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Fluoride Varnish Applied at Well Child Care Visits Can Reduce Early Childhood Caries

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Early childhood caries (ECC), or tooth decay of the primary teeth, is the greatest health disparity for American Indian/Alaska Native (AI/AN) children. The 1999 Indian Health Service Oral Health Survey showed that 68 percent of AI/AN preschool children have decay in their primary teeth, and in some tribal groups the rate is greater than 90 percent. The caries rate for AI/AN children is the highest of any ethnic group in the United States, and is six times higher than the rate for white children (see Table 1).

Table 1. Caries prevalence in children in the United States
Surgeon General's Report on Oral Health, 2000

	2 - 4 years old	6 - 8 years old
Total	16%	29%
White	11%	26%
African American	22%	36%
Hispanic	24%	43%
Native American	68%	69%

Equally discouraging is that while the overall caries rate for US children has steadily decreased in recent years, the rate of caries in preschool AI/AN children actually increased between the IHS Oral Health Surveys of 1992 and 1999. Neither educational counseling about caries nor increased availability of fluoridated water has reduced the childhood tooth decay rate in AI/AN communities. Not even dental extractions or extensive dental surgery have been shown to slow the progression of caries rates in young children.

In the past, ECC was called "baby bottle tooth decay" and was felt to occur because of prolonged drinking of liquids containing sugar such as juice or soda from a baby bottle. However, it is now known that caries formation results from a complex interplay of dietary habits, oral hygiene, and the presence in the mouth of cariogenic bacteria — primarily *Streptococcus mutans*. Tooth enamel is in constant equilibrium between demineralization and remineralization. A physical tooth cavity results when the rate of demineralization exceeds the rate of remineralization for a period of months to years. The primary cause of this condition is that the acids of certain bacteria (like *S. mutans*) shift the equilibrium toward demineralization.

Tooth decay, is an infectious process. However, children are not born with the *S. mutans* bacteria that cause cavities. Research on the timing of *S. mutans* showed that most children acquired the

In this Issue...

bacteria from their mothers at about age 18 - 30 months. However, many AI/AN children already have destructive cavities by age 18 months. It is hypothesized that the transmission of *S. mutans* occurs at an earlier age in AI/AN children.

Understanding the pathogenesis of caries suggests two therapeutic pathways to prevent caries. The first is the use of an antimicrobial to delay or prevent the transmission of cariogenic bacteria. Unfortunately, there is no Food and Drug Administration (FDA)-approved drug effective against *S. mutans* available at this time, although two clinical trials are underway to test such an antimicrobial in AI/AN communities. The second approach is to shift the tooth equilibrium toward remineralization (i.e., away from cavity formation) through the use of fluoride.

What are needed are innovative approaches to delivering fluoride to younger children. Fluoride varnish is a topical fluoride product that is suitable for infants and young children. The FDA licensed fluoride varnish in 1994. Despite its recent arrival in the United States, fluoride varnish has been used for over 40 years in Europe for caries prevention. In selected populations it has been reported to achieve a caries reduction of 40 - 55%.

A major barrier to the use of fluoride varnish to prevent early childhood caries is how to deliver this product to infants and preschool children before they develop ECC. Access to dental care for preschool children is problematic nationwide and also within the Indian Health Service (IHS). However, the IHS has a strong track record in well child care and delivering immunizations to infants and children. We proposed to make use of this established pediatric care system and offer fluoride varnish application to infants and children when they presented for well child care clinic.

Methods

As part of routine preventive care, our pediatric clinic began applying fluoride varnish during well child visits. We used *Duraflor*® which is 5% sodium fluoride (22.6 mg fluoride/milliliter). The fluoride is in suspension in a resin that allows it to stick readily to the tooth surface. Patients received fluoride varnish if they had any primary teeth present and parents agreed to application. Fewer than 1% of parents declined.

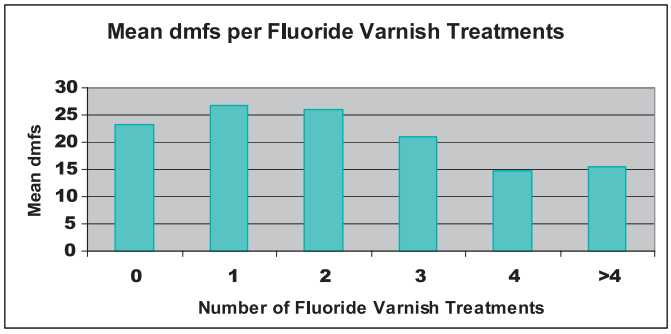
Fluoride varnish was applied during regularly scheduled well child visits at 9, 12, 15, 18, and 24 months. The teeth were wiped clean and dry with a gauze pad and a pea-sized amount of fluoride varnish was applied to all surfaces of the teeth with a kwik-tip brush. Parents were instructed not to brush the teeth or to let the child chew any hard foods for the rest of the day. Parents received age appropriate information on caries prevention prior to fluoride varnish application.

To determine the effectiveness of fluoride varnish, we examined children who attended the local Head Start program. Each new Head Start class was examined over a 3-year period. The 133 students in 2003 had not received fluoride varnish treatments and served as historical controls. One hundred and twenty-eight students in 2004 and 96 students in 2005 had received an increasing number of fluoride varnish treatments and were examined to determine the effectiveness of this intervention in our population. A pediatric dentist (CB) who was blinded to the fluoride status of each student performed visual exams. A standard scoring system of decayed, missing, or filled surfaces (dmfs) was used. Each tooth has five surfaces, and each surface was marked as caries free or caries present. A tooth with one surface with caries or filling received a dmfs score of 1. A tooth with two surfaces containing caries or a filling received a score of 2. A missing tooth, extracted tooth, or a tooth with a crown covering all surfaces received a score of 5. Thus, a child with no caries would have a total dmfs score of 0. A child who had four molars with crowns would have a dmfs score of 20 (5 dmfs/tooth X 4 teeth = 20).

Results

The mean dmfs per child in relation to the number of fluoride varnish applications is shown in Figure 1. Children without any fluoride varnish treatments had a mean dmfs score of 23.6. There was no decrease in the dmfs score for children who received only one or two applications of varnish. There was a slight decrease in mean dmfs for children receiving three applications of varnish. Children who received four or more applications of fluoride varnish had a mean dmfs score of 15, which is 35% lower than children who had no treatments. Among the children examined, no increased benefit was found for having more than 4 treatments.

Figure 1. Mean dmfs score compared to number of fluoride varnish treatments



Calculation of confidence intervals using a significance of 0.05 is shown in Table 2. Four or more fluoride varnish treatments showed a statistically significant reduction in dmfs scores compared to patients receiving 0 - 3 treatments.

Table 2. Age adjusted dmfs score by number of fluoride varnish treatments received

Variable	Number of Fluoride Varnish Treatments		
	0 - 3 (N=282)	4+ (N=75)	p-value
dmfs	23.36	15.59	0.005

Limitations

It should be noted that our intervention with fluoride varnish was conducted as a public health practice rather than research. No attempt was made to determine whether the children who received four or more applications of fluoride varnish differed from the other children in other ways that might also affect caries rates, such as frequency of exposure to cariogenic foods or a strong family history of early childhood caries.

Conclusions

Application of fluoride varnish to infants and toddlers in a well child care clinic is effective:

- Four or more fluoride varnish treatments over a two-year period reduced the rate of ECC by 35 percent.
- Fluoride varnish was accepted by the parents and well tolerated by the children.
- Fluoride varnish is cost-effective in that it can be applied to young children for a very small marginal cost by using the existing well child care system. The application of fluoride varnish can be done by non-dentists and takes less than three minutes to complete. Given the nationwide shortage of pediatric dentists and the difficulty of dental access for many children, this is an ideal model of care for Indian health programs. *Durflor*® is only about $1.00 per application. In contrast, a single trip to the operating room for dental repair under general anesthesia is about $2,500.

As the IHS Chief Clinical Consultant for Pediatrics, I would encourage all facilities that serve AI/AN children to consider adding the application of fluoride varnish to their well child care visit activities from ages 9 - 24 months. At most IHS clinics the dentists on-site could provide instruction to primary care providers on how to apply fluoride varnish and how to purchase the product. The American Academy of Pediatrics has a helpful web page devoted to oral health at *http://www.aap.org/oralhealth/*.

Lastly, fluoride varnish will reduce but will not eliminate ECC in AI/AN children. Fortunately, there are a number of other promising avenues for caries reduction in children. Currently, there is a randomized clinical trial in a southwestern tribal community to evaluate use of a 10% chlorhexidine varnish applied to the dentition of mothers of children less than six months of age in order to reduce the bacterial load of *S. mutans* in the mothers, and thereby delay and decrease transmission of *S. mutans* from mother to infants. Other studies are looking at the use of xylitol gum that decreases adherence of *S. mutans* to the teeth. It is hoped that the use of multiple approaches will eventually reduce the oral health disparity that plagues AI/AN children.

In summary, we cannot drill or extract our way out of the problem of early childhood caries among AI/AN children. Traditional dental practices have not, and will not, solve child tooth decay in AI/AN communities. Only new approaches — a paradigm shift in treating tooth decay in young children — will succeed.

The author wishes to thank Craig Bruce, DDS for his performance of dental exams on our patients. This project and report were approved by the Tuba City Regional Healthcare Corporation Board of Directors.

References

1. Vargas CM, Crall JJ, Schneider DA. Sociodemographic distribution of pediatric dental caries: NHANES III, 1988-1994. *J Am Dent Assoc*. 1998 Sep;129(9):1229-38.
2. Department of Health and Human Services. *Oral Health in America: A Report of the Surgeon General - Executvie Summary*. Rockville,MD: National Institute of Dental and Craniofacial Research, National Institute of Health, US Department of Health and Human Services; 2000:1,5-6.
3. Indian Health Service. *The 1999 Oral Health Survey of American Indian and Alaska Native Dental Patients:Findings, Regional Differences and National Comparisons.* Rockville, MD: US Department of Health and Human Services; 1999:1-6.
4. Graves CE, Berkowitz RJ, Proskin HM, Chase I, Weinstein P, Billings R. Clinical outcomes for early childhood caries: influence of aggressive dental surgery. *J Dent Child (Chic)*. 2004 May-Aug;71(2):114-7.
5. Vaikuntam J. Fluoride varnishes: should we be using them? *Pediatr Dent.* 2000 Nov-Dec;22(6):513-6.
6. Marinho VCCC, Higgins JPT, Logan S, Sheiham A. Fluoride varnishes for preventing dental caries in children and adolescents. *The Cochrane Database of Systematic Reviews* 2002, Issue 1.Art. No.: CD002279.DOI:10.1002/14651858.
7. Strohmenger L, Brambilla E. The use of fluoride varnishes in the prevention of dental caries: a short review. *Oral Dis.* 2001 Mar;7(2):71-80.
8. Weintraub J, Ramos-Gomez F, Jue B, Shain S et al. Fluoride varnish efficacy in preventing early childhood caries. *J Dent Res* 2006, 85(2): 172-76.
9. Tenovuo J, Hakkinen P, Paunio P Emilson CG. Effects of chlorhexidine-fluoride gel treatments in mothers on the establishment of mutans streptococci in primary teeth and the development of dental caries in children. *Caries Res.* 1992;26(4):275-80.
10. Isokangas P, Soderling E, Pienihakkinen K, Alanen P. Occurrence of dental decay in children after maternal consumption of xylitol chewing gum, a follow-up from 0 to 5 years of age. *J Dent Res.* 2000 Nov;79(11):1885-9.

The Mobile Adolescent Treatment Team: Providing Outreach to Village Youth and Their Families to Combat Issues Related to Grief and Loss

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History of the Mobile Adolescent Treatment Team

The Mobile Adolescent Treatment Team (MATT) is one of several components of Norton Sound Health Corporation's (NSHC) Behavioral Health Services (BHS) department in Nome. NSHC, in existence since 1970, is a non-profit tribal health organization serving the Bering Strait region of western Alaska. The population of the region (approximately 9,250 according to the 2003 US Census) is comprised of three major indigenous peoples: Inupiat, Central Yupik, and Siberian Yupik Eskimos. The region is approximately three-fourths Alaska Native and one-fourth a combination of Caucasian, African American, and Pacific Islander races.

Nome is the hub of all major services, with approximately 3,615 residents. Most of the surrounding villages of the Bering Strait region range in population from under 200 to just over 700. The MATT Program, originating in 2000, is a unique model of care that targets Alaska Native youth between the ages of 9 and 20 who at risk for out-of-home placement due to mental health and/or substance abuse problems. MATT staff travel to the various villages in the region offering individualized, intensive treatment within the youths' home villages in an effort to reduce the number of out-of-home placements.

Cultural Competency

The MAT Team is comprised of a combination of non-Native Alaskan master level mental health clinicians and Alaska Native certified substance abuse counselors. Cross training is active and ongoing within the MATT Program. MATT staff also cross-train with NSHC Village Based Counselors (VBCs), Alaska Native personnel who have most often grown up in the village in which they are employed.

MAT Team Referral Process

MATT staff work from the premise that there is no wrong door to treatment, accepting referrals from multiple sources including the Office of Children's Services, Department of Juvenile Justice, Kawerak (a regional Native social services organization), Jacob's House (a temporary children's shelter), Kusqui House (transitional housing for women in recovery), Tribal Court, the Indian Child Welfare Act (ICWA) coordinator, Norton Sound Regional Hospital staff, the Child Advocacy Center, village clinic staff, VBCs, village public safety officers, school personnel, and BHS itinerant clinicians. A client's family or the client him- or herself can also self refer for services through the MATT Program.

Common Problems Encountered

The MAT Team encounters problems stemming from and involving domestic violence, homicide, the clash of traditional and modern culture, unresolved grief, teen pregnancy, substance abuse (primarily alcohol, marijuana, gasoline, or propane sniffing), underage tobacco use, school truancy, conduct problems (at home, at school, in the community), depression, suicidal ideation and attempt, child abuse (physical, sexual, emotional), child neglect, unemployment, and underemployment.

The majority of MATT clients have one or more mental health diagnoses. A little over half of all MATT clients also have substance abuse diagnoses or are at high risk for developing a substance abuse problem due to experimentation or active substance abuse within the youth's household. To qualify for MATT services, a youth normally has a global assessment of functioning (GAF) of 50 or below.

Involving Family and Others in the Youth's Life

The youth and his or her family are invited and encouraged to participate fully in the treatment process from the start. The family is included into the treatment plan as active members who agree to daily and/or weekly work with their child. MATT staff request permission to access collateral information from school staff and others involved with the youth and include these other significant helpers into the youth's treatment plan in ways that will be helpful to the youth.

MATT Program Data

MATT Program data have been gathered from the inception of the program to the present. A one-page, 23 item questionnaire (Client Profile) consisting primarily of yes/no questions is administered verbally by MATT staff during each client intake. A total of 127 client cases (69 males, 58 females) had been opened through June 2006. This number does not

include the high volume of nonbillable contacts and crisis interventions which never developed fully into open cases.

The Client Profile questions are as follows: 1) has the parents' drinking contributed to the child's needing services? 2) has the child been placed out of the home, or is the child at risk of out of home placement? 3) is the Office of Children's Services involved in the child's case? 4) has the child ever been placed in a foster home? 5) has the child ever been placed out of the region? 6) has the child ever lived with relatives because of family problems? 7) is the child having problems in school? 8) does the child have a substance abuse problem? 9) does the child have a mental health diagnosis? 10) does the child have legal problems? 11) do the parents of the child have legal problems? 12) is Fetal Alcohol Spectrum Disorder suspected? 13) has fetal alcohol exposure been confirmed by the child's parents? 14) has the child witnessed domestic violence? 15) does the child have a history of being sexually abused? 16) does the child have a history of being physically abused or neglected? 17) does the child have a history of being emotionally abused or neglected? 18) has the child ever attempted suicide? 19) has the child ever had suicidal ideation? 20) has the child ever had a plan for suicide? 21) does the child have grief and loss issues? 22) has the child experienced other trauma? (e.g., being a witness to a suicide, being the victim of severe bullying, etc.), 23) has the child ever experienced a head injury?

Results of Data by Gender

For the purpose of program study and evaluation, the Client Profile information was divided by gender, and the most common problems found in the majority of the male and female client samples were examined. The following is a breakdown of the data.

Males (Total Sample 69). The most common problems found in the male sample are as follows: 66 of 69 had a mental health diagnosis; 65 of 69 had grief and loss issues; 62 of 69 had problems in school; 53 of 69 had parents whose drinking contributed to the child's needing services; 53 of 69 had a history of emotional abuse or neglect; 48 of 69 had witnessed domestic violence; 47 of 69 had a history of physical abuse or neglect; 42 of 69 were at risk of being placed out of the home; 37 of 69 had legal problems; 36 of 69 had a substance abuse problem; and 35 of 69 were suspected of having FASD (see Table 1).

Table 1. MATT male clients

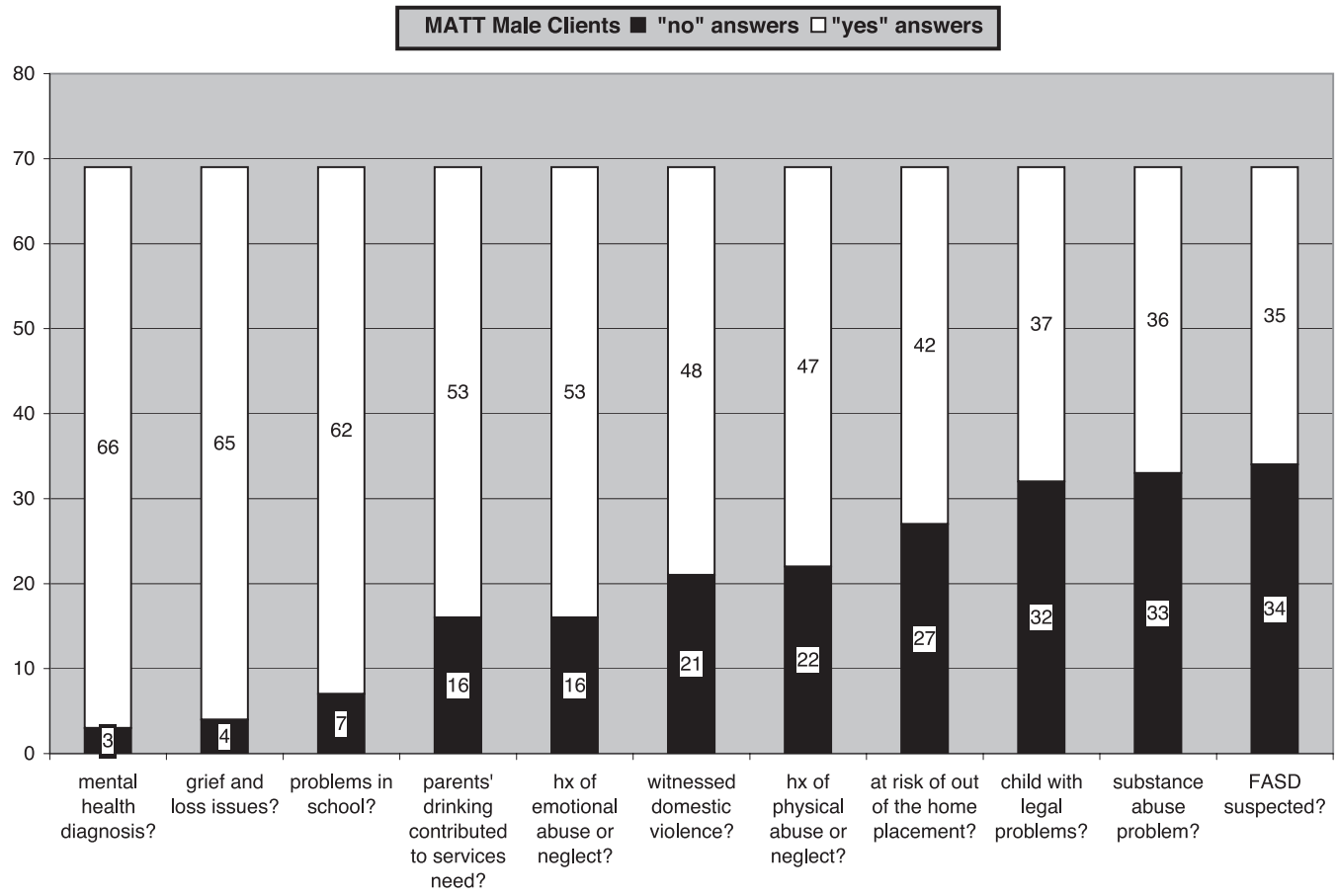
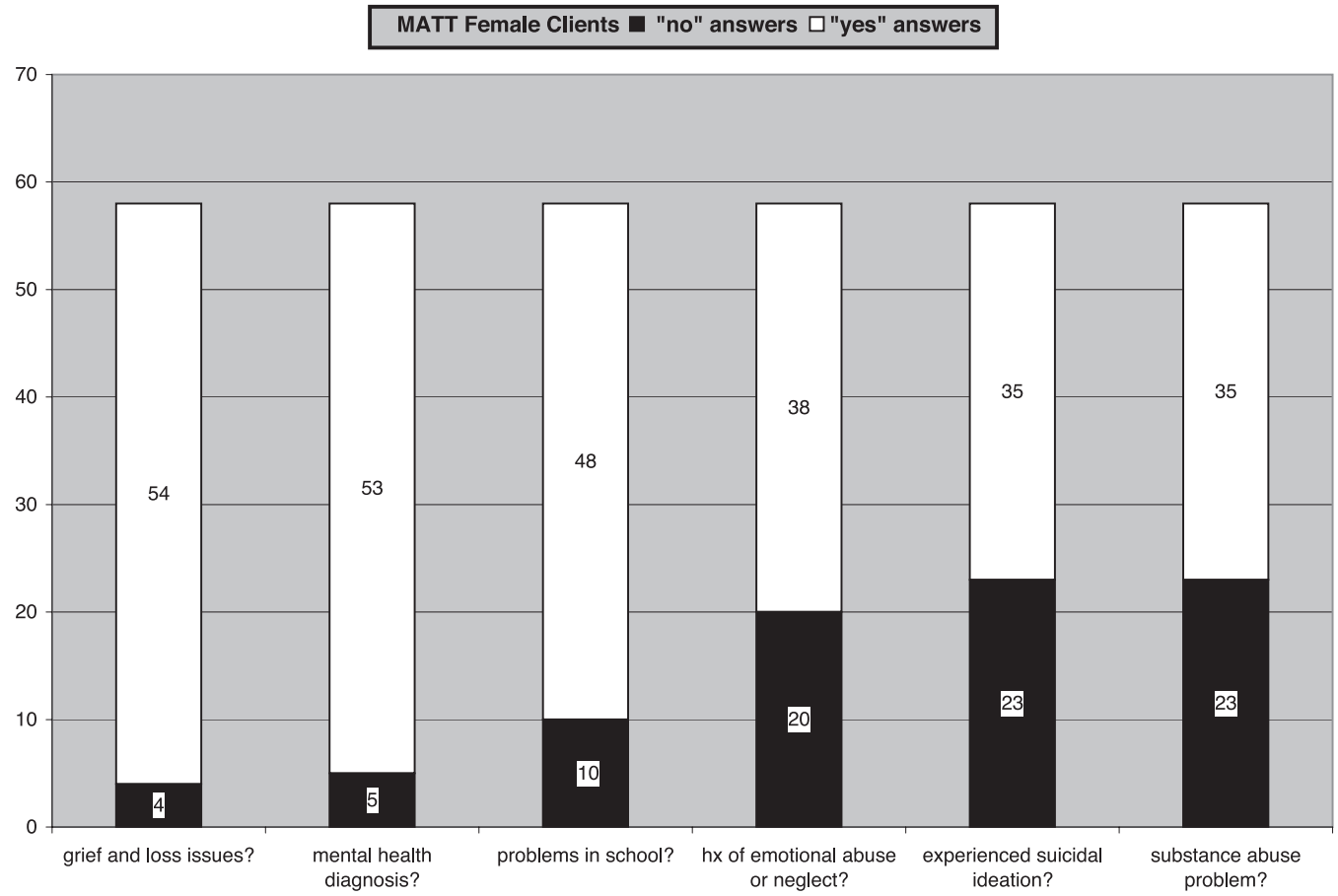


Table 2. MATT female clients



Females (Total Sample 58). The most common problems found in the female sample are as follows: 54 of 58 had grief and loss issues; 53 of 58 had a mental health diagnosis; 48 of 58 had problems related to schooling; 38 of 58 had a history of emotional abuse or neglect; 35 of 58 had experienced suicidal ideation; and 35 of 58 had a substance abuse problem (see Table 2).

Analysis of the Data

One of the most striking findings is the almost double acuity found within the male sample as opposed to the female sample. Males answered affirmatively to approximately twice as many Client Profile questions as females. Having a mental health diagnosis was found to occur with the greatest frequency in the male population with grief and loss issues found occurring with the second greatest frequency. In the female sample, these findings were reversed with grief and loss issues occurring with the greatest frequency and having a mental health diagnosis occurring with the second highest frequency. Problems in school was found to be the third most commonly found problem in both the male and female samples. Substance abuse problems were found in more than half of both samples, although, overall, females reported positively for substance abuse problems at a higher rate than the males.

Hypotheses Regarding High Incidence of Grief and Loss Issues

There undoubtedly are many elements from the past and present that have created grief and loss for the people of the Bering Strait region of Alaska. Based on this writer's work over the last two plus years, as well as in-depth study of the region's culture and history, the following are thought to be some of the significant contributing factors that individually as well as synergistically account for the high occurrence of grief and loss issues found in the client population served.

Lower than average life expectancies. According to State of Alaska epidemiology, life expectancies of Alaska Natives increased on average from 47 years to 67 years from 1950 to 1979 - 80. At the same time, non-Native Alaskans' life expectancy increased from 66 to 73 years from 1950 to 1979 - 80. The dramatic difference in life expectancy for Natives as opposed to non-Natives can be quickly grasped by noting that there was only one year's difference separating the low end of life expectancy of non-Natives in 1950 and the high end of life expectancy of Alaska Natives in 1979 - 80.[1]

Multiple deaths during influenza and tuberculosis epidemics. Entire Alaska Native villages were decimated less than 100 years ago due to the smallpox epidemic of 1835 –

1849, followed by the 1918 influenza epidemic, followed two years later by the tuberculosis epidemic. Many villages were completely wiped out. Other villages suffered multiple adult deaths that created an entire generation of orphans. Children not only lost their parents, but the benefit of learning their culture, as missionary run orphanages stepped in to raise the abandoned children with Christian traditions.

Gold rush, military influx, prejudice. The Klondike Gold Rush occurred between 1897 and 1898. An estimated 30,000 people converged into Alaska who heretofore had had only sketchy contact with non-Native people. Extensive military bases were built after the bombing of Pearl Harbor, and these brought more outsiders to Alaska. In 1916, Alaska's population was estimated to be 58,000. By 1950, the population had more than doubled to 138,000 with the relocation of military personnel to the state.[2] With the rapid influx of outsiders, Alaska Natives were often pushed aside or treated with even less respect than second class citizens in their own state. As early as 1867, in the Treaty of Cession with the Russians for example, Alaska Native tribes were excluded from the "enjoyment of all the rights, advantages and immunities of citizens of the United States." Later, in 1915, Alaska Natives were given the choice between breaking all ties with their tribes to become citizens or remaining non-citizens.[3] Completely disenfranchised initially, then given the choice between giving up their traditional ways of life that had served them well for generations and this new thing called citizenship, the state's original inhabitants struggled with feelings of shame and low self-worth, as well as confusion about how to meld the new ways of life brought in from outside while maintaining their old ways of life.

Loss of culture through forced assimilation, separation from parents, introduction of Christianity. Missionary run schools sprang up in the late 1800s to raise and "civilize" Alaska Native children. Youth were sent to boarding schools far from their home villages, thus separating them from their families nine months out of each year. Forced and widespread efforts to assimilate Alaska Natives created additional psychologically traumatic loss due to the school policy's punishment of children for speaking their native language and practicing their traditional ways (dancing in particular). Additional loss of culture occurred as churches preached that practicing traditional ways was next to practicing devil worship. The first recorded missionary attempts to convert Alaska Natives to Christianity occurred in 1787 and occurred systematically because "converted natives were always more manageable."[4] Even the centuries old village names were renamed after prominent missionaries. Again, an internalized sense of shame and loss swept through villages as age-old Alaska Native ways of living were decimated, negated, and lost.

Death experienced more frequently. Due to the remoteness of most villages and the difficulties of traveling between villages until just recently, marriages occurred for generations just on the fringe of family bloodlines. It is next to impossible to find someone who doesn't have numerous relatives within their home community. In such small and intimate communities, all deaths are felt on a continuum that ranges from mild to intense. It is safe to say that there is no one person not somehow affected by a fellow community member's death in the village. The repeated and frequent experience of traumatic death compounds each loss that came before.

Higher incidence of trauma accompanying more deaths. According to the most recent Alaska Bureau of Vital Statistics data, cancer is the leading cause of death; accidental death by injury is the second leading cause of death; and suicide is the third leading cause of death in the Bering Strait Alaska Native population.[5] The state of Alaska has the fourth highest number of suicides per capita in the United States.[6] Within Alaska as a whole, suicide rates are highest for people between the ages of 15 and 29, and attempts by Natives outrank those by non-Natives four to one.[7] Accidental death and death by suicide serves only to intensify the grief and trauma already experienced with each loss.

Tradition of keeping problems to one's self. According to Harold Napoleon, a Yupik Eskimo, the deep grief caused by the tremendous loss to disease in the 1900s set in motion a way of dealing with feelings in which sadness was not discussed openly in the villages. It seemed to be agreed upon that "without discussing it, that they would not talk about it. It was too painful and the implications too great. [So it was treated as] if it never happened [and] to this day [this] remains a way of dealing with problems or unpleasant occurrences."[8] Not sharing one's feelings of loss negates the opportunity to work through the multiple emotions of fear, anger, sadness, shock, and helplessness felt with each death. When emotions are not released to process, each new loss serves only to compound the ones that came before.

Rapid change in way of life. Satellite TV, Internet, running water, electricity, gas heat, government-built housing, pull-tabs, bingo, and use of snowmobiles and ATVs all create reliance on outside forces and a cash economy in a region where unemployment is way above 50%. Drug and alcohol use is also contrary and a threat to Alaska Natives' traditional ways of life. Self-blame and internalized shame again come into play as comparisons are made between life in the village and life as portrayed in the media that now so freely flows into the village.

Specific Interventions Used by the MAT Team

MATT staff use a variety of interventions to address youth and family grief and loss issues, as well as the other commonly seen problems, with special emphasis being placed on strengthening the sense of pride and dignity in each youth's cultural history. The traditional values of the three tribes served by MATT staff are included in almost every treatment plan, and the youth's attention is directed to his or her traditional values as a concrete and practical means of managing his or her distress.

Youth and family are encouraged to talk about the difficult, less pleasant aspects of life, self-doubt, dislike of self, loneliness, and loss. Psychoeducational handouts, workbooks, games, and journaling are used to help youth and family members build self-esteem, manage anger, follow rules at home and at school, learn assertiveness, and manage bullying behavior. MATT staff use videos and DVDs of traditional activities to educate and encourage youth to become more active in their culture. MATT staff engage side-by-side in subsistence activities with youth (berry picking, craftwork, hunting, fishing, gathering wood, etc.) in an effort to role model healthy life skills and help youth reconnect with their community and heritage.

Region-wide efforts are made to combat grief and loss issues both on the micro and macro levels. On the macro level, a regionally and culturally sensitive booklet on grief and loss, the stages one can expect to navigate through after experiencing a loss, as well as concrete suggestions about where to seek help, activities to engage in, etc., has been developed and is not only used specifically with MATT clients, but is also distributed region-wide to the village clinics for community members to pick at their leisure. Another macro approach to combating mental health issues in the region is the public health oriented articles published monthly in the regional newspaper as well as quarterly in the corporation newspaper.

In the same vein of preventive education, the MAT Team participates in the yearly health fair held in Nome. Some past booth themes have included suicide prevention, parenting, and stress management. MATT staff also participate in community wellness fairs, talking about grief and loss, substance abuse, and suicide prevention.

Lastly, suicide prevention flyers outlining the warning signs of suicide as well as tear off strips with 24/7 helpline numbers are posted throughout the region in the clinics, stores, post offices, etc..

Summary

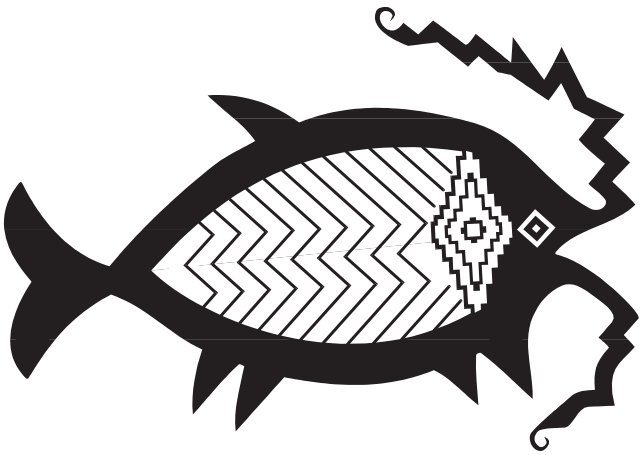
The MATT Program has worked hard over the last six years to build trust in the communities it serves. As mentioned above, our referrals have increased to the point that we are recruiting additional staff to meet the rising number of requests for services. Research shows that there are four components responsible for client change: 1) extratherapeutic factors; 2) the relationship between staff and client; 3) placebo, hope, and/or expectancy of change; and 4) structure, model, and/or technique used in treatment.

According to Miller et al, broken down into percentages, the relationship is responsible for 30% of the change that occurs in the client. "In particular, clients give the highest ratings to treatment relationships they experience as caring, affirming, accommodating, as well as focused on their goals."[9] Emphasis on building relationship is central to the MATT Program, although this is understandably slow, considering the trauma Alaska Natives have encountered in relationship to the world around them over the last 200 years. Building trust within the various remote communities has been a process that has literally taken years, but serves as the foundation from which all MAT Team work occurs.

The MATT Program is a valuable resource in an otherwise resource-limited environment. Alaska Natives are slowly beginning to respond to the invitation to engage in the treatment relationship the MAT Team extends to individuals, families, and villages, and good work is being done on both sides.

References

1. State of Alaska Epidemiology. *http://www.epi.alaska.gov/bulletins/docs/b1991_13.htm*
2. A Brief History of Alaska Statehood (1867-1959), Eric Gislason. *http://xroads.virginia.edu/~cap/BARTLETT/49state.html*
3. Governing Alaska: Native citizenship and land issues. Copyright 2004 – 2006 Alaska Humanities Forum. *http://www.akhistorycourse.org/articles/article.php?artID=136*
4. Catholic Encyclopedia: Alaska. *http://www.newadvent.org/cathen/01246b.htm*
5. The Alaska Bureau of Vital Statistics, 2002-2004. *http://www.hss.state.ak.us/dph/bvs/death_statistics/Leading_Causes_Census_Race/body15.html*
6. American Association of Suicidology. *http://www.suicidology.org/displaycommon.cfm?an=1&subarticlebr=21*
7. Statewide Suicide Prevention Council. *Alaska suicide prevention plan*. September 2004: 17.
8. Napoleon, H. 1996. *Yunyaraq: The way of the human being*. University of Alaska: Fairbanks.
9. Miller, S., Duncan, B., Hubble, M. *What works in therapy*. *http://www.psychjourney.com/What%20Works%20In%%20Therapy.htm*



Alaska Native Medical Center Recognized as a Center for Excellence in Evidence-Based Practice

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The Alaska Native Medical Center (ANMC) has a long-standing commitment to providing the highest quality healthcare and excellent customer service, as recognized through the hospital's mission and vision.

> *The Alaska Native Medical Center shall fulfill the mission and vision of the Alaska Native Tribal Health Consortium and Southcentral Foundation by working together with the Native Community to achieve wellness by providing the highest quality health services for all Alaska Natives.*

Clinicians at the bedside are now questioning practice and using scientific knowledge to guide health care decision-making, while also honoring patient preferences and values. Since 2001, the ANMC Department of Nursing Services (DoNS), as a non-academic medical center, has engaged in a paradigm shift in enhancing professional nursing practice and elevating the quality of patient care. Evidence-based practice provides the process to intersect the use of the best scientific evidence while partnering with patients to make the best decisions based on their values and continuously improve the quality of health care provided.

A unique collaboration has led to ANMC's development as a Center of Excellence in evidence-based practice. The ANMC DoNS has partnered with a nationally and internationally recognized nurse researcher, Marita Titler PhD, RN, FAAN from the University of Iowa Hospitals and Clinics (UIHC). The collaboration focuses upon promoting adoption of evidence-based practices by embedding evidence-based care into ANMC's organizational culture and daily work processes. The department has sponsored, co-sponsored or supported a number of educational programs supporting expanding nursing knowledge and use of evidence-based practice. Among these programs is the Evidence-Based Practice Staff Nurse Internship (EBPSNI), which promotes staff nurses and nurse managers, in partnership with their unit-based nursing teams, developing a clinically relevant evidence-based practice project for their clinical area, and driving excellence in patient care.

These 2004-2006 internship teams learned and applied the Iowa Model of Evidence-based Practice to Promote Quality Care toward four highly successful outcomes: 1) *Healthy Grieving for Alaska Native Patients*: a culturally appropriate end-of-life grief support program for patients and family members experiencing loss that established an innovative comfort care companion program and grief support algorithm providing increased family and staff satisfaction; 2) *Pneumovax Administration* for at-risk outpatients yielded a 70% increase in clinic vaccination rates; 3) *MRSA Survey Tool* for inpatient surgical patients identified potential MRSA patients for admission isolation to prevent nosocomial infections; and 4) *Triage in an Ambulatory Oncology Clinic* increased patient satisfaction and decreased unnecessary use of emergency services.

Organizational commitment to the internship continues, and the next program will begin in November 2006. In the past, the internship teams were mentored by experts from the UIHC. Since developing extensive internal expertise, ANMC will teach and coordinate our own EBPSNI this fall with the Nursing Research and Evidence-based Practice Council functioning as faculty and facilitators.

Six additional nurses have developed leadership skills in facilitating evidence-based care through attending the Advanced Practice Institute: Promoting Adoption of Evidence Based Care at UIHC. These nurses have led practice changes and made improvements in patient outcomes for breastfeeding education, a rooming-in babies project, a rapid response team development, continuous renal replacement therapy in the CCU, and sedation use in the CCU. Efforts toward developing a cohort of skilled professional nurses sustain the organizational pursuit of the highest quality of care for the Alaska Native population.

ANMC has been recognized for excellence in a number of ways. ANMC was awarded the prestigious Magnet designation by the American Nurses Credentialing Center in 2003, the first and only such recognition in Alaska and tribal healthcare. Excellence is also apparent through numerous presentations and outreach efforts provided by ANMC nurses, including at the Sigma Theta Tau International's evidence-based practice Pre-Conference in 2005 and the two recent national Magnet Conferences in 2004 and 2005. ANMC hosted a 2005 Magnet Conference in Anchorage to encourage facilities throughout Alaska to pursue the magnet concept that recognizes nursing excellence.

The unique hospital infrastructure at ANMC supports the designation as a Center of Excellence in Evidence-based Practice and is based on a strong foundation from our core values of providing the highest quality healthcare and excellent customer service. Nursing shared governance supports evidence-based practice and builds upon the strengths and leadership of nurses throughout the organization, promoting best practices while incorporating and honoring patient values. Central to this model is the belief that staff nurses play a key role in excellence.

Nurses at ANMC would like to acknowledge the journey over the last five years, through continuous and sustained efforts and collaboration with UIHC. Through our leadership and strong collaboration, in 2006 the Alaska Native Medical Center is recognized for distinguished performance in building a Center of Excellence in Evidence-Based Practice.

Editor's Note: The following is a digest of the monthly Obstetrics and Gynecology Clinical Consultant's Newsletter (Volume 4, No. 9, September 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

FDA approves OTC access for Plan B for 18 and older: a 'catch-22' for AI/AN patients?

The US Food and Drug Administration (FDA) announced approval of Plan B, a contraceptive drug, as an over-the-counter (OTC) option for women age 18 and older. Plan B is often referred to as emergency contraception or the "morning after pill." It contains an ingredient used in prescription birth control pills — only in the case of Plan B, each pill contains a higher dose and the product has a different dosing regimen. Like other birth control pills, Plan B has been available to all women as a prescription drug. When used as directed, Plan B effectively and safely prevents pregnancy. Plan B will remain available as a prescription-only product for women age 17 and under.

Duramed, a subsidiary of Barr Pharmaceuticals, will make Plan B available with a rigorous labeling, packaging, education, distribution, and monitoring program. In the CARE (Convenient Access, Responsible Education) program Duramed commits to:

- Provide consumers and health care professionals with labeling and education about the appropriate use of prescription and OTC Plan B, including an informational, toll-free number for questions about Plan B;
- Ensure that distribution of Plan B will only be through licensed drug wholesalers, retail operations with pharmacy services, and clinics with licensed health care practitioners, and not through convenience stores or other retail outlets where it could be made available to younger women without a prescription;
- Packaging designed to hold both OTC and prescription Plan B. Plan B will be stocked by pharmacies behind the counter because it cannot be dispensed without a prescription or proof of age; and
- Monitor the effectiveness of the age restriction and the safe distribution of OTC Plan B to consumers 18 and above and prescription Plan B to women under 18.

This action concludes an extensive process that included obtaining expert advice from a joint meeting of two FDA advisory committees and providing an opportunity for public comment on issues regarding the scientific and policy questions associated with the application to switch Plan B to OTC use. Duramed's application raised novel issues regarding simultaneously marketing both prescription and non-prescription Plan B for emergency contraception, but for different populations, in a single package. The agency remains committed to a careful and rigorous scientific process for resolving novel issues in order to fulfill its responsibility to protect the health of all Americans.

OB/GYN CCC Editorial comment

Let's make sure that it is not a "catch-22" for AI/AN patients

Why a "catch-22"? As drugs develop over-the-counter status, many Indian health pharmacies have been known to drop the drug from their formulary for cost and space reasons. So if it had been a complete change to OTC status, many of our more cash strapped patients would actually have less access to Plan B, as it may have been removed from the formulary, and that particular patient may not have had the funds to buy it OTC. Ironically, the fact that a prescription is still required for this particular product for women less than 18, you will actually preserve Plan B's place on your facility's formulary. I would urge you to remind your P&T Committee of that requirement, so that Plan B stays on formulary at your facility.

From Your Colleagues: Burt Attico, Phoenix

Congenital anomalies linked to NSAID use in first trimester

Background. Many women take non-steroidal anti-inflammatory drugs (NSAIDs) during pregnancy, but the risks for the infant remain controversial. We carried out a study to quantify the association between those women prescribed NSAIDs in early pregnancy and congenital anomalies.

Conclusions. Our study suggests that women prescribed NSAIDs during early pregnancy may be at a greater risk of having children with congenital anomalies, specifically cardiac septal defects.

Ofori B, et al. Risk of congenital anomalies in pregnant users of non-steroidal anti-inflammatory drugs: a nested case-control study. *Birth Defects Res B Dev Reprod Toxicol.* 2006 Aug 23.

Hot Topics: Obstetrics

Cesarean delivery: increased risk of postpartum maternal death versus vaginal delivery

Results. After adjustment for potential confounders, the risk of postpartum death was 3.6 times higher after cesarean than after vaginal delivery (odds ratio 3.64, 95% confidence interval 2.15–6.19). Both prepartum and intrapartum cesarean delivery were associated with a significantly increased risk. Cesarean delivery was associated with a significantly increased risk of maternal death from complications of anesthesia, puerperal infection, and venous thromboembolism. The risk of death from postpartum hemorrhage did not differ significantly between vaginal and cesarean deliveries.

Conclusion. Cesarean delivery is associated with an increased risk of postpartum maternal death. Knowledge of the causes of death associated with this excess risk informs contemporary discussion about cesarean delivery on request and should inform preventive strategies.

Deneux-Tharaux C, et al. Postpartum maternal mortality and cesarean delivery. *Obstet Gynecol.* 2006 Sep;108(3):541-548.

OB/GYN CCC Editorial comment

Deneux-Tharaux C, et al. joins the expanding literature that has documented the downside of the now nearly 30 percent cesarean delivery rate. Here are three recent additions to that growing body of literature. In the meantime, please continue to be an advocate for vaginal delivery in your AI/AN patients when possible.

Here is an excerpt from a recent ACOG Press Release on this topic:

Cesarean Delivery Associated with Increased Risk of Maternal Death from Blood Clots, Infection, Anesthesia

"…Many developed countries, including the US and France, have seen a considerable rise in the number of cesareans performed each year (28% and 20% in 2003, respectively). Women today may view cesarean delivery as a relatively low risk procedure and to request it for themselves, even though it may not be medically necessary. Though rates of maternal death in most developed countries are relatively low — US women have a 1 in 3,500 chance of pregnancy-related death — incidences of maternal mortality have not significantly decreased in the last two decades. These study results suggest that mode of delivery may be a modifiable risk factor, and in some cases, choosing vaginal delivery over non-medically indicated cesarean delivery could help lower maternal mortality rates…."

The online version of this CCCC has four other articles describing other adverse outcomes from cesarean delivery.

Gynecology

See and treat: HPV positive, HSIL cytology, and a high-grade impression at 2nd colposcopy

Conclusion. In the ALTS population, after the first colposcopic diagnosis of <CIN2, clear risk stratification for CIN3 outcomes was obtained among women with a subsequent HPV-positive test. Because absolute risk for histologic CIN3 outcomes was high for women with HPV positive tests, HSIL cytology, and a high-grade impression at second colposcopy, it is worth considering whether this combination of findings might warrant immediate excisional therapy in some circumstances.

Walker JL, et al. Predicting absolute risk of CIN3 during post-colposcopic follow-up: results from the ASCUS-LSIL Triage Study (ALTS). *Am J Obstet Gynecol.* 2006 Aug;195(2):341-8.

Child Health

Metformin useful for treating PCOS in adolescents

Polycystic ovary syndrome (PCOS) is a common hormonal disorder in women that is characterized by excessive androgen and menstrual dysfunction. Originally believed to be a cosmetic and fertility problem, PCOS can increase risk of cardiovascular disease and diabetes mellitus. The cause of PCOS is not fully understood, but insulin resistance and hyperinsulinemia can increase androgen production in the ovaries and adrenal glands. Studies have found that weight loss and the use of insulin-sensitizing agents have improved clinical status and hyperinsulinemia, and reduced excessive androgens in women with the syndrome. However, these studies do not address PCOS in adolescents. Bridger and colleagues evaluated insulin-sensitizer (metformin [Glucophage]) use with healthy lifestyle counseling in adolescents with the disorder.

The authors conclude that metformin lowers testosterone levels and improves menstrual regularity in adolescent women with PCOS. They also note an improvement in HDL cholesterol but none in other lipid parameters. There is a trend toward improvement in insulin sensitivity in the metformin group, but long-term follow-up studies need to be performed to determine if it is significant.

Bridger T, et al. Randomized placebo-controlled trial of metformin for adolescents with polycystic ovary syndrome. *Arch Pediatr Adolesc Med*. March 2006;160:241-6.

Chronic disease and Illness

Varenicline was significantly more efficacious for smoking cessation

Context: The alpha4beta2 nicotinic acetylcholine receptors (nAChRs) are linked to the reinforcing effects of nicotine and maintaining smoking behavior. Varenicline, a novel alpha4beta2 nAChR partial agonist, may be beneficial for smoking cessation.

Conclusion: Varenicline was significantly more efficacious than placebo for smoking cessation at all time points and significantly more efficacious than bupropion SR at the end of 12 weeks of drug treatment and at 24 weeks.

Gonzales D, et al. Varenicline, an alpha4beta2 nicotinic acetylcholine receptor partial agonist, vs sustained-release bupropion and placebo for smoking cessation: a randomized controlled trial. *JAMA*. 2006 Jul 5;296(1):47-55.

OB/GYN CCC Editorial Comment
Varenicline for smoking cessation: deterrent effect — definite promise, but no panacea

Varenicline has just been released to the public and may signify an advance, as it both decreases the desire for nicotine and provides a deterrent effect. First, by partially activating the nAChR, craving and withdrawal symptoms may be mitigated following abrupt cessation or reduction of nicotine consumption. Second, by occupying part of the receptors and blockading nicotine binding, a partial agonist may also act as a partial antagonist to reduce smoking satisfaction prior to quitting or following a slip or relapse.

In the above issue of JAMA, Gonzales and colleagues, Jorenby and colleagues, and Tonstad and colleagues report the results of three randomized trials on the efficacy of varenicline for achieving smoking cessation. The JAMA Editorial points out, "It is important for clinicians to moderate some of the potential enthusiasm that is likely to occur as the result of the publication of these trials, FDA approval of the drug, and promotion by this manufacturer. On the one hand, these studies demonstrate that varenicline is associated with higher smoking cessation rates than placebo and may produce better cessation rates than bupropion, a first-line–approved smoking cessation drug. Importantly, varenicline represents a third class of drug with probably a different mechanism of action than either nicotine replacement therapy or bupropion. On the other hand, varenicline definitely is not a panacea for smoking cessation. Many participants in these trials experienced adverse events, stopped taking their study medication before they should have, and discontinued participation in the studies. Importantly, the majority of participants in these three studies did not quit smoking even with varenicline."

Treatobacco.net is another resource for those working on the treatment of tobacco dependence throughout the world. It presents authoritative, evidence-based information about the treatment of tobacco dependence, under five headings: Efficacy, Safety, Demographics and Health Effects, Health Economics, and Policy. Go to http://www.treatobacco.net/home/home.cfm.

Klesges RC, et al. Varenicline for smoking cessation: definite promise, but no panacea. *JAMA.* 2006 Jul 5;296(1):94-5.

Features: ACOG
Human Papillomavirus Vaccination

Abstract. The US Food and Drug Administration recently approved a quadrivalent human papillomavirus (HPV) vaccine for females aged 9 - 26 years. The American College of Obstetricians and Gynecologists recommends the vaccination of females in this age group. The Advisory Committee on Immunization Practices has recommended that the vaccination routinely be given to girls when they are 11 or 12 years old. Although obstetrician-gynecologists are not likely to care for many girls in this initial vaccination target group, they are critical to the widespread use of the vaccine for females aged 13 - 26 years. The quadrivalent HPV vaccine is most effective if given before any exposure to HPV infection, but sexually active women can receive and benefit from the vaccination. Vaccination with the quadrivalent HPV vaccine is not recommended for pregnant women. It can be provided to women who are breastfeeding. The need for booster vaccination after five years has not been established (see Harper et al below). Health care providers are encouraged to discuss with their patients the benefits and limitations of the quadrivalent HPV vaccine and the need for continued routine cervical cytology screening.

Human papillomavirus vaccination. ACOG Committee Opinion No. 344. American College of Obstetricians and Gynecologists. *Obstet Gynecol*. 2006;108:699–705.

Breastfeeding: Suzan Murphy, PIMC
Engorgement — it only feels like it is going to last forever

New mothers might forget the pain of childbirth, but they usually do not forget the discomfort of engorgement. New moms describe engorgement as "having rock hard, huge breasts," "being so full that the baby can't latch," "having pain all over, even into the back," and generally a frustrating and difficult problem.

If engorgement occurs, it will be 2 - 5 days after birth. As hormones shift to support the new phase of lactation. colostrum transitions to mature milk, and the milk supply increases. If the baby is not drawing the milk off the breast every 2 – 3 hours, the breasts can become congested. The congestion usually lasts a long 24 - 48 hours. Some moms will experience a low-grade fever (100 degrees).

Treatment for engorgement is:

- Reassurance that the engorgement/swelling/congestion will calm down in 24 - 48 hours.
- Apply cold compresses to the breasts between feedings. Some moms report relief with applying cold, washed cabbage leaves to the breast, replacing them as they wilt. Research has not found clinical difference when cabbage is compared to other treatments such a cold packs. However, no harm has been found and cabbage may be more accessible to families.
- Use gentle heat while nursing. Warm packs are soothing and allow more milk to be released.
- If latching in not possible, hand express or use a pump to gently express enough milk for the areola to soften and the baby to latch. If a hospital grade pump is available, use it. Using a department store pump or vigorously hand pumping can damage the nipple, aggravating an already difficult situation.
- Sometimes with the arrival of the mature milk, babies will change how they suck. This could be because the shape of the breast and/or nipple have changed – but it can mean a dysfunctional latch, sore nipples, and an

unhappy dyad. So ask the mom, watch and help her make the sure the latch is still okay.

- Stress to the mom that breastfeeding or expressing milk about every 2 hours for the next 24 hours will help. Assure the mom that it will get better.
- Motrin/ibuprofen as an anti-inflammatory treatment helps also. It is generally considered safe to use with lactation.

Prevention will help. To keep engorgement from happening, encourage new families to breastfeed 8 - 12 times in 24 hours – that is about every 2 - 3 hours. Caution new families that letting the baby or mom sleep through feedings in the first 2 - 5 days can have miserable results. Once the new family is past the first five days, profound engorgement goes away. The mom may notice that her breasts become softer as the weeks progress. Sometimes moms will fear that their milk supply is dwindling. It helps to assure the mom that her milk is still there; her body is becoming accustomed to it being there.

References: online

International Health Update Claire Wendland, Madison, WI
Health care and indigenous peoples: the other side of the planet

New Zealand's indigenous minority people, the Maori, have substantially worse health indicators than the majority population, mostly descendants of British colonizers or later migrants. The authors of this article questioned whether part of the problem might be a lesser quality of hospital care for Maori patients. New Zealand's health system is publicly funded; hospital care is both free of charge and reasonably evenly geographically distributed; 90% of the population lives within an hour's drive of a hospital.

A team of research assistants reviewed records of nearly 6,000 admissions randomly selected from a stratified sample of six tertiary care hospitals, four secondary hospitals with 300 beds or more, and four secondary hospitals with less than 300 beds. Outpatient, psychiatric, and rehabilitation admissions were excluded. They identified adverse events (any unintended injury resulting in disability that could be considered at least in part iatrogenic) and used multiple logistic regression to assess the likelihood of an adverse event against gender, socioeconomic status, indigeneity status, and age. Age-adjusted rates of preventable adverse events were found to be significantly higher for Maori patients, especially for those who were over 45 or hospitalized for a musculoskeletal or digestive problem. Interestingly, Maori patients had a significantly *lower* risk of adverse outcomes related to surgery or obstetrical admissions, data the authors present in tables but do not discuss. Socioeconomic status did not affect adverse events.

Although the authors concluded that a higher likelihood of suboptimal care might contribute to the poor health indicators of New Zealand's Maori population, their study raises more questions than it answers. The utility of chart audits for assessing quality of care has been questioned, for instance; as the authors acknowledge, preventable adverse events are only one small measure of overall health system access and process issues that may be important in indigenous health. Nonetheless, the study is an interesting contribution to a surprisingly small body of research on health systems issues for indigenous people.

Davis P, et al. Quality of hospital care for Maori patients in New Zealand: retrospective cross-sectional assessment. *The Lancet*. 367:1920-5, June 10, 2006.

Medical Mystery Tour
First trimester screening: How would you counsel this patient?

Let's review last week's case. Ms. L. is a 40 y/o G1P0 at 9 weeks gestation (by a 6 week ultrasound) and is aware of her age-related risks for fetal aneuploidy. She inquires about the possibility of early screening. Which ONE of the statements below is the most accurate way to counsel her:

A. Ultrasonic measurement of fetal nuchal translucency combined with biochemical tests between 11 and 13 weeks may detect close to 90% of chromosomally abnormal fetuses.
B. Early trimester screening has a better detection rate, but a higher false positive rate, than mid-trimester screening.
C. Women who have first trimester screening that is negative will not need further testing.

Answer: A. Ultrasonographic measurement of the fetal nuchal translucency combined with biochemical tests between 11 and 13 weeks may detect close to 90% of chromosomally abnormal fetuses. Ms. L. is likewise 40 years old and has the same age-related risks as Ms. Walks Alone. First trimester screening between 11 and 13 weeks may be an option for her if you are able to refer her to a site where she can have nuchal translucency (NT) performed by a certified sonographer, and have free beta HCG and PAPP-A determinations done. Studies to date demonstrate that such testing will have an 85 - 89 % detection rate for fetal aneuploidy, if the NT is reliably measured. These detection rates and false positive rates are comparable, or better, than a second trimester strategy utilizing the "quad screen" and high resolution ultrasound, and much better than "triple testing." Remember that second trimester screening for neural tube defects is still necessary since that issue will not be addressed by this testing. The important logistic issue is whether you have the resources available to provide accurate testing and appropriate follow up. If so, and if the patient requests it, this is certainly an appropriate strategy for this patient.

MFM Editorial comment: George Gilson, MFM, ANMC
Do we need to do MSAFP testing after first trimester Down syndrome screening?

A recent Fetal Medicine Foundation newsletter (Vol.2, Issue 3, July 2006) discussed this topic and reached some interesting conclusions that may be pertinent to our practices. The current standard of care in the US has been in place since the early 1980s, and is to offer maternal serum alpha fetoprotein (MSAFP) testing to all pregnant women in order to screen for fetal open neural tube defects (ONTD), including anencephaly and meningomyelocele. Other important abnormalities suggested by an elevated MSAFP are the abdominal wall defects, including gastroschisis and omphalocele. Most MSAFP determinations are done between 15 and 20 weeks gestation, and are now part of either the "triple" or "quad" screens, which are also done to screen for fetal Down syndrome (DS). Unfortunately, MSAFP has less than optimal sensitivity and specificity for ONTD, with a detection rate of about 80% (MSAFP >2.5 MoM) at a fixed false positive rate of 5%.

Second trimester ultrasound, on the other hand, has sensitivity and specificity for ONTD that are >95%. The diagnosis of anencephaly is usually immediate. The diagnosis of spinal defects is also excellent. In addition to vertebral column defects, the cranial findings of an abnormal cerebellum, the "banana" sign (Chiari type II malformation), and the resultant cranial deformity of the "lemon" sign, have been well described for several decades. Fetal abdominal wall defects are usually also easily diagnosed with ultrasound. The more rare fetal problems, such as the genitourinary abnormalities, bowel obstruction, and teratomas, which are also associated with elevated MSAFP, are also usually apparent on ultrasound.

If your patient has chosen first trimester "combined" screening for Down syndrome (measurement of the fetal nuchal translucency (NT) and determinations of pregnancy associated plasma protein A [PAPP-A] and free beta HCG between 11 and 13 weeks), does she also need to undergo MSAFP screening in the second trimester? Does she need a second trimester anatomic survey to look for the abnormalities detailed above? Ultrasound at 11 - 13 weeks should easily be able to diagnose anencephaly, as well as abdominal wall defects. At the present time however, there are no studies that have looked at the accuracy of screening for spinal defects at this gestational age.

In our system in Alaska, those women who have had negative first trimester screening for fetal DS receive a second trimester sonographic anatomic survey, and are thus screened for ONTD with the modality with the best detection rate. If a woman has had a negative first trimester screen, we have elected not to do "integrated" DS screening with a quad screen in the second trimester, and thus we do not get an MSAFP. Women who present after 13 weeks can elect multiple marker screening, with MSAFP, and may also require second trimester ultrasound as indicated. However, this scheme may not be most cost-effective in your setting, especially if "level II" ultrasound services are not readily available. Likewise, remember that ACOG guidelines continue to recommend MSAFP screening for women who have had first trimester screening, despite the above evidence. As this is a continuously evolving field, remember to "stay tuned for further details…."

OB/GYN CCC Editorial comment

For more background on this and other prenatal genetic screening questions, please go to this free CME module, which is also just a great resource: Prenatal genetic screening: Serum and Ultrasound at *http://www.ihs.gov/MedicalPrograms/MCH/M/TM01.cfm.*

References: online

Midwives Corner: Lisa Allee, CNM, Chinle
Postpartum Care: Still the neglected stepchild of perinatal services?

Noelle Borders, CNM, a recent UNM graduate, did a meta-analysis of the literature on postpartum health, experience, and care. What she found overall was a dearth of good studies, especially in this country, but in those available, mainly from the UK, Australia, New Zealand, and Scandinavia, she did find intriguing information about women's experience of postpartum.

The vast majority (87 - 94%) of postpartum women report at least one health problem in the immediate (birth to 3 months) postpartum period. These include: backache, urinary stress incontinence, fecal incontinence, urinary frequency, depression and anxiety, hemorrhoids, extreme tiredness, frequent headaches, migraines, perineal pain, constipation, increased sweating, acne, hand numbness or tingling, dizziness, hot flashes, dysparunia, decreased libido, or breast discomfort (lactating or not).

Many of these problems slowly resolve with time, but some worsen, and new ones occur. One fascinating trend is that perineal pain is reported by 25 - 30% at 0 - 3 months, 11% at 3 - 6 months and 21% at greater than six months. Two small studies tried to assess functional status at six weeks (when we conventionally call the postpartum over and done with) and found that none of the mothers had resumed full functional status per self reports. Another very important finding was that "women experience an array of symptoms, the majority of which they may never report to health care providers."

Borders then looks at the effect of delivery method on postpartum health. The literature shows that women with a cesarean or assisted vaginal birth fare significantly worse than women who had a spontaneous vaginal birth. For example, women with an assisted vaginal birth had more perineal pain, constipation, hemorrhoids, breakdown of stitches, sexual problems, and fecal incontinence, although the last was not associated with vacuum assists.

After cesarean section, women had more bodily pain, backaches, and greatly increased risk of readmission for problems such as hemorrhage, uterine infection, wound complications, cardiopulmonary and thromboembolic conditions, pelvic injury, genitourinary problems, etc.. The much-touted-of-late protective effects of cesarean birth on urinary and fecal incontinence were not borne out. Fecal incontinence was less frequent after cesarean births but did happen, and the urinary incontinence protection was only in the immediate postpartum. It was negated entirely if it was c-section number three or more and, actually, women who had cesareans were more likely to report other urinary problems by six months postpartum. Interestingly headaches and tiredness were not related to mode of delivery and, contrary to common beliefs, neither was depression. However, maternal satisfaction, fulfillment and distress/sense of feeling cheated were related to delivery mode. Spontaneous vaginal birth gave women the highest sense of fulfillment and satisfaction and the lowest levels of distress or sense of being cheated, while assisted vaginal births and c-sections were the exact opposite, and these findings persisted after six months. From the literature, Borders makes it clear that the gold standard for optimal postpartum health is a spontaneous vaginal birth.

Borders next tackles research and care — both are greatly lacking, especially in the United States. She calls for more research, quoting the results of a study using focus groups where participants voluntarily asked "What is normal postpartum recovery?" and no one knew the answer. She also very nicely points out that just doing research is not enough — the information then needs to be shared with women so they better know what to expect postpartum, and with clinicians so they can provide better care.

As for care, she points out how abysmal the US standard of one visit at six weeks really is. She reports an amazing standard in England of 6 - 7 home visits by a midwife in the first two weeks, other visits as needed, and a check up at 6 - 8 weeks. Other models include the WHO's recommendation of visits at times of greatest need, i.e., 6 hours, 6 days, 6 weeks and 6 months; a study that looked at customizing care to each woman's response on a symptoms checklist and which found lower rates of depression and higher satisfaction with care; and another study that found no difference with simply adding a 1-week visit to the 6-week visit model. Borders calls for all of us "to improve postpartum care by experimenting with flexible ways of meeting women's needs after the birth of a baby" and reminds us of the tremendously far reaching effects this improvement in postpartum care can have.

Editorial Comment: Lisa Allee, CNM

When I was in midwifery school more than 10 years ago, the poor state of postpartum care in this country was decried and we were encouraged to do better. I read this article and realized not much has changed in the ensuing years. I felt a bit personally reassured that I had for a time fulfilled our postpartum professor's dream when I had my own home birth practice and I was able to provide home visits at 24 hours and 3 - 5 days, office visits at 2 and 6 weeks, and frequently stayed in touch with women beyond that. The reality for us in IHS is drastically different, but I have reason for hope. Here at Chinle we have started offering two week postpartum visits, and the response has been encouraging. Another big source of encouragement is Centering Pregnancy, which is sweeping through IHS. Many non-IHS Centering sites have found that women and families want to continue the groups past birth, and so postpartum visits have been added, and Centering Parenting (for the whole first year) has been born. As we embrace Centering in IHS, let's be sure to remember the neglected stepchild and include postpartum care. If you are not doing Centering, or for the women not electing to do Centering, we also need to heed Borders call for innovative, flexible change in how we do postpartum care and support — home visits, phone calls, support group — dream big.

Borders, N. After the afterbirth: a critical review of postpartum health relative to method of Ddelivery. *Journal of Midwifery & Women's Health*. Vol 51 No 4 July/August 2006.

Midwives applaud new false labor EMTALA regulations

The American College of Nurse-Midwives (ACNM), the nation's oldest women's health organization, commends the Centers for Medicare and Medicaid Services (CMS) for changes it made to regulations governing the Emergency Medical Treatment and Labor Act (EMTALA), that highlight the important role of certified nurse-midwives (CNM) and certified midwives (CM), and helps to improve hospital efficiency with respect to discharging women who are not yet in labor.

The CMS published its final rule (link below) addressing changes to the hospital inpatient payment rates for fiscal year 2007. As part of this final rule, it also addresses the definition of "labor" within the regulations that govern the EMTALA. The final rule changes existing regulations to revise the definition of "labor" in §489.24(b) to state that, "a woman experiencing contractions is in true labor unless a physician, certified nurse-midwife, or other qualified medical person acting within his or her scope of practice as defined in hospital medical staff bylaws and State law, certifies that, after a reasonable time of observation, the woman is in false labor."

The current regulation requires a physician to certify when a woman is in false labor. While not specifically named in the new regulation, CMs would also be covered by this new definition in that it identifies that other qualified personnel acting within their scope of practice may certify when a woman is in false labor. CMS states in the rule that the effect of this change would be to have a single, uniform policy on the personnel who are authorized to make a determination as to whether an individual has an emergency medical condition. The final rule takes effect October 1, 2006.

"This change demonstrates that the bureaucratic process

can work," stated Katherine Camacho Carr, CNM, PhD, president of the ACNM. "ACNM has been working with an EMTALA Technical Advisory Group and CMS officials for more than a year and a half to get this regulation modified. ACNM appreciates the thoughtful work CMS and the EMTALA TAG put into making this modification that will benefit the women CNMs and CMs serve."

ACNM also wishes to express its appreciation to the American College of Obstetricians and Gynecologists for its support during the process.

OB/GYN CCC Editorial comment:

The changes above represent a major shift in the regulation on how false labor can be triaged. Kudos to ACNM and ACOG for their hard work on this. Each facility should re-evaluate their triage policies and procedures based on the new regulations.

Navajo News: Jean Howe, Chinle
Implanon: a single rod contraceptive implant

On July 17, 2006 the FDA approved a new single rod contraceptive implant for use in the US. Implanon consists of a 40 x 2 mm (about the size of a matchstick) rod of ethylene vinyl acetate (EVA) and etonogestrel (ENG). The total dose of 68mg of ENG is initially released at a rate of 60 micrograms per day, gradually declining to 30 micrograms per day over three years of use. Implanon has been sold in over 30 countries worldwide and has been used by more than 2.5 million women since 1998. This is the first contraceptive implant to be marketed in the US since Norplant, a six-rod system, was withdrawn from the market in 2000. Because it is a single rod system, insertion and removal are simplified; one study (Zheng) comparing Implanon and Norplant demonstrated insertion times of 0.61 minutes vs. 3.90 minutes and removal times of 2.18 minutes vs. 11.25 minutes respectively.

Contraceptive efficacy is achieved primarily by suppression of ovulation by the effect of etonogestrel on the hypothalamic-pituitary-ovarian axis. A secondary effect is thickening of the cervical mucus, making it less penetrable to sperm. Additionally, the endometrial lining is rendered less favorable for implantation. Overall efficacy is cited as >99%, with most failures in study populations occurring at the time of insertion or removal. The US study populations did not include women over 130% of their ideal weight; it is unclear if efficacy is reduced in obese women.

As with most hormonal contraception, changes in bleeding patterns are likely and are the most frequent reason for patient dissatisfaction and for requests for early removal. There is no single bleeding pattern to be anticipated; some women experience amenorrhea while others have more frequent bleeding. One US study (Funk, et al.) followed 330 women using Implanon for 474 women-years of exposure. Amenorrhea rates from month 4 onwards ranged from 14 - 20%. Of women enrolled in the study population, withdrawal was attributed to the following side effects: bleeding pattern changes (13%), emotional lability (6.1%), weight increase (3.3%), depression (2.4%), and acne (1.5%). To improve patient tolerance, extensive counseling prior to selection of this method will be essential.

Organon, the manufacturer of Implanon, is sponsoring training for clinicians on insertion and removal techniques. Implanon will not be dispensed to providers who have not completed the training. Training sessions can be arranged by calling 1-877-IMPLANON and are expected to start this fall. Organon states that Implanon will be available in the fourth quarter of this year; no pricing has been established yet, but an Organon representative states that the price will be "no more than the cost of a 3-year supply of combined oral contraceptive pills." Similarly, information on federal pricing has not yet been released.

Implanon is likely to be a useful addition to the contraceptive options available in the US. Women selecting this method must be carefully counseled about bleeding irregularities to improve tolerance. Addition to the formulary at IHS facilities is likely to be influenced by cost; availability of federal pricing will be important in making this method widely available throughout IHS.

The manufacturer's website is *http://www.IMPLANON-USA.com/*.

Perinatology Picks: George Gilson, MFM, ANMC
How important is maternal intratpartum glucose to neonatal hypoglycemia?

Summary. Six of the 7 studies of maternal intrapartum glycemic control (total N=660) demonstrate a lower incidence of neonatal hypoglycemia in women who were euglycemic during labor. Surprisingly, neonatal hypoglycemia was not necessarily correlated with maternal antepartum glycemic control. There is no Cochrane review of this topic.

References: online

STD Corner: Lori de Ravello, National IHS STD Program
Sexual education/HIV education and youth

Here are three reports from a recent WHO series on Sexual Education/HIV Education and youth in the developing world. I think much of it is relevant for reservation communities. All three reports (and more) can be downloaded from the full WHO report at this site below.

Effectiveness of sex education and HIV education interventions in schools

Conclusions. A large majority of school-based sex education and HIV education interventions reduced reported risky sexual behaviours in developing countries. The curriculum-based interventions having the characteristics of effective interventions in the developed and developing world should be implemented more widely. All types of school-based interventions need additional rigorous evaluation, and more rigorous evaluations of peer-led and non-curriculum-based

interventions are necessary before they can be widely recommended.

Kirby D, Obasi A, Laris BA. The effectiveness of sex education and HIV education interventions in schools in developing countries. *World Health Organ Tech Rep Ser*. 2006;938:103-50; discussion 317-41.

Effectiveness of community interventions targeting HIV and AIDS prevention at youth

Conclusions. Considerable creativity, ingenuity, and commitment are demonstrated in designing and delivering HIV interventions, but there is a paucity of adequate evidence of their effectiveness. This precludes identification of the types of interventions that actually produce the targeted changes. It is essential that governments and donor agencies invest in high quality process and outcome evaluations and cost-benefit analyses so that effective interventions can be identified and promoted.

Maticka-Tyndale E, Brouillard-Coylea C. The effectiveness of community interventions targeting HIV and AIDS prevention at young people in developing countries. *World Health Organ Tech Rep Ser*. 2006;938:243-85; discussion 317-41

Effectiveness of mass media in changing HIV/AIDS-related behaviour among youth

Conclusions. We found that mass media programmes can influence HIV-related outcomes among young people, although not on every variable or in every campaign. Campaigns that include television require the highest threshold of evidence, yet they also yield the strongest evidence of effects. This suggests that comprehensive mass media programmes are valuable.

Bertrand JT, Anhang R. The effectiveness of mass media in changing HIV/AIDS-related behaviour among young people in developing countries. *World Health Organ Tech Rep Ser*. 2006;938:205-41; discussion 317-41.

Sexually Transmitted Diseases Treatment Guidelines, 2006

These guidelines for the treatment of patients who have STDs were developed by CDC after consultation with a group of professionals knowledgeable in the field of STDs. Physicians and other health care providers play a critical role in preventing and treating STDs, and these guidelines are intended to assist with that effort. Go to *http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5511a1.htm.*

October is Domestic Violence Awareness Month October 11 is Health Cares About Domestic Violence Day

October is national Domestic Violence Awareness Month (DVAM). This is an annual observance sponsored by the National Coalition Against Domestic Violence. Every October, across the country, domestic violence survivors and advocates, health care providers, elected officials, law enforcement and public safety personnel, business leaders, faith-based groups, and many others are organizing and participating in domestic violence memorial activities, public education campaigns, and community outreach events. If you would like more information about DVAM activities and how your facility can participate, visit *www.ncadv.org.*

Join thousands of other health care providers for the eighth annual Health Cares About Domestic Violence Day (HCADV Day) on October 11, 2006!

Sponsored by the Family Violence Prevention Fund (FVPF). HCADV Day is a nationally recognized awareness campaign that takes place annually on the second Wednesday of October. HCADV Day aims to educate members of the health care community about routine domestic violence (DV) assessment and the long term health implications of DV. If you would like more information about how your facility can participate in Health Cares About Domestic Violence Day as well as additional information about Domestic Violence Awareness Month, visit *hltp://endabuse.org/hcadvd/.*

Health care providers are in a unique position to identify and assist victims of domestic violence. If you would like more information about how to improve the response of your facility to domestic violence visit *www.endabuse.org/health.*

Sample hospital and clinic domestic violence policies and procedures and guidelines for providers can be found on the IHS Maternal and Child Health Domestic Violence website at *http://www.ihs.gov/MedicalPrograms/MCH/V/index.cfm.*

If you are a victim of domestic violence, call the National Domestic Violence Hotline at 1-800-799-SAFE; TDD: 1-800-787-3224.

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

"He has never been known to use a word that might send a reader to a dictionary"

William Faulkner (about Ernest Hemingway)

Articles of Interest

Early prednisone therapy in Henoch-Schonlein purpura: a randomized, double-blind, placebo-controlled trial. *JPediatr*. 2006 Aug;149(2):241-7. http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed

The authors report a randomized, double-blind, placebo-controlled trial of prednisone in the treatment of Henoch-Schonlein Purpura (HSP). They excluded patients who had hematuria or proteinuria at presentation. Patients received prednisone (1 mg/kg/day for two weeks with weaning over the following two weeks. Patients who received prednisone had reduction of intensity of abdominal and joint pain. Prednisone did not prevent the development of hematuria or proteinuria but abnormal urinalyses resolved in 61% of the treated patients compared to 34% of the placebo patients. There was no difference in the small number of treated versus untreated patients who developed severe nephritis that required renal biopsy.

Editorial Comment

To paraphrase Homer Simpson's description of the power of donuts; "Steroids, is there nothing they can't do?" The longstanding debate on steroid use in HSP has been hampered by the relative infrequency of the condition. Assembling a patient series of adequate size for a placebo-controlled trial is an achievement in itself. Prednisone appears to decrease abdominal and joint pain and was associated with more prompt resolution of hematuria and proteinuria. Unfortunately, prednisone did not decrease the small number of patients who developed severe nephritis. Since this is the major sequela of HSP, this is very disappointing. Bottom line: Steroids could be prescribed for HSP for symptomatic relief but are not likely to affect long term renal outlook.

Physician documentation of neonatal risk assessment for perinatal infections. *J Pediatr*. 2006 Aug;149(2):265-7. *http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?CMD=search&DB=pubmed*

The author looked at documentation on the newborn record of maternal status of hepatitis B, syphilis, Chlamydia and group B streptococcus. Over half of the infants lacked documentation in their charts, although for most, this included negative reports of hepatitis B, syphilis, and Chlamydia. The author speculated that many physicians know the test is negative and do not feel the need to record negative findings in the chart. However, 5% of the positive GBS results and 1% of positive Chlamydia results were not documented in the infant's chart, suggesting that this information was overlooked. The author suggests that nurseries need to establish systematic processes to ensure that information from the mother's record is transferred to the physician caring for the infant.

Recent literature on American Indian/Alaskan Native Health

Douglas Esposito, MD, MPH

The Alaska *Haemophilus influenzae* type b experience: lessons in controlling a vaccine-preventable disease. *Pediatrics*. 2006 Aug;118(2):e421-9. *http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=16882783&query_hl=1&itool=pubmed_docsum*

The Arctic Investigations Program of the CDC has been conducting surveillance of invasive *Haemophilus influenzae* in Alaska since 1980. These data, combined with US census data from 1980, 1990, and 2000, were used to calculate Hib infection rates in children < 10 years of age. Case rates from before and after implementation of universal Hib vaccination are compared. Data from vaccination registries, case reviews, and previously conducted Hib carriage studies in Alaska were also analyzed for this report.

Since implementation of the universal Hib vaccination campaign in 1991, an estimated 479 cases of invasive Hib disease have been prevented in Alaska Native children less than five years of age. Average annual attack rates for that age group fell from 309.4 cases per 100,000 population pre-vaccine to just 5.4 cases per 100,000 population in 2001 - 2004; a decrease of over 98%. Please refer directly to this important article for a complete and valuable discussion of all the results. The bottom line is that the Hib vaccination campaign represents one of the most successful and important vaccination initiatives in US history.

Editorial Comment

Thanks to the incredible efforts that led to the development and broad distribution of the Hib vaccine, in my eleven-plus years as a pediatrician, I never encountered a case of invasive Hib until just a couple of years ago. Today, it's a wonderfully rare occurrence. Having now observed first-hand the ravages of this disease, I hope never to see it again, and due to this particular success story, I likely never will. Hats off to our own Rosalyn Singleton and the CDC Arctic Investigations Program for chronicling the benefits of Hib vaccine for the Alaska Native population.

Thanks also for demonstrating that, despite a dramatic decrease in incidence, Alaska Native populations still suffer much higher rates of this terrible disease than does the general Alaska and US population. As stated conspicuously in the last line of the abstract and in the last two lines of the report: "Household crowding, poverty, unemployment, and lack of indoor plumbing . . . are each more prevalent among rural Alaska Native persons than persons living in urban Alaska. Equity in disease rates may not be achieved in indigenous populations with the current vaccines unless other factors contributing to disease transmission are addressed." For minority populations living in the US, observed health disparities are inextricably interwoven within socioeconomic disadvantage and racial prejudice.

Additional Reading

Experience with the prevention of invasive *Haemophilus influenzae* type b disease by vaccination in Alaska: the impact of persistent oropharyngeal carriage. *J Pediatr.* 2000 Sep;137(3):313-20. *http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?db=pubmed&cmd=Retrieve&dopt=AbstractPlus&list_uids=10969253&query_hl=4&itool=pubmed_docsum*

QuickStats: infant mortality rates, by maternal race/ethnicity — United States, 1995 and 2003. *MMWR Morb Mortal Wkly Rep*. 2006 Jun 23;55(24):673-6. *http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5524a6.htm?s_cid=mm5524a6_e*

Editorial Comment

Infant mortality (death in individuals <1 year per 1,000 live births) for American Indian/Alaska Native mothers ranks second highest in the US, surpassed only by the rate for non-Hispanic blacks. The infant mortality rate for non-Hispanic blacks in 2003 was 13.61, followed by the AI/AN rate of 8.73. This compares poorly to the overall US rate of 6.84. In 1998, the US, one of the richest nations on the planet, ranked 28th among industrialized nations in infant mortality, according to the March of Dimes. (*http://www.marchofdimes.com/files/international_rankings_1998.pdf*). International comparison of infant mortality is controversial, and reporting bias probably does contribute some to the observed differences. However, few experts would argue that we don't have a real problem here at home. In fact, it would appear that uniquely American styles of socioeconomic disparities, racism, and unequal access to care and supportive services contribute to our poor international showing. Will we ever be able to effectively eliminate these deplorable and embarrassing disparities?

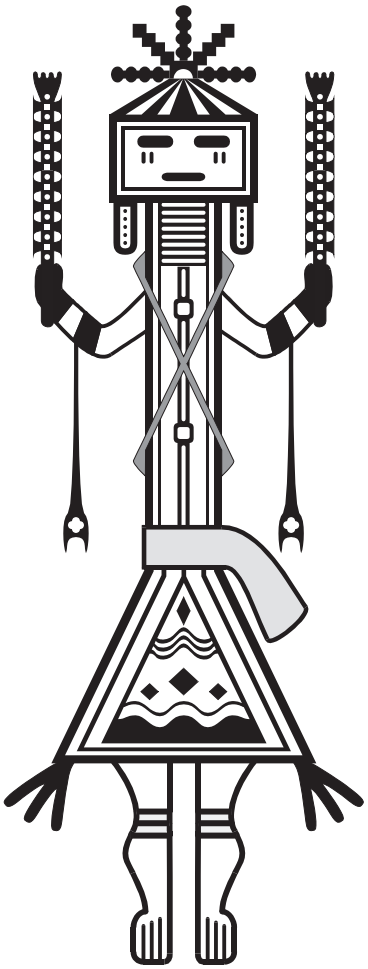
For a more thorough presentation of the infant mortality data in the US for 2003, please refer to the first citation below. The last two citations will be interesting to anyone wanting to learn more about our international infant mortality ranking.

Additional Reading

Infant mortality statistics from the 2003 period linked birth/infant death data set. *Natl Vital Stat Rep*. 2006 May 3;54(16):1-29.

Infant Mortality and Income in 4 World Cities: New York, London, Paris, and Tokyo. *Am J Public Health*, 2005 Jan;95(1):86-90. *http://www.ajph.org/cgi/content/abstract/95/1/86*.

Comparing international infant mortality rates. *CMAJ*. 2000 Sep 5;163(5):497-8. *http://www.cmaj.ca/cgi/reprint/163/5/497*.



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