heli-skiing, fishing, and hunting. This is the source of Copper River Salmon!

We offer flexible schedules, competitive salary and benefits, and loan repayment options. We would like to hear from you if you are excited about being an old style, small-town, family doctor.

Get more information about Cordova at *www.cordovaalaska.com*, *www.cordovachamber.com*, and *www.cordovaalaska.net/cordovarealty/*. For more information, please contact Gale Taylor, at (907) 424-3622; or gale@ilanka.org

Emergency Department Physician/Director
Kayenta Health Center; Kayenta, Arizona

Kayenta is unique in many ways. We are located in the Four Corners area on the Navajo Indian Reservation as part of the Indian Health Service/DHHS. We have challenging assignments, beautiful rock formations, movie nostalgia, ancient ruins, and wonderful clientele to care for. We are within one hundred and fifty miles from the Grand Canyon and one hundred miles from Lake Powell, which offers boating, fishing, water skiing, and camping. World class skiing resorts and winter sports are just a few hours away in Colorado and Utah. Kayenta is a great place to raise a family with stress free living in a small hometown setting.

Working for Kayenta Health Center provides a unique opportunity. Because of our remote location and underserved population, you may be eligible for loan repayment and can be making a real difference in the world.

We are currently recruiting for a BC/BE emergency department physician and director to work in our 24-hour, eight bed facility. This is a great opportunity to join our multi-specialty ten member medical staff and nursing team. This position will be supported by dynamic outpatient clinical services, including dental, optometry, mental health, public heath nursing, pharmacy, radiology, environmental health services, and nutrition.

If interested in this exciting employment opportunity, please contact Stellar Anonye Achampong, MD, Clinical Director, at (928) 697-4001; e-mail *stellar.anonye@ihs.gov*; or send CV to Human Resources/Melissa Stanley, PO Box 368, Kayenta, Arizona 86033; telephone (928) 697-4236.

Multiple Positions
Riverside-San Bernardino County Indian Health Inc.; Banning, California

Internal medicine physician: two years experience in an ambulatory care patient setting. MD degree, current California

medical license, current DEA license, board certified.

Public health nurse: bachelor of science degree in nursing from an accredited school of nursing. Must possess a current California nursing license and public health nurse certificate; valid California driver's license and safe driving record.

RN charge nurse: current California RN license, current CPR certification, current California driver's license. Experience with computerized medical management system desirable. Two years experience in ambulatory care, urgent care, or similar setting.

Registered Dietitian & Public Health Nutritionist: bachelor of science degree in foods and nutrition, applicable master's degree in nutrition or masters in public health or RD. At least two years professional experience required. A California driver's license and a current DMV printout are required.

Quality management/credentialing assistant: applicant must possess a high school diploma or equivalent. Must have two years experience in the coordination of quality management and credentialing services for the professional staff. Must have strong written and oral communications skills.

All applicants must be able to work with the Indian community and be sensitive to the Indian culture and its needs. Please fax resumes to Human Resource Department at (951) 849-3581; or e-mail *msouvenir@rsbcihi.org*.

Multiple Professions
Pit River Health Service, Inc.; Burney, California

Pit River Health Service is an IHS funded rural health clinic under P.L.93-638 in northern California that provides medical, dental, outreach, and behavioral health. We are seeking several professional positions to be filled. We are looking for a Health Director to administer and direct the program to fulfill the Pit River Health Service, Inc.'s primary mission of delivering the highest possible quality of preventative, curative and rehabilitative health care to the Indian people served; a Dental Director to plan and implement the dental program and supervise dental staff; a Public Health Nurse or Registered nurse seeking a PHN license to provide public health nursing and to coordinate and supervise Community Health Services program; a Behavioral Health Director/LCSW as an active member of an interdisciplinary team providing prevention, intervention, and mental health treatment services to clients; and a Registered Dental Assistant.

Burney is located about 50 miles northeast of Redding, California in the Intermountain Area. The Intermountain Area offers plenty of recreational opportunities such as fishing, hiking, camping, boating, and hunting, with a beautiful landscape. Snow skiing is within an hour's drive away. The Intermountain Area is a buyers market for homes, as well. All available positions require a California license and/or certification. To apply for employment opportunities and for more information, please contact John Cunningham; e-mail *johnc@pitriverhealthservice.org*; or telephone (530) 335-5090, ext. 132.

Family Practice Physician
Internal Medicine Physician
Psychiatrist
Winslow Indian Health Care Center; Winslow, Arizona

The Winslow Indian Health Care Center (WIHCC) in northern Arizona is currently looking for primary care physicians in family practice, internal medicine, and psychiatry. We have a staff of 12 physicians, including a surgeon, and nine family nurse practitioners and physician assistants. We offer comprehensive ambulatory and urgent/emergent care to patients at our health center in Winslow, which includes a state-of-the-art, seven-bed Urgent Care Center completed in 2006. WIHCC also operates two field clinics five days a week on the Navajo Reservation, at Leupp and Dilkon. Our FPs and internist also provide inpatient care at the local community hospital, the Little Colorado Medical Center, where the FPs provide obstetrical deliveries with excellent back-up from the local OB-Gyn group. The psychiatrist works as part of a team consisting of one full-time psychiatric nurse practitioner, another (part-time) psychiatrist, and five Navajo counselors, providing primarily outpatient services with occasional hospital consults.

WIHCC offers an awesome mix of professional, cultural, and recreational opportunities. It is located just seven miles from the breathtaking beauty of Navajoland and its people, and 50 miles from Flagstaff – a university town with extensive downhill and cross-country skiing, where several of our employees choose to live. Attractive salary and benefits, as well as a team oriented, supportive work environment are key to our mission to recruit and retain high quality professional staff.

WIHCC became an ISDA 638 contracted site in 2002, and has experienced steady growth and enhancement of programs and opportunities since the transition from a direct IHS program. Please contact Frank Armao, MD, Clinical Director, if you are interested in pursuing an opportunity here, at *frank.armao@wihcc.org*; telephone (928) 289-6233.

Family Practice Physician
Peter Christensen Health Center; Lac du Flambeau, Wisconsin

The Peter Christensen Health Center has an immediate opening for a board certified family practice physician; obstetrics is optional, and call will be 1/6. The facility offers competitive salaries, excellent benefits, and loan repayment options; all within a family oriented work atmosphere.

The Lac du Flambeau Indian Reservation is located in the heart of beautiful northern Wisconsin. The area's lakes, rivers, and woodlands teem with abundant wildlife, making it one of the most popular recreational areas in northern Wisconsin. The area boasts fabulous fishing,
excellent snowmobiling, skiing, hunting, golf, and much more. Four seasons of family fun will attract you; a great practice will keep you.

For specific questions pertaining to the job description, call Randy Samuelson, Clinic Director, at (715) 588-4272. Applications can be obtained by writing to William Wildcat Community Center, Human Resource Department, P.O. Box 67, Lac du Flambeau,

Wisconsin 54538, Attn: Tara La Barge, or by calling (715) 588-3303. Applications may also be obtained at *www.lacduflambeautribe.com*.

Primary Care Physician
Zuni Comprehensive Community Health Center; Zuni, New Mexico

The Zuni Comprehensive Community Health Center (Zuni-Ramah Service Unit) has an opening for a full-time primary care physician starting in January 2008. This is a family medicine model hospital and clinic providing the full range of primary care -- including outpatient continuity clinics, urgent care, emergency care, inpatient (pediatrics and adults) and obstetrics -- with community outreach, in a highly collaborative atmosphere. For a small community hospital, we care for a surprisingly broad range of medical issues. Our professional staff includes 14 physicians, one PA, one CNM, a podiatrist, dentists, a psychiatrist, a psychologist, optometrists, physical therapists, and pharmacists. Our patient population consists of Zunis, Navajos, and others living in the surrounding area.

Zuni Pueblo is one of the oldest continuously inhabited Native American villages in the US, estimated to be at least 800 - 900 years old. It is located in the northwestern region of New Mexico, along the Arizona border. It is high desert, ranging from 6000 - 7000 feet elevation and surrounded by beautiful sandstone mesas, canyons, and scattered sage, juniper, and pinon pine trees. Half of our medical staff has been with us for more than seven years, reflecting the high job and lifestyle satisfaction we enjoy in this community.

For more information, contact John Bettler, MD at (505) 782-7453 (voice mail), (505) 782-4431 (to page), or by e-mail at *john.bettler@ihs.gov*. CVs can be faxed to (505) 782-4502, attn: John Bettler.

Primary Care Physicians (Family Practice, Internal Medicine, Med-Peds, Peds)
Psychiatrists
Pharmacists
Nurses
Chinle Service Unit; Chinle, Arizona

Got Hózhó? That's the Navajo word for joy. Here on the Navajo Reservation, there's a great mix of challenging work and quality of life. No rush hour traffic, no long commutes, no stressors of urban life. We walk to work (naanish) and enjoy living in our small, collegial community. Our 60-bed acute care hospital is located in Chinle, Arizona, the heart of the Navajo Nation. At work we see unique pathology, practice evidence-based medicine, and are able to utilize the full scope of our medical training. Together, we enjoy learning in an atmosphere of interdepartmental collaboration, supported by an established network of consulting specialists across the southwest. A comprehensive system of preventive programs and ancillary services allows us to provide the best possible care for our patients. During our time off, many of us explore the beautiful southwest, bike on amazing slick rock, and ski the slopes of the Rocky Mountains. It's a great life – combining challenging and interesting work with the peaceful culture of the Navajo people and the beautiful land of the southwest.

We're looking for highly qualified health care professionals to join our team. If you're interested in learning more about a place where "naanish baa hózhó" (work is joyful), contact Heidi Arnholm, Medical Staff Recruiter, Chinle Service Unit, telephone (970) 882-1550 or (928) 674-7607; e-mail *heidi.arnholm@ihs.gov*.

Family Practice Physician
Family Practice Medical Director
Tanana Chiefs Conference, Chief Andrew Isaac Health Center; Fairbanks, Alaska

We are seeking a board certified family practice physician, preferably with obstetrics skills for a full-time position. We will have openings in the summers of 2007 and 2008.

The facility is a multispecialty clinic providing services in obstetric/gynecology, internal medicine, and family practice. It also includes dental, optometry, pharmacy, behavioral health, community health aides, and other services. Our referral region includes 43 villages in interior Alaska covering an area the size of Texas. Fairbanks has an outstanding school system and university. We offer a very competitive salary with a great benefits package and a loan repayment plan. Commissioned Corps positions are also available. Contact Jim Kohler at (907) 459-3806 or *james.kohler@tananachiefs.org*.

Family Practice Physician
Seattle Indian Health Board; Seattle, Washington

Full Time, Fantastic Benefits! We are recruiting for a family practice physician to join our team at the Seattle Indian Health Board in Seattle, Washington. We are a multiservice community health center for medical, dental, mental health, substance abuse, and community education services. We are looking for a physician who is familiar with health and social issues facing American Indians/Alaska Natives and a desire to promote the delivery of appropriate health services to this population.

Seattle Indian Health Board (SIHB) physicians are responsible for the delivery of quality, culturally sensitive primary medical care to the SIHB's patient population. This position provides general medical care (including diagnosis, treatment, management, and referral) to SIHB patients with acute, chronic, and maintenance health care needs. The physician chosen will also participate in the medical on-call rotation schedule and other responsibilities such as consulting and coordinating care with other practitioners, nursing, pharmacy, laboratory, and outside referral sites. He or she will provide clinic preceptorship of mid-level practitioners and patient care instruction to nurses, pharmacists, and other SIHB clinical staff. The incumbent will precept for residents for the outpatient continuity family practice clinics. In addition to supervising patient care, preceptors engage in didactic activity to enhance resident learning. The physician will also participate in quality assurance, program development, community health education/screening, and related activities. He or she will document all patient care information/treatment in problem-oriented format in the patient's

medical records, as well as complete and submit encounter forms and related materials according to established procedure. Finally, the person selected will comply with SIHB policies and procedures, and the AAAHC Standards of Care.

Qualifications include board certification in family medicine and a Washington State medical license. All applicants will be required to complete a background check. Please visit our website at *www.sihb.org* for more information, or you can call Human Resources at (206) 324-9360, ext. 1123.

Primary Care Physicians
USPHS Claremore Comprehensive Indian Health Facility; Claremore, Oklahoma

The USPHS Claremore Comprehensive Indian Health Facility has openings for full-time positions for an emergency medicine physician, a surgeon, an anesthesiologist (or nurse anesthetist), an OB/GYN physician, and an internal medicine physician.

The Claremore hospital is a 50-bed specialty based comprehensive care facility, providing care through nine organized clinical services: community health, dentistry, optometry, emergency medical services, general surgery, internal medicine, obstetrics and gynecology, pediatrics, and radiology. In addition, the hospital has a six-bed intensive and coronary care unit and CAT scan equipment with 24 hour teleradiology support. The facility maintains several academic affiliations, and has a professional staff consisting of 36 staff physicians, approximately 60 contract physicians, five dentists, three nurse practitioners, a physician assistant, an optometrist, and an audiologist.

Claremore is a town of 18,000 just 21 miles northeast of the very metropolitan city of Tulsa, with a US Census county population of 560,431. Tulsa has a major airport with international flights and destinations in most major US cities, and was ranked in the top 10 southern cities in Southern Living magazine and Fodor's Travel Publications as one of its outstanding travel destinations. Tulsa's cost of living is 8 percent below the national average and has a county per capita income 11 percent above the national average. If you prefer
rural living, there are many opportunities nearby. The facility is located 10 minutes from a major lake, and only one hour from a lake with over 1,100 miles of shoreline.

For more information, contact Paul Mobley, DO at (918)342-6433, or by e-mail at *paul.mobley@ihs.hhs.gov*. CVs may be faxed to (918) 342-6517, Attn: Paul Mobley, DO.

Family Practice Physician
Hopi Health Care Center; Polacca, Arizona

The Hopi Health Care Center currently has openings for family practice physicians and family nurse practitioner or physician assistants. The Hopi Health Care Center is a small, rural IHS hospital providing full spectrum family practice medical services including ambulatory care, adult/peds inpatient care, low risk obstetrics, and ER care. We currently staff for 12 full time physicians, and four full time FNP/PA positions. Our facility is located in northern Arizona, 90 miles northeast of Flagstaff and 70 miles north of Winslow, on the Hopi Indian Reservation. Services are provided to both Hopi and Navajo reservation communities. The reservation is located in the heart of the southwest; within a 90 mile radius are abundant mountain areas, lakes, forests, and archeological sites. The Hopi Health Care Center is a new facility established in 2000 with a full ambulatory care center environment including a dental clinic, physical therapy, optometry, and behavioral health services. We are a designated NHSC site, and qualify for the IHS Loan Repayment Program.

For more information, please contact Darren Vicenti, MD, Clinical Director at (928) 737-6141 or *darren.vicenti@ihs.gov*. CVs can be faxed to (928) 737-6001.

Family Practice Physician
Chief Redstone Health Clinic, Fort Peck Service Unit, Wolf Point, Montana

We are announcing a job opportunity for a family practice physician at the Chief Redstone Clinic, Indian Health Service, Fort Peck Service Unit in Wolf Point, Montana. This is a unique opportunity for a physician to care for individuals and families, including newborns, their parents, grandparents, and extended family. Applicants must be culturally conscious and work well within a team environment. The Fort Peck Service Unit is located in the northeast corner of Montana along the Missouri river. Fort Peck Service Unit has two primary care clinics, one in the town of Poplar and one in the town of Wolf Point.

Our Medical Staff is composed of five family practice physicians, two internal medicine physicians, one pediatrician, one podiatrist, and four family nurse practitioners/physician assistants. We have a full complement of support services, which include dental, optometry, audiology, psychology, social work, radiology, lab, public health nursing, and a very active Diabetes Department. These are ambulatory clinics; however our providers have privileges in the local community hospital. We have approximately 80,000 patient contacts per year. We work very closely with the private sector. IHS and the private hospital have a cardiac rehabilitation center. By cooperating with IHS, the hospital has been able to get a CT scanner and a mammography unit. Tribal Health has a dialysis unit attached to the Poplar IHS clinic. Customer service is our priority. The IHS has excellent benefits for Civil Service and Commissioned Corps employees. There are loan repayment options, and we are a designated NHSC site. We strive to provide quality care through a strong multidisciplinary team approach; we believe in being closely involved in our population to encourage a "Healthier Community."

There are many opportunities for recreation, as we are a short distance from the Fort Peck Dam and Reservoir. For more information about our area and community please go to the website at
http://www.ihs.gov/FacilitiesServices/AreaOffices/Billings/FtPeck/index.asp. Fort Peck tribes also can be found on *www.fortpecktribes.org*, and the Fort Peck Community College on *www.fpcc.edu*. Northeast Montana offers many amenities one might not expect this far off the beaten path. If you are interested

please contact our provider recruiter, CDR Karen Kajiwara-Nelson, MS, CCC-A, at (406) 768-3491 or by e-mail at *karen.kajiwara@ihs.gov*. Alternatively, you can contact Dr. Craig Levy at (406) 768-3491, or e-mail *craig.levy@ihs.gov*, or the Billings Area Physician Recruiter, Audrey Jones, at (406) 247-7126 or e-mail *audrey.iones@ihs.gov*. We look forward to communicating with you.

Pediatrician
Family Practice Physician
Pharmacist
Obstetrician/Gynecologist
PHS Indian Hospital; Browning, Montana

The Blackfeet Service Unit is recruiting for health practitioners who want to join the staff at the PHS Indian Hospital, Browning, Montana. The Blackfeet Service Unit is home to the Blackfeet Community Hospital, a 27-bed hospital, active outpatient clinic, and well-equipped emergency department. Inpatient care includes obstetrics and elective general surgery. We also offer community health nursing, an active diabetes program, optometry, laboratory, dental, and ENT services along with behavioral and social services and women's health. We are seeking candidates who are committed to improving the health of the local community and being part of a team approach to medicine. The hospital is located 13 miles from Glacier National Park. This area offers spectacular mountains and incredible outdoor activities year round. There are loan repayment options, excellent benefits, and we are a designated NHSC site. If you are interested in joining our medical team, contact Dr. Peter Reuman at *peter.reuman@ihs.gov* or telephone (406) 338-6150; or contact the Physician Recruiter, Audrey Jones, at *audrey.jones@ihs.gov* or telephone (406) 247-7126. We look forward to hearing from interested candidates.

Family Practice Physician
Pharmacists
PHS Indian Hospital, Harlem, Montana

The Fort Belknap Service Unit is seeking family practice physician and pharmacist candidates to join their dedicated staff. The service unit is home to a critical access hospital (CAH) with six inpatient beds, two observation beds, and a 24-hour emergency room, as well as an 8 am to 5 pm outpatient clinic. The service unit also operates another outpatient clinic 35 miles south of Fort Belknap Agency in Hays. The Fort Belknap CAH outpatient visits average 39,000 per year. The new clinic in Hays, the Eagle Child Health Center, can adequately serve 13,000 per year. The medical staff includes four family practice positions, two physician assistants, and one nurse practitioner, and has implemented the Electronic Health Record in the outpatient clinic. The service unit also has a full-time staffed emergency medical services program. The staff is complemented by contract *locum tenens* physicians for weekend emergency room coverage.

The medical staff is supported by and works with a staff of nurses, behavior health personnel, physical therapist, lab and x-ray personnel, pharmacists, dentists, administrators, housekeepers, supply specialists, and contract practitioners to provide the best possible care to patients. The staff works as a team to make a difference. Contract (private) hospitals are from 45 to 210 miles from the facility.

There are loan repayment options, excellent benefits, and we are a designated NHSC site. The area is primarily rural, and a friendly small-town atmosphere prevails here. The reservation communities promote various local activities such as rodeos, church socials, and basketball. The tribe also manages its own buffalo herd. Bigger events fill in the calendar as well, such as the Milk River Indian Days, Hays Powwow, and the Chief Joseph Memorial Days, featuring cultural activities and traditional dancing. The Fort Belknap Tribe has hunting and fishing available both on and off the reservation. The Little Rocky Mountains and the Missouri River provides scenic and enjoyable areas for the outdoor-minded. If you are interested in joining our medical team, contact Dr. Robert Andrews at *robert.andrews@ihs.gov* or telephone (406) 353-3195; or contact the Physician Recruiter, Audrey Jones, at *audrev.jones@.gov;* telephone (406) 247-7126.

Family Nurse Practitioner or Physician Assistant
Fort Peck Service Unit; Poplar, Montana

We are announcing a job opportunity for a family nurse practitioner and/or physician assistant at the Verne E Gibbs Health Center in Poplar, Montana and the Chief Redstone Health Clinic, Indian Health Service, Fort Peck Service Unit in Wolf Point, Montana. The Fort Peck Service Unit is located in the northeast corner of Montana along the Missouri river. Fort Peck Service Unit has two primary care clinics, one in the town of Poplar and one in the town of Wolf Point. The Medical Staff is composed of five family practice physicians, two internal medicine physicians, one pediatrician, one podiatrist, and four family nurse practitioners/physician assistants. We have a full complement of support services, which include dental, optometry, audiology, psychology, social work, radiology, lab, public health nursing, and a very active Diabetes Department that includes one nurse educator, one FNP, and one nutritionist. We strive to provide quality care through a strong multidisciplinary team approach; we believe in being involved in the community to encourage a "Healthier Community."

There are many opportunities for recreation, as we are a short distance from the Fort Peck Dam and Reservoir. For more information about our area and community please go to the website at *http://www.ihs.gov/FacilitiesServices/AreaOffices/Billings/FtPeck/index.asp*. We are looking for an applicant with well rounded clinical skills. Two years experience is preferred but new graduates are welcome to apply. Northeast Montana offers many amenities one might not expect this far off the beaten path. If you are interested please contact our provider recruiter, CDR Karen Kajiwara-Nelson, MS, CCC-A at (406) 768-3491 or by e-mail at *karen.kajiwara@ihs.gov*.

Family Practice Physicians

Dentists
Pharmacists
Crownpoint Comprehensive Healthcare Facility; Crownpoint, New Mexico

The Crownpoint IHS facility has openings for two family practitioners with low risk obstetric skills (we will consider candidates without OB skills), two pharmacists, and two general dentists. Our service unit follows a family medicine model for providing full-spectrum care to our patients, with a dynamic medical staff that finds the work here quite rewarding. With a high HPSA rating, we are a NHSC-eligible site for payback and loan repayment.

Crownpoint is a town of about 2,500 people in the Four Corners region of New Mexico. We serve a traditional community of 25,000 Navajo people, many of whom speak only Navajo and live in traditional homes with no running water, electricity, or phone service. Our hospital has a six bed ER, a 17 bed med/peds unit, a labor and delivery/post-partum unit, and a large outpatient clinic. We have a total of 16 dental chairs, optometry, and mental health services, as well as on-site pharmacy, laboratory, radiology, and ultrasonography. Our medical/dental staff is a collegial and supportive group including ten family physicians, two pediatricians, an obstetrician/gynecologist, a psychiatrist, three PAs, three FNPs, four dentists, and a podiatrist. We have a very exciting, full-spectrum medical practice that includes high-risk prenatal care, low-risk labor and delivery, emergency room care with management of trauma and orthopedics, and an interesting inpatient medicine and pediatric service.

As primary care physicians in a rural setting, we manage a wide variety of medical problems. We care for many patients with diabetes and hypertension, but we also see some unusual illnesses such as plague, Hantavirus, and snake bites. There are many opportunities for outpatient and ER procedures including suturing, therapeutic injections, closed reductions of fractures and dislocations, para/thoracentesis, chest tubes, LPs, colposcopy, sigmoidoscopy, and OB ultrasound.

While Crownpoint is small, there is a lot to do in the surrounding area. There are two junior colleges in town where many of us have taken Navajo language, weaving, and history classes. Some have gotten involved with local churches and children's activities. Outdoor activities are plentiful, with downhill and cross-country skiing, camping, and fishing all nearby. There are several excellent mountain biking and hiking trails, as well as Anasazi ruins that are right in Crownpoint. Albuquerque is two hours away and is our nearest large city with an international airport. Other destinations that are within an afternoon's drive include Santa Fe (three hours), Durango and the Rocky Mountains (two hours), Taos (four hours), Southern Utah's Moab and Arches/Canyonlands National Parks (four hours), Flagstaff (three hours) and the Grand Canyon (five hours).

For more information, contact Harry Goldenberg, MD, Clinical Director, at (505)786-5291, ext.46354; e-mail *harry.goldenberg@ihs.gov*; or Lex Vujan at (505) 786-6241; e-mail *Alexander.vujan@ihs.gov*.

Family Practice Physician
Pediatrician
Bristol Bay Area Health Corporation, Dillingham, Alaska

Bristol Bay Area Health Corporation (BBAHC) is a mature tribal compact located in scenic southwestern Alaska. The Bristol Bay Area Service Unit encompasses 44,000 square miles of Alaska country bordering the Bristol Bay region of the state. Over 400 employees provide primary care to 28 villages including two sub-regional villages, and a primary care hospital, Kanakanak, located in Dillingham, Alaska. The Medical Staff consists of nine family physicians, a pediatrician, a nurse midwife, four dentists, a physical therapist and an optometrist, all providing primary care. The patient population consists of Yupik Eskimo, Aleut, and Athabascans who have been residents of the area for hundreds of years. Family physicians provide a broad spectrum of practice including obstetrics, inpatient medicine, emergency care and procedures such as colonoscopy, EGD, flexible sigmoidoscopy, colposcopy, and treadmill services in a very collegial and supportive atmosphere. Our solo pediatrician is allowed to practice full spectrum pediatrics with an extremely interesting patient mix and some very high risk and rare genetic disorders unique to this area. The pediatrician works in a collegial manner with family physicians and is not required to perform any adult medicine or obstetrics, but solely pediatrics.

BBAHC was the first hospital in the country to establish a 638 contract and has an extremely good working relationship with their Board of Directors. Of note, the practice here in Alaska is unique, and air travel to outlying villages is required, since continuity care to the villages is very important to our care here and is uniquely rewarding. BBAHC has an extremely competitive salary and benefits package.

If interested, please contact Arnie Loera, MD, Corporate Medical Director, at (907) 842-9218, Kanakanak Hospital/Bristol Bay Area Health Corporation, PO Box 130, Dillingham, Alaska 99576. You may also contact him by e-mail at *aloera@bbahc.org*. CVs can be faxed to (907) 842-9250, attn: Arnie Loera, MD. You may also view our website for information about our corporation at *www.bbahc.org*.

Family Practice Physician
Santa Clara Indian Health Service Health Center; Espanola, New Mexico

The Santa Clara Indian Health Service Health Center is recruiting for a family practice physician for a full-time position. The medical department is staffed with three providers: one full-time family practice physician, one half-time family practice physician, one half-time internal medicine physician, and one full-time nurse practitioner or one full-time physician assistant position. This ambulatory care clinic is primary care-oriented with outpatient, dental, behavioral health, laboratory, radiology, optometry, psychiatry, podiatry, pediatrics, women's health, and other services. The referral facility is Santa Fe Indian Hospital in Santa Fe, New Mexico, located 30 miles away, from where many of the staff

commute.

The Santa Clara Health Center is located in the Pueblo of Santa Clara in Northern New Mexico. This area is renown for its famous black pottery and Puye cliff dwellings and has outdoor activities including their very own Big Rock Casino and Golf Course, skiing nearby at Santa Fe, Taos, or Angelfire, fishing, river rafting, biking, hiking, rock climbing, feasts, pow-wows, and many others. We are located approximately 80 miles northwest from Albuquerque, the largest city in New Mexico. The University of New Mexico is also located in Albuquerque.

The position is available as either Commissioned Corps or Civil Service (US citizens and Status Candidates). For more information, please contact Bindu Smelser, MD or Chico Livingston MD at Santa Clara Health Center, (505) 753-9421, or apply on the open continuous announcement number AAO-OC-602 to Albuquerque Area Indian Health Service, Division of Human Resources, 5300 Homestead Road, NE, Albuquerque, NM 87110; telephone (505) 248-4510. Contact Raelyn Pecos at (505) 248-4106 or *raelyn.pecos@ihs.gov* for a copy of the job announcement, or go to *www.usajobs.gov*, USAJOBS control number 806649.

Medical Technologist
Tuba City Regional Health Care Corporation; Tuba City, Arizona

The Tuba City Regional Health Care Corporation, a 73-bed hospital with outpatient clinics serving 70,000 residents of northern Arizona, is recruiting for full-time generalist medical technologists. The laboratory has state-of-the-art equipment. We offer competitive salary, based on experience. Relocation benefits are available. New graduates are encouraged to apply for this position. Tuba City is located on the western part of the Navajo reservation approximately 75 miles north of Flagstaff, Arizona, with opportunities for outdoor recreation and cultural experiences with interesting and adventurous people.

For more information, please contact Minnie Tsingine, Laboratory Supervisor, at (928) 283-2716 or *minnie.tsingine@tcimc.ihs.gov*. For an application, please contact Human Resources at (928) 283-2041/2432 or *mfrancis@tcimc.ihs.gov*.

Family Medicine Physicians
Phoenix Indian Medical Center, Phoenix Arizona

The Family Medicine Department is recruiting for BC/BE family physicians at the Phoenix Indian Medical Center and the satellite clinic at Salt River. The positions are predominantly outpatient with limited hospital inpatient activity; OB optional. Join eight physicians, one nurse practitioner, one physician's assistant, and a number of part-time providers. PIMC is one of the largest IHS sites, with over 100 providers and 70 active beds. We have been using PCC+ and in part EMR. There are great opportunities socially, culturally, professionally, and educationally living in the Phoenix metropolitan area. The IHS has a great benefits package for Civil Service and Commissioned Corps. Loan payback is an option. For more information, please contact/send CV to Eric Ossowski MD, Family Medicine Department, Phoenix Indian Medical Center, 4212 N. 16th Street, Phoenix Indian Medical Center, Phoenix, Arizona 85016. Telephone (602) 263-1537; fax (602) 263-1593; or e-mail *eric.ossowski@ihs.gov*.

Family Practice Physician
Gallup Indian Medical Center; Gallup, New Mexico

The Gallup Indian Medical Center has an immediate opening for a family medicine physician. GIMC is one of the largest Indian Health Service sites. The IHS has great benefits packages for both Civil Service and Commissioned Corps providers. We are an NHSC scholarship and an IHS Loan Repayment site as well. The Department of Family Medicine offers the opportunity for full spectrum family medicine care. There are currently nine physicians, two physician assistants, and one pharmacist clinician in the department. Chronic disease management and prevention are the focus for continued development and expansion of this department and program. The hospital has a multi-specialty group, and family medicine physicians have inpatient privileges at GIMC as well as at the community hospital, Rehoboth McKinley Christian Hospital.

Please contact Dr. Alma Alford, Chief of Family Medicine, if you are interested in pursuing an opportunity here. The address is Gallup Indian Medical Center, 516 E. Nizhoni Blvd., P.O. Box 1337, Gallup, New Mexico 87301-1337; telephone (505) 722-1000; fax (505) 726-8740; office number (505) 722-1280 or 722-1775; e-mail *alma.alford@ihs.gov*.

2007 YEAR-END INDEX ☐

Major Subjects and Titles, Volume 32, January through December 2007

Change of Address or Request for New Subscription Form

Name _____ **Job Title** _____

Address _____

City/State/Zip _____

Worksite: ☐ **IHS** ☐ **Tribal** ☐ **Urban Indian** ☐ **Other**

Service Unit (if applicable) _____ **Social Security Number** _____

Check one: ☐ **New Subscription** ☐ **Change of address**

If change of address, please include old address, below, or attach address label.

Old Address _____

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@phx.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/PublicInfo/Publications/HealthProvider/Provider.asp).*

Wesley J. Picciotti, MPA .....Director, CSC
John F. Saari, MD .....Editor
E.Y. Hooper, MD, MPH.....Contributing Editor
Cheryl Begay .....Production Assistant
Theodora R. Bradley, RN, MPH.....Nursing Consultant
Erma J. Casuse, CDA .....Dental Assisting Training Coordinator
Edward J. Stein, PharmD .....Pharmacy Consultant

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

Circulation: The PROVIDER (ISSN 1063-4398) is distributed to more than 6,000 health care providers working for the IHS and tribal health programs, to medical schools throughout the country, and to health professionals working with or interested in American Indian and Alaska Native health care. If you would like to receive a copy, send your name, address, professional title, and place of employment to the address listed below.

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.

Authors should submit at least one hard copy with each electronic copy. References should be included. All manuscripts are subject to editorial and peer review. Responsibility for obtaining permission from appropriate tribal authorities and Area Publications Committees to publish manuscripts rests with the author. For those who would like more information, a packet entitled "Information for Authors" is available by contacting the CSC at the address below or on our website at www.csc.ihs.gov.

Dept. of Health and Human Services
Indian Health Service
Clinical Support Center
Two Renaissance Square, Suite 780
40 North Central Avenue
Phoenix, Arizona 85004

PRESORTED STANDARD
POSTAGE AND FEES PAID
U.S. DEPT. OF HEALTH & HUMAN SERVICES
PHOENIX, AZ
PERMIT NO. 5691

CHANGE SERVICE REQUESTED

OFFICIAL BUSINESS
PENALTY FOR PRIVATE USE $300