



3rd International Meeting on Indigenous Child Health: Many Voices Into One Song

March 6-8, 2009 / Albuquerque, NM



POSTER ABSTRACT PRESENTATIONS

#1 **Violence Prevention Toolkit** *Erin Wolski , Pauline Huppie-Parsons, Dan Peters**

Purpose: The Native Women's Association of Canada's Youth Violence Prevention Toolkit encompasses five main workshops: Domestic Relationship Violence; Date Violence; Emotional/Physiological Violence; Domestic Relationship Violence; and Bullying/Cyber Bullying. The information in the Toolkit is intended to "train the trainer"; workshop participants learn how to deliver a workshop, raise awareness about violence prevention in their community, and effectively engage youth in dialogue. The objective is to inform and inspire youth about projects they can undertake themselves to get involved in violence prevention. Each workshop is comprised of a number of activities that the participants can engage in. The workshop proposed for this event is BULLYING.

Methods: The Toolkit can be used by community organizations, youth centers, health care providers, individual youth, or anyone who is interested in promoting violence prevention activities in their community. Each workshop can be delivered to any number of participants. They are geared to address 30 to 40 participants, and include a power point presentation with some interactive activities to maximize participant engagement.

Results/Outcomes: The NWAC is currently delivering "train the trainer" workshops across Canada instructing participants on how best to deliver these workshops in their own communities. Several participants found the workshops highly motivating and indicated they couldn't wait to go home and deliver the workshops in their communities. It was suggested that the Toolkit should be offered to elementary and high schools. Each of these workshops is versatile and can incorporate different cultural teachings and practices as necessary. The Youth Violence Prevention Toolkit initiative has a built-in evaluative component. Each session is evaluated or rated by the participants through a feedback form process. Participant feedback will be collated at the sunset of the 3-year initiative and presented at a National Conference. NWAC hopes to highlight lessons learned, best practices, success stories, partnership development opportunities, and overall outcomes.

Conclusions: After having gone through the workshop, participants will understand what bullying/cyber bullying is, recognize its early signs, and better understand the root causes behind bullying. They will know how to respond to a bullying situation and learn about different ways to prevent it. Aboriginal people in Canada experience bullying in many forms. Bullying can originate from both Aboriginal and non-Aboriginal people. As Aboriginal people however, we are often harder on ourselves than anyone else, and this can be particularly true for Aboriginal women. In the work NWAC is involved in nationally we try bring attention to the "causes of causes". We believe strongly that sustainable change can only come about by targeting root causes.

#2 **Media for Engaging Indigenous Communities One Story at a Time** *Brenda K. Manuelito*, Carmella Rodriguez**

Short Description: Digital storytelling was originally developed in the 1990s, by Joe Lambert and Dana Atchley at the Center for Digital Storytelling in Berkeley, CA, as a grassroots movement focused on community development and social justice. Over the past decade it has been mostly utilized in the field of education and is increasingly being introduced into the fields of public health and community medicine. Digital storytelling is an innovative technology that captures first person narrative into a 2-3 minute "mini-movie" using stills, short video clips, voice, and soundtrack. These powerful and emotionally compelling digital stories are being introduced to health care professionals working in indigenous communities in order to create dialogue, conduct outreach, promote advocacy, and increase awareness about critical health issues in underserved and rural communities. Individuals at the Center for Native Digital Storytelling at the University of Washington have adapted standard digital storytelling training and presentation materials that are culturally appropriate for Native audiences (i.e., manuals and tutorials have been textually and

visually-designed to make them easier to understand). In this workshop, presenters will provide an overview of the three-day intensive training workshop for digital storytellers that takes them through the steps of script preparation, story circle, storyboarding, recording audio narration, scanning and downloading images, and editing their “mini-movie” using video and audio editing software. More specifically, conference participants will learn about a variety of free and low-cost photo manipulation and video/audio editing software on multiple computer platforms (i.e., Mac and PC computers). Presenters will provide a short description of each product and discuss their advantages and disadvantages. Digital stories will be screened to illustrate the composition and integration of the narrative and the media elements used to create an emotionally compelling educational awareness tool that builds upon the strength and beauty of our indigenous peoples. This participatory and cost-effective new media approach provides a path for building support and increasing funding around critical and time-sensitive health issues.

#3 Inpatient and Outpatient Bronchiectasis Visit Rates among American Indian/Alaska Native and the US General Child Population <18 years of age, 2002-2005
Rosalyn Singleton, Robert C. Holman, Lori Pruitt, Joseph Klejka, Krista Y. Christensen, Patrician Valery, Anne Chang, Greg Redding, James E. Cheek*

Background: Bronchiectasis not associated with cystic fibrosis is uncommon in developed countries and rarely the subject of research; however, it appears to occur frequently among Indigenous children such as Alaska Native, Australian Aboriginal and Pacific Islander children.

Methods: Hospitalizations and outpatient visits with bronchiectasis listed as a diagnosis for AI/AN children <18 years of age during 2002-2005 were selected from Indian Health Service/tribal direct and contract hospital discharge and outpatient visit data for analysis. Hospitalizations and outpatient visits with bronchiectasis were also selected for the general US child population using the Nationwide Inpatient Sample and the National Ambulatory and National Hospital Ambulatory Medical Care Surveys.

Results: The average annual bronchiectasis-associated hospitalization rate for AI/AN children <18 years was 3.7/100,000 children. The regional rate was highest for the Alaska region (6.5; Alaska’s Yukon Kuskokwim Delta – 16.9/100,000 children) and the Southwest region 6.8/100,000. The rate for US children was 1/100,000. The average annual outpatient visit rate for AI/AN children <18 years was 43.4/100,000. The outpatient visit rate was highest for AI/AN children in the Alaska region (208.9/100,000; Yukon Kuskokwim Delta - 902.2). The number of outpatient visits for US general population of children was very small and a rate could not be reliably estimated.

Conclusions: The high hospitalization and outpatient visit rates among AI/AN children in Alaska and Southwest regions reflect a substantial burden of bronchiectasis. In these populations, bronchiectasis occurs in a setting of extremely high rate of pneumonia, associated with household crowding and lack of running water. Interventions that decrease pneumonia rates should impact bronchiectasis rates in AI/AN children.

#4 Disparities in Infectious Disease Hospitalizations among American Indian and Alaska Native Infants
Robert C. Holman, Dana L. Haberling, Rosalyn J. Singleton, Krista L. Yorita, Claudia A. Steiner, James J. Sejvar, Elisabeth A. Wirsing, Edna L. Paisano, Lawrence B. Schonberger, James E. Cheek*

Purpose: To describe the burden of infectious disease (ID) hospitalizations among American Indian and Alaska Native (AI/AN) infants (<1 year of age).

Methods: First-listed ID hospitalizations for AI/AN infants during 2001 through 2006 were selected from the Indian Health Service direct and contract healthcare service inpatient dataset by using a comprehensive list of International Classification of Diseases, Ninth Revision, Clinical Modification codes for IDs. The ID hospitalizations for the general US infant population were selected from the Nationwide Inpatient Sample (2001-2006) and the Kids’ Inpatient Database (2003). Hospitalization rates were examined for both populations.

Results/Outcomes: Infectious disease accounted for more than half of the hospitalizations among AI/AN infants during 2001-2006. The average annual hospitalization rate was 10,417 per 100,000 AI/AN infants, which was lower than the rate reported for 1998-1999 (14,970). However, the rate was higher than the US infant ID hospitalization rate of 7011 per 100,000 live births (95% CI=6618-7403), which also decreased. The highest rates were among AI/AN infants living in the Alaska (17,007) and the Southwest (13,326) regions. Lower respiratory tract infections accounted for three-fourths of the ID hospitalizations among AI/AN infants (7755) and about 59% of those among the general US infant population (4135 [95% CI 3919-4352]).

Conclusions: The ID hospitalization rate for AI/AN infants remains higher than that for the general US population of infants, although the rates in both populations decreased over time. It is important to continue to implement prevention measures to reduce ID infant morbidity, particularly for lower respiratory tract infections.

#5 Working With Children Using Indigenous and Wholistic Healing Ways Along With Social Work Practices
Marlene J. Carriere*

Short Description: An Indigenous and Wholistic healing approach using the traditional ways of the medicines, song, drum, and storytelling are used to work with the mental, emotional, physical and spiritual beings of the student. Also, using personal life experiences alongside the learned social work practices are incorporated into the healing process. More 'heart centered' methods of Alternative healing techniques are used rather than 'mind-centered' methods of western approaches. For example, the LAYING OF HANDS is a gentle and loving method of healing; the mental, emotional, physical and spiritual bodies. This approach is used as the 'energy check-in' where we sit on the floor to become grounded, rub hands and flick off any negative energy, then I place my hands over the child's hand (not touching) where spirit information begins to flow. Because the child has difficulty expressing their emotions or current life situations, the school counsellor does emotional check-ins on a daily basis. Using this method helps the child to explore the different emotions to help them feel where the emotion is in their body. Connection to the Universal Life Force Energy is used with the pure intention of Divine Love for the *best interest of the child* is what makes the difference in the child's development. We (spirit guides, grandmothers, angels) bring majic (purposely spelled this way for a reason) by spiritually transferring majic rings around the child, using the elemental kingdom of dragons, fairies, little people and other fantasy/majical creatures.

#6 Little Saskatchewan Children and Diabetes
Cynthia E. Beardy*

Purpose: Our initiative was to establish a base for diabetes knowledge in children. Obesity & Lack of exercise is very prevalent due to lack of recreation facilities. Types 1, 2, 2.5 or type 3 are now identified in aboriginal children very young. We wanted to change our pre-occupation with cure & treatment and focus on illness prevention and health promotion. It is our community's responsibility to share knowledge and health is very important in our children. At community health clinics, parents and family members requested help in teaching our children before it was too late (diabetes prevention). Our focus was direct teaching to children through game based activities. Aboriginal children are considered high risk for chronic diseases and injury. Morbidity rates are higher due to socio-economic conditions. Chronic conditions lead to life impairment physically, mentally and social development. Diabetes is the most common chronic condition in our communities.

Methods: We brainstormed and tried to find innovative ways to incorporate learning into our "exercise & nutrition" teaching goals. We established connections with the local health authorities with staff like nutritionists and dieticians we could access. We contacted the local doctors and the Diabetes Education Resource Centre in the city for follow-up access. Staff and our network were really helpful and volunteered their time and expertise. We obtained consent through an "easy to understand" information package. We went door-to-door to gain consent for the children's participation. Screening dates were set with the health authority participating with their staff and

ours. Further education was provided to children about eating habits and the need to exercise to prevent Diabetes. This was stressed throughout the testing and the healthy breakfast provided post testing. Our scavenger hunt and walking derby were also assisted with nutritionist support. **Results:** Knowledge was shared and we hope that as we continue each year we will help combat the diabetes rates in our communities. A couple of children have been diagnosed and are receiving treatment and assistance through our centre. We are hopeful that they will be healthier with this condition and prevent major complications. **Conclusions:** We want to share and pass on our initiatives. By doing so we may help others.

#7 Promoting Oral Health with the Indian Health Service Head Start Program "Oral Health Toolkit"
Bonnie Bruerd*

Purpose: Data from 2,663 AI/AN children ages 2-5 years documented that 79 percent had experienced dental caries (filled or unfilled decay) and 68 percent had untreated dental caries. Over 50 percent of the children ages 2-5 years had severe Early Childhood Caries (ECC).

Methods: The IHS Head Start Program developed Oral Health Best Practices, Tools and Resources, posters, and a Quick Reference Guide for Head Start Teachers to promote best practices to prevent dental caries from pregnancy to five years of age. These materials collectively are referred to as the "Oral Health Toolkit."

Results/Outcomes: The "Oral Health Toolkit" will be distributed in January 2009 to every Region XI (AI/AN) Head Start grantee and IHS and Tribal dental programs to institutionalize best practices in oral health for AI/AN communities.

Conclusions: This poster session will display all of the new materials. Workshops with Head Start staff will encourage both center-based and community-based planning to implement best practices from pregnancy to five years of age. The Oral Health Toolkit will serve as guidance for program planning and institutionalization of best practice to improve oral health in AI/AN communities.

#8 Interdisciplinary Health Promotion in Elementary School with Urban Aboriginal Children: Nursing Students, Children and Teachers supporting the Determinants of Health
Andrea M. Pritchard*, Jean A. Johnson, Andrea Bridge, Heather Kerr, Joanna Szabo-Hart, Jan Wegerhoff

Short Description: This presentation will explore health promotion and family-centered care with Aboriginal children supported through an undergraduate nursing practicum. The School of Nursing at Mount Royal College collaborates with Alberta Health Services and Calgary Board of Education to provide a unique practicum experience for 3rd year child health nursing students with Aboriginal children at Piitoayis Family School. This elementary school is culturally based from an Aboriginal perspective, and serves a diverse population of ~140 children in kindergarten-grade 6 who are predominantly Blackfoot, Cree, and Métis. Nursing faculty and students work together with children, teachers and community teams to support determinants of health through 6-week clinical placements held throughout the school year. Nursing students are placed in each classroom, and provide daily health teachings based on children's needs and capacities, while reflecting Alberta Health Services' school health priorities and Alberta Learning's provincial health curriculum. Nursing students focus on promoting children's healthy living skills. Furthermore, nursing students collaborate to provide larger group interventions with community agencies. The well being of teachers is also acknowledged, and nursing students strive to care for these caregivers by providing blood pressure clinics and information sessions on teacher-identified topics such as infection transmission and compassion fatigue. While this placement provides an excellent learning opportunity for nursing students to apply their pediatric skills, Aboriginal children have demonstrated greater health knowledge, self-care skills and reduced infection transmission after interventions with nursing students. A research proposal has been drafted to formally evaluate outcomes associated with this practicum.

#9 Healthy Families Yukon Program
Lynda E Silverfox*

Purpose: The Healthy Families program will deliver a culturally appropriate intensive home based family support service to children and families. Supports to families begin prenatally or at birth and continues through to school age in collaboration with other governments and community agencies to promote healthy growth and development with children. Our goal is to systematically assess the strengths and the needs of new parents and assist them in accessing community services as needed. We empower families by enhancing family functioning, building trusting nurturing relationships, supporting and teaching problem-solving skills, and finally; promote positive parent-child relationships and improve the family's support system.

Method: Healthy Families Yukon is a early intervention home visiting program in partnership with Community Health. The program is free to all parents and is based on voluntary participation. Fourteen Critical Elements guide our services delivery to ensure successful programming and best practices to participants in the program. We have recently completed a parent participation survey of the families we support and the feedback was very positive.

Results/ Outcomes:

- Expand parent's knowledge, skills and resources.
- Healthy children; connected to medical provider
- Increase immunization rates
- Decrease the number of families involved with child protection
- Promote school readiness

Conclusion: Our Vision is that Healthy Families Yukon will nurture and support families in creating a safe and healthy environment in which to prepare children for a healthy, responsible adult life.

#10 Lei Hipu'u Early Childhood Development Project at Kokua Kalihi Valley Comprehensive Services in Honolulu Hawai'i
Dawn PN Mahi*

Purpose: To promote the health, well-being, and school readiness of Native Hawaiian, Micronesian, Filipino and Samoan children ages 0-5 in Kalihi Valley, a dominantly Asian/Pacific Islander/immigrant area of Honolulu where 50% of children are deemed not ready to enter first grade.

Methods: A needs assessment with the four ethnic communities is finding out what families with children 0-5 need to be successful. Delivery of services is beginning to be coordinated by a new Kalihi Valley service provider network; fostering cultural competency is key. Providers are challenged to collaborate in an interdisciplinary, compassionate manner to proactively address social determinants of health. A culturally appropriate, multi-lingual early-childhood curriculum for families and providers fostering bonding and attachment and best childcare practices is being adapted and disseminated. Community-identified issues will be addressed by the Leadership Council, a coalition of community members, service providers, and government.

Results/Outcomes: A strong, cross-culturally competent community that values and understands the importance of early childhood health, well-being and how early childhood experiences affect long-term outcomes; young children who feel safe, protected, unconditionally loved, and confident, who are ready to learn from first grade and beyond; accessible and easy-to-understand social services, education, and health care for families of diverse cultures and values; support for families who are transitioning between cultures, and a coordinated network of social services that proactively supports families to achieve their best self-determined definitions of success. We would like our model for this type of community work to be easily replicated in other areas.

Conclusions: The results will be discussed.

**#11 “Sacred Children” – Aboriginal Parent Education Resource Kit
Noreen Agrey* on behalf of the National Advisory Committee**

Purpose: This three-year project resulted in the development of educational parenting resources for Aboriginal families across Canada with an emphasis on health, safety and growth/development. The resources focus on parenting children aged 6 to 12 years. *Sacred Children* - Aboriginal Parent Education Resource Kit focuses on the strengths of Aboriginal parenting. Throughout history, the significance and importance of families has been celebrated and recognized as an integral social system in Aboriginal communities. The resource emphasizes the retention of Aboriginal heritage, culture, and values in building stronger communities and healthy families. Values and traditions surrounding Aboriginal parenting were explored as part of the research of this project. This was accomplished through sharing with Elders, traditional advisors, families, and organizations within Aboriginal communities. Tradition continues to be a strong and viable link to building and creating an atmosphere for developing healthy family values. These traditional values such as sharing, caring, respect, and communication are demonstrated and utilized in an informative and educational way in the resource. Traditional wisdom offers not only understanding, but child rearing methods that can be applied in today's society. By empowering parents with knowledge of culture, language, and history families can be strengthened. As cultural strength is preserved, people become better equipped to live with a challenging and ever changing world.

Methods: Focus groups, surveys and a literature review were used throughout the development of the resources to ensure best practice evidence and usefulness to Aboriginal families and parenting facilitators.

Goal: To reinforce and support parents' inherent knowledge in order to strengthen and enhance healthy parenting in Aboriginal families with children aged six to twelve years.

Objectives: To design and develop a unique parenting education resource that is culturally adaptable in content and design for Aboriginal families; and to provide comprehensive, holistic knowledge to Aboriginal parents and communities on the health, safety, and development of children in the age group of six to twelve years. The initial survey with Aboriginal parents across Canada indicated the top priorities for topic development within the resource: self-esteem, communication, nutrition, discipline, and bullying.

#12 Role of LPS, IL-4, IFN γ , and MCP-1 in the Regulation of Gene of Previously Unknown Function, TMEM154.

Kaiyu Jiang, Jonathan D. Wren, Yanmin Chen, Erik Dumas, Ashton Glover*, Markqayne Ray, James N. Jarvis

Purpose: Research suggests American Indian /Alaskan Native (AI/AN) children show immune response differences compared to the broader population. Increased infant mortality and polyarticular juvenile arthritis (poly JIA) reflects this. Gene TMEM154 controls the monocyte movement, the first cells to enter the joints of children with poly JIA. TMEM154 is blunted in neonatal immune responses and increased in children with poly JIA. Though basic, these studies provide an opportunity to directly address issues of importance to AI/AN child health.

Methods: Stimulated THP-1 cells with LPS, IFN- γ , IL-4, and MCP-1. Incubated 2 hours with and without prior 24 PMA incubation. Isolated RNA with RNeasy Mini Kit from QIAGEN and measured RNA purity using a spectrophotometer. Carried out reverse transcription using a QIAGEN kit. Ran real-time PCR using a kit from Applied Biosystems with primers TMEM154 and GAPDH.

Results/Outcomes: Without PMA Incubation: Control, LPS stimulation decreased TMEM154. TMEM154 appeared more selectively regulated during IL-4-induced differentiation of monocytes than IFN γ . With PMA Incubation: After THP-1 cells were differentiated into macrophages, TMEM154 mRNA expressed a pattern distinctly different from undifferentiated cells, TMEM154 was up regulated in THP-1 cells differentiated into macrophages. The greatest effect was with LPS. IFN γ had limited effects on levels of TMEM154 mRNA. MCP-1 and IL-4 similarly up-regulated.

Conclusions: TMEM154 regulation by known inflammatory mediators suggests that it heavily influences monocyte maturation and inflammatory response regulation. Since inflammation diseases are important contributors to the morbidity in AI/AN communities, particularly children, furthering knowledge of this gene will lead to insights and identification of new therapy targets.

#13 Maternal and Child Health Public Opinion Research 2006
Heather McCormack*

Purpose: In early 2006, Health Canada conducted public opinion research (POR) in First Nations/Inuit communities to determine: knowledge levels regarding healthy pregnancy; community health resources; and barriers in accessing information.

Methods: Twenty-minute telephone interviews were conducted with 925 First Nations on reserve and 407 Inuit men and women between the ages of 18 and 40 with a 38% response rate.

Results: The poster will highlight the levels of awareness of healthy practices during pregnancy. Results noted the importance of nutrition (60% of respondents), stopping the use of alcohol (45%) and tobacco use (40%). Emotional health, avoiding stress and resting were noted by only 2% of the respondents. Results related to understanding: 80% identified smoking as dangerous and 75% noted that even having a few alcoholic drinks during pregnancy could pose risks. The research also provides information on behaviour changes e.g., improving nutrition noted by 73%. Key sources of information during pregnancy were explored. Over 50% of respondents looked for information on healthy pregnancy as soon as their pregnancy was confirmed, using family doctors, nurses and health clinics as key sources. Most women (55%) looked to their partner for support, as well as their mother (50%).

Conclusions: The results of this POR were used to inform the development of programming and policies for First Nations and Inuit and the focus of a social marketing campaign in late 2006 and early 2007. The campaign relied heavily on distribution of information through nurses and health clinics, consistent with the research.

#14 Aboriginal Childrens Health Research: A Scan of Peer-Reviewed Articles
Heather McCormack*

Purpose: Despite the disparities between the health status of Aboriginal children and other children in Canada, there is limited research in this area. This project was established to contribute to the development of an Aboriginal child health research agenda.

Methods: This poster presentation will highlight the results of a review of the published research on Aboriginal children in Canada, Australia, New Zealand and the United States between 1996 and 2005, organized schematically. The articles were identified by searching a variety of databases, using criteria for inclusion (qualitative, quantitative and descriptive studies; focus on Aboriginal child health; population focus prenatal to age 12).

Results: There were over 400 peer-reviewed research articles analysed for the study. Almost half (48%) related to US indigenous populations, with 22% from Canada. The research focussed predominantly on school-aged children (40%) and children less than 2 years old (38%) with only 22% on preschool-aged children. In Canada, most of the research was centred in Quebec (38% of articles specifying a geographical location) and focussed predominantly on First Nations children (62%). Environmental exposure accounted for the largest number of research articles in Canada, while growth and development (including obesity) have clearly dominated the research agenda in Australia and the US. There were some clear gaps in the research, based on a comparison of the research issues and current health issues (e.g., injuries).

Conclusions: This research identified gaps and potential areas of work, including research related to injuries, obesity and secondary analysis of health data.

#15 Sharing Successes - The Aboriginal Diabetes Initiative Approach
Heather McCormack*, Halina Cyr

Purpose: Health Canada's Aboriginal Diabetes Initiative (ADI) provides access to prevention and promotion programming in over 600 First Nations and Inuit communities. ADI also provides funding to more than 50 prevention projects serving Métis, Off-reserve First Nations, and Urban Inuit populations. The main objective of the ADI is to reduce the incidence of type 2 diabetes through a range of culturally appropriate health promotion, prevention, and improved access to screening and treatment services.

Methods: With the increased rates of diagnosis of type 2 diabetes in children and youth, the ADI is empowering Aboriginal people and communities to address diabetes by increasing awareness and by mobilizing regions and communities to develop and implement their own diabetes prevention activities. Focussing on children and youth, this poster will profile the implementation of diabetes prevention programming which is delivered through trained community diabetes prevention workers.

Results/Outcomes:

- Increased awareness and practice of healthy behaviours in supportive environments
- Increased First Nation / Inuit participation, ownership and capacity to address diabetes and other chronic diseases
- Improved access to high quality, well coordinated programs and supports for First Nations, Métis and Inuit individuals, families and communities

Conclusions: The impact of the ADI model on individual, family and community health outcomes continues to be assessed. Given the evidence-based implementation model, communities are able to adapt quickly to address local needs, including programming for children and youth.

#16 TURTLE Camp: Lifestyle Intervention Program for American Indian Children at the Oklahoma City Indian Clinic
Diane E. Clayton, Hazel A. Lonewolf, Sara R. Kernell*

Purpose: Teaching Urbans Roads to Lifestyle and Exercise (TURTLE) Camp is a diabetes prevention program for American Indian children. The Camp focuses on decreasing the progression of overweight and obesity by providing the children the necessary skills to make healthy lifestyle choices through nutrition, physical activity, and diabetes education.

Methods: Oklahoma City Indian Clinic (OKCIC) patients, 7-9 years old, and above the 60% for weight were eligible to attend TURTLE Camp during the 2008 spring and summer sessions. Pre- and post-tests were given to assess knowledge as well as body mass index (BMI) was recorded. Six months later BMI was reassessed.

Results/Outcomes: Fifty-three children attended the spring and summer TURTLE Camps. Forty-nine pre- and post-tests were analyzed. There was a 38% increase in knowledge post-test scores. With a t-value of -7.86 and a resulting p-value of <0.0001, there was a statistical significance in the post-test knowledge scores during the 2008 spring and summer TURTLE Camps. Fifty-five percent of the participants returned six months later for follow up. Although there were no statistically significant differences among BMI baseline and follow up data, 5% of the participants moved from the overweight category to the healthy category.

Conclusions: TURTLE Camp is a great program for the OKCIC children because it provides them an opportunity to learn about nutrition, physical activity, and diabetes in a fun and exciting environment as well as improve their lifestyle choices that can help them later in life.

#17 Oklahoma City Indian Clinic Immunization Program
Hazel Lonewolf, Sarah Brown, Sara Kernell*

Purpose: American Indians are more likely to have several of the risk factors associated with failure to immunize, i.e. lower socioeconomic status and lack of parental education. The presence of these risk factors in addition to lack of transportation makes it important to make sure American Indian children are fully up to date on their recommended immunizations.

Methods: Beginning in August 2007, the Public Health Immunization Nurse began tracking children aged 19-35 months who were not up-to-date on their immunizations. Monthly reports of children not up-to-date were generated, letters were sent out to the parents, telephone calls made, and home visits or visits to daycare were made if appointments were not kept.

Results/Outcomes: Childhood immunization rates for the 4:3:1:3:3 immunization combination (i.e. 4 DTaP, 3 Polio, 1 MMR, 3 HiB, 3 Hepatitis B) increased from 76.4% in 2007 to 88.3% in 2008, surpassing both the Indian Health Services' (IHS) Government Performance and Results Act (GPRA) target of 78% and Healthy People 2010 target of 80%. In addition, the six universally recommended vaccines for young children (4 DTaP, 3 HiB, 3 Hepatitis B, 1 MMR, 3 Polio and 1

Varicella) 2010 target of 90% were all met, with the exception of 4 DTaP. The number of documented home visits also increased from 42 in 2007 to 59 in 2008 during the same period. **Conclusions:** A Public Health Childhood Immunization Nurse who constantly monitors and actively seeks out children not up to date is the essence of success for improved immunization rates.

#18 Opportunities for Wellness, Exercise and Recreation (POWER) After-school Program
Diane Clayton, Steve Daugherty*, Sara Kernell

Purpose: A decline in physical activity, poor eating habits and an increase in sedentary behaviors have led to a dramatic rise in childhood obesity among American Indian children over the last 20 years. In Oklahoma, one study found that 61% of Native American children were overweight or at risk for overweight. Project POWER provides physical activity and nutrition education in an after school program to reduce diabetes for elementary school children in Oklahoma City.

Methods: Sixteen third, fourth, and fifth grade children at a local elementary school were recruited from Johnson O'Malley to attend a 12 week after school program 2 days a week. During the after school program the children were provided with nutrition educations, physical activities and healthy snacks that emphasize healthy food and beverage options in order to improve behavior. The educations lasted 30 minutes and were taught by a registered dietitian and the physical activities lasted 75 minutes and were led by the Health Promotion/Disease Prevention Coordinator. A pre- and post-test was administered and body mass index was measured on the first and last day of the program to measure the impact of Project POWER.

Results/Outcomes: 58.3% of the participants had an improved BMI. There was also a 56.5% increase in post-test scores.

Conclusions: Project POWER is a valuable community-based after school program that encourages proper nutrition and physical activity habits in order for children to make healthier behavior changes.

#19 Assessing the Need for the Development of Culturally Sensitive Strategies for the Diagnosis of FASD
Patricia M Blakley*, Cara D. Zukewich

Purpose: In 2005, Health Canada published *Fetal alcohol spectrum disorder: Canadian guidelines for diagnosis* which allowed for a more objective approach to the assessment process. Clinicians in Saskatchewan recognize that the assessment process used to diagnose FASD may not meet the needs of Aboriginal children. Many of the tests are standardized on urban Caucasian English-speaking and/or American populations and many of the children seen in the diagnostic clinics in Saskatchewan and possibly Canada are not of that descent. The purpose is to assess the cultural sensitivity of assessment tools and approaches used in the diagnosis of FASD for Aboriginal children. The research is designed to determine what assessment tools and approaches other clinicians across the country are using, how they are adapting existing tools, and how appropriate they feel these tools are for Aboriginal and other minority populations.

Methods: The research project *Assessing the Need for the Development of Culturally Sensitive Strategies for the diagnosis of FASD* is supported by the Public Health Agency of Canada. In 2008 a database of stakeholders (including Aboriginal agencies, physicians, speech-language pathologists, occupational/physical therapists, and psychologists) was developed and stakeholders were invited to participate in a series of focus groups. In September and October, a series of focus groups were hosted with these stakeholders. Not everyone was available to attend these focus groups; therefore, an additional conference call discussion with Canadian Aboriginal Organizations and representatives was added. An online survey for each discipline: physicians, speech-language pathologists, occupational therapists, and psychologists, was also developed. In January 2009 a last consultation meeting with physicians from across Canada was hosted. An attempt was made to include participants from across Canada.

Of the 156 people on the stakeholders database:

- 10 Aboriginal representatives met face-to-face or via conference call for the focus group

- Using videoconferencing we hosted focus groups with:
 - 4 physicians
 - 28 speech-language pathologists and occupational therapists/physical therapists
 - 13 psychologists
- 4 Aboriginal agencies participated in the conference call on November 28th
- 17 people completed the online survey (plus 3 pilot tests)
- Four pieces of written feedback after focus group
- 9 physicians met face to face

A total of 85 people were consulted across Canada.

Results/Outcomes: This project is still on-going and will be completed March 31st, 2009. The support for this project from clinicians and Aboriginal agencies has been overwhelming. The following themes have come from the project:

- First Nations, Métis and Inuit populations are significantly diverse culturally. It may not be possible to norm to every Aboriginal population but standardized tests that are commonly used do need Canadian standards.
- Parenting, communication, and interaction behaviors are based on the cultural world-view of aboriginal people. Language differences and environment affect the assessment tools and processes.
- It is important to involve local community members in the assessment process.
- It is important to not diagnose FASD in the absence of documentation of maternal alcohol use.
- There are several key challenges in diagnosing FASD and ensuring the diagnosis meets the needs of the child, family and community.
- There are several risk factors for providing an FASD diagnosis and clinicians need to be aware of what promotes over-diagnosis and/or under-diagnosis (i.e. political, social, cultural factors; shame/guilt; human comfort level of doctors/nurses to ask about alcohol consumption by the mother; community awareness and understanding; and community norms)
- During assessment the focus needs to be on strengths instead of deficits.
- It is important to have an accurate diagnosis.

Further questions that came out of the project were:

- Is it possible to norm the assessment tools to the many different Aboriginal populations?
- How do we account for the language differences and difference in experience?
- Have testing materials (especially psychological tests) been normed for or reviewed by Aboriginal experts?
- Would it be possible or advisable to have more involvement of community members in the assessment process? (i.e. training for community members to administer tests, more education of community members about diagnosis, settings in which assessments are done, co-testing by professionals and trusted community people).
- How do clinicians deal with the factors that influence diagnosis?
- During the assessment process how do clinicians empower rather than label and stigmatize?
- What is the benefit of having an accurate diagnosis to the child, to the parents, to the community, to the health system and other systems?

Conclusions: There has been strong support from clinicians and Aboriginal agencies that the current strategies for diagnosing FASD may not meet the needs of Aboriginal children and their families. This may be partially due to stigma related issues and, therefore, it is not especially important that when providing a diagnosis for a person in a vulnerable population that clinicians use not only appropriately standardized tests but take into account a number of other factors to ensure the assessment is accurate. As a result of this project further sources of funding will be explored to look at the adaptation and possible development of culturally sensitive tools.

#20 Indigenous Health Research Through Surveillance
Danielle Grenier*, Anne-Marie Ugnat, Marie Adèle Davis, Melanie Laffin Thibodeau

Purpose: Many diseases with serious outcomes seem to have a higher incidence in indigenous populations. To document findings from comprehensive surveillance of non-type 1 diabetes

mellitus (NT1DM), juvenile idiopathic arthritis (JIA), severe combined immunodeficiency (SCID), congenital cytomegalovirus infection (CMV) and neonatal herpes simplex virus infection (HSV).

Methods: Studies were conducted through the Canadian Paediatric Surveillance Program, a network of >2500 paediatricians reporting cases of rare diseases monthly according to preset protocols. Confidentiality is mandatory; studies receive ethical approval.

Results/Outcomes: Of the 345 confirmed NT1DM cases in first nine months, 66% presented as type 2 diabetes mellitus; nearly all were obese/overweight; most had positive family history of diabetes and 44% belonged to the Aboriginal group. Six months of JIA surveillance confirmed 253 cases with 4.1% in First Nations' children. Twenty-three cases of SCID were confirmed in three years, including three in Aboriginal children. In nearly three years, 46 CMV cases were confirmed with 13% in First Nations women. Six cases were from rural areas with four born to First Nations women. Three years of neonatal HSV surveillance confirmed 58 cases (5.9 per 100,000 live births) with a fatality rate of 16%. Among surviving cases with available follow-up information over three years, 42.9% had some degree of developmental delay. Aboriginal women represented 10.5% of cases while constituting approximately 4% of Canadian population during study period.

Conclusions: Rare diseases active surveillance can identify at-risk groups; provide reliable national data and evidence to support the development of medical and public health interventions.

#21 The Next Generation Project: Childhood Outcomes of Offspring of Mothers with Early Onset Type 2 Diabetes

Justin M Cloutier, Heather J Dean, Elizabeth AC Sellers*

Purpose: The incidence of type 2 diabetes (T2D) in First Nations children is 20-fold higher in Manitoba compared to other Canadian provinces. Genetic predisposition and maternal pre-pregnancy T2D increase the risk of developing T2D in childhood. The Next Generation Project is a longitudinal cohort study following the children born to mothers who had pre-pregnancy T2D diagnosed before 18 years. The objectives are to assess the growth patterns, and identify the modifiable risk factors in these high risk children.

Methods: Annual heights and weights are recorded, and a fasting blood glucose is measured in offspring ≥ 7 years of age.

Results: On December 31, 2008, 40/78 (51%) offspring had completed their annual assessment. 100% of the boys, and 68% of the girls >2 years of age were overweight or obese. 8/35 (23%) of the offspring ≥ 7 years of age have T2D. The Canadian Diabetes Association 2008 guidelines recommend screening for diabetes in at risk children ≥ 10 years of age at least every two years. 44% of the offspring ≥ 10 years of age have T2D. 2/8 (25%) of these were diagnosed before the age of 10. All of the offspring with T2D have one or two copies of the private Oji-Cree HNF1- α G319S polymorphism, associated with a mild insulin secretory defect.

Conclusion: Overweight and obesity are modifiable risk factors for age of onset of diabetes. The high risk genotype is a non-modifiable risk factor for T2D. Our results inform the design of potential prevention programs.

#22 Through Their Eyes: A Photovoice Project with Aboriginal Youth

Ryan Meili, Breanna Davis*, John Dosman, Daniel Fuller*

Purpose: This participatory research project aimed to allow interested Aboriginal youth in the Northern Saskatchewan regions of Dillion and Ile-a-la Crosse to self identify issues that determine health and sickness in their communities.

Methodology: We used the 'photovoice' methodology to engage these youth. The youth in our project were given disposable cameras to take pictures in their communities which represented 'health and sickness' in both positive or negative ways. They were also given a diary to record their motivations for each photograph. Five youth in Dillon and eleven in Ile-a-la Crosse completed the initial phase of the project. The individual youth, with help from the research team, then selected pictures that best represented their perceptions of health in the community. These were discussed both individually and as a larger group with the use of probing questions to guide

the process of reflection. The data was then shared with the respective communities.

Results: Theme analysis by these youth identified the prominent themes to be: activities, environment, healthy choices, leadership, and drugs & alcohol. From the discussion with each community plans were made with the youth and involved parties to take action in regards to their identified concerns.

Conclusions: While at times challenging, we found this methodology to be an innovative way to engage youth and to start capacity-building. The data translation component of this project is still underway but has been promising thus far to make changes in the community driven by the youth.

#23 Project Grandd: Services for Grandparents Raising Grandchildren with Developmental Disabilities: A Collaborative Community-based Approach to Meet Complex Health Care Needs

I Leslie Rubin*, Janice T Nodvin, Cheryl A Rhodes

Purpose: When family structure and stability are disrupted by social and economic adversity grandparents are often called on to assume a parental role. The purpose of the project is to identify this group of grandparents who are the primary caregivers for their grandchildren with disabilities and provide them practical and emotional support to empower and enable them to them to improve their own health as well as the health of their grandchildren.

Methods: *Identification* – through the medical community, social service and child welfare agencies, departments of aging and disabilities. *Clinical* - Children are seen in public health care systems and in developmental, autism, CP, and other clinics. *Counseling* - Grandparents attend monthly support groups. *Follow-up* - Weekly phone contact by project staff, including home visits. *Training* – Monthly workshops address identified needs: educational, medical/developmental, legal, respite, self-care, relationships and social capital. *Legal* - Families are provided with legal consultation. *Respite* - Respite is arranged through existing community programs.

Results: In two years the project has assisted over 48 families and 108 children. Monitoring benchmarks and participant evaluations are used to measure impact on families and also among providers and agencies.

Conclusions: Grandparents who become the primary caregivers for their grandchildren with disabilities require an infrastructure of support and a network of services including the establishment of a Medical Home to assure that their health and well-being. Project GRANDD provides a model to meet these needs.

#24 Break the Cycle of Disadvantage and Disability

I Leslie Rubin*, Janice T Nodvin, Cheryl A. Rhodes

Purpose: Children who are born into circumstances of social and economic disadvantage are at greater risk for disorders of health, growth, development and learning. This results in a cycle of disadvantage and disability. This project offers a model for opportunities to “Break the Cycle” and improve the outcome for children and positively influence society and cultivate leaders for the future.

Method: The Break the Cycle Project is a collaborative and inter-disciplinary model that works with students and faculty from a variety of academic disciplines. Each student identifies a project that focuses on addressing the factors that compromise child health and development in circumstances of social and economic disadvantage with a view to reducing the negative impact on child health and development. Senior faculty supervise and direct student research.

Results: Over 4 years there have been 3 projects with 15 students from 6 universities and colleges. There have been 3 open conferences, 3 published monographs and an International Journal which will be publishing a single issue dedicated to the Break the Cycle projects. One of the monographs has been used to inform public policy.

Conclusions: This project was designed to address a big challenge with small steps. The intent is 3 fold: *Participating students* - increased awareness of important social issues and interest in future practice and career choices. *University faculty* - direct student research into these areas and inform curriculum. *The professional community* - outreach education and information dissemination and informing public policy.

#25 Reduce Injuries: Eliminate Disparities in Child Mortality Rates among American Indian and Alaska Native Children and Youth
Lawrence R. Berger, David Wallace, Nancy Bill*

Purpose: The overall child mortality rate for AIAN children ages 1 through 19 years is 44.28 per 100,000 (2000-2002). This rate is nearly 40% higher than that of White children in the United States (31.94 per 100,000). We investigated the impact of mortality from injuries on the overall child mortality rate in these two populations.

Methods: We determined cause of injury, and calculated all-cause mortality and age-specific mortality rates, for all AIAN and White children and youth 0-19 years of age in the United States using CDC's Web-Based Injury Statistics Query and Reporting System (WISQARS). We also calculated an "adjusted" all-cause mortality rate for AIAN that assumes that the AIAN injury mortality rate is equal to the White injury mortality rate.

Results/Outcomes: The overall child mortality rates for AIAN and U.S. White populations would be essentially equal (59.8 vs.59.2 per 100,000, respectively) if AIAN child injury rates were reduced to those of the U.S. White population. In some age groups (5-9, 10-14, and 15-19 years) the overall child mortality rates would actually be lower among AIAN children. Reducing child injury rates among AIAN children and youth is an ambitious, but feasible, goal. From 1982 to 2002, unintentional injury mortality rates among AIAN children ages birth-19 years decreased 39%. During this same time period, rates for White children decreased 51%.

Conclusions: In the search to reduce disparities in mortality among AIAN children and youth, injury prevention should play a dominant role. This study was published in the IHS Provider, July 2007, pages 203-208.

#26 Nations Community's Prenatal Model to Address FASD
A Michel Morton, Tracy Michano-Stewart, Paul Masotti, Stuart Macleod, M Anne George, Christine Loock, Jennifer Ranford, Marilyn Van Bibber, Michael Fleming*

Purpose: This Canadian First Nations community sought to create a culturally appropriate model to help modify the way prenatal women, who presented with concerns, were consuming alcohol. The overall intent was to contribute to knowledge which could decrease the incidence of FASD in Aboriginal communities. No comparable Canadian model existed.

Methods: This model was created as part of a national participatory-action study shared by four First Nations communities and seven university-based researchers (UBR's). The project looked at how these communities evaluated Fleming's (2002) Brief Intervention Model, a research-based American model, and created their own model. The community of focus comprised 450 people and is located near the Trans Canada Highway, 225 miles from the nearest urban centre. Due to the distance from the urban centre, face-to-face contact with the researchers was limited. Most communication took place electronically. A Community Research Facilitator (CRF) was hired locally. A working group (WG), that was also compensated, was elected by elders and other community members of note. The WG, with the assistance of the CRF, developed the model. Initial orientation to the model development was offered by the UBR's as well as on-going support during the process.

Results/Outcomes: The WG and CRF developed a model.

Conclusions: The resulting model reflects community norms and responses, appears useful and may be helpful to others. It represents early Canadian First Nations model development in the area of prenatal FASD intervention. The model will be showcased in the poster presentation.

#27 Development of a Perinatal Surveillance System for the Northwest Territories, Canada
*Karolina Machalek**

Purpose: Government, clinicians and researchers have expressed a need for a comprehensive, territory-wide perinatal surveillance system in the Northwest Territories (NWT), Canada that would collect data on all women conceiving and/or giving birth as well as their fetuses/newborns.

Methods: Stakeholder consultations to identify the needs for a perinatal surveillance system in the NWT were undertaken. Objectives and the design of the database were elucidated.

Perinatal database development was based on a number of background sources, including variables suggested by the World Health Organization, the Canadian Perinatal Surveillance System, the Canadian Perinatal Programs Coalition, the Canadian Congenital Anomalies Surveillance Network, and the Fort Smith Health and Social Services Authority Midwifery Program Evaluation Framework, amongst others.

Results: Objectives of the perinatal surveillance system included: program evaluation and quality assurance, surveillance and research. Approximately 400 variables related to maternal and infant health were identified for data collection. Special considerations for northern and indigenous populations included documenting variables such as transfers for birth, type and number of caregivers, ethnicity, and risk factors such as smoking and alcohol consumption during pregnancy. Results indicated that data collection must be dynamic in order to fulfill the objectives and cater to a variety of stakeholders.

Conclusions: The proposed NWT perinatal database has the capacity to meet data collection needs for surveillance, program evaluation and research related to maternal and infant health. The collection of data specific to northern and indigenous communities ensures its relevance to a variety of stakeholders interested in the health of indigenous women and children.

#28 Infrequent Prenatal Exposure to Acute Doses of Alcohol on the Cognitive Development of Inuit Infants

Sarah L. Fraser*, Stéphanie Fortin, Gina Muckle, Jocelyne Gagnon, Dominique Laflamme

Purpose: Prenatal exposure to alcohol has been associated with specific neuropsychological difficulties including deficits in executive functioning, memory and attention skills. Among young infants, such specific effects are more difficult to decipher as neuropsychological tasks are rare. The aim of this study is to assess the impact of prenatal exposure on both global and specific cognitive skills among 12 month old infants.

Methods: Data was collected among Inuit mothers and infants from Nunavik, Quebec. Maternal interviews were conducted during mid-pregnancy and 1 month postpartum to document prenatal alcohol use and potential confounding variables. Infants were tested using the BSID between 11 and 16 months of age. Scores were created for verbal and non-verbal tasks as well as for expressive language, receptive language and object permanence items as identified by Bayley (1993).

Results/Outcomes: In this sample average absolute alcohol per day was low ($\mu = 0.1$; S.D. = 0.2) however 36% reported having had ≥ 5 alcoholic beverages (binge) on at least one occasion during pregnancy. Multiple linear regressions controlling for potential confounding variables suggest that the dichotomous alcohol parameter (binge/no binge) is associated with reduced acquisition of object permanence but is not associated with scores on verbal, overall non-verbal or the global cognitive scores.

Conclusions: The results of this study suggest that executive functioning difficulties associated with prenatal alcohol exposure may be observed in infants as young as 1 year of age. The nonverbal tasks can easily be performed with Inuit infants whose mother-tongue is not English. Identification of children with such difficulties could allow early intervention to moderate the effects of prenatal exposure to alcohol.

#29 Validation of Culture-specific Pictograms for Type-II Diabetes Management in a Mexican Community

Elena Pascuet*, Régis Vaillancourt, Rocío Arias, Javier Hernandez, Octavio Corres Castillo, Dennise Albrecht, Fanny Zegarra

Varying levels of health literacy, age, disease state, language, and cultural variations can all affect a patient's capacity for comprehending and executing diabetes treatment plans. The Mexican state of Oaxaca has a high concentration of indigenous people of 17 different spoken dialects, which can be a barrier to comprehending medical instructions. Pictograms are descriptive symbols that help bridge these communication barriers.

Purpose: To validate and design culture-specific pictograms for type-2 diabetes counselling tools.

Methods: Diabetic participants were enrolled at the Hospital de la Niñez Oaxaqueña (HNO) and

at the Hospital Regional de Alta Especialidad de Oaxaca in Oaxaca, Mexico. Demographic information recorded included the patient's age, sex, dialect spoken, and education level. Health literacy was measured using the validated SAHLISA-50 instrument. Participants were individually asked to interpret 35 existing pictograms as part of a diabetes patient counselling tool. The participants' responses were coded as incorrect, partially correct, or completely correct.

Results/Outcomes: A total of 25 participants were interviewed (age 38-79, 12M) with 36% having inadequate health literacy and 20% of indigenous descent (Zapotec and Mixtec). The 16 pictograms highlighting blood pressure control, exercise, weight loss, nutrition, aspects of foot care, eye problems, kidney disease, medication, constipation, and diarrhea were understood >80%. Pictograms less well understood were a result of differences in standard of care between North America and Mexico (ie. temperatures taken axillary, no self-checking of blood sugar levels, unfamiliarity of hypo/hyperglycemia symptoms). A total of 18 pictograms will be revised (11 minor, 7 major changes) to meet culture-specific needs.

Conclusions: Validating pictograms will support the next steps of implementing pictograms into clinical practice and contribute to improved management of type II diabetes.

#30 Validation of Culture-specific Pictograms for the Labelling of Medications in a Mexican Community

Elena Pascuet*, Régis Vaillancourt, Rocío Arias, Javier Hernandez, Octavio Corres Castillo, Dennise Albrecht, Fanny Zegarra

The Mexican state of Oaxaca has a high concentration of indigenous people of 17 different spoken dialects, which can be a barrier to comprehending medical instructions. Pictograms are descriptive symbols that help bridge communication barriers between the healthcare provider and their patients.

Purpose: To validate existing pictograms to be culture-specific and serve as a supplementary aid for the labelling of medication.

Methods: Study participants were enrolled by at the Hospital de la Niñez Oaxaqueña (HNO) in Oaxaca. Demographic information recorded included the patient's age, sex, dialect spoken, and education level. Health literacy levels of participants were measured using the validated SAHLISA-50 instrument. Participants were individually asked to interpret 32 existing medication instruction pictograms that cover a range of different concepts: dose/route, frequency and precautions. The participants' responses were coded as incorrect, partially correct, or completely correct.

Results/Outcomes: A total of 80 participants were interviewed (age 18-69, 37M) with 61% with grade 6 or less of schooling and 44% showed inadequate health literacy. Indigenous participants (Zapotec, Mixtec, Mazateco, Nahuatl, and Chatino) comprised 30% of the total study sample. The 10 pictograms depicting dose and frequency were understood >80%. The 4 pictograms for use of an inhaler and keep out of reach from infants/children instructions were the most poorly understood with >60% comprehension. A total of 14 pictograms will require minor revisions and 5 will be removed completely from the inventory.

Conclusions: Validating pictograms will support the next steps of implementing pictograms into clinical practice and contribute to safe medication practices.

#31 The Nutritional Health of Pregnant Women and Their Babies.....A Story From The East!
James S McGrath*, Mary Jessome*

Purpose: In 1994, the government of Canada announced the Canada Prenatal Nutrition Program (CPNP) to help First Nation and Inuit communities improve birth outcomes by improving the nutritional health of low-income, high risk pregnant women. Evaluation data has demonstrated a trend of continuous improvement in measurable health outcomes. In Atlantic Canada, it was determined that several outcomes such as breastfeeding rates and appropriate introduction of complementary foods continue to fall below average. In 2006, the Atlantic Regional office of Health Canada conducted a needs and assets assessment to determine how government and First Nation communities could collaborate to enhance community based CPNP programs and improve service delivery and program outcomes.

Methods: Community health staff representing 33 First Nation communities in Atlantic Canada were invited to complete a 'Community Nutrition Needs and Assets Assessment'. A total of 38 questions were asked to identify strengths and assess gaps in services that exist within community based CPNP programs. The overall response rate was 33.7%.

Results/Outcomes: The findings were summarized in a report card format and shared with community leadership and health staff. It was found that additional human nutrition resources, regular training opportunities, culturally appropriate resources, and strong collaborative partnerships and linkages between community based staff and local, provincial and national governments are key to improving health outcomes in pregnant women and their babies.

Conclusions: Many of the recommendations are being implemented and the report is used to help guide the development of CPNP work-plans at both Health Canada and throughout First Nation communities in Atlantic Canada.

#32 Elsipogtog Immunization Program (Infant and Preschool)
Carol Ann Levi*, Martha Sock*

Purpose: In early 2007, based on the perception of low clinic visits in 0-5 age group a concern was identified that immunization coverage rates were low in this population. The Elsipogtog Health Center staff committed to working on this issue over the next five months. (March 1- July 31 2007)

Methods:

- Chart review of age 0-5 population
- Analysis of coverage rates
- Identification of urgency based on number of months client behind schedule
- Consultation and support from elders in community
- Evaluation of project

Results/ Outcomes:

- At beginning of project, 20% of children (0-5 years) were behind; 50% of the "behind" group greater than 6 months behind.
- Many strategies developed, reminders; flexible hours; transportation; photographs; use of local media; community paper resources; t- shirts; elder participation; honouring parents
- Increase in clinic visits and in coverage rates at end of 5 month period

Conclusion:

- Increased awareness of immunization in community; use of local phrases "*Naturally Native*" and dream catcher on promotional items became familiar to all. Mi'kmaq language used on promotional items.
- Parents value and look forward to their children being honored in photos (newspaper)
- Immunization is a community program and works better when entire community is involved; in particular elders
- Collaboration with and awareness of immunization schedules with entire health team supports awareness and coverage.
- Dedication of staff played a key role
- There is a need to sustain momentum including human and other resources.

#33 Patterns of and Risk Factors for Methamphetamine Use among Expectant Teens in 4 Southwestern American Indian Communities
Britta C. Mullany, Yvonne Davis*, Nicole Neault*, Allison Barlow, John T. Walkup, Cradling Our Future Study Team.

Purpose: While risk factors for alcohol and substance use in general are well documented in American Indian (AI) communities, little information exists to date regarding methamphetamine use prior to and during adolescent pregnancy or regarding correlates of methamphetamine use in this special population.

Methods: Data were collected from June 2006 - May 2008 at the start of a community-based randomized trial of the impact of a paraprofessional-delivered home-visiting intervention on maternal and child health and behavioral outcomes. A total of 322 expectant women aged 12-19

were enrolled from 4 reservation communities (San Carlos, Whiteriver, Fort Defiance, and Tuba City). Baseline data were examined to: (1) describe patterns of methamphetamine and other drug use prior to and during pregnancy and (2) examine correlates of methamphetamine use prior to and during pregnancy, including sociodemographic, cultural identification, family functioning, mental health, and other drug use factors.

Results/Outcomes: Lifetime and pregnancy methamphetamine use ranged from 10.1%-43.1% and 0-12.3%, respectively, across the 4 sites. Mean age of first methamphetamine use ranged from 15.4-16.8 years. Correlates for methamphetamine use included depression, use of alcohol and other drugs, low family functioning, and family history of alcohol problems or suicide. Strong cultural identification appeared to be protective against methamphetamine use.

Conclusions: Results corroborate other epidemiological findings of high rates of substance use among AI adolescents, and are of special concern among a vulnerable population of young parents. Identified risk and protective factors may help guide prevention efforts.

#34 An Investigation of Invasive Disease Caused by Haemophilus influenzae in Alaska
Kim Boyd Hummel^{}, Michael G. Bruce^{*}, Tammy Zulz, Debby Hurlburt, Marcella Harker-Jones, Carolyn DeByle, Lisa Bulkow, Debby Parks, Thomas Hennessy*

Purpose: Routine vaccination with Haemophilus influenzae type b (Hib) conjugate vaccines has dramatically reduced rates of Hib disease in Alaska; however, replacement with other Hi is of concern. The goals of this study are to describe the clinical/epidemiologic features of invasive typeable Hi (THi) disease, assess THi colonization, and determine risk factors for both.

Methods: From 2005-2008, we collected oral-pharyngeal specimens from cases of invasive THi infection in Alaska children <10 years old, and among close contacts of the case, and community controls (non-close contacts). Demographic and risk factor data are collected using standard interview and chart review forms.

Results/Outcomes: 374 participants were enrolled, 16 of whom were cases of invasive THi disease. 6 (37.5%) were serotype a (Hia), 6 (37.5%) were serotype b and 4 (25%) were serotype f. Median age was 7.5 months, 12 (75%) were male, 11 (69%) were AN children. Clinical presentations included: bacteremia (69%), pneumonia (50%), meningitis (38%), and septic arthritis (6%). Among 40 close contacts of Hia cases, 7 (18%) were colonized with Hia vs. 0 of 97 controls (p<.001); carriage of Hib (6%) and Hif (2%) among close-contacts demonstrated no statistically significant difference in comparison to carriage among controls.

Conclusions: The majority of invasive THi disease in Alaska is now being caused by non-b serotypes, with highest rates among AN children. Preliminary data from this study demonstrate that a higher proportion of close contacts of persons with invasive Hia disease are colonized with Hia when compared with other Hi serotypes.

#35 Near Elimination of Vaccine-type Pneumococcal Carriage by Pneumococcal Conjugate Vaccine in a Community at High Risk of Carriage and Disease
Eugene V. Millar, Katherine L. O'Brien, Jennifer R. Scott, Delois Jackson, Cynthia G. Whitney, Raymond Reid, Mathuram Santosham, Lori Samuel^{}, American Indian LTNP Study Group*

Purpose: 7-valent pneumococcal conjugate vaccine (PCV7) has been used among Navajo and White Mountain Apache (N/WMA) communities, first in an efficacy trial (1997-2000), and subsequently on a routine basis (late 2000-present). The impact of routine vaccination on pneumococcal carriage is not known.

Methods: A longitudinal carriage study among N/WMA families (children <8y and adults ≥18y) was conducted from 3/2006 through 4/2008. Nasopharyngeal (NP) specimens were collected monthly for 7 visits. Carriage risk factors were ascertained by interview. Pneumococci were cultured and typed by standard methods.

Results/Outcomes: 1077 individuals (444 adults, 633 children) from 301 households were enrolled between 3/2006 and 9/2007; 60% were Navajo. The median age of children and adults was 2.9y (range: 8 weeks-7.8y) and 27.7y (range: 18.0-85.6y), respectively. A total of 6541 NP specimens have been collected. Of the 3380 NP specimens processed to date, 1231 (36.4%)

were positive for pneumococcus. Carriage rates were highest among children 2-4y (59%). The most prevalent serotypes were 6A (11.0%), 19A (10.2%), 22F (6.6%), NT (5.9%), 11A (5.0%), 23B (4.9%), 35B (4.8%), 17F (4.4%), 10A (3.8%) and 23A (3.3%). Only 26 (2.0%) VT isolates were found (19F, n=16; 6B, n=4; 9V, n=3; 4, n=3). Prior to routine introduction of PCV7 (1998-2000), the prevalence of VT carriage (in the control arm of the efficacy trial) was approximately 40% and 8% among children <5 years and individuals ≥5 years, respectively.

Conclusions: These data demonstrate a near elimination of VT carriage among N/WMA 10 years after first introduction and 5 years after routine use of PCV7 among infants.

#36 Native Health Initiative: A Partnership to Address Inequities in Health through Loving Service
Shannon Fleg*, Anthony Fleg, Missy Begay, Rose Chavez

Short Description: American Indians live sicker and die younger than other Americans, largely due to preventable causes of morbidity/mortality and inequities in education, employment, socioeconomic status, and other social determinants of health. The Native Health Initiative (NHI) was created in 2004 as a partnership between health professions students and North Carolina's American Indian communities to address these health inequalities. NHI is grounded in the framework of *health equity* and *loving service* and uses four principles to work toward these ideals: (1) educating future health care providers on the health issues and disparities facing American Indians, (2) providing concrete, sustainable benefits to the communities involved, (3) supporting students and host communities to engage in meaningful cultural exchange, (4) empowering American Indian youth through mentoring and leadership training. Through four years of work, over 30,000 hours of *loving service*, and an expansion to four partnerships (NC, NM, CA, CT), NHI is finding that a model which emphasizes equitable sharing of power and a caring/loving approach to bring diverse individuals and organizations together is an effective method to address social and health inequities.

#37 Delivering Pediatric Care in the Arctic: A Canadian Perspective
Radha Jetty*, Louise Murray*

Purpose: Delivering healthcare to children in the Canadian Arctic can be challenging due to the isolation of communities, lack of available resources, high cost of healthcare and the high burden of illness. The purpose of this initiative is to review the health issues unique to children living in the Qikiqtani region of Nunavut, Canada and explore potential models for delivery of pediatric care.

Methods: A literature review was performed and input was sought from pediatricians and other healthcare professionals working in the Arctic to delineate other models of care. Pediatric subspecialty referral patterns were reviewed.

Results/Outcomes: The children of Qikiqtani experience similar health challenges to others in the Arctic, however some are unique. There are five northern Canadian pediatric models. Two models have permanent pediatrician(s) residing in the region's urban center. The other regions have visiting pediatricians providing outpatient consultation at the local level. In the Qikiqtani region, pediatric care is primarily provided in the health centers and at the regional hospital by family physicians, nurses, a rotating pediatric resident and three visiting pediatricians. For more urgent care and subspecialty care, children are transferred to a pediatric referral hospital. A significant proportion of the region's children received specialty and subspecialty care with many requiring visits to the regional and pediatric hospital.

Conclusions: Children in the Qikiqtani region have a high burden of illness which necessitates frequent and costly interaction with the healthcare system. Any new model for pediatric care will need to take this into consideration and build on models already in place in other regions.

#38 Places for the Good Care of Indigenous Children
Margo, L., Greenwood*, Tina, N., Fraser*

Purpose: The purpose of this project was to examine attributes of the 'good care' of First Nations children in Canada focusing on the structural and philosophical underpinnings of programs and services. Broadly speaking, the project is about Indigenous early childhood and the potential of understanding childhood development as a site for cultural rejuvenation and regeneration. More specifically, through a comparative study between two First Nations communities within the Carrier Nation and Maori communities (specifically the Tuhoe tribe of Aotearoa/New Zealand), the project seeks to answer questions about linkages between early childhood, government policies, community visions, and identity. Fundamental to this (re)building is the exercise of autonomy by Indigenous communities over language, culture and traditions, and the care and education of children. Integral to this study is our own positioning as Cree and Maori scholars, longtime early childhood educators, development workers, advisors on multiple committees concerned with Aboriginal issues in Canada, and our own lived experiences as mothers.

Methods: The project is a qualitative descriptive case study undertaken with two First Nations communities within the Carrier Nation and Maori communities (specifically the Tuhoe tribe of Aotearoa/New Zealand). Specific information gathering methods included: focus groups, key informant interviews, audio/visual reviews and document research.

Results/Outcomes: A number of structural and transformative considerations for policy and program change are identified.

Conclusions: This study highlights the importance of linguistic and cultural continuity for the health and wellbeing of children, families and communities.

#39 Improving Child Health in Mexican Kumei Indigenous Communities
Javier Cesena, Ana Rodriguez, Gregorio Montes, Madre Ines Trejo, Yolanda Arce, Bron Anders*, Jean Mullenax, Lisa Welch Scalco

Short Description: A unique collaboration between the health committees of 6 Baja California indigenous communities, (Ana Rodriguez, Gregorio Montes), CUNA (Cultura Nativa) a Mexican NGO dedicated to preserving the culture of the Baja indigenous communities (Javier Cesena, Dr. Samuel xxx.), Centro de Promocion training program for health outreach workers (health promoters) in Tijuana (Madre Ines Trejo, Dra Yolanda Arce and UCSD (University of California San Diego) , (Dr. Bron Anders, Dr. Jean Mullenax and pediatric residents) has developed over the past decade. Since longterm, culturally sensitive doctors have not been available to these communities, it was felt that building local capacity for health promotion was desirable. To date 12 promotores (health outreach workers) from 6 indigenous communities have had training in Tijuana. 8 Health Fairs were then organized over a 3 year period (supported in part by the Barona Band of Kumeyaay Indians in San Diego County (Lisa Welch Scalco, tribal chairwoman). During these health fair weekends in the remote villages medical clinics were held, capacity building workshops were performed for the promoters, and relaxation, eating and singing occurred. Health promoters were trained to do vital signs on all children, and to fill out growth charts. Dental hygiene was taught and demonstrated by the health promoters during the health fairs. Nutrition, importance of breastfeeding, care of minor diseases (diarrhea, dehydration prevention, upper respiratory illnesses) was taught and handouts and appropriate incentives (saline nose drops, toothbrushes etc) were given out during the health fairs. The promoters from the other communities also attended the health fairs. Entire villages then came out to the health fairs. Growth charts were collected on approximately 200 children. In general children were healthy but had very poor dental hygiene. Access to health care for minor problems and medicines remain problematic.

The health promoters have gone on to collect important demographic and chronic disease data for each of their villages. Plans for the future might include raising the level of training to include care of minor illnesses for the promoters and linking up to telemedicine programs at UCSD.