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Pathways Into Health: Health Professions Education for American Indians and Alaska Natives Utilizing Distance Learning, On-Site Education, and Cultural Integration

James M. Galloway, MD, FACP, FACC, Director, Native American Cardiology Program, Indian Health Service, Flagstaff, Arizona; Carl Fox, PhD, Vice Provost, Northern Arizona University, Flagstaff, Arizona; Jenette Benham, (Chippewa Cree), Pathways Into Health, Las Vegas, Nevada; and Ciciley Wolfname, (Northern Cheyenne) Pathways Into Health, University of South Dakota, Vermillion, South Dakota

“Native American students are frequently forced to endure educational environments that violate their rights to equal educational opportunity and ignore their cultural identities.”

From the U.S. Commission on Civil Rights, “A Quiet Crisis”, July 2003.¹

A national shortage of health care professionals exists. This shortage is often most acute and severe in the western states and in rural areas where many American Indian and Alaska Native (AI/AN) communities are located. Indeed, the 2003 vacancy rate for Indian Health Service (IHS) health professionals was approximately 12%, ranging from six percent for sanitarians to 22% for dentists.¹ This shortage is further aggravated by conventional health care education that fails to include many elements essential for practice in AI/AN communities. These skills must be learned on the job, in the field.

It is even more disconcerting that the numbers of American Indians and Alaska Natives (AI/AN) and other minority populations are significantly underrepresented within the process of medical education and even more so in medical education faculties. Requirements that mandate on-site education at academic institutions far distant from their home communities further hamper the professional education of American Indians and Alaska Natives. Students often must live far from their homes away from social supports and their culture. This combination of

factors promotes low enrollment and high dropout rates. Indeed, American Indian students are the least likely to earn a degree and most likely to drop out of college of any racial or ethnic group in America.² For instance, in 2002, of all US college freshman at four year colleges, only 37% of Native American will earn a degree within six years, while 63% of Asians, 57% of Whites, 45% of Hispanics and 38% of African Americans will do so.³

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This disparity extends to graduate study enrollment and completion as well. For instance, only 0.3% of first time applicants for medical school in 2004 were AI/AN.⁴ Cultural isolation after entering medical school is another major issue. In 2004, there were only nine US medical schools that had more than two AI/AN students in their graduating class.^{4,5} AI/AN physicians make up only 0.002% of the total US physician workforce, compared to 4.4% for African Americans, 5.1% for Hispanics 73.8% for Whites, and 14.9% for Asians/Native Hawaiians/Pacific Islanders.⁶

Studies demonstrate that minority patients may receive less health care and feel less satisfied with their care when their clinician is of a different ethnicity or race.⁷⁻⁹ The lack of minority health professionals is deepening the nation's persistent racial and ethnic disparities. From heart disease, cancer, and HIV/AIDS to diabetes and mental health, American Indians as well as other ethnic and minority groups tend to receive less and lower quality health care than whites. This, in turn, results in well documented higher mortality rates.¹¹ Further support for a direct connection between poorer health outcomes for minorities and the shortage of minority health care providers comes from the Institute of Medicine's (IOM) study, *Unequal Treatment*.^{10,11} In 2003, the IOM warned of the unequal treatment racial and ethnic minorities face when encountering the US health care system and recommended increasing the number of minority health professionals as a key strategy to eliminating health disparities. Indeed, the issues of racial and health disparities and the lack of minorities in the health professions are inescapably linked.¹¹

"We know that minority physicians, dentists and nurses are more likely to serve minority and medically underserved populations, yet there continues to be a severe shortage of minorities in the health professions," Dr. Louis Sullivan, US Secretary of Health and Human Services, 1989-1993, stated at his briefing on the "Missing Persons: Minorities in the Health Professions, the Sullivan Report" on September 20, 2004.¹² New and non-traditional paths to the health professions must be explored.¹¹

One of the recommendations of the Sullivan Report is that schools of health professions should provide and support "bridging programs" to enable graduates of two-year colleges to succeed in the transition to four-year colleges.¹¹

Recognition of these facts is becoming more widespread. For example, Jordan J. Cohen, MD, President of the American Association of Medical Colleges (AAMC), declared in his Presidential Address at the 2005 AAMC meeting that the number one challenge facing medical education is to increase the racial and ethnic diversity of the medical profession.¹³

These facts led to the creation of a new educational initiative, Pathways into Health (PIH). PIH originated out of leadership from the Pascua Yaqui Tribe, the University of Arizona, Northern Arizona University, and the Indian Health Service. Pathways into Health was initiated in 2004 as a grassroots collaboration where tribes and tribal organizations;

tribal and academic individuals representing the disciplines of medicine, nursing, pharmacy, medical technology, and public health; the Indian Health Service (IHS); and academic health centers began discussing the possibility of creating a new model for training Alaska Native and American Indian health science students to meet this need.

Pathways into Health has subsequently grown into a large coalition of over 150 individual academic and tribal participants. It includes representatives of nine major academic institutions (from Alaska, South Dakota, North Dakota, Montana, New Mexico, Arizona and Massachusetts), tribes, tribal colleges, tribal health corporations, and the IHS. PIH is dedicated to bringing culturally-reinforcing, interprofessional health education to AI/AN students on their home reservations and communities utilizing distance learning and cutting edge telehealth technology.

By combining the resources of tribal partners, tribal colleges, universities, the IHS, and other collaborators, PIH is developing culturally-responsive, multidisciplinary, team-focused, and geographically accessible health professions education for American Indian and Alaska Native students. PIH's overarching mission is to expand the number of qualified health care professionals capable of addressing the significant and growing health care needs of AI/AN communities. We are honored to have received a resolution of support from a number of tribes as well as the National Congress of American Indians.

PIH is working to create innovative team-based educational programs for nurses, physicians, public health scientists, pharmacists, and other health professions that will enroll AI/AN students from across the nation. This will enable high quality professional health education near their homes whether on distant, rural reservations or in urban Indian health care settings. This approach has significant benefits for improving health care for American Indian and Alaska Native patients in IHS, tribal, urban, and university based hospitals and clinics. Importantly, the program will employ new curricula and take place in an entirely new type of learning environment. Students of medicine, nursing, public health, and pharmacy will learn together in classes, small groups, in clinics, and at the bedside. Clinical care will be delivered by teams of physicians, nurses, nurse practitioners, clinical pharmacists, and others in allied health professions connected nationally through telehealth. As recommended by the IOM, students of several disciplines (medical, nursing, public health, pharmacy and allied health) will be assigned to interdisciplinary health care delivery teams for their educational experience.

PIH has three major goals that flow from its primary mission. The first is to recruit qualified American Indian and Alaska Native students who will graduate and remain in their home community as health care professionals. The second goal is to create an interdisciplinary and culturally-reinforcing educational environment using traditional and innovative curricular methods including distance learning models. The third is to improve the health of American Indian and Alaska

Native communities by graduating health care professionals capable of providing high quality and culturally appropriate clinical care. To reach these goals, we propose the creation of long term bi-directional educational networks linking Native communities, tribal organizations, and local institutions of higher education with established academic health centers, health professions schools, as well as IHS facilities and staff.

The Pathways into Health initiative aims to take a lead in health professions education. The initiative will develop a distance learning program to help American Indian and Alaska Native students on reservations and in rural areas obtain health professions education. Woven throughout the initiative are cutting-edge technology, an interdisciplinary focus, and cultural reinforcement.

National Advisory Council

The PIH National Advisory Council is a leadership group composed of AI/AN individuals working in leadership positions within academia and as tribal leaders, and others who may provide significant benefit to the initiative. The role of the council is to provide PIH with wisdom, guidance, and advice related to the overall initiative vision, development, and successful implementation. We are honored to have Dr. Everett Rhoades, prior Director of the IHS; Dr. Betty Keltner, Dean of Nursing, Georgetown University; Dr. Jenny Joe at the University of Arizona; Mr. Wayne Taylor, prior Chairman of the Hopi Tribe; H. Sally Smith, Chairman of the National Indian Health Board; and Ms. Judy Sherman of the Friends of Indian Health provide guidance to us as our National Advisory Council.

Interim Executive Board and Governing Board

The Interim Executive Board will serve until the Governing Board is established. The Governing Board is responsible for ensuring that the vision, mission, and core values of the organization are reflected in all aspects of the initiative's operations.

Pathways Into Health Subcommittees

The initiative's current subcommittees (with co-chairs in parentheses) are listed below.

Pipeline Coordination (Carl Fox, PhD, Northern Arizona University; and Sean Clendaniel, MPH, CHES, Northern Arizona Health Education Center). The tribal partners in PIH have repeatedly instructed other PIH members about the significant need for more and cohesive efforts for AI/AN children in the "educational pipeline" from elementary grades to college. This committee is working to develop plans and implement activities to support and encourage AI/AN students at the elementary, junior high, high school, and undergraduate levels to enter into the health care fields. The committee recently received grant funding to create a national registry of successful pipeline programs.

Telehealth Infrastructure Coordination and Development (Mark Carroll, MD, Director, IHS Telehealth Program; and Richard McNeely, Co-Director of the Arizona Telemedicine

Program at the University of Arizona). This committee is composed of telehealth experts who identify, develop, and promote effective telecommunication agendas, programs, and mechanisms for the initiative's distance learning programs. One of the current goals is to develop an inventory or assessment of the availability of broadband Internet access to potential students in the PIH program.

Conference Development (Jenette Benham, NACP, Nevada (Chippewa Cree); and Jan Harris, MSHA, FAHCE, University of Alaska, Anchorage). This committee is currently developing an invitational, state-of-the-art conference, entitled "The Pathways Into Health Professional Conference" that will take place in Denver, Colorado in September. The conference will be aimed at disseminating and translating the latest research findings in health professions education into practice within programs serving American Indian and Alaska Native communities. The six key topics to be addressed include interprofessional education; disparities in health, health care, and health professions education; the optimal integration of culturally reinforcing curricula, teaching, and training; the latest in distance education techniques and technologies; and optimal support activities for students in the pipeline to become health care professionals.

The specific aims of the conference involve focusing on the improvement of the health care system's ability to provide access to and deliver high quality health care to reduce racial, ethnic, and socioeconomic disparities among American Indians and Alaska Natives through integrated professional health education of American Indians and Alaska Natives. Also, ways to improve the health system's capability for patient centered care, which may serve as a national model for other racial, ethnic, and socioeconomic groups in the future, will be discussed. It is also an aim to bring together national and international experts to focus on the development of knowledge, techniques, and tools for the continued optimal implementation of the components of Pathways into Health into professional health education. Although invitational, the attendees are expected to be composed of approximately equal numbers of tribal individuals, educators, and federal and tribal health care workers. Native American students will also be involved and will participate to assist in the guidance of the initiative.

Resource development committee (Michael Grey, MD, and Robert Valencia, Pasqua Yaqui Tribe). As the name implies, this committee is focused on the development of effective mechanisms to fund initiative activities, including grants, federal funding programs, and foundation proposals. The committee is working with other committees in the development of projects with the Robert Wood Johnson and Kellogg Foundations. The Robert Wood Johnson Foundation effort has spun off into the direction of nursing, public health, and front-line workers.

Governance (Michael Allison, Arizona Department of Health Services (Navajo); and Fred Kopacz, Southcentral Foundation, Alaska). This committee has developed an effective organizational structure for the initiative with a mechanism to

ensure fair representation from partners. These Interim Operating Procedures are poised to be transitioned into corporate non-profit bylaws when PIH goes to a 501(c) 3 status.

Clinical Laboratory Sciences Program (Mary Ann Sens, MD, PhD, Chair of Pathology at the University of North Dakota; and Ilene Decker, PhD, Assistant Dean of the College of Health Professions at Northern Arizona University). The first educational program developed by Pathways into Health with partners from the University of North Dakota and Northern Arizona University was introduced in the fall semester of 2005. This educational program utilizes distance learning to deliver clinical laboratory sciences education to AI/AN students working at Indian health care facilities in the southwest. This program has just received IHS long term training approval and is now being advertised nationally. Scholarship funding is available. This training is available to IHS and tribal employees.

Nursing and Public Health Program (Mark Veazie, PhD, NACP, IHS). This committee is focusing on AI/AN frontline workers and students involved in health promotion and disease control. The goal of the program is to train students to form, function within, and learn from interprofessional teams that include other frontline workers, physicians, pharmacists, and epidemiologists. The committee is developing a proposal called "Circle of Care" for the Robert Wood Johnson Foundation.

Each of the PIH Committees has monthly conference calls to discuss committee activities and plans, and to coordinate. There is always room for others to join these committees, and you are welcome to volunteer. If you are interested, please contact Ms. Ciciley Wolfname at Ciciley.wolfname@usd.edu or by calling (605) 677-5167.

Visit Pathways into Health Online

Please visit the Pathways into Health website at www.pathwaysintohealth.org. This website was developed to be used as an interactive communication tool. It will provide regular updates regarding the progress of PIH and will list contact information as well as the activities of the PIH committees, Interim Executive Board and National Advisory Council. You will be able to view the newsletters and the calendar listing the PIH committee's conference call schedules. Your input and suggestions are important to us. As we continue to develop the website, our goal is to make it even more user friendly, informative, and accurate. The PIH website is being maintained and administered by volunteers who are dedicated to the mission of PIH.

General Membership Meetings

Everyone is invited to join in on our next national meeting to see what Pathways is about and to learn about ways to get involved with Pathways into Health. If you are interested in participating, please contact Ms. Ciciley Wolfname at Ciciley.wolfname@usd.edu or by calling (605) 677-5167; or Ms. Jenette Benham at jenette@ddrvegas.com or telephone (702) 452-9110.

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Increasing Rural Access to Health Information on the Internet

Louis J. Lafrado, PhD, L&D Associates Consulting Group, Inc., Rio Rancho, New Mexico; Linda Morgan Davis, MLS, MBA, Albuquerque/Bernalillo County Library System, Taylor Ranch Library, Branch Manager, Albuquerque, New Mexico; and Earlene S. Groseclose, PHN, Director, Division of Public Health Services, Santa Fe Indian Hospital, Santa Fe, New Mexico

Introduction

For the past decade and a half, the development of information and communications technologies has been extraordinary. With the introduction of sophisticated technologies for access to information and communications, a significant divide has developed between those who have access to the information and technologies and those without access. This “digital divide” represents the gap between those with access to the Internet and its information and the populations without such access. As Haughton et al¹ have pointed out, those without access are the same populations traditionally classified as underserved by the health care system.

Geographic isolation, lower socioeconomic status, and transience are contributing factors to the digital divide. Kind et al² demonstrated that underserved populations were aware of the health data available on the Internet and were eager to access the data and interact with their primary care providers. However, the digital divide keeps these populations isolated as a result of lack of local infrastructure, lack of public access, and limited discretionary income to purchase necessary equipment and Internet access. Disadvantaged patient populations have limited access to and use of the wealth of health information residing on the Internet.³ As Schloman has pointed out,⁴ this fact widens and deepens the disparity between those with and without adequate access to the health information based on the Internet, and the disparities become more acute for those behind on the Internet accessibility issue. This same author also suggested that those without access will become increasingly more marginalized as their counterparts with technology and communication access widen the digital divide.

Connection to the Internet in rural New Mexico is limited by the lack of adequate technology infrastructure. The digital divide in rural states like New Mexico prevents access to consumer health information for residents in these areas. The same divide limits health care professionals’ access to evidence-based health information. The result is limited success in treatment of chronic diseases like diabetes. Jackson

et al⁵ recently reported on the impact of emerging information technology on improved diabetes care and suggested additional research on the cost effectiveness of information technology and its impact on clinical outcomes. Similar results were shown in newly diagnosed cancer patients, where knowledge and behavior were changed following access to cancer information on the Internet.⁶

The current effort in rural New Mexico was undertaken to develop a strategy for increasing access to consumer and evidence-based health information located on the Internet. A series of projects placed Internet workstations and personal digital assistants in rural and frontier locations in American Indian communities in an effort to make consumer health information available to patients and evidence-based health information available to public health nurses at the point of care in rural health facilities.

Results suggest that the digital divide can be closed in rural New Mexico when technology and access are made available, and that these residents recognize the importance of the health information. In addition, the results demonstrate that health care professionals can improve their access to evidence-based literature and improve the quality of care at the point of care in rural locations.

Methods

Three approaches were taken to develop greater high speed Internet access in American Indian communities in rural and frontier counties in New Mexico. These approaches were designed in collaboration with the staff at the National Network of Libraries of Medicine (NN/LM) and included Internet workstations, mobile health information laptops, and utilization of personal digital assistants (PDA) capable of Internet and wireless phone functions.⁷

Three public access Internet workstations were obtained through NN/LM and placed in three separate Indian Health Service (IHS) health care facilities in rural communities. Internet workstations included a desktop computer, laser printer, and appropriate furniture. The Internet workstations were installed by information technology staff from IHS with firewall software and child protection software installed. Each workstation was placed in a publicly accessible location in the facility and was publicized by local announcements of availability.

A mobile health information Internet workstation was obtained for Internet training and mobile access to Internet-

based consumer and evidence-based health information. A laptop, LCD projector, wireless PC card, and mobile printer were obtained to provide training on performing searches for evidence-based literature through *www.pubmed.gov*. The mobile workstation was used to conduct community and small group trainings on evidence-based literature searching and access to consumer health information through National Library of Medicine websites. Citations and specifically requested consumer health information were printed for those attendees requesting hard copies of information.

To improve point-of-care service for public health nurses, Treo 600 and 650 SmartPhones were obtained and equipped with wireless phone service and broadband Internet access through Verizon Wireless. These were distributed to public health nurses in the Santa Fe Indian Hospital (Santa Fe, NM) and project managers. Training on use of the PDA functions, telephone functions, and broadband access were performed.

Data collection included monitoring and recording of websites visited by users of the Internet workstations, literature search strategies, and kilobyte usage of the PDA SmartPhones over the first year of the project.

Results

Acquisition of the NN/LM-supported Internet workstations resulted in their placement in one moderately urban and two rural American Indian communities in New Mexico. Workstations were placed in geographically northern, western, and central locations to provide access to consumer health information for residents who otherwise would not have access at home, work, or school. The three workstations provided Internet access to residents from as many as eleven tribes in the state. They were placed in areas of health care facilities that were accessible to the public and patients visiting the clinics.

Success of the Internet workstations varied. One workstation was used to start a diabetes patient education resource. One workstation was less successful, but has remained available for public and patient use. This second workstation was overshadowed by the construction of a new health facility by the tribe. The third workstation was placed in a public access canteen and was preceded by abundant public

Table 1. Most popular consumer health websites

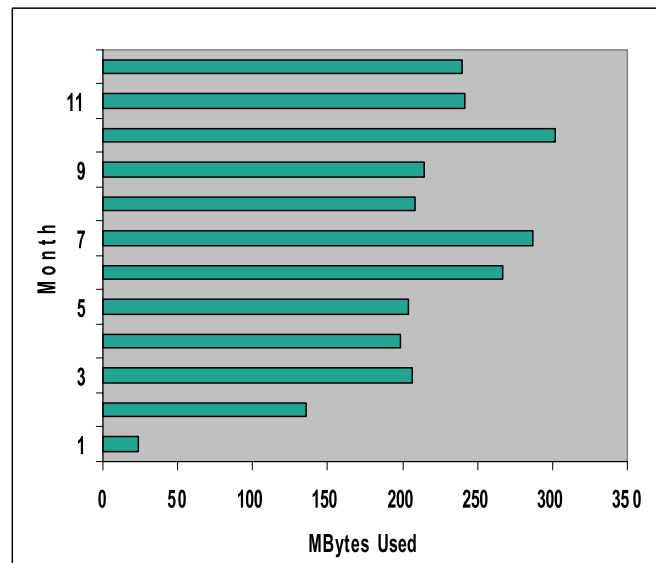
National Institute of Drug Abuse
Department of Justice
National Institute of Justice
American Diabetes Association
Indian Health Service
National Heart, Lung and Blood Institute
Public Health Resources on the Internet
Medline Plus
NIH Online Consumer Health Information

announcements within the health clinic. Usage of this workstation was initially slow with only infrequent use by clinic visitors. Within 2 to 3 months of installation, this workstation was being used by as many as 6 - 7 visitors every hour during business hours of the hospital. Table 1 shows the most popular consumer health websites.

The objective of the mobile health information workstation was to provide training on awareness of the availability of consumer health information on the Internet. In addition, the mobile effort provided training on searching for evidence-based literature at *www.pubmed.gov*.

The implementation of the SmartPhone project was intended to permit health care professionals the opportunity to search evidence-based literature at the point of care in rural health settings. Public health nurses used the SmartPhones to access the Internet and search the literature database via the Medline On Tap (MDoT) service from the National Library of Medicine. Internet access through the wireless broadband technology was used to perform literature searches on a variety of subjects including cardiovascular disease, obesity, substance abuse, diabetes, maternal-child health, rural telecommunications, and Internet utilization. Results were viewed online on the SmartPhone screen and downloaded later to desktop computers via hotsynching. Wireless broadband access increased over the first year of the project (Figure 1) with increasing abilities and improved functionality of the phones.

Figure 1: MByteUsage on SmartPhones



Discussion

The “digital divide” between those with Internet access and those without threatens the health and well being of those without adequate access. As the digital divide closes for some, lack of access becomes even more acute for those left out of the

mainstream.⁸ The threat then becomes that those without access to the Internet and the health information available there leaves them marginalized from the rest of society.⁴ Where telephone technology is limited, it is clear that Internet access will be equally limited. Too often those with Internet access in urban settings assume their counterparts in more rural and frontier counties have the same access. These assumptions leave the rural resident isolated and at a disadvantage, leading to further underutilization of the Internet and health information.³

Simply delivering access is insufficient to make consumer health information available to those with limited access. Technology literacy and reading literacy are areas of training necessary to improve access to and comprehension of consumer health information.⁹⁻¹¹ The ability to discern reputable consumer health information is also imperative. Efforts will continue to increase technology literacy in rural communities while local health care professionals will be encouraged to assist their patients in the comprehension of online consumer health information beyond their reading level and from reputable sites.¹²⁻¹³

Conclusion

These preliminary efforts demonstrate that implementation of the wireless technology program has improved Internet access and quality of care in real time. The “digital divide” puts those without access at a disadvantage in self-care and health maintenance. We report on increased access, improved point-of-care service delivery, and closing of the “digital divide.”

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Telehealth or Telemedicine?

Gary Quinn, MSW, Emerging Leader, IHS Division of Behavioral Health, Rockville, Maryland

What is the difference between telehealth and telemedicine? Visit the Indian Health Service (IHS) telehealth website (<http://www.telehealth.ihs.gov/>) and you will find definitions for both. However, the best information to be obtained from this website is how your Area can innovatively face 21st century challenges such as rising health care costs, the expense of staff training, and addressing health care needs of a changing client population. For example, IHS telehealth identifies four main areas: innovation, resource development, business modeling, and collaboration as opportunities for Areas to consider when seeking to increase sustainability, enhance access to care, boost quality of health care, and obtain cost-effective training for staff.

Before we look at an example of telehealth within IHS, a glimpse at worldwide approaches may be helpful. During a 2005 Price Waterhouse Coopers (PWC) health research Institute survey of health care executives, the following seven features of sustainability were identified: 1) a quest for common ground between public and private interests, 2) a digital backbone to efficiently use technology, 3) incentive realignment, 4) quality and safety standardization, 5) strategic resource deployment, 6) a climate of innovation, and 7) adaptable delivery roles and structures. Among the examples of technology usage from the PWC survey were the following: England is building a national health care information network that requires physicians to use a computer to get paid; Canada is building a national health info-way; Australia is considering making electronic reimbursement mandatory; Norway is using telemedicine to provide health care in remote areas; and the United States is considering a national medical record system.

So, how are some IHS Areas innovatively implementing technology? Currently all twelve Areas report telehealth activities. Details about some of these efforts may be found in the fall issue of the IHS telehealth newsletter (<http://www.telehealth.ihs.gov/Documents/THealthNewslettetNovember2005.pdf>). IHS Southwest Telehealth Consortium (IHSSTC) includes the Albuquerque, Navajo, Phoenix, and Tucson Areas. These Areas meet quarterly to discuss and share ideas regarding regional opportunities and strategic directions for telehealth collaboration. In May 2005, these four IHSSTC Area Directors signed a Memorandum of Agreement (MOA) that formally guides their 21st century approach to enhancing healthcare in their Areas.

On February 3, 2006, I met with Albuquerque Area Director James Toya, Chief Medical Officer Dr. Leonard

Thomas, Public Health Advisor Tony Danielson, and their IT staff to discuss how Albuquerque incorporates telehealth. Teleradiology is used at several service units. During a typical sequence, digitalized radiological images are sent to Albuquerque Area for reading by a radiologist from University of New Mexico Hospital or Albuquerque Indian Hospital. The results are usually sent back to the service unit within minutes. Obviously one advantage is saving the cost of a full time employee (FTE) by not having a full-time radiologist at each service unit. Similar cost saving applications exist for telepsychological services and use of this technology that allowed Albuquerque Area to provide case management and discharge planning for two clients last month at the New Sunrise Regional Treatment Center (NSRTC) located in San Fidel, New Mexico. The use of telehealth technology also allows families of the patients to save money as they can participate from a site within their community while telepsychological services are provided miles away at the NSRTC site. For more information contact Tony.Danielson@ihs.gov.

Albuquerque Area is exploring how to use telehealth to monitor congestive heart failure (CHF) patients from their home. A patient can either enter data into a keyboard link from home or readings can be sent directly from monitors attached to the patient for morning, midday, and evening readings. The data can be read by a heart specialist who can advise the patient to either reduce or increase their prescribed medications without the patient coming in for an office visit. Another advantage is real time diagnosis versus making an appointment and traveling to the heart specialist's office. Behavioral health is another telehealth capability that Albuquerque is using via a partnership with the Veterans Administration. This collaboration allows IHS to use VA behavioral health specialists to treat American Indian veterans.

For every telehealth application, Albuquerque Area is committed to ensuring confidentiality of patient health care and the inclusion of each tribal community in the design of new services. Each service unit using this type of telehealth works with the tribal community to forge a local advisory board. This board helps decide what type of telehealth services will be provided within their community.

Information Technology Director Joseph Lucero and Telecommunications Officer Larry Barry provided a technological description of their telehealth system. Currently, all Albuquerque sites using telehealth technology are transmitting the digital signals over a secure T-1 link between sites or a fiberoptic for two pairs of normal twisted wires — the same as you use in your home. T-1 lines can normally handle

24 voice conversations, with each conversation being digitized at 64 Kbps. However, with more advanced digital voice encoding techniques, it can handle more voice channels. While T-1 has a capacity of 1.544 Mbps (1,544,000 bits per second), Mr. Barry advised they are looking into upgrading their system to Digital Signal 3 (DS-3). DS-3 refers to the speed of an advanced digital signal and is used to classify capacities of digital lines and trunks. DS-3 is the equivalent of 28 T-1 channels, operating at a total signaling rate of 44.736 Mbps. The primary reason for Albuquerque Area to consider upgrading to DS-3 is the potential for expansion and to allow more sites within Albuquerque Area to use telehealth. One potential expansion is the use of telehealth for cost-effective staff training which will, in turn, make the overall telehealth system more cost-effective. Staff can train from their service unit locations while saving travel and time away from their work sites.

Currently, each site within Albuquerque Area costs approximately \$22,000 for initial set-up and equipment. This cost does not include monthly service charges to a local service provider. For approximate IT start up costs, contact Joe Lucero at Joe.Lucero@ihs.gov or Mr. Barry at Larry.Barry@ihs.gov.

This summary of the value of telehealth reflects how the Albuquerque Area is taking to heart a telehealth system that is an innovative, adaptive delivery system that also enhances quality and permits cost savings for their tribal communities. For more information on telehealth in the Albuquerque Area, e-mail Dr. Leonard Thomas at Leonard.Thomas@ihs.gov.



2nd International Meeting on Indigenous Child Health: Solutions, Not Problems

April 20 - 22, 2007 / Montreal, Quebec, Canada



SAVE THE DATE!

Join the American Academy of Pediatrics and the Canadian Paediatric Society, in cooperation with the Indian Health Service and the First Nations Inuit Health Branch, Health Canada, for the International Meeting on Indigenous Child Health. Child health providers and researchers dedicated to working with American Indian, Alaska Native, First Nations, Inuit, and Métis children and families are encouraged to attend.

Please note that IHS employees will need to obtain a federal passport in order to receive reimbursement for attending this meeting. For more information on passport requirements and for updated conference information, visit www.aap.org/nach.

Unusual Case? Need Treatment Information?

Diane Cooper, Biomedical Librarian/Informationist, Health Services Research Library, National Institutes of Health Library, Bethesda, Maryland

Scenario: You decide the patient's pain in the arch of his foot is plantar fasciitis. You haven't treated plantar fasciitis for a while, and you wonder, What's the current, evidence-based treatment? Where can you find a recent evidence review? Cochrane, you say? Good suggestion — you've been reading this column. We thank you. But Cochrane's review on plantar fasciitis is dated 2003. It says that treatment effectiveness for heel pain is unclear. Is there something more current? Here's another evidenced-base medicine resource, with more topics, and maybe a friendlier interface: Clinical Evidence, from The British Medical Journal (BMJ).

What is Clinical Evidence?

Clinical Evidence (CE) is a database that summarizes what is known – and not known – about over 226 medical conditions and over 2,000 treatments seen in primary care situations. For each topic, the literature is searched using Medline, Embase, and the Cochrane Library for published, systematic reviews and randomized controlled trials that answer the clinical question. For topics where there are few, or no, good, systematic reviews or randomized controlled trials, the literature is searched for observational studies.

How is it put Together?

Clinical Evidence is owned by the *British Medical Journal (BMJ)* Group in the United Kingdom. Contributors with clinical expertise in specific fields review the selection of studies and summarize the findings for each question. Next, the topic is peer reviewed by advisors, two external expert clinicians, and an editorial committee. Each topic is reviewed every 12 months for updates. New topics are added to the database monthly. See Table 1.

Table 1. Latest Clinical Evidence updates

<ul style="list-style-type: none">• Intimate partner violence towards women• Absence seizures in children• Bipolar disorder• Chlamydia (uncomplicated, genital)• Chronic fatigue syndrome• Gastro-oesophageal reflux in children• Irritable bowel syndrome, Neonatal jaundice• Non-steroidal anti-inflammatory drugs• Organophosphorus poisoning (acute)	<ul style="list-style-type: none">• Plantar heel pain and fasciitis• Raynaud's phenomenon (primary)• Sinusitis (acute)• Sleep apnoea• Sore throat• Squamous cell carcinoma of the skin (non-metastatic)• Thromboembolism• Tonsillitis
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An Example: Using Clinical Evidence to find plantar fasciitis treatment options

You will find *Clinical Evidence* on the HSR Library website (<http://hsrl.nihlibrary.nih.gov> or <http://nihlibrary.ors.nih.gov/ezproxy/ihs.htm>). Scroll across the top menu to RESEARCH TOOLS. In the drop-down box select DATABASES. Go down the list to CLINICAL EVIDENCE.

In the main box, select the subjects *plantar heel pain* and *fasciitis*. Next will be a page that lists treatment options that are likely to be beneficial, and treatment options that have unknown effectiveness. You can click on any of the treatments to get more information, or you can print a PDF version of the whole document outlining the randomized controlled trials and systematic reviews used to verify the effectiveness.

In this case, *CE* reviewed systematic studies for plantar fasciitis treatments in October 2005 (more current than Cochrane's). This review reported unknown effectiveness of the following treatments due to small study sizes or a lack of randomized controlled trials: custom made insoles; corticosteroid injections (short term); extracorporeal shock wave therapy; heel pads or heel cups; low intensity continuous wave diode lasers; stretching exercises; surgery; and ultrasound.

Treatments likely to be ineffective or even harmful include: corticosteroid injection (medium and long-term); and corticosteroid injection plus local anesthetic injection (medium to long-term).

A summary of benefits, harms and comments for each treatment option is given along with summaries of the systematic reviews and RCT if available.

Being a good clinician, however, you notice the *CE* review is almost a year old (topics are updated annually). So you use PubMed to search the last year for *systematic reviews* and *plantar fasciitis*. You find an alternative medicine article on using wheatgrass cream. The result of this randomized controlled trial showed wheatgrass cream is no more effective than a placebo cream for treatment. So, your *CE* review stands as the best advice.

Give *Clinical Evidence* a try. It is easy to use and fast. If you need help using this resource or any of the online resources on the HSR Library website, please e-mail me at cooperd@mail.nih.gov.

Editor's Note: The following is a digest of the monthly Obstetrics and Gynecology Chief Clinical Consultant's Newsletter (Volume 4, No. 5, May 2006) available on the Internet at <http://www.ihs.gov/MedicalPrograms/MCH/M/OBGYN01.cfm>. We wanted to make our readers aware of this resource, and encourage those who are interested to use it on a regular basis. You may also subscribe to a listserv to receive reminders about this service. If you have any questions, please contact Dr. Neil Murphy, Chief Clinical Consultant in Obstetrics and Gynecology, at nmurphy@scf.cc.

OB/GYN Chief Clinical Consultant's Corner Digest

Abstract of the Month

Maternal Periodontal Disease in Early Pregnancy: Small-for-Gestational-Age Infant

Objective: The objective of the study was to determine whether periodontal disease is associated with delivery of a small-for-gestational-age infant.

Study Design: In a prospective study of oral health, periodontal disease was categorized as health, mild, or moderate/severe on the basis of clinical criteria. Small for gestational age was defined as birth weight less than the 10th percentile for gestational age. A risk ratio (95th percentile confidence interval) for a small-for-gestational-age infant among women with moderate or severe periodontal disease was calculated.

Results: Sixty-seven of 1017 women (6.6%) delivered a small-for-gestational-age infant, and 143 (14.3%) had moderate or severe periodontal disease. The small-for-gestational-age rate was higher among women with moderate or severe periodontal disease, compared with those with health or mild disease (13.8% versus 3.2% versus 6.5%, $P < .001$). Moderate or severe periodontal disease was associated with a small-for-gestational-age infant, a risk ratio of 2.3 (1.1 to 4.7), adjusted for age, smoking, drugs, marital and insurance status, and pre-eclampsia.

Conclusion: Moderate or severe periodontal disease early in pregnancy is associated with delivery of a small-for-gestational-age infant. Understanding the mechanism of periodontal disease-associated adverse pregnancy outcomes could lead to interventions to improve fetal growth.

Boggess KA, Beck JD, Murtha AP, Moss K, Offenbacher S. Maternal periodontal disease in early pregnancy and risk for a small-for-gestational-age infant. *Am J Obstet Gynecol.* 2006 May;194(5):1316-22.

Comments from Todd Smith, IHS Periodontal Consultant, Phoenix

This large prospective study supports prior research in this field; that is, periodontitis (gum disease) is associated with increased risk for adverse pregnancy outcomes, including preterm birth, low birth weight infants, and preeclampsia. The dose response relationship here is of particular interest; the worse the periodontitis the greater the likelihood of a small-for-gestational-age infant. This ongoing research is also

investigating the effects of periodontal treatment on the pregnancy outcome of expectant mothers. Smaller studies have found that "deep cleanings" can reduce the risk of preterm and/or low birth weight infants, probably by decreasing the chronic inflammation and infection associated with periodontitis. Results should be published in 2007. For additional information on periodontitis and adverse pregnancy outcomes, check the web link www.perio.org/consumer/ftm.html and click on "Gum Disease Linked to Pregnancy Complications" and the Archived Press Releases "Periodontal Disease and Overall Health."

CCC Editorial Comment

Maternal periodontal disease is a chronic exposure to oral pathogens that may represent a treatable condition that contributes to impaired *in utero* fetal growth. It appears there may be an association, but we need to prove causation. We need an appropriately powered treatment RCT to see if intervention makes any difference. We should be mindful of other recent trends in preterm labor management, e.g., antibiotic therapy of BV/vaginitis in patients in PTL or patients with prior preterm birth, in which there was ultimately no difference in outcome.

From Your Colleagues

Carolyn Aoymana, HQE

Women's Health Assessment Toolkit (WHAT)

The Women's Health Assessment Toolkit (WHAT) is a collaborative project of the Texas Medical Center Women's Health Network and the Region VI Office on Women's Health, US DHHS. The WHAT has been developed to guide local or regional decision-makers or community planners in assessing women's health status and related infrastructure within a specific designated community. The WHAT provides a series of guided exercises that help local community planners:

- Describe demographics about the women of their area
- Link to county level data
- Adopt measurable objectives based on 19 Women's Health Indicators;
- Identify existing assets and prioritize needs from 35 community health status assets such as
 - Health e.g., Breastfeeding support

- Health education and information e.g., adolescent STD
- Community e.g., safe recreation policies and availability
- Incorporate findings into a usable planning document (Part 4, Putting It All Together). The guided exercises can be used individually, or can be used collectively to plan activities, raise funds, build collaborations, allocate resources, and influence public policy. Go to <http://www.healthstatus2010.com/owh/>.

Hot Topics: Obstetrics

David Gahn, Hastings Indian Medical Center; and Eric Manske, Gallup Indian Medical Center

Counterpoint: Not Yet Time to Use the P:C Ratio

The P:C ratio would at first glance seem to be an excellent shortcut in the diagnosis and management of pre-eclampsia, but we have several concerns:

1. Because of the many physiologic changes that occur in pregnancy and the unique pathophysiology of pre-eclampsia, comparing the usefulness of the P:C ratio in pre-eclampsia to the management of chronic renal disease is, we feel, inappropriate.
2. The literature for pregnant women is incomplete and inconsistent but seems to indicate that P:C ratio can be used to rule *out* significant proteinuria, but is not reliable in quantifying the level of proteinuria in pregnant women with pre-eclampsia.
3. In regards to the pathophysiology of proteinuria in pre-eclampsia, we cannot assume that protein excretion from the glomerular endotheliosis is as constant as the creatinine excretion, meaning that the excretion of protein can increase and decrease significantly over short periods of time, independent of the GFR, where the excretion of creatinine will not.
4. Despite all this, we would still endorse the use of the P:C ratio in certain clinical situations for ruling out pre-eclampsia if the cut-off is low enough to keep the sensitivity high. We might consider using the P:C ratio to make a transfer decision, but not to diagnose/treat a patient in house (can you imagine trying to transfer a 30 week EGA woman to a wary physician 200 miles away solely because of an elevated P:C ratio?). We suspect there would be enough other clinical information available to make the transfer decision.
5. Medico-legally, we are rolling the dice if ACOG hasn't endorsed the use of P:C ratios in diagnosing and managing pre-eclampsia.
6. In the article, we appreciated the comment about looking at the entire clinical picture. Pre-eclampsia is a sneaky disease and the appropriate treatment is typically based on the "weight of evidence." We often hear ourselves and our colleagues after a lengthy discussion of a patient in whom we are trying to r/o

pre-eclampsia say, "Does she look like she has pre-eclampsia?" It is often the most important piece of data when the diagnosis is questionable.

Overall, we are not convinced we can predict the 24-hour urine protein excretion reliably with the P:C ratio in both the 120 kg 40 y/o diabetic woman and the 45 kg 16 y/o woman. Also, the pursuit seems academic. We haven't seen a patient go from questionable pre-eclampsia to a disease state that doesn't allow for transfer while waiting for a 24-hour urine. We know that pre-eclampsia can progress rapidly, and all of us have seen people go from mild to severe to seizures over a short period of time, but we are usually not surprised by the rapid progression. It would seem that the major reason for promoting the use of P:C ratio in pregnancy is simply to avoid the hassle (for patient and clinician) of collecting and waiting for the results of the venerable 24-hour urine protein quantification. Unfortunately, for the reasons outlined above, we do not believe that this is clinically appropriate or supported by the current data.

OB/GYN CCC Editorial Comment

I want to thank Drs. Gahn and Mankse for this thoughtful counterpoint to the April CCCC Abstract of the Month, "Protein to creatinine ratio in pre-eclampsia: is the data preceding the US benchmarks?" with comments by Jonathan Steinhart and Jean Howe. I would like to clarify two other points that were raised in the wake of that Abstract of the Month.

First, the original systematic review by Price, et al, suggested that the P:C had its greatest value in its ability to 'rule out' significant proteinuria, i.e., emphasizing the negative predictive value. "Most importantly, we have shown that the protein:creatinine ratio for a random urine sample (particularly with adjustment of the test threshold to a lower value) might be used to rule out the presence of significant proteinuria as defined by a quantitative measure of the 24-hour protein excretion. Use of the ratio negates the uncertainty associated with the use of dilute or concentrated urine. When results above the cutoff value for the protein:creatinine ratio are obtained, a full 24-hour urine collection and quantification are indicated."

From a logistics viewpoint, there is enough evidence to use the P:C to rule out the disease. That way, one can let the patient go home without the delay of being admitted and doing the collection, which as we agree gives very variable results. If the P:C value is over 0.2, then they should probably have further evaluation. Also, as Sibai has demonstrated in several papers, while the *presence* of proteinuria is what enables us to make the diagnosis, the *amount* of proteinuria is not associated with either maternal or infant outcome.

Secondly, here was another important comment from one of our readers who asked, "You state in passing that 'as we currently recommend the use of daily aspirin therapy in patients with previous severe pre-eclampsia . . . ' I am unaware that this is a currently endorsed strategy for prevention of preeclampsia in this country, given the large multicenter trials disproving this intervention (e.g., Caritis et al. Low-dose

aspirin to prevent preeclampsia in women at high risk. *NEJM* 1998; 338:701-05). The Cochrane review of 42 trials does show a small benefit. What source(s) do you have?"

Yes, we have been recommending low dose aspirin on our Indian health national guidelines website for a small group of high risk patients for a while now, namely:

- Chronic hypertension
- Past severe pre-eclampsia
- Renal disease
- Pre-existing diabetes

Yes, it is based on the Cochrane Review below, although the content was actually brought to our attention by the IHS Nephrology Chief Clinical Consultant prior to that.

Knight M, Duley L, Henderson-Smart DJ, King JF. Antiplatelet agents for preventing and treating pre-eclampsia. The Cochrane Database of Systematic Reviews 2000, Issue 2. Art. No.: CD000492. DOI: 10.1002/14651858.CD000492.

IHS guidelines: <http://www.ihs.gov/NonMedicalPrograms/nc4/nc4-linguid.cfm>

Gynecology

FDA: Vaccine to Prevent Cervical Cancer Is Safe, Effective

The U.S. Food and Drug Administration Advisory Panel endorsed Merck's Gardasil vaccine against the four strains of human papillomavirus (HPV) responsible for 70 percent of cervical cancer cases. Questions remain as to whether the vaccine's effectiveness could be "offset" by the fact that it does not protect against all cervical cancer-causing HPV strains and congenital anomalies found in some infants born to women who received the vaccine near the time of conception. If approved as expected, the vaccine will be the first to protect against cervical cancer.

The American Cancer Society predicts that about 9,710 new cases of invasive cervical cancer will occur in the United States in 2006 and calculates that about 3,700 women will die from this disease this year. Globally, HPV causes about 470,000 cases of cervical cancer per year, according to the World Health Organization. Many adolescents, adults, and health care providers have a limited understanding of HPV infections, particularly those that are sexually transmitted. Individuals must understand these issues to make informed decisions about the new vaccines. The media will play an exceptionally important role in the public's understanding of the issues surrounding HPV and the vaccines. Go to the National Network for Immunization Information at <http://www.immunizationinfo.org/> or the CDC Facts HPV vaccine at <http://www.cdc.gov/std/hpv/STDFact-HPV-vaccine.htm>.

Child Health

Relationship Between Team Sport Participation and Adolescent Smoking

The present study provides the first evidence of interacting effects of environmental influences with specific genetic

variants on adolescent smoking progression. Experimentation with cigarette smoking usually begins in adolescence. Some, although not all, adolescents who experiment with cigarettes progress to a regular smoking habit. Environmental or behavioral factors, such as physical activity, seem to account for some of the variability in adolescent smoking progression.

- Physical activity had a significant negative effect on smoking, but only for adolescents with team sport participation. The between-group difference in the effect of physical activity on smoking was significant.
- For adolescents participating in at least one team sport, having one and two risk genotypes had a positive effect on physical activity.
- For adolescents with no team sport participation, neither risk genotype had a significant effect on physical activity.
- The difference in the effect of smoking risk genotype on physical activity between the groups was significant for one and two risk genotypes.
- For adolescents involved in at least one team sport, neither smoking risk genotype had a significant direct effect on smoking; the effect was indirect through physical activity. The indirect effect of one and two smoking risk genotypes on smoking progression through physical activity was significant.
- There was not a significant indirect effect of one and two smoking risk genotypes on smoking progression through physical activity for adolescents without team sport participation, although a direct effect approached significance, indicating an increased risk of smoking progression by the end of 12th grade for adolescents with one and two risk genotypes.

Because adolescent smoking often results in long-term smoking in adulthood, the medical and economic impact of preventing and reducing youth smoking could be significant.

Audrain-McGovern J, Rodriguez D, Wileyto EP, et al. Effect of team sport participation on genetic predisposition to adolescent smoking progression. *Archives of General Psychiatry*. 2006;63(4):433-441.

Chronic disease and Illness

Caring for Patients after Bariatric Surgery

Bariatric surgery leads to sustainable, long-term weight loss and may be curative for such obesity-related comorbidities as diabetes and obstructive sleep apnea in severely obese patients. The *roux-en-Y* gastric bypass has become the most common procedure for patients undergoing bariatric surgery. The procedure carries a mortality risk of up to 1 percent and a serious complication risk of up to 10 percent. Indications include body mass index of 40 kg per m² or greater, or 35 kg per m² or greater with serious obesity-related comorbidities (e.g., diabetes, obstructive sleep apnea, coronary artery disease, debilitating arthritis). Pulmonary emboli, anastomotic leaks, and respiratory failure account for 80 percent of all

deaths 30 days after bariatric surgery; therefore, appropriate prophylaxis for venous thromboembolism (including, in most cases, low-molecular-weight heparin) and awareness of the symptoms of common complications are important. Some of the common short-term complications of bariatric surgery are wound infection, stomal stenosis, marginal ulceration, and constipation. Symptomatic cholelithiasis, dumping syndrome, persistent vomiting, and nutritional deficiencies may present as long-term complications. *Am Fam Physician*. 2006;73:1403-8.

Features: ACOG

ACOG Recommends First Ob-Gyn Visit in Early Teens

The American College of Obstetricians and Gynecologists (ACOG) reaffirms its recommendation that teenage girls first visit an ob-gyn between the ages of 13 and 15 in a new committee opinion published in the May 2006 issue of *Obstetrics and Gynecology*. This initial reproductive health visit will help teens develop a relationship with their ob-gyn before they need to seek care for a specific health issue. The committee opinion details ACOG recommendations for the scope of the visit, discussion topics, and ways to address confidentiality concerns.

The early teen years are an ideal time for an initial ob-gyn office visit that focuses on screening and preventive health care. “During these years, young teens face new issues regarding sexual and reproductive health and development on a daily basis. It’s important that they develop a relationship with their ob-gyn,” says Marc Laufer, MD, chair of ACOG’s Committee on Adolescent Health Care. “Interaction with an ob-gyn they trust allows teens to get answers to questions that they may be too embarrassed or afraid to raise with parents and friends. Ob-gyns also can encourage teens to adopt healthy lifestyle habits that they can carry into adulthood.”

Physicians can discuss normal development, menstruation, sexuality, healthy eating habits, safety and injury prevention, and date rape prevention with teens. It also gives ob-gyns an opportunity to address problems that may require early intervention such as eating disorders and weight issues, blood pressure problems, and mental health issues such as anxiety, depression, and physical, sexual, and emotional abuse. “Teens who are nervous about receiving a pelvic exam can rest easy. A pelvic exam is rarely necessary during the initial visit, unless indicated by medical history,” Dr. Laufer adds. Because ACOG recommends that young women have their first Pap test approximately three years after vaginal intercourse but before age 21, teens may visit the ob-gyn several times before a speculum or pelvic exam is needed. However, ob-gyns may recommend a pelvic exam if the teen has had an abnormal puberty (pubertal aberrancy), abnormal bleeding, or abdominal or pelvic pain.

“The first reproductive health visit is an excellent time to discuss pregnancy prevention and sexually transmitted infections,” says Lesley Breech, MD, vice chair of the Committee on Adolescent Health Care. Today, more than 85%

of adolescents become sexually active during the teen years — nearly one-third of ninth graders and more than 60% of 12th graders report having had sexual intercourse, and the US has the highest teen pregnancy rate of any industrialized nation. “Physicians can use the visit as an opportunity to provide teens with early and accurate information about sex. We can talk about how to use condoms correctly and the various types of contraception that are available, such as emergency contraception, before they start having sex,” Dr. Breech adds. If a teen is already sexually active at the time of her first visit, she can be screened for certain sexually transmitted infections through a urine sample.

Parents are encouraged to get involved. The first visit provides an opportunity for parents or guardians to meet the physician, alleviate fears, and develop trust. Parents also can encourage a positive relationship between their daughter and her ob-gyn. Ob-gyns can greet parents and teens together to give a thorough explanation of the visit and confidentiality issues. The exam and discussion should then continue between physician and teen alone to ensure privacy.

Hepatitis B and Hepatitis C Virus Infections in Obstetrics and Gynecology

ACOG Committee Opinion No. 332

Abstract: Hepatitis B and hepatitis C may be transmitted from patients to health care workers and from health care workers to patients. To reduce the risk, all obstetrician–gynecologists who provide clinical care should receive hepatitis B virus vaccine. Obstetrician–gynecologists who are hepatitis B surface antigen positive and e antigen positive should not perform exposure prone procedures until they have sought counsel from an expert review panel. Because the risk of hepatitis C virus transmission is lower than that of hepatitis B virus transmission, routine testing of health care workers is not recommended, and hepatitis C virus-positive health care workers are not required to restrict professional activities.

Hepatitis B and Hepatitis C Virus Infections in Obstetrician–Gynecologists. ACOG Committee Opinion No. 332. American College of Obstetricians and Gynecologists. *Obstet Gynecol*. 2005;106:1141–2.

Breastfeeding

Suzan Murphy, PIMC

Database Provides Information about Drugs in Breastfeeding Mothers

The Drugs and Lactation Database (LactMed) is a peer-reviewed and fully referenced database of drugs to which breastfeeding mothers may be exposed. The database was produced by the National Library of Medicine as part of the Toxicology Data Network. Among the data included are maternal and infant levels of drugs, possible effects on breastfed infants and on lactation, and alternate drugs to consider. The database is searchable by drug name. Go to <http://toxnet.nlm.nih.gov/cgi-bin/sis/htmlgen?LACT>.

Medical Mystery Tour What Was the Common Theme in These Two Cases?

Let's recap what we learned last month.

Patient #1. This 35 year old G2P1001 was originally scheduled for elective repeat cesarean delivery at 36 2/7 pending results of fetal lung maturity studies. The patient's prenatal course was significant for a first visit at 8 weeks. The gestational age was confirmed by a 10 week ultrasound. The patient was offered a quad screen and /or amniocentesis and declined both. The patient had gastroesophageal reflux disease and received omeprazole 20 mg per day orally. The patient's previous delivery was significant for a low transverse cesarean delivery for an abruption placenta at term. The infant did well and she had an unremarkable course. She otherwise had a history of mild endometriosis and laparoscopy for an ovarian cystectomy.

Patient #2. This 20 year old G3P0020 at 40 2/7 presented with good early dating for an outpatient cervical ripening regimen. The patient had uncomplicated Class A₁ gestational diabetes mellitus. The patient weighed 193 lbs and her fetus was in a cephalic presentation. Her cervical exam was 50% effaced, 1 cm dilation at the external os, firm, and posterior with the presenting part at -3 station.

The question was, What do these two patients have in common? First, let me tell you a little more about our patients. Patient #1 received an amniocentesis that revealed a fluorescence polarization (FP) of 30 mg/g, which is immature. One reference laboratory's FP ranges include immature \leq 39 mg/g; mature ? 55 mg/g. Results between 40-54 mg/g cannot be declared "mature" or "immature" with the same level of confidence and should be considered "Inconclusive."

The reflex follow up test was a phosphatidylglycerol (PG) with these results

% PGL	Trace
% Ppt.Lec.	65
% PI	27.0
LS ratio	2.4

Interpretation: Lungs are mature with caution if not diabetic or 36 weeks.

Soon after the PG level result returned (NB: the patient had been 36 2/7 when the amniocentesis was performed), the patient underwent a cesarean delivery for what was termed "extreme maternal anxiety." The patient delivered a 7 lb. 5 oz. infant with Apgars of 8 and 9. The infant developed respiratory distress, required additional respiratory support, and was transferred to the neonatal intensive care unit. The mother did well and was discharged on the third post-operative day. The infant remained hospitalized in the special care nursery and was discharged on the 5th hospital day.

Patient #2 was functionally a primipara who received a 3-day cervical ripening process followed by a prolonged 2-day induction of labor. This process culminated in a cesarean

delivery for prolonged 1st stage of labor as the patient did not progress beyond 8-9 cm despite adequate contractions with oxytocin augmentation. The patient delivered a 6 lb. 15 oz. infant with Apgars of 7 and 8. The mother and infant initially had an unremarkable post-operative course and were both discharged, afebrile, on post-operative day 2.

The mother had to be re-admitted for cellulitis on post-operative day 6. The patient was started on ampicillin, clindamycin, and gentamicin intravenously and spontaneously began draining purulent material from her wound. The patient remained hospitalized until post-operative day 10. At the time of this review the patient was still being followed in outpatient clinic for continued wound care 5 weeks after her surgery.

Let me summarize the clinical scenarios. The first patient received an elective cesarean delivery for "extreme maternal anxiety" with an immature lung profile at 36 weeks. Recall it was reported "mature with caution if not diabetic or 36 weeks," and the patient had been 36 2/7 at the time of amniocentesis. Her infant developed respiratory distress and required neonatal intensive care. The infant remained hospitalized after the mother was discharged.

The second patient underwent a cervical ripening and subsequent prolonged induction of labor with an unripe cervix. The patient ultimately received a cesarean delivery with a less than 7 lb. infant for a prolonged 1st stage of labor. The patient developed a wound infection and required re-admission to the hospital. The patient required prolonged outpatient wound care that was not complete at the time of this review.

So, back to the question, What do these cases have in common? The cases have two things in common. First, the patients developed common complications of common procedures: prolonged neonatal intensive care after premature delivery (although in this case, iatrogenic prematurity) and prolonged wound care after a cesarean delivery for a failed induction (although in this case, for a non-acute indication with an unripe cervix).

Second, these both happened during the same holiday week. The first patient received her amniocentesis on Christmas day and the second patient had the decision to begin cervical ripening made on the day before Christmas Eve. A couple thoughts come to mind. As some move toward cesarean delivery on demand and increasingly patient directed care, we may want to reflect that at one point our predecessors followed the Latin dictum, "*Primum non nocere*" ("First, do no harm").

One could argue that in an effort to comply with these patient's wishes to be at home with their family for the holidays, our health care system may have failed to uphold the spirit of one of its most basic principles.

OB/GYN CCC Editorial Comment Is it 'Poor Datism' or 'Post Datism'?

Considering the two cases above, let's muse about elective induction of labor. In 2002, the last year for which full natality statistics are available, the labor induction rate was 20.6%.

This reflects a 64% increase since 1989. Demographics reveal that induction of labor is more common in insured patients, but is rising in all groups. As more than 60% of women are in the formal work force, some degree of scheduling is desirable on economic grounds alone. The challenge is to balance patient autonomy with resource utilization and health care concerns as illustrated above.

Other positive aspects of labor induction are that it allows us to smooth the L/D work flow, and react to an increasing number of indications for induction of labor are e.g., post term vs post datism. The key is to calibrate our patients expectations and not to allow ourselves to misguide patients about their chance of timely delivery with an unfavorable cervix. Or, put another way, to what extent do we need to allow our patient's mother in law's frequent flyer ticket affect our clinical practice. We should also be aware that in many cases we are inducing patients for what amounts to 'poor datism,' rather than true post datism. Throughout this increase in induction of labor, ACOG has not changed its criteria for elective delivery, i.e., 39 weeks by good dating parameters. (see multiple Resources online)

Navajo Corner, Kathleen Harner, Tuba City Methamphetamine Abuse among Women on Navajo, PART 2 of 4

Recognizing methamphetamine (MA) abuse is not always simple. A few weeks ago, I saw a lovely multigravid woman in the ER, at TCRHCC, bleeding with an incomplete abortion. Her husband was with her and she was clearly grieving about the pregnancy loss. He was appropriately concerned about her and attentive to her grief. When he left the ER to check on their children at home, she confided to me that he had been "doing meth" and it was affecting their marriage. She asked me if I would talk to him and urge him, for the sake of their family, to stop. Although I routinely ask patients about illicit drug use, I would never have guessed that this family had a problem. The first challenge for the practitioner is identifying the patients with a problem. Once this is done, how best to help the gravida and her family?

One of the best opportunities to approach and intervene with the substance abusing woman is when she is pregnant. The pregnancy or the child's birth may give her a powerful motive to seek treatment for her addiction. Early intervention efforts during the prenatal period increase the likelihood that she will successfully recover from drug abuse. It is equally important to provide the pregnant, substance abusing woman with optimal, comprehensive obstetrical care to avoid the complications of pregnancy that can occur in the abusing gravida. A continuum of follow-up services is a critical element for an improved quality of life for the substance abusing woman and her family. She often lives in a stressful environment that may include physical and sexual abuse, single parenthood, and limited financial and social support. Interventions during the postnatal period are needed to help her successfully parent her child, abstain from the use of drugs, and

address complex social needs.

It is a good assumption that if a pregnant MA abuser seeks prenatal care, she is interested in ending her drug use. Health care providers have a unique opportunity during pregnancy to identify drug abusers and help them stop abusing. For a treatment program to effectively meet the needs of MA abusers, it is essential to understand the perspective of the "customer" as she approaches, enters, and participates in treatment. There are a number of entry points in the system for women who might not present directly for treatment, including:

- Pediatricians (mothers will take children to the doctor even when they will not go for their own problems)
- Child protective agencies
- Social service agencies
- Primary care providers
- Criminal justice system

Two types of barriers must often be addressed concerning outreach to women who use MA. First, internal barriers to seeking treatment for substance use disorders that include guilt, depression, fear of children being taken away, and fear of partners who are using or dealing drugs must be identified and mitigated. Second, external barriers to be examined include lack of accessibility to treatment programs, need for childcare, or lack of community-based programs that prevent women from seeking treatment. Often, reducing just one barrier is enough to bring a woman into treatment. For example, treatment programs that provide child care may have higher participation levels than those that do not. Treatment for women should involve a holistic approach.

According to the National Institute on Drug Abuse, the most effective treatments for MA addiction are cognitive behavioral interventions. These approaches are designed to help modify the patient's thinking, expectations, and behaviors, and to increase skill in coping with life stressors. Methamphetamine support groups are also effective adjuncts to behavioral interventions. There are no pharmacological treatments for MA abuse, although antidepressant medications can be helpful in combating the depressive symptoms seen in the first few months of abstinence from the drug.

Incentives, contingent on drug abstinence, are a powerful intervention tool for facilitating abstinence in cocaine and methadone maintained cocaine abusers. There is evidence that MA dependent individuals respond similarly. The aim is to decrease behaviors maintained by drug reinforcers and increase behaviors maintained by nondrug enforcers by presenting rewards.

Although some traditional drug abuse treatment elements are appropriate for MA abusers, many treatment staff feel ill prepared to address the challenges presented by MA abusers. Poor treatment engagement rates; high dropout rates; severe paranoia; high relapse rates; ongoing episodes of psychosis, severe craving, and anhedonia are clinical challenges that are frequently more problematic than in other treatment

populations. In small communities, it is often only law enforcement that has the proper skills to deal with the needs of MA abusers. Several of the clinical problems encountered by the staff working with MA abusers occur because the staff have primarily been trained in alcoholism treatment, and the severe psychiatric symptomatology of MA abusers is simply beyond their scope of practice. Providing extra training to this staff is part of the solution. Involving mental health experts also helps to meet these clinical challenges.

Pregnant women pose additional challenges; in addition to intensive outpatient treatment, attention must be given to providing prenatal care. It is important that the clinical staff working with pregnant women are capable of dealing with their relapses. Often there is a lack of empathy to pregnant women who are using drugs. Additionally, women with small children require an increased level of support while in treatment. The combined burdens of work, home care, childcare, and family responsibilities, in addition to attending treatment, frequently can lead to a fatigue so profound the MA abuse may reoccur in an effort to combat exhaustion.

Stimulant users, which include MA abusers, respond well to contingency procedures, and this includes drug court strategies. Drug courts are based upon the rapid and certain application of contingent consequences based upon the behavior of the drug user. Drug court participants who successfully exhibit desired behaviors can earn their way to progressively less demanding treatment regimens. Those unable to maintain a contract of desired behaviors move to more intensive levels of care or incarceration. The National Institute of Drug Abuse has demonstrated that once women enter a treatment program, the motivation to stay drug free is their children.

Next Month: The Phoenix Indian Medical Center's approach to the substance abusing gravida.

Oklahoma Perspective

Greggory Woitte, Hastings Indian Medical Center Female Sexual Dysfunction

Female sexual dysfunction is a common problem affecting an estimated 50 - 80% of postmenopausal women as well as a significant number of premenopausal women. Sexual dysfunction can take on several variations, from an absence of sexual fantasies and desire for sexual activity (hypoactive sexual desire disorder) to an absence of orgasm after normal sexual excitement phase (female orgasmic disorder). As with many topics in our specialty, this taboo subject is often only discussed when asked about. Getting a good history and providing the patient with information can often alleviate some of the problems. Medications such as testosterone and hormone replacement therapy can be used, but there is limited evidence supporting widespread use of these medications. The online version of the OB/GYN CCC Digest lists a few articles that will make you more comfortable approaching this topic with your patients.

Perinatology Picks

George Gilson, MFM, ANMC

Factors Associated With Rise in Primary Cesarean Births in the United States, 1991-2002

Objectives: We examined factors contributing to shifts in primary cesarean rates in the United States between 1991 and 2002.

Methods: US national birth certificate data were used to assess changes in primary cesarean rates stratified according to maternal age, parity, and race/ethnicity. Trends in the occurrence of medical risk factors or complications of labor or delivery listed on birth certificates and the corresponding primary cesarean rates for such conditions were examined.

Results: More than half (53%) of the recent increase in overall cesarean rates resulted from rising primary cesarean rates. There was a steady decrease in the primary cesarean rate from 1991 to 1996, followed by a rapid increase from 1996 to 2002. In 2002, more than one fourth of first-time mothers delivered their infants via cesarean. Changing primary cesarean rates were not related to general shifts in mothers' medical risk profiles. However, rates for virtually every condition listed on birth certificates shifted in the same pattern as with the overall rates.

Conclusions: Our results showed that shifts in primary cesarean rates during the study period were not related to shifts in maternal risk profiles.

Declercq E, Menacker F, MacDorman M. Factors associated with the rise in primary cesarean births in the United States, 1991-2002. *Am. J Public Health.* 2006; 96(5):867-872.

STD Corner

Lori de Ravello, National IHS STD Program Prediction of Pelvic Inflammatory Disease Among Single, Sexually Active Women

Results: Women enrolled using the risk score were young, single, sexually active, and often had prior sexually transmitted infections. Incident PID was common (8.6%). From 24 potential predictors, significant factors included age at first sex, gonococcal or chlamydial cervicitis, history of PID, family income, smoking, medroxyprogesterone acetate use, and sex with menses. The model correctly predicted 74% of incident PID; in validation models, correct prediction was only 69%.

Conclusions: Our data validate a modified chlamydial risk factor scoring system for prediction of PID. Additional multivariable modeling contributed little to prediction. Women identified by a threshold value on the chlamydial risk score should undergo intensive education and screening.

Ness RB et al. Prediction of pelvic inflammatory disease among young, single, sexually active women. *Sexually Transmitted Diseases.* 33(3):137-142, March 2006.

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

“Science is facts; just as houses are made of stone, so is science made of facts; but a pile of stones is not a house and a collection of facts is not necessarily science.”

Henri Poincare (1854-1912)

Articles of Interest

A randomized, controlled trial of removable splinting versus casting for wrist buckle fractures in children. *Pediatrics*. 2006 Mar;117(3):691-7. <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed>

Wrist buckle fractures are commonly seen in pediatric patients in both emergency departments and pediatric clinics. The standard treatment in the US is to place these children in a short arm cast for 2 to 4 weeks. In Britain many patients are placed in a removable splint.

This study was a randomized controlled trial for children 6 to 15 years of age with a buckle fracture of the wrist. Patients received either a short arm cast or a removable plaster splint for three weeks. There was no difference in pain or fracture healing. Children with the splint had better physical functioning and less difficulty with activities of daily living at 2 and 3 weeks post injury.

Editorial Comment

Buckle wrist fractures are commonly seen and treated by primary care physicians in the IHS if for no other reason than few of our rural clinics have easy access to orthopedists. This study confirms what most people knew intuitively: that these fractures heal promptly. This study also confirmed what many of us knew from experience: that these fractures heal so rapidly in children that many patients will remove their own casts before 3 weeks and never return for follow-up. In this study 40% of children had stopped wearing their splint most of the time by 14 days and by 20 days almost 85% had stopped wearing their splint. If both treatments are equal we should use the least restrictive choice. A commercially available preformed splint would likely work as well as a plaster splint and be much quicker in a busy clinic.

Screening for developmental dysplasia of the hip: recommendation statement. *Pediatrics*. 2006 Mar;117(3):898-902. <http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed>

Screening ultrasounds of the hip in newborns were going to make unrecognized developmental dysplasia of the hip (DDH) a thing of the past. It hasn't worked out that way.

The United States Preventive Services Task Force looked at the risks/benefits of screening tests for DDH. They felt that screening ultrasounds have a high false positive rate. Surprisingly, they also found there was not sufficient evidence to recommend physical exam screening for DDH given the high rate of spontaneous resolution of DDH in well infants. There is no controlled trial demonstrating better outcomes in a population screened for DDH.

Editorial Comment

The American Academy of Pediatrics and the American Academy of Family Physicians continue to recommend physical exam screening for DDH. It seems prudent to perform a physical exam of the hips at well child visits until 6 months of age.

Infectious Disease Updates.

Rosalyn Singleton, MD, MPH Mumps Outbreak hits the Midwest

Through May 10, 3,268 mumps cases have been reported to CDC from 12 states in the United State's largest mumps outbreak in years. The outbreak started in Iowa in December 2005. The strain of mumps virus is the same one that has caused an ongoing outbreak in the United Kingdom. The



majority of cases are in 2-dose MMR recipients, and the predominant age group is 18 - 24 years. This isn't unusual, since mumps is occurring in a highly vaccinated population. About 80% of persons who have received 1 MMR dose can be considered protected and 90% after 2 doses. Since no vaccine is 100 percent efficacious, most cases of disease in a highly vaccinated population will happen in individuals who have been vaccinated.

The main outbreak control measure is immunization of persons not fully vaccinated. In an outbreak, fully vaccinated is defined as 2 doses of MMR for persons age 1 - 49 years and 1 dose of MMR vaccine for persons age 50 years and older. During an outbreak, health care facilities should consider recommending 2 doses of MMR vaccine to unvaccinated health care workers born before 1957 who do not have other evidence of mumps immunity.

So far, Wisconsin sites in the Bemidji Area are the main IHS sites affected by this outbreak. CDC recommends that a blood specimen for IgM, and buccal swab and/or urine for culture or PCR be collected from all patients with clinical features compatible with mumps. Isolation procedures consist of droplet precautions for 9 days after onset of parotitis. Daily updates on this outbreak are available on the CDC website at: <http://www.cdc.gov/nip/diseases/mumps/default.htm>.

Recent literature on American Indian/Alaskan Native Health

Doug Esposito, MD, MPH

A nationwide population-based study identifying health disparities between American Indians/Alaska Natives and the general populations living in select urban counties. *Am J Public Health*. 2006 Mar 29; [Epub ahead of print] http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=16571711&query_hl=10&itool=pubmed_DocSum

The authors report results of a study designed to assess the health status of the urban American Indian/Alaska Native population served by urban Indian health organizations (UIHOs). Data from the 2000 US census and the National Center for Health Statistics were used.

As you might imagine, health data collected on a national level demonstrate significant disparities for AI/AN groups as compared to the general US population. This is true for the urban as well as for the general AI/AN population. The authors also document significant disparities in socioeconomic status. They show that AI/AN people living in UIHO areas are about twice as likely to be poor, unemployed, and to not have a college education. Rates of AI/AN children living in poverty were found to be highest; almost twice that of the comparison groups and approximately 10 percent higher than adult AI/ANs. Approximately 20% of the 400,000 AI/AN births happening nationwide between 1991 and 2000 occurred in urban areas covered by UIHOs. Other interesting and important statistics are reported in this article, and should be

accessed directly by any interested individuals.

Some study findings were not easily explained, and require additional investigation. Lower rates of low birth weight were found for both urban and nationwide AI/AN populations than for the comparison groups. However, rates of prematurity were slightly higher. The authors suggest that this is perhaps somehow related to higher rates of diabetes among AI/AN groups, but such a statement seems a little "premature" to me! Additionally, the birth rate for AI/ANs living in UIHO service areas was about one fourth that of the general US population, although the birth rate for the general AI/AN population nationwide was similar to that of the general US comparison group. The authors posit that this could be due to mobility factors of the maternal AI/AN population at large, whereby deliveries are occurring outside of the UIHO area of residence. Are these women moving back to reservations to have their babies?

The authors make several suggestions that they believe would result in reductions in health disparities. They contend that disparities in access to care are paramount to the plight of the urban AI/AN population. Other studies have definitively documented that urban AI/ANs are less frequently insured and less frequent users of primary health care. Under-funding of urban Indian health programs also appears to be important. The authors point out that "... although UIHOs are the primary health care venue for urban American Indians/Alaska Natives, who represent 60% of the nationwide AI/AN population, IHS allocations for these organizations represent 1% of the total IHS budget." They call for urgently needed leadership "to refocus and unify the system into a more cohesive and coherent national health care initiative" to address a "fragmented and decentralized" urban AI/AN health system.

Finally, data collection on urban AI/AN populations is problematic. Difficulties exist due to racial misclassification and a lack of a formal mechanism to track urban AI/AN health statistics and demographics. The authors suggest that the adoption of standardized racial classification schemes would help to more accurately track the needs of this underserved population. Further research in a number of areas, of course, is needed.

Editorial Comment

Relatively few studies exist documenting the health status of urban AI/ANs, even though as many as 60% of the Native American population nationwide reside in urban areas. The results of the current study mirror findings from other studies of urban AI/AN children, some of which are listed below. The plight of the urban Indian is an important issue, only made worse by the apparent continuing migration of AI/AN people to urban centers and the continued dissolution of funding for AI/AN health programs. Achieving the goal of eliminating health disparities by the year 2010 as set forth in *Healthy People 2010* is appearing more and more of an impossibility to this writer. What do you think?

Additional Reading

Perinatal and infant health among rural and urban American Indians/Alaska Natives. *Am J Public Health*. 2002 Sep;92(9):1491-7. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12197982&query_hl=5&itool=pubmed_docsum

Disparities in infant health among American Indians and Alaska natives in US metropolitan areas. *Pediatrics*. 2002 Apr;109(4):627-33. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=11927707&query_hl=5&itool=pubmed_docsum

Health status of urban American Indians and Alaska Natives. A population-based study. *JAMA*. 1994 Mar 16;271(11):845-50. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=8114239&query_hl=5&itool=pubmed_docsum

Measuring disparity among American Indians and Alaska Natives; who's counting whom? *Med Care*. 2003;41(5):579-81. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=pubmed&dopt=Abstract&list_uids=12719680&query_hl=65&itool=pubmed_DocSum

New Risk Management Manual Available

The second edition of the IHS publication, *Risk Management and Medical Liability, A Manual for Indian Health Service and Tribal Health Care Professionals*, by Stephen W. Heath, MD, MPH has been posted on the IHS Internet website at the National Council of Chief Clinical Consultants (NC4) homepage. The button labeled "Credentials/Risk Management" will take you to the manual site. The direct web link is: www.ihs.gov/NonMedicalPrograms/NC4/nc4-cred.cfm.

This current edition of the manual describes the medical malpractice tort claim process changes that have taken place, updates data on tort claims, describes the IHS role in National Practitioner Data Bank reporting, and provides additional risk management guidance for local programs and health care professionals. It has been posted on the IHS website to allow access by as many individuals as possible. Comments and suggestions are welcome; they may be e-mailed to stephen.heath@ihs.gov.



Additional Indications for Medicare Coverage for Cardiac Rehabilitation

Peter Kim, MD, and Henry Van Dyk, MD, both from the Department of Internal Medicine, Tuba City Regional Health Care Corporation, Tuba City, Arizona

We are pleased to report that the Centers for Medicare and Medicaid Services (CMS) has recently added three additional criteria for cardiac rehabilitation coverage, effective for services performed on or after March 22, 2006. In addition to the three original criteria that included: 1) documented diagnosis of acute myocardial infarction (AMI) within the preceding 12 months, 2) status post coronary artery bypass surgery (CABG), and 3) stable angina, the newly added criteria are as follows: 4) status post heart valve repair or replacement, 5) status post percutaneous transluminal coronary angioplasty (PTCA) or coronary stenting, and 6) status post heart or heart-lung transplant.

“The decision to cover three new clinical indications and provide a comprehensive set of services when treating cardiac rehabilitation patients is consistent with the medical evidence,”

CMS Administrator Mark B. McClellan, MD, PhD, said. “This expansion of coverage for rehabilitation will give many more patients with heart disease access to proven treatments to restore a higher quality of life.”

The revised coverage determination does not include coverage of cardiac rehabilitation for patients with congestive heart failure (CHF), which is not supported by sufficient clinical evidence at this time. Ongoing studies are likely to provide more clear answers about possible benefits of cardiac rehabilitation for patients with CHF.

Cardiac rehabilitation programs have been shown to significantly reduce mortality and disability in patients with cardiovascular disease. We are excited that with the newly expanded coverage of cardiac rehabilitation by CMS, more patients are now able to receive the positive benefits of cardiac rehabilitation.



Correction

We regret one of the authors was omitted from the byline for the article entitled “Cardiac Rehabilitation and Secondary Prevention of Coronary Heart Disease in Native Communities” (*The IHS Provider*, Volume 31, Number 3, March 2006, pages

53 - 56). Vanessa Jenny, RN, Cardiac Rehabilitation Nurse, Tuba City Regional Health Care Corporation, Tuba City, Arizona should have been included in that list.



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