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Depression in American Indians and Alaska Natives: A Review of Indian Health Policy and Services

The following is the second of three papers that were written during each author's participation in the Kaiser Family Foundation's Native American Health Policy Fellowship last year.

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Depression and other mental health disorders disproportionately affect American Indians and Alaska Natives, and there is a great need for services and resources to reduce disparities in this area. While there are a number of programs and policies that address these issues, more efforts are needed. This paper will review the problem of depression in American Indians and Alaska Natives and the policies that address mental health conditions in Indian communities.

Depression

Depression is one of the most prevalent and debilitating mental health conditions. When a person is clinically depressed, his or her ability to function, both mentally and physically, is affected, and this may last for weeks, months, or even years. Symptoms of depression include a persistent sad mood; loss of interest or pleasure in activities that were once enjoyed; significant change in appetite or body weight; difficulty sleeping or oversleeping; physical slowing or agitation; loss of energy; feelings of worthlessness or inappropriate guilt; difficulty thinking or concentrating; and recurrent thoughts of death or suicide.[1] There is a high degree of variation among people with depression in terms of symptoms, the course of the illness, and response to treatment, indicating that depression may have a number of complex and interacting causes. Psychosocial and environmental stressors are known risk factors for depression.[1]

Depression, the second-leading cause of disease burden in the United States, is a chronic illness that affects 19 million people.[2] Research indicates that people diagnosed with depression have medical costs twice those of healthy individuals and that they visit hospital emergency rooms with a significantly greater frequency; depression is the cause of $30 - $50 billion of lost productivity annually.[3] Seven of the top 10 drugs covered by managed care programs in many states are medications for depressive disorders.[2] Despite the efficacy of treatment, it is estimated that two thirds of individuals suffering from depression are not getting the help they need.[1]

Some say that depression ignores race, ethnicity, educa-

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tion level, and socioeconomic status. Women experience depression at roughly twice the rate of men.[1] More than 2 million older Americans suffer from some form of depression.[4] It has been reported that 70 to 90 percent of late-life depression is undiagnosed because of the older individual's depressive symptoms being attributed to other medical problems.[4] A number of epidemiologic studies have reported that up to 2.5 percent of children and up to 8.3 percent of adolescents in the U.S. suffer from depression.[5] Experts say that underlying some of the simmering rage among teens is undiagnosed depression.[6] Studies strongly suggest that depression is more prevalent among adults with diabetes than among the general population.[7]

According to the Surgeon General's Report on Mental Health 1999, the U.S. mental health care system is not well equipped to meet the needs of racial and ethnic minority populations. Depression has often been misdiagnosed in communities of color because of cultural barriers such as language, trust and values in the relationship between doctor and patient, and reliance on the support of family and the religious community rather than mental health professionals during periods of emotional distress.[8] According to a supplemental report to the Surgeon General's Report on Mental Health entitled "Mental Health: Culture, Race and Ethnicity," racial and ethnic minorities bear a greater burden from unmet mental health needs and thus suffer a greater loss to their overall health and productivity.[2]

Depression in American Indians and Alaska Natives

The history of American Indians and Alaska Natives (AI/AN) sets the stage for understanding their significant mental health needs.[2] Depression is a significant problem in many AI/AN communities.[9] Treaties, legislation, and cultural upheaval play a considerable role in the problem of depression and the under-diagnosis of depression in American Indians today. Because AI/ANs comprise such a small percentage of the U.S. population, in general, national research studies do not include sufficiently large samples of AI/AN to draw accurate conclusions regarding their need for mental health care.[2] However, studies with AI/AN participants point to a high incidence of comorbid mental health and substance abuse/addiction problems, including anxiety, depression, and suicide.[10] Cultural diversity among the 561 Federally recognized tribes is great, and cultural differences exist in the expression and reporting of distress among AI/AN[2]; this also may affect research findings.

Limited data suggest that the prevalence of psychiatric illness is high among elderly Indians, especially in the primary care and urban settings.[11] Compared with other women, the health and mental health status of American Indian women is generally worse.[12] American Indian women are at risk for many factors associated with depression, including poverty, lack of education, and larger numbers of children.[12] Many do not discriminate bodily from psychic distress and may express emotional distress in somatic terms or bodily symptoms. In a study by Shore and Stone, 1973, women from a Pacific Northwest tribe experienced a higher prevalence rate of duodenal ulcers, related to the pressure experienced from being part of a matrilineal culture and the stresses of acculturation. Acculturation and bicultural demands often place Indian women in a position of having to fulfill multiple and perhaps conflicting social roles.[13]

American Indian adolescents have been reported to exhibit high levels of depression, suicide, substance abuse, and quitting school.[14] In addition, 31.6% of American Indian families live below the poverty level compared with a national rate of 13.1%.[15] American Indian children growing up under these stressful circumstances are at high risk for behavioral and emotional problems.[11] Studies indicate that only 16.1% to 29% of youth meeting criteria for a current alcohol, drug, or mental disorder receive care for that disorder.[11] The age-adjusted suicide rate for AI/AN is 19.3 per 100,000 compared to 11.2 per 100,000 for U.S. all races in 1995.[15] The age-adjusted alcoholism death rate for AI/AN is over 7 times the U.S. all races rate for 1995.[15] All of these factors suggest AI/AN have high rates of depression or are at risk for devel-

oping mental illness.

The high burden of chronic disease among AI/AN also increases the risk of depression and other mental disorders. The prevalence rate for diabetes in American Indians is 2.8 times the overall U.S. rate, and evidence indicates that patients with diabetes are three times more likely to have a co-existing diagnosis of depression. Thus, the argument holds that American Indians, who already have a high prevalence of diabetes, are at increased risk for major depression.[16]

Addressing the Problem of Depression

Depression is the most treatable of all mental illnesses. About 60 to 80 percent of depressed people can be treated successfully.[8] The single, explicit recommendation of the 1999 Surgeon General's Report on Mental Health is to "seek help if you have a mental health problem or think you have symptoms of a mental disorder." However, depression frequently occurs coincident with a variety of other physical illnesses, including heart disease, stroke, cancer, or diabetes, and is often unrecognized and untreated.[1]

The most commonly used treatments for depression are antidepressant medication, psychotherapy, or a combination of the two. The two most common types of antidepressants are selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressants (TCA).[1] Advanced medications have major advantages over older therapies in decreasing absenteeism and increasing work performance.[17] Thus, the high cost of these medications proves to be cost-effective. Most primary care patients with depression prefer counseling to medication.[19]

Alternative approaches to mental health care that emphasize the interrelationship between mind, body, and spirit can also play an important role in recovery and healing.[19] Medical studies have confirmed that spirituality can have a profound effect on mental states, and that high levels of hope and optimism are key factors in fighting depression.[20] There is new public interest in herbal remedies for various medical conditions, including depression. St. John's Wort, an herbal remedy promoted as having antidepressant effects, is currently under study in its first large scale, controlled study funded by the National Institute for Mental Health. Studies have shown that light, moderate, and vigorous intensity exercise can reduce symptoms of depression.[21] According to the Dietary Guidelines for Americans, 2000, regular physical activity promotes psychological well-being and self-esteem, and reduces feelings of depression. In a recent Roper Starch Worldwide survey, 94 percent of people said they exercise to improve their emotional well-being, and 87 percent said they do so to reduce stress.[22] In addition to reducing symptoms of depression, aerobic forms of exercises have been suggested as one approach to reduce the costly effects of excessive or chronic stress.[24]

Strategies for treating depression that are culturally appropriate and relevant for Indian communities are suggested to be effective. For example, a study in Seattle, Washington revealed that two-thirds of the urban Indian patients sampled employed traditional healing practices regularly and felt that such practices significantly improved their health status.[24]

Addressing the Problem of Depression in American Indians and Alaska Natives

The U.S. Census Bureau estimates that 4.1 million AI/AN lived in the United States in 2000. Access, availability, and utilization of healthcare are critical in addressing the problem of depression in AI/AN. However, only 1 in 5 American Indians reports access to Indian Health Service care.[25]

From 1980 to 1995, over 2000 journal articles and book chapters were published on the mental health of American Indians. The most frequent service-related topics were the need for culturally sensitive assessment and care (76%), the importance of family and community to the treatment process (59%), the limitations of delivery systems and lack of local input into planning (47%), and the role of traditional healing (32%).[11] There is clearly a need for more comprehensive mental health services for AI/AN.

Legislation to authorize comprehensive mental health services for tribes has been enacted and amended several times, but Congress has consistently failed to appropriate funds for such initiatives.[25] A number of policies and programs have been implemented to deal with mental health disorders in Indian communities. Below, a number of such policies and programs have been reviewed to determine whether

they yield the most effective strategies to address mental health conditions in AI/AN, including comprehensive, culturally appropriate, and accessible care.

Mental Health Policies for American Indians and Alaska Natives

Indian Health Service. In 1955, the U.S. Government established the Indian Health Service (IHS) within what is now the Department of Health and Human Services. The goal of the IHS is to provide health care for AI/AN; however access is limited to approximately 20% of AI/AN due to the fact that clinics are located only on or near Indian reservations.[25] Only about 36% of AI/AN live on reservations or in other tribally defined areas; 64% live in other urban or rural areas.[25] The IHS has many health programs, including the Behavioral Health Program, which includes mental health, alcoholism, and substance abuse services. The vision of the IHS Behavioral Health Program is "so that the unique balance, resiliency, and strength of our AI/AN cultures are supported and enriched, we at the IHS Behavioral Health Program strive to eliminate the disease of alcoholism and other drug dependencies and the associated pain it brings to individuals of all ages, families, villages, communities, and tribes." Eligible patients access the Behavioral Health Program through its direct health care system at IHS hospitals, clinics, and health programs on or near reservations. Mental Health services range from psychotherapy (counseling) and medications, as prescribed by health care providers, to traditional healing practices, alcoholism programs, and prevention activities.

P.L. 106-260, the Tribal Self-Governance Amendments of 2000, amends the Indian Self-Determination and Educational Assistance Act to provide for tribal management of Indian health programs. Substance abuse and mental health are two programs that can be recommended for inclusion into the contracts or compacts between tribes and the Indian Health Service. While this act provides for an important shift of authority for health programs from the government to the tribes, the effectiveness of all programs is hampered by the significant lack of resources for Indian health. In testimony to the Senate Committee on Indian Affairs in 2000, Sally Smith, Chair of the National Indian Health Board, stated "Federal appropriations for Indian health have been shrinking relative to inflation, making it more difficult to provide health care to AI/AN."

Indian Health Care Improvement Act. The Indian Health Care Improvement Act is the primary legislation that authorizes Congress to appropriate funding for Indian health services. This act was first passed in 1976 as Public Law 94-437 and has been reauthorized three times since. In the 107th Congress both the House[26] and Senate[27] have introduced amendments to the expired bill for its reauthorization. Title VII of the IHCIA, Behavioral Health Programs, provides for the development of a comprehensive behavioral health prevention and treatment program that emphasizes collaboration between alcohol and substance abuse, social services, and mental health programs. The draft legislation for the reauthorization of this act was developed through an extensive tribal consultation process. During this process, the National Indian Health Board stated its support for integrating programs, which are nurturing, fulfilling, accountable, and responsible in their ability to offer significant insight and opportunity for wellness and balance in our tribal communities.[27] The Indian Health Care Improvement Amendments section 701 (a)(5) ensures that Indians, as citizens of the Untied States and of the states in which they reside, have the same access to behavioral health services to which all citizens have access.[27]

Rural Mental Health Accessibility Act of 2001. Additional pending legislation that may improve the mental health of American Indians includes the Rural Mental Health Accessibility Act of 2001, which authorizes monies to establish interdisciplinary programs in which mental health providers and primary care providers are trained side by side; establishes demonstration projects to provide mental health services via tele-health; and provides monies to conduct targeted public education campaigns with the goal of reducing the stigma and misinformation surrounding mental health.

Substance Abuse and Mental Health Services Administration. SAMHSA was established by Congress under Public Law 102-321 in 1992 to strengthen the Nation's capacity to provide prevention, diagnosis, and treatment services for substance abuse and mental illness. An example of a recently funded initiative is the grant opportunities specifically for tribes and tribal communities, but these are very competitive and not every tribe or tribal community has the opportunity or resources for acquiring these grants.

Department of Justice. There is a great need to coordinate resources provided by different Federal agencies. One attempt to coordinate among Federal agencies involved the Mental Health and Community Safety Initiative for American Indian/Alaskan Native Children, Youth and Families. Launched in FY 2000 with the Department of Justice (DOJ), the Department of Health and Human Services (DHHS), and the Department of Interior, this initiative was designed to provide tribes with assistance in developing innovative strategies that focus on mental health issues. The Violence Against Women Act, passed in 1994, also specifies authorization for tribes to access services. The American Indian and Alaskan Native Affairs Desk has been established in the Department of Justice to enhance access to information by Federally recognized tribes regarding funding opportunities, training and technical assistance, and other relevant information. Previously the Department of Justice's primary involvement in Indian country was to investigate and prosecute crimes. Since 1994 the department seeks to empower tribes to combat crime at the local level by enhancing programs designed to better their own justice system, thereby reducing the environmental stressors that are known to be risk factors for depression among Indian women.

National Institutes of Health. The National Institutes of Health (NIH) is one of eight agencies in the Public Health Service of the Department of Health and Human Services, and is comprised of 27 separate Institutes and Centers including the National Institute of Mental Health (NIMH). The primary focus of NIH is research, and Congress has determined that medical research is a priority and plans to double the NIH budget within five years. However, the number of research studies on AI/AN health issues currently funded by NIH is low, despite significant and persistent disparities in their health status.[1] NIH has developed a strategic research plan to reduce and ultimately eliminate health disparities, which can be found at *http://heathdisparities.nih.gov/working/institutes.html.* One area of focus of the National Institute of Mental Health includes addressing suicide and depression among AI/AN. The NIMH web site will provide information for tribal leaders and tribal health directors on future Requests For Application (RFA).

Tribal Consultation. The Presidential Executive Order on Tribal Consultation and Memorandum initiated in 1994 states, "All executive departments and agencies shall consult with Indian tribes and respect tribal sovereignty as they develop policy on issues that impact Indian communities."[28] While the DHHS has a policy on tribal consultation, the Indian Health Service is the only agency that has implemented a comprehensive process for consultation. As agencies consider improvements in behavioral and mental health services, it is imperative that they consult in a meaningful way with AI/AN tribes to ensure that their policies and programs meet the significant mental health needs in Indian communities.

Conclusions

AI/AN have less access to and availability of health care services, and thus have a greater disability burden from unmet mental health needs. Programs and policies are in place to address the problem; however, the resources are not. Congress, tribal leaders, agencies, and health care workers can effectively reduce the burden of disease caused by depression among AI/AN by addressing the following:

Data Collection: To determine the resources needed for adequate access to mental health service, improvements in the collection of data are critical in the assessment of problems and the impact of depression and other mental health disorders in AI/AN communities. More data are needed to help define the mental health needs of

AI/AN, and to inform policy makers.[29] This includes measuring the impact of treatment methods used, such as pharmacologic agents, behavioral therapy, as well as alternative or complementary practices, including traditional healing practices and spirituality.

- *Education of Providers*: Culture counts, and cultural competency increases the likelihood of proper diagnosis and treatment.
- *Increase public awareness*: Specifically targeting AI/AN, thereby decreasing the stigma associated with depression.
- *Research:* Increase the numbers of AI/AN subjects and Indian communities involved in research on mental health issues, by offering projects through tribal colleges and over-sampling of AI/AN in large scale studies to ensure inclusion.
- *Prevention and Mental Health Promotion*: Prevention programs with proven effectiveness such as culturally and spiritually strong programs, and programs with a physical fitness component can help bring AI/AN people closer to a state of wellness.
- *Consultation*: Coordination and collaboration across agencies and with tribes is necessary in order to make positive impacts on eliminating health disparities.
- *Authorization of IHCIA*: Increase the availability of, access to, and utilization of mental health services through authorization of the expired Indian Health Care Improvement Act.
- *Appropriate resources*: Allocation of adequate resources will improve the overall health of AI/AN.

As stated above, the problem of depression among AI/AN is real. There is much to be done, and there are many ways to be part of the solutions.

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PALLIATIVE CARE PEARLS

The following article is the first in an ongoing series in support of the development of a unified approach to palliative care services for American Indians and Alaska Natives. The information will consist of brief, concise facts and information for providers of palliative care.

Dyspnea at the End of Life

Look for simple things first, then consider opioids as the drugs of choice

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Assessment

Dyspnea may be present during the syndrome of imminent death, or it may occur earlier in the disease trajectory. Look for simple or common problems first: fluid overload, acute anxiety, severe pain, constipation, or urinary retention. Pulse oximetry, blood gases, electrocardiogram, or chest x-ray are not indicated if death is imminent.

General Treatment Measures

Try positioning (sitting up), use of an electric fan or open window, and relaxation techniques; decrease or discontinue intravenous fluids.

Treatment with Opioids

These are the drugs of choice, even in patients with chronic obstructive pulmonary disease. For an opioid naive patient, begin with low dose oral (10-15mg) or parental (2-5mg) morphine; if on chronic opioids, use 50% over the baseline regimen. If acute and severe, use 2-5mg morphine intravenously every 5-10 minutes until relief is obtained. Relief is what the patient perceives, and is not measured by oximetry or respirations/minute.

Treatment with Oxygen

This is not always helpful and is not always the first option. You may use a therapeutic trial; nasal cannulae are preferred over mask. There is little reason to go beyond 4-6 L/min.

Treatment with Other Drugs

These might include antitussives for cough, anticholingerics for secretions (e.g., a scopolamine patch), bronchodiators, and anxiolytics (e.g., lorazepam) for anxiety.

Family/team Discussions

Evidence is lacking that the use of opioids significantly hastens death in the presence of terminal dyspnea; a discussion and ongoing dialogue including the family and the entire health care team is essential to avoid confusion about symptom relief versus fears of euthanasia or assisted suicide.

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Chronic Kidney Disease is a Public Health Issue

This article is the first in a series of 12 one-page articles about chronic kidney disease. This month's topic provides an overview of the series.

Andrew S. Narva, MD; and Theresa A. Kuracina, MS, RD, CDE, both from the Indian Health Service Kidney Disease Program. Albuquerque, New Mexico

American Indians experience high rates of chronic kidney disease (CKD), often resulting in end-stage renal disease (ESRD). At the end of 1999, 5361 people identified as AI/AN were being treated for ESRD, reflecting a prevalence rate 3.5 times greater than that of white Americans. The incidence rate for ESRD was 2.7 times the white rate and increased at 8% per year during the period 1992-1996. During the 10-year period from 1988-1997 the number of AI/AN with ESRD tripled.

The epidemic of diabetes mellitus among AI/AN, which began in the middle of the 20th century, appears to be driving the increase in ESRD. More than two-thirds (68%) of AI/AN who initiated treatment for ESRD in 1999 developed kidney failure as a result of diabetes, virtually all type 2, while only 25% of whites and 42% of blacks with ESRD were patients with diabetes. The incidence rate for ESRD due to type 2 diabetes among AI/AN during 1996-1999 (349/million) was three times the white rate (99/million), and was higher than any other disease-specific rate for any US race. Some communities of the southwest have extraordinarily high rates of kidney failure. In Zuni Pueblo, a community of 10,000 in western New Mexico, the prevalence of ESRD is 17,400 per million population. This is 4.5-, 5.7-, and 21.3-fold higher than that for African Americans, American Indians, and European Americans, respectively.

The purpose of this series of articles to be published in *The Provider* is to help clinicians improve the care we provide to patients with chronic kidney disease by describing new standards of care developed by the National Kidney Foundation, the Renal Physicians Association, and other kidney-related professional groups. These guidelines cover evaluation, classification, and treatment of persons with CKD, as well as preparation for renal replacement therapy (dialysis and transplantation).

The guidelines are similar to information published in *The Provider* over the past fifteen years but comprise a more comprehensive approach. These guidelines are evidence-based, reviewed by multiple disciplines, and available for general review prior to final publication. These guidelines are not intended as standards or mandates. Rather, they should be used to "make informed decisions for each individual patient." However, it is likely that these guidelines will become the "gold standard" for the care of patients with chronic kidney disease.

This series will focus primarily on chronic kidney disease guidelines developed by the National Kidney Foundation through the Kidney Disease Outcome Quality Initiative (K/DOQI) and published in *The American Journal of Kidney Disease*; they can also be found at *www.kidney.org/professionals/doqi/guidelineindex.cfm*. In the coming months, we will summarize guidelines for:

- Evaluation, classification and monitoring of patients with CKD
- Evaluation and treatment of hypertension in CKD
- Evaluation and treatment of anemia in CKD
- Assessment of nutritional status and intervention
- Bone disease and disorders of calcium and phosphorus in CKD
- Lipid management in CKD
- Reducing cardiovascular disease in patients with CKD
- Assessment of functioning and well being in patients with CKD
- Preparation for kidney replacement therapy (modalities)
- Vascular access
- Performance measures for IHS

Why it matters

CKD is progressive and irreversible. Thus, the most effective interventions are those that identify patients as early as possible in the course of the disease and permit the institution of effective preventive measures. The patient care standards to be described in this series have the potential to significantly decrease the burden of CKD in the US population and among AI/AN. The public health model under which we operate and the high risk population we serve make the Indian health system an ideal model for implementation of these guidelines.

Personal Digital Assistants in the Indian Health Service

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History and Background

John Sculley, the former Chairman of Apple Computer, coined the phrase "Personal Digital Assistant" (PDAs) with the release of the Apple Newton on July 22, 1993. The Newton was a small portable computer that was rich in features, including Internet connectivity, a phone book, a calendar, and an organizer. The Newton was heavy, had poor handwriting recognition, and was too expensive to be practical for its time.

In March 1995, Palm Computing launched the Palm Pilot. This PDA had fewer features and carried a much lower price tag. The Palm Pilot sold faster than the VCR, color TV, the cell phone, and even the personal computer. Since then, PDAs have become an integrated necessity in the information technology armamentarium.

With lower prices and the increased availability of clinical and non-clinical applications, the use of PDAs within the Indian Health Service (IHS) has been rapidly expanding. Providers and para-professionals have purchased their own PDAs and have been taking advantage of a wide variety of clinical and non-clinical applications. In response to this growing demand, the IHS Information Technology Support Center (ITSC) has initiated a PDA pilot test project in twelve Area sites. This will be the first in a series of articles to orient the novice to the use of PDAs and to provide additional knowledge to the expert user. In this first article, we will describe differences between some of the popular PDAs available to assist in selecting the most appropriate PDA for your intended usage.

Choosing a PDA

Your choice of a PDA will be based upon your primary use for the device, personal preference, and recommendations made by your IT or computer operations department. We will describe a few of the important considerations that should be considered when purchasing a PDA, including the following: 1) operating system, 2) hardware, 3) memory, 4) expansion capabilities, 5) battery life, 6) displays, 7) wireless capabilities such as e-mail and web-surfing, and 8) cost.

Operating System

Although many operating systems (OS) exist for PDA devices, two popular systems are utilized by a majority of PDA manufacturers. These systems are the Palm OS and the Windows CE OS. Differences between the two operating systems have been described in terms of their designed uses; the palm OS is designed to be utilized as an adjunct to the personal computer while the Windows CE OS has been designed to function as an independent computer.

With these differences come benefits and disadvantages. While offering greater functionality and the ability to run more than one program simultaneously, the Windows CE OS is less dependable and more prone to "crashes." The palm OS is a very stable system but lacks some of the increased functionality of the Windows CE OS. Differences in software availability exist between the two OS choices, although software has been developed for both systems to provide similar functionality. As a rule, software written for the Palm OS is compatible with all Palm OS PDAs; for example, a program can be transferred from a Handspring Visor to a Palm m515 or a TRGpro without problem. Software based on one operating system (for example, Windows CE or Palm) is not usually compatible with the other.

Symbian (previously called EPOC OS) is another OS that has been utilized on PDAs (especially in Europe). Although no longer publicly marketed on PDAs, the Symbian OS can be found on new "smart" cell phones that offer advanced capabilities and graphical features.

Hardware

Nearly all PDAs share some way of interacting with a desktop computer. Generally, this is accomplished through the use of a PDA cradle, which is hooked up to your computer through either a serial or a USB port. This allows PDAs to perform a "hot sync" (an exchange of information) with the computer it is connected to. Not all cradles are designed the same, and different types or manufacturers of PDAs may require a different type of cradle. This is very important when several users may be sharing one computer. The type of PDA the several users each purchase may create a situation where they exceed the number of available ports on the computer, and it may not be possible to connect all cradles at once. If separate computers are utilized, the type of PDA used is less critical.

Memory

Memory is an extremely important issue -- too much is never enough. Every program that is installed on a PDA takes up space, which is called memory. Older PDAs used to be equipped with 2 megabytes (mb) of memory. Today many Palm OS PDAs come with 8 mb standard, and some are equipped with 16 mb (notably the Palm m515, Visor Pro, Treo communicators, and most Sony devices). PDAs that utilize the Windows CE OS require greater memory to operate. Most Windows CE PDAs are equipped with a standard 32 mb of memory although some PDAs such as the Jornada can be purchased with up to 64 mb of memory.

Although memory is a critical feature, it is also important to know that many PDAs can accept memory upgrades. Palms can utilize multimedia or SD cards; Sony utilizes the Memory Stick; many Windows CE devices can accept SD expansion cards; Handspring Visors and Treo Communicators may have expansion slots that can accept memory expansion modules; and the Treo can also accept SD cards.

Expansion

Many accessories, ranging from memory cards, to digital cameras, to miniature keyboards are available for PDAs. Many of the Palm Computing PDAs can be equipped with Multimedia or SD memory (storage) cards, as well as miniature keyboards that can be attached directly to the PDA. Sony PDAs can utilize Memory Sticks for memory and storage; nearly all of the Windows CE based PDAs accept memory expansion cards. Some Windows CE devices such as the Jornada and Compaq come with a built-in microphone and speakers. Handspring has taken an approach to broaden the utility of its organizers; Visors have an expansion slot that has been designed to accept a number of add on modules including: 1) modem and phone, 2) memory, 3) bar code scanners, 4) presentation utilities, 5) games, 6) digital cameras, 7) remote control devices, 8) voice recorders, 9) health and wellness manuals such as the Physician's Desk Reference, and even 10) a mini- massager. The Treo Communicator has been reported to retain this capability while providing the ability to utilize memory cards as well.

Battery Life

Battery life may affect your choice of a PDA. Most PDAs are utilizing rechargeable batteries that are stored within the device and recharge when you place the PDA on its cradle. Others require AA (some Blackberry devices) or AAA (Palm m105, m125, and older Handspring PDAs) batteries. If you have access your PDA cradle and an electrical outlet often (at least weekly), you may prefer to have a rechargeable battery. If you are frequently "out in the field" for prolonged periods of time and do not have access to a power outlet or your PDA cradle, you may prefer having the ability to stock up on batteries for your PDA. Some Windows CE devices, Sony PDAs, and Blackberry devices are equipped with rechargeable lithium batteries that may also be replaced.

Factors influencing battery life include color displays (use more battery life than monochrome displays), operating systems (Windows CE tends to run batteries down more quickly due to the ability to run multiple programs at once, thus using more energy), and the use of the backlight (allows you to see your PDA in the dark) -- the longer you use your backlight, the faster your energy goes down.

Displays

Originally developed in monochrome (greenish background and black letters/numbers), PDAs have recently provided the user with the choice of a color display as well. Many of the higher-end PDAs such as the Palm m515, m130, Visor Prism, Visor Treo, Treo Communicators, Sony PDAs, and Windows CE OS devices provide color displays. The need for color is dependent upon the intended use of the device. If you want to store pictures or work with graphics, a color display may be essential in your choice of PDA. On the other hand, if you plan to use your PDA only as a database for words and numbers, or only plan on reading from your PDA, color may not be a factor in you selection. As stated above, at the present time color displays tend to drain battery life more quickly than the traditional monochrome displays.

Connectivity

Most PDAs have access to the Internet (e-mail, web pages, etc.) through one methodology or another. Palms have wireless capability when additional hardware is purchased, with the exception of the Palm i705, which has built-in connectivity through Palm.net services; the Handspring Visor can be fitted with the Visor Phone or a modem module and wireless services can be purchased through Cingular, Voice Stream, or Sprint; the Handspring Communicator comes equipped with a built in integrated cell phone; the Blackberry provides full time e-mail services and is currently one of the most secure wireless connections available through a government-specific Secure Multipurpose Internet Mail Extensions protocol upgrade; the Sony platform does not come equipped with wireless connectivity built in, although a modem attachment can be purchased; and the Windows CE platform provides many devices that come equipped with wireless capabilities such as the Jornada (with additional hardware), the Toshiba 2032, Audiovox Thera, and T-mobile Pocket PC edition.

Cost

In the end, one of the major determinants in your selection of a PDA may be the cost of the device. Early PDAs such as Apple's Newton ran as much as $1,000 ten years ago. Fortunately, prices have dropped significantly as PDAs have been redesigned over the past years. A Palm OS-based PDA will run anywhere between $100 to as much as $500. With wireless capabilities, prices can be even higher. Windows CE-based devices are slightly higher priced, running about $400 to $800. Again, wireless connectivity is additional, and generally consists of a yearly or monthly payment.

As of this time, there are no cost savings with a government purchase contact for any of the PDAs. Prices for PDAs are very competitive; manufacturers are selling them at their lowest cost already and are unwilling to go lower. The Blackberry device is the only exception to this rule. The Blackberry can be purchased at a government rate in combination with a subscription for unlimited e-mail messaging for under $1000. Other cost considerations should be made for warranties and extended warranties. Since PDAs are small and very transportable, there is a high potential to drop or accidentally damage the PDA. The screen is exceptionally vulnerable to falls and foreign objects, and one may spend the same amount of money replacing the PDA screen as one spent on the PDA device itself. A warranty will protect the PDA in these situations and may be worth the additional expense.

Summary

In summary, the choice of a PDA should be based upon your intended use for the device, personal preferences, and compatibility with other systems that are already in place. Be sure to check the recommendations made by your IT or computer operations department before making a purchase on your own to ensure compatibility and adherence to local policy and procedures. Many websites are available that can provide further information on selecting a PDA such as the following:

http://www.pdabuyersguide.com/index.htm
http://www.pdajd.com/vertical/tutorials/buyesrguide1.xml
http://www.pdamd.com/vertical/tutorials/buyersguide.xml
http://www.zdnet.com/special/filters/sc/pda/
http://www.pdabuzz.com/Features/BuyersGuide/

Future Articles

Future articles will discuss the following subjects:

- the role of PDAs within the Indian Health Service
- results of the recent PDA usage survey
- clinical and non-clinical software
- the future role that PDAs may have within the Indian Health Service.

Send Us Your Notices About Your Meetings

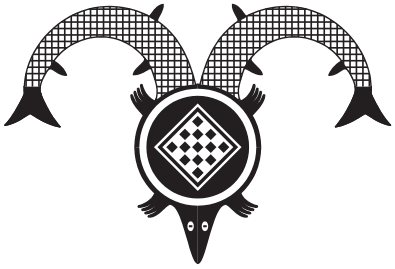
We continue to receive feedback from our readers asking *The Provider* to publish more announcements of continuing education activities in the *Meetings of Interest* section, and to publish them sooner. Those working in remote areas say that they need more information about what meetings are occurring, and they need it as early as possible so that they can make appropriate plans. In these days of shrinking resources, these meetings are often the most cost-efficient ways available to obtain high quality, relevant continuing professional education.

Keep in mind that it takes about three weeks from the time we deliver the finished copy to the printer until it reaches those in the field. All notices that we have available at the time we go to the printer are included, even if they are last minute submissions, so sometimes they appear within three weeks after they are received by us. However, if submissions come in just after the latest issue went to the printer, it can take up to seven weeks to get notices into the next issue that will come out.

We encourage all meeting planners who would want to invite a wide audience to attend their meetings to think about publishing notice about their activity in *The Provider.* Announcements can be placed early in the planning stages, even if all of the details aren't known, and the notice can be updated each month as more information becomes available.

There is no prescribed format for these notices; they should offer as much detail as is known about the target audience, goals, dates, location, featured faculty and topics, CE sponsorship and credit, location, costs, and contacts to register or obtain more information. Items can be submitted as paper copies through the mail, although it is faster and easier to use them if they come to us as an e-mail attachment.

Many of our readers prefer to attend meetings offered in Indian Country, so let's be sure that they know about as many opportunities as possible, with plenty of time to plan.



Advanced Practice Nurses Annual Business Meeting Report

Judith Whitecrane, CNM, Phoenix Indian Medical Center; and APN representative to the National Council of Nurses, Phoenix, Arizona

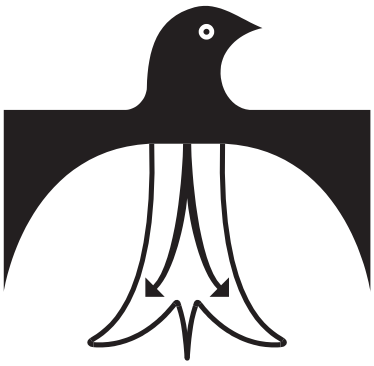
The annual business meeting for advanced practice nurses (APNs) in Indian health was held June 3-4, 2002 in conjunction with the PA/APN Continuing Education Conference in Scottsdale, Arizona. About forty APNs from IHS, tribal, and urban programs attended this meeting. They included family nurse practitioners, adult nurse practitioners, certified nurse midwives, women's health care nurse practitioners, pediatric nurse practitioners, and mental health nurse practitioners.

The agenda included discussion of current issues affecting APNs, reports from the IHS Areas represented by attendees, and a special visit from the Acting Principal Nurse Consultant of the IHS, Celissa Stephens RN, MSN.

The following resolutions were determined to be of great importance to attendees and were submitted by the group to the IHS National Council of Nurses (NCON) for their support:

1. *Salary increase initiative*: Continue to support the salary increase initiative for IHS Civil Service nurses, including a yearly review of salaries to keep pace with the private sector. (Since this meeting, this initiative has been approved and is awaiting implementation.)
2. Position Descriptions and Classification Standards: Revise the outdated (1977) classification standards and position descriptions for APNs that describe the beginnings of the APN profession. (A fall meeting has been planned by NCON to begin this process.)
3. *Bonuses:* Encourage CEOs to provide retention on recruitment bonuses
4. *Hard to fill vacancies*: Consider APNs in hard to fill physician vacancies, especially mental health nurse practitioners. Patients need the care and APNs can deliver it.
5. *Continuing education*: Advocate for equitable continuing professional education funding for APNs comparable to physicians in Indian health.
6. *Loan repayment*: Advocate for continuing loan repayment for all APNs. Additionally, there are APNs working in supervisory and staff nursing positions who have been unable to get loan repayment because they do not work in the area of their degree. For instance, a nurse-midwife who works as a supervisor of a remote obstetrics unit is not eligible for loan repayment because he or she is not working as a nurse-midwife.
7. *Position Paper*: Write a position paper for *The Provider* to inform readers of the workload, current practice, and potential additional contributions of APNs to Indian health. Workload data are needed for this (several NCON members have already sent workload data reports from their Areas).

The funding support for this annual meeting received from Headquarters Nursing is gratefully acknowledged.



NTHRC FELLOWSHIPS

The Northwest Portland Area Indian Health Board is looking for American Indian and Alaska Native pre- and post-doctoral students who are interested in a fellowship position at Oregon Health and Sciences University or the University of Washington.

What Experience Will an NTHRC Fellowship Offer?

That's up to you. NTHRC has a short list of requirements for its fellows, but a long list of innovative and flexible tools that you can use to tailor your fellowship experience.

The Requirements

Each fellow will spend two years at one of the two premier medical research institutions of the Pacific Northwest: Oregon Health & Sciences University in Portland, Oregon or the University of Washington in Seattle, Washington. Although you will choose one school as your "home base," you will attend frequent seminars and workshops at the other school. These seminars will be help foster your research skills. At your home base, you will work with your mentor on a project in biomedical, clinical, behavioral, or population-based research.

For more information, contact Luella Azule, Project Coordinator, Northwest Tribal Research Center, Northwest Portland Area Indian Health Board, 527 SW Hall St., Suite 300, Portland, Oregon 97201; telephone (503) 228-4185.

NMGEC "Virtual" Geriatric Institute

The New Mexico Geriatric Education Center (NMGEC) is excited to announce their first "Virtual" Geriatric Institute videotaped from the actual Summer Geriatric Institute just held in June. From your office or home computer, and at your convenience, you can get the geriatric information you need to provide quality care for elders.

Topics include "Frail Elders," "Fall Prevention," "Incontinence," Osteoarthritis." "Osteoporosis," "Sensory Deficits," and "Oral Health." Log on and check it out; the "Virtual" Geriatric Institute is accessible on our website at http://hsc.unm.edu/som/fcm/gec.

The tuition is $40 per topic or $100 for all. Tuition waivers are available for IHS/tribal providers, so please check with us about this. The course offers continuing medical education (CME) credit as well as continuing education credit for social workers (pending), nurses, and allied health providers.

If you have questions about this new offering from the NMGEC, please contact us by telephone at (505) 277-0911; or e-mail *dfranklin@salud.unm.edu.*

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THE IHS PRIMARY CARE PROVIDER

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

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