



10th International Meeting on Indigenous Child Health

March 24-26, 2023 – Tulsa, Oklahoma

POSTER ABSTRACT PRESENTATIONS

#1 **Taking a step back: Understanding the fourth space in improving healthcare access for children with acute respiratory infections in the Fiji Islands.**

Sainimere Boladua^{}, Cameron Grant, Fiona Langridge, Stephen Howie*

Purpose: Globally pneumonia is a leading cause of child mortality. Equally the burden of acute respiratory infections in Fiji and other Pacific Island countries is unacceptably high. Acute respiratory infections are preventable and effective interventions exist, however the application of preventive and interventional strategies is limited by the ability of Western-designed health systems to reach those in greatest need in a timely manner. Health systems generally, and in the Pacific specifically, are dominated by western biomedical approaches. These don't encompass multi-faceted indigenous worldviews, which are important considerations for improving access to healthcare.

Methods: A literature review search strategy was developed including key search terms related to barriers and enablers to access to healthcare for children with acute respiratory infections. The MEDLINE, EMBASE, SINALH and Scopus databases were searched for studies in the English language published up to 2021. Search through the grey literature was also undertaken. A critical review of access to healthcare frameworks was completed which identified a lack of consideration for wide worldviews. A second literature search related to Fijian models of health and worldviews was completed in order to integrate these concepts into our understanding of access to healthcare.

Results: The indigenous Fijian worldview (Space 1) is based on three related dimensions – lagi (heavens), vuravura (earth) and bulu (spirit world). Disruption of this ecosystem manifests as sickness or death. Christianity (Space 2) in Fiji add another set of beliefs and belief systems. The indigenous Fijian then has an additional worldview to consider when they access (western) healthcare (Space 3). The intersection of these three worlds is termed the 'fourth space'. This is the space that the individual operates from, and that we must understand, in order to improve access to healthcare.

Conclusions: It is not possible to gain full understanding of barriers to access to healthcare or of potential interventions to remove barriers, if restricted to a western biomedical model of health and health systems. There is a mismatch when one-worldview healthcare service structures are applied to pluralist societies. The health system in Fiji, and in all countries with indigenous populations, should acknowledge the fourth space that people operate in and acknowledge it as a key factor that influences access to healthcare. Consideration of this fourth space is necessary if access to healthcare for indigenous populations is to be improved.

#2 **Expanding Syphilis Response with Small Hospital-Based Public Health Department on Navajo Nation**

Amanda Burrage, Anatheia Edleman^{}, Jamie Wilson^{*}, Jarred McAteer, Sophina Calderon, Diana Hu, Rickey Lawson, Krishanya Smith, Chad Barlow, Neenah Trujillo*

Purpose: Syphilis and Congenital syphilis cases are increasing rapidly across the country. In the Western Agency of the Navajo Nation we have seen a similar rise in cases. In the Tuba City Service Area between 2019 and 2021 there was a 500% increase in syphilis cases. Managing and following syphilis results and cases has been a challenge for a small hospital-based public health department. We have assembled a multi-disciplinary team to review and follow these cases, identify risk factors, and develop interventions.

Methods: Starting in 2022, a team composed of multidisciplinary healthcare providers, public health technicians, public health nurses, and Navajo Nation, County and State public health representatives meets virtually once a

week to review new syphilis laboratory results. Weekly reports are generated from the laboratory database with all positive syphilis tests in the past week. During calls, each result is reviewed in the context of accompanying information from the Electronic Medical Record. Syphilis staging, treatment guidelines and coordination of treatment and follow-up are discussed, and appropriate parties are assigned to locate and communicate with patients.

Results: From January through November 2022, 406 positive syphilis tests have been identified in our local laboratory. Of these, 158 were identified as new syphilis cases and were staged and referred for treatment and follow-up testing as needed. Of these new cases, 15 were cases of syphilis in pregnancy. With rising cases, we have increased access to testing and expanded treatment options to include home visits with a provider. Additional efforts to identify high-risk populations and develop messaging for early prenatal care and frequent syphilis testing are under way in hopes of decreasing the number of infants with congenital syphilis.

Conclusions: Rising syphilis and congenital syphilis cases are a large and growing burden on small health care facilities and public health departments around the country. A multidisciplinary approach to identify cases, determine appropriate treatment, and coordinate treatment and follow-up have helped to strategically manage the large increase syphilis cases in our service area. Ongoing efforts are underway to inform the community about rising syphilis cases and the recommendation for annual testing, and to increase access to syphilis testing and treatment.

#3 **Postpartum Depression among AI Mothers and the Need for Continued Research**

Ashleigh Coser, Terrence Kominsky, Brady Garrett*

Purpose: Postpartum depression (PPD) is estimated to occur among 10% of the United States population is linked with various negative outcomes including low responsiveness to infant, low rates of breastfeeding, and child behavioral and emotional disorders (Goeglein & Yatchmink, 2020). AI mothers are reported to potentially experience the highest rates of depression compared to other ethnicities (Ko et al., 2017; Wei et al., 2008). To date, there have not been any published studies aimed at examining the EPDS psychometrics among a solely AI sample. The current study examined the factor structure of the EPDS among a community sample of AI mothers and examined psychosocial factors potentially influencing PPD.

Methods: Cherokee Nation Health Services (CNHS) serves members of any of the 574 federally recognized tribes in the United States. The research team reviewed over 1000 patient charts for inclusion in the analyses. Participants were included in the study if they were enrolled in a federally recognized tribal nation and were 18 years of age or older. Six-week postpartum visits occurring between January 2019 and September 2021 were included in the analyses. To guarantee independence between the exploratory and confirmatory factor analyses, the study included two samples (sample 1=157, sample 2=158). A total of 315 AI mothers were included in the sample.

Results: Results of the multiple regression analysis revealed that the model did not account for a significant amount of variance, $F(7,285)=1.93$, adjusted $R^2=.02$, $p=.077$. Analyses indicated a single-factor solution, like that of Cox et al., (1987). A CFA was conducted to examine the fit of the one-factor model ($\chi^2(35)=118.49$, $p<.001$). The observed values for both absolute measures of fit were suggestive of poor model fit and a lack of parsimony, SRMR=.12 and RMSEA =.12 (90% CI .10, .15). Overall, the items appear to hang together as a unidimensional factor but poor absolute model fit indicate need for further examination of PPD.

Conclusions: Screening for PPD among AI mothers is vital for accurate and reliable screening of PPD and addressing health disparities. Contrary to previous literature, we did not find any association between PPD and the demographic variables. A possible explanation may include the limited variability of total scores for our sample and the percentage of clinical level symptoms for our sample. Our results also suggest that the EPDS is insufficient at assessing the complexity of PPD for AI mothers. One aspect not measured by the EPDS is assessing somatic symptoms of depression and possible need for continued examination AI conceptualization of depression.

#4 Association between access to oral health care and early childhood caries in Manitoban Indigenous communities
Daniella DeMare, Maria Manigque, Robert Schroth, JaeHee Jin, Betty-Anne Mittermuller, Scaling-up the Healthy Smile Happy Child Initiative Team*

Purpose: High rates of early childhood caries (ECC) in Manitoban Indigenous communities reflect inadequate access to oral health care in these areas. To improve the oral health of Indigenous children, it is important to investigate the resources available to them, and to look at the barriers preventing adequate care. This will allow professionals to address disparities, and work towards increasing access for everyone. The purpose of this study was to investigate access to oral health care and ECC rates in four Indigenous communities in Manitoba, Canada.

Methods: This study examined dental and parent/caregiver questionnaire data on 144 child participants recruited from three rural Indigenous communities (2 rural Metis communities and Pine Creek First Nation) and one urban community (Point Douglas neighbourhood, Winnipeg) participating in the scaling-up of the Healthy Smile Happy Child initiative. Dental exams were completed for children < 72 months of age. Responses to questions on access to care, geographical limitations, financial concerns, oral health literacy, and health-seeking behaviour were examined. Descriptive statistics, Chi-square tests, t-tests, and ANOVA were used. A $p \leq 0.05$ was considered statistically significant. NCSS were used to analyze the data (Kaysville, Utah).

Results: Communities experienced high rates of ECC, with children living rurally having a higher prevalence than those living in urban Winnipeg (66.2% vs. 55.2%; $p < 0.01$). Almost all children (95.8%) requiring dental surgery traveled to urban areas for care. A majority of parents and caregivers of children with ECC did not feel like they received adequate oral health education from family (63%), friends (61.7%), medical professionals (62.3%), dental professional (55%), or others in the community (61.6%; $p > 0.05$). Almost all participants with caries-affected children (95.2%) first visited a dentist only when they saw signs of dental decay because services were too far and they could not get an appointment.

Conclusions: Our findings highlight the need for more geographically accessible dental professionals and dental homes for young children in Indigenous communities. There is also a need for greater oral health promotion and education to improve oral health literacy to address ECC.

#5 Visual Conversation on Liver Wellness
Kate Dunn

Purpose: Hepatitis C disproportionately impacts Indigenous communities. Due to the predominantly western biomedical approach and current health inequities stemming from historical and continued trauma, many community members do not complete screening or treatment for this curable disease. Nearly half of those infected are unaware of their infection or resulting liver damage. Although frequent transmission is through unsafe injections there are multiple infection sources impacting all generations in the community including children, teens, adults and Grandparents. Stigma, shame, fear and misinformation often accompany conversations around hepatitis and liver disease leading to the inspiration for an innovative approach focusing on liver wellness.

Methods: This transdisciplinary Wisdom Seeking project conducted by an Indigenous student incorporated Indigenous traditional perspectives with nursing background in Two-Eyed Seeing to engage in semi-structured interview conversations with eight Indigenous Knowledge Keepers from the three Treaty areas across Alberta, Canada. Listening to their stories and perspectives on liver wellness. Focusing on respect, relevance, responsibility, reciprocity and relationship building throughout the research journey. This approach incorporated traditional protocol and frequent feedback loops with participant-partners to co-create a blending of oral tradition and storytelling with modern audio-visual media to co-create a culturally relevant DocuStory (short Documentary story style video) for hepatitis C awareness.

Results: Through this Wisdom Seeking journey the focus has been on reciprocity and partnerships in working toward a culturally relevant educational resource to increase awareness of the importance of the liver and facts on hepatitis C. This request came from Indigenous community healthcare teams and these partnerships supported co-creation for relevant health promotion, approached from within a circle of wellness supporting balance in mental, spiritual, emotional and physical health. Feedback from Indigenous community members, young and old, appreciated the DocuStory's land-based visuals, and said they were inspired by the relaxing and wholistic viewpoint shared through visual storytelling in the 20-minute video.

Conclusions: DocuStory co-creation incorporating wholistic wellness perspectives shared by Knowledge Holders/Elders, social influencers and young people with hepatitis C lived experience, resulted in increasing awareness and maintaining the interest of audiences of all ages. Demonstrating an innovative health promotion approach relevant to a wide range of health-related topics incorporating community member engagement in a format relevant to schools, harm-reduction, diagnostic screening events, and routine health programming. Due to rising rates, pandemic impact on community, and disparity in awareness and screening for hepatitis C, this wholistic wellness-based resource brings family and community together in a traditional way to learn and share knowledge.

#6 The Strep A Detectives find their first clue: identification of Streptococcus pyogenes (Strep A) on classroom surfaces informs environmental health interventions to reduce incidence

Stephanie Enkel, Bernadette Wong, Abbey Ford, Janessa Pickering, Liam Bedford, Slade Sibosado, Hannah Thomas, Nina Lansbury, Jonathan Carapetis, Asha C. Bowen*

Purpose: Preventing Strep A infections is more than just stopping the development of a sore throat or skin sores; it removes the potential for life-threatening illness and painful therapies, keeping kids out of hospital, on Country and healthy. Children spend considerable time at school, and there is an urgent need to increase our understanding of the potential for Strep A transmission in this setting to inform prevention strategies. In conjunction with a well-established prospective cohort study (The Missing Piece Study), this project aimed to determine if Strep A could be detected using environmental settle plates and swabbing high touch surfaces in two remote Western Australian schools.

Methods: Twelve classrooms in two Kimberley schools (remote Western Australia) were assessed for Strep A transmission during 2021 and 2022. Students were observed for 20 minutes in their classroom and from this the twenty highest-touch items/surfaces were identified to be swabbed. Where possible, students were engaged in the research with a ten minute talk and aided in the identification of items to swab. Additionally, seven Colistin Nalidixic Acid agar plates were placed in each occupied classroom for four hours to capture airborne or droplet transmission. CNA plates and SGGB-stored surface swabs underwent gold standard culture microbiology to identify Strep A, including bacitracin and latex agglutination testing. Identified Strep A isolates were stored for whole genome sequencing (WGS).

Results: Of the 240 environmental swabs collected, four were positive for the presence of Strep A in three classrooms within the same school (2022, age range of students 5-9 years of age). Positive surfaces included plastic, fabric and wood. Strep A was not present on any settle plates; however the majority grew a mixture of environmental Staphylococcus, Coliform and some types of filamentous fungi. Further analysis comparing the environmental genotypes with those identified from the concurrent sore throat and skin sore surveillance is underway.

Conclusions: Strep A was detected in Kimberley classrooms using environmental swabs but was not detected using settle plates. This differs from research completed in the United Kingdom which identified a high frequency of airborne spread of Strep A in classrooms. Results garnered from WGS, due in February 2023 will allow for further interpretation of results.

#7 Reducing the incidence of Streptococcus pyogenes infections through environmental health interventions: the need for further research

Stephanie Enkel, Hannah Thomas, Ray Christophers, Nina Lansbury, Jonathan Carapetis, Asha C. Bowen*

Purpose: Streptococcus pyogenes (Strep A) infections exemplify the inequitable burden of infectious diseases experienced by remote-living Australian Aboriginal and Torres Strait Islander people. These infections most commonly of the skin or throat can progress to cause several serious downstream consequences including acute rheumatic fever (ARF), rheumatic heart disease (RHD) and acute post-streptococcal glomerulonephritis (APSGN). It is widely recognised that they are all entirely preventable by halting the initial transmission of Strep A from person to person.

Methods: Our team are working with remote Aboriginal communities in Western Australia, Australia to better understand how Strep A spreads between people, the behavioural influences of Strep A transmission, and the most relevant Healthy Living Practices to prevent Strep A transmission. Qualitative research including yarning groups and individual interviews, will be used to understand how environmental health is perceived and practised in remote Aboriginal communities and how environmental health referrals are discussed with community members by clinic staff. This project will build upon pre-existing relationships to ensure that research is conducted in consultation with communities and to find areas for further improvement.

Results: Despite having strong evidence that the heavy burden of Strep A infections in rural and remote Australia is contributed to by inequitable living conditions and that environmental health interventions are likely to be beneficial, there is limited evidence confirming the efficacy of specific environmental health interventions on reducing disease rates. Similarly, there is limited evidence confirming Strep A transmission mechanisms in endemic communities. The recently published RHD Endgame Strategy recommends tackling the root causes of RHD by guaranteeing communities have access to healthy housing and built environments. Evidence to inform and prioritise these actions is needed.

Conclusions: This research is an iterative process, developing along the way to answer further questions as they arise. Stopping Strep A infection and the post-infectious sequelae is possible, yet uncertainties about the best methods of prevention remain. Findings from our research will be disseminated among research partners and participants to feedback to those who have posed questions as to the most effective ways of reducing transmission of Strep A in the community and the home.

#8 **Putting the P in SToP: Health Promotion and Environmental Health in the See, Treat and Prevent Skin Sores and Scabies Trial**

Stephanie Enkel, Stephanie Enkel, Tracy McRae, Hannah Thomas, Nina Lansbury, Juli Coffin, Roz Walker, Ray Christophers, Jonathan Carapetis, Asha C. Bowen*

Purpose: Maintaining healthy skin is important for maintaining overall physical and cultural health and well-being. However, Australian Aboriginal people living in remote communities are at a higher risk of skin infections including impetigo, scabies, and their sequelae due to environmental, social and demographic factors and the ongoing negative impact of colonisation. Skin health has been identified as one of the health priorities by communities and health services in the Kimberley region of Western Australia, Australia. From this, the SToP Trial was designed to See, Treat and Prevent impetigo and scabies, in partnership with Aboriginal community-controlled organisations. The SToP Trial aimed to strengthen and build on these current skin health practices to improve the awareness, detection, and treatment of skin infections (impetigo and scabies) in the region with a key focus on health promotion and environmental health as recommended by Kimberley research partners.

Methods: The Prevent component of the SToP Trial (2018 – 2023) focused on working with local communities and health services to strengthen culturally appropriate skin-related health promotion and environmental health activities. All health promotion activities were co-designed with community members with lived experience in their communities and workshopped at several points to ensure they aligned with the community. While yarning to learn more about community perceptions of environmental health, it was identified early in the Trial that further research was needed to ascertain the most effective environmental health initiatives to reduce impetigo and scabies, with results garnered through community mapping, economic assessments, and yarning activities.

Results: Health promotion activities included the creation of a Hip Hop video focusing on environmental health messaging with school students, school-based health education sessions for participants, the inclusion of Prevention as a key theme in all resources, and the production of Healthy Skin Books in local language with several communities. Learnings from environmental health in the SToP Trial have and will continue to inform the subsequent study focusing solely on creating more evidence to support environmental health initiatives to prevent skin infections and rheumatic heart disease. Data are being analysed.

Conclusions: Prevent activities were embedded in the SToP Trial at the request of community leaders and co-design and local ownership have been prioritised in developing these activities in the Trial. All involved note the importance of Seeing and Treating impetigo and scabies; however, to see a sustainable reduction in skin infections, Prevention remains key to success.

#9 Snakebite envenoming: An under-recognised threat to indigenous children in tropical and subtropical regions

Lucy Guile, Adrienne Lee, Daniel Martin, José María Gutiérrez*

Purpose: Paediatric snakebite envenoming has been described as ‘the world’s most neglected “Neglected Tropical Disease”’. Snakebite envenoming in indigenous children is arguably even more deserving of this title. Data on the burden of snakebite envenoming amongst indigenous communities is sparse. In Brazil, indigenous rural populations have higher incidence of snakebite exposure and a case fatality rate 3.5 times greater than their white counterparts. Children are particularly susceptible to serious complications of envenoming. This study aims to identify key risk factors and predictors of mortality in snakebite envenomed children. The implications of these findings for indigenous children in snake-endemic regions are then considered.

Methods: A comprehensive scoping literature review of relevant databases (MEDLINE, Global Index Medicus) was undertaken in English, Spanish and Portuguese, with no restriction on results by language, geographical region or publication date. Studies were included if they reported risk factors for mortality after snakebite in children, with an estimate of relative risk, odds ratio or similar, with associated p-value. Risk factors and predictors of mortality were categorised as ‘patient factors’, ‘treatment factors’ or ‘clinical features’ and their relevance to indigenous populations considered. The study protocol was informed by the Joanna Briggs Institute’s methodology for scoping reviews and prospectively registered via the Open Science Framework Registry.

Results/Outcome: 333 unique articles were retrieved, with 12 meeting inclusion criteria. Of these, 83.3% of studies were undertaken in India, 16.7% in Papua New Guinea. Statistically significant risk factors for mortality that are of relevance to many indigenous communities include: delay in administration of antivenom; rural residence; need for mechanical ventilation or blood products; non-availability of intensive care facilities. Indigenous children are more likely than non-indigenous to live in rural areas with limited access to healthcare infrastructure, contributing to disproportionate levels of infant mortality. However, none of the included articles recorded what proportion of their study participants were of indigenous heritage.

Conclusions: This review demonstrates that many indigenous children in snake-endemic regions are at the confluence of multiple risk factors for death after snakebite envenoming. The most frequently cited risk factor for mortality was delay in administration of antivenom - a modifiable factor that warrants immediate attention from policymakers at national and international level. Also evident is the dearth of data relating to the impact of snakebite envenoming on indigenous children. Lack of disaggregated data (i.e. that recognises indigenous identity) can obscure profound inequalities and barriers to accessing healthcare. Further research into the burden of snakebite from nations with substantial indigenous populations is urgently required.

#10 Food Can Be Medicine: Decolonizing Nutrition as a Mitigating Factor for Dietary Degradation

Eva Ihle, Joshua Sparrow, Crystal Wahpepah*

Purpose: Children’s health is impacted by the food they eat. Indigenous children’s health is impacted by colonization’s disruption of Indigenous food-related resources, knowledge and practices. Current industrial agricultural non-native, genetically modified foods, and monocultures are often sensitive to changing climate patterns (e.g., worsening droughts and floods). A food sovereignty movement is underway to promote health and protect food resources from climate change by revitalizing Indigenous agriculture, hunting, fishing, food gathering and preparation, and stewardship of land and water. This presentation will highlight Indigenous food sovereignty theory as well as the experience of some of this movement’s pioneers.

Methods: Primary literature will be presented to illustrate the physiological impact on children of diet and nutrition before and after colonization. Interventions that have potential to mitigate nutritional deficits and its sequelae will also be described. One intervention presented will be the revival of indigenous cuisine in the restaurant business. An Indigenous chef will share her experience of opening a café that showcases Indigenous cuisine

Results: Analyses of traditional crops’ nutritional value have demonstrated that they are more nutritious than comparable commercial crops. Commercial crops’ replacement of traditional foods has been linked with negative health consequences such as obesity, heart disease, and diabetes. Studies on native foods’ nutritional value suggest that a more traditional diet could reverse the effects of industrialized food products. Whether such a transition can actually improve the health of Indigenous peoples will depend on the wide-spread adoption of this

approach to nutrition. Indigenous chefs are raising awareness of Indigenous foods' health benefits, which may be synergistic with other Indigenous food sovereignty efforts.

Conclusions: By recognizing the health benefits that can result from the revitalization of Indigenous food-related practices, pediatricians in communities vulnerable to poor nutrition can take a more holistic approach to health care. Overall wellness can be advanced by supporting both physiological and societal well-being, such as the re-ignition of Indigenous food-related practices. Because such practices are based on food resources that are more sustainable than those of industrialized agriculture, they also have the potential to protect the global food supply from climate change.

#11 Voices of Indigenous students at Queen's University: Holistic Wellness Experiences and Perspectives

Claire Lamothe, Julia Moreau*, Caroline Instrum, Amrita Roy*

Purpose: Indigenous university students face unique challenges related to the legacy of colonization and systemic racism. In 2021, we partnered with Queen University's Student Wellness Services and Four Directions Indigenous Student Centre to qualitatively assess the holistic wellness needs of Indigenous students. Results highlighted that Indigenous students' holistic wellbeing is unbalanced, students encounter racism on campus, and there is a need to improve culturally competent wellness services on campus. The current study extends previous findings by qualitatively documenting Indigenous students' experiences and perspectives of holistic wellness, racism, discrimination, and barriers to accessing wellness services on campus.

Methods: This study now focuses on qualitative research methods involving sharing circles with Queen's Indigenous students while maintaining an ongoing partnership with Student Wellness Services and Four Directions Indigenous Students Centre. To qualitatively capture the lived experiences of Indigenous students, two sharing circles will be hosted with 10 Indigenous students each. Sharing circles will be conducted by the researchers and informed by a cultural counsellor. Audio recordings of the sharing circles will be used for thematic analysis using NVivo software. To date, Queen's University's ethical board has provided clearance, potential participants have been recruited.

Results: The results are to be determined as research is currently underway. Sharing circles will be conducted in the near future and so these results could be shared at the conference.

Conclusions: Done in partnership with Four Directions and Queen's Student Wellness Services to help ensure cultural appropriateness and safety and real-world applicability, this study will allow us to identify areas of change to better the wellbeing of current and future generations of Indigenous students. Findings will serve to inform intervention programming at Queen's University and policy updates. More broadly, these results may be applicable to other Canadian universities. Additionally, this research will also advance the broader scholarship on Indigenous youth wellness, services, and policies. Finally, this research can help contribute to the advance of truth and reconciliation at Queen's.

#12 A systematic review and narrative synthesis of respiratory research among Māori and Pacific children living in Aotearoa, New Zealand

Mataroria Lyndon, Moana Research: Matenga-Ikihele, A., Fa'alili-Fidow, J., Tiakia, D., Natua, J., Gentles, D., Malugahu, G., Tuesday, R., Hapai Te Hauora: Ngawati, M.*

Purpose: This systematic review aimed to explore the characteristics of respiratory research among Māori and Pacific children (0-14 years) living in Aotearoa New Zealand. Research objectives were to evaluate the types of study designs used, summarise participant demographics including ethnicity, and evaluate whether culturally relevant frameworks were incorporated.

Methods: Studies were located across the following four databases: Medline, EBSCOHost, Scopus and PubMed, from 2010 to 2020. To qualify, studies needed to include (1) Māori or (2) Pacific children aged (3) 0-14 years and to (4) describe a respiratory research project conducted in New Zealand. A narrative synthesis of the studies meeting the inclusion criteria was performed.

Results: Of the 450 identified studies, 23 studies met the inclusion criteria. Most studies were retrospective cohort studies with respiratory conditions focused mainly on asthma, group A streptococcus, and bronchiectasis. Three

studies were qualitative, and only two of the twenty-three studies reported using a Kaupapa Māori research framework to inform their study.

Conclusions: Despite the increased attention to the respiratory health of Māori and Pacific children, there is a lack of research on the lived experiences of whānau and their children who endure these conditions. In addition, few studies incorporate culturally relevant frameworks. To develop a greater understanding of child respiratory health to advance health equity, further research that incorporates culturally relevant frameworks is urgently needed.

#13 The Friendship Centre Movement: Building Culturally Safe Pathways to Supporting Urban Indigenous Children's Health

Victoria Marchand

Purpose: The National Association of Friendship Centres (NAFC) supports over 100 Friendship Centres and Provincial/Territorial Associations (PTAs) in Canada from coast-to-coast-to coast, comprising the Friendship Centre Movement (FCM). Urban Indigenous children represent a substantial portion of the community currently accessing services and programs at Friendship Centres. Our presentation will offer insight into how ongoing development of Friendship Centres supports holistic and culturally safe care to urban Indigenous children through health and social services, education, and urban programming. We will touch upon (1) targeted programming and services for urban Indigenous children and (2) how healthcare sites are mobilized within Friendship Centres to better health outcomes and respond to the unique needs of local communities.

Methods: Our targeted group of attendees would include those who are providing a variety of services to urban Indigenous communities and demonstrate the critical role of Friendship Centres. Friendship Centres are civil society community hubs offering connection and invaluable resources to culturally safe care embedded in wrap-around programs and services. Case studies of successful community-based care at Friendship Centres will be included, such as le Regroupement des centres d'amitié Autochtones du Québec, more specifically the Minowé Clinic in Val d'Or, QC and the Acokan Clinic and La Tuque, QC.

A testimony from an urban Indigenous youth will be included to support personal experiences of urban Indigenous programming and how it has affected overall positive outcomes on healthy living.

Results: A deep understanding of: The impact of culturally safe healthcare provided by Friendship Centres, The success of healthcare responses developed for urban Indigenous communities by urban Indigenous communities and, The success of healthcare services imbedded in culturally safe wraparound programs and services The Val d'Or Native Friendship Centre's Health Clinic Minowé provided 3,200 interventions for over 650 Indigenous clients and decreased the reporting and placement of children in foster care by 40%. We will also include a high-levelled summary of A New Trail to Blaze: Moving toward an Equitable Access to Healthcare in Urban Areas for Indigenous People where we recognize Indigenous-specific approaches and practices, including community-based recommendations.

Conclusions: The ongoing development towards healthcare accessibility within Friendship Centres continues to grow. With this, urban Indigenous children can access anti-racist and culturally safe healthcare, programming, and educational initiatives that honour Indigenous self-determination and appropriately represent the diversity within urban Indigenous communities.

#14 Association and Disparities of Food Insecurity and Child Abuse: Analysis of the National Survey of Children's Health

Cassie McCoy, Molly Bloom, Amy Hendrix-Dicken, Micah Hartwell*

Purpose: Many factors contribute to child abuse, especially family stressors like food insecurity. Given the adverse effects of child abuse and food insecurity, investigating their relationship is crucial to developing mitigation strategies. Thus, our primary objective was to assess the relationship between child abuse and food insecurity-- specifically among Indigenous children and other minority groups who are disproportionately affected.

Methods: We conducted an observational study using the National Survey of Children's Health (2016-2021) to assess the relationship between food security and child abuse. We determined population

estimates and rates of children experiencing food insecurity and child abuse. We constructed logistic regression models to assess associations, via odds ratios, between food security and child abuse, including demographic factors.

Results: While rates of food security were similar across age groups, Indigenous, Black, multi-racial, and Hispanic children lived in households with higher rates of marginal or low food security. Compared to food-secure households, the odds of experiencing abuse among children in households with marginal or low food security were significantly greater (AOR: 2.30, 95% CI: 2.10-2.53 and AOR: 5.19, 95% CI: 4.48-6.02, respectively). The interaction between food security and race showed that Indigenous children in households with food shortages were much more likely to experience abuse than white children without food limitations (AOR: 7.80, 95% CI: 3.18-19.13).

Conclusions: Child abuse and food security have a significant association, highlighting a potential target for reducing child abuse. Indigenous children disproportionately experienced food insecurity and child abuse. These disparities are likely the result of the effects of intergenerational historical trauma, loss of food sovereignty, and structural/systemic racism. Efforts to improve food security through policy, community food banks, and school-based programs rooted in culturally competent practices may secondarily reduce child abuse.

#15 **Improving Hearing Screening in Children and Adolescents at an Ambulatory Indian Health Service Facility**

Melanie Mester, April Graham*

Purpose: 14.9% of children ages 6-19 have at least a minimal hearing loss. Even with minimal levels of hearing loss, children can miss up to 10% of speech in conversations taking place at a distance of 3 feet. Per AAP Recommendations for Preventive Pediatric Health Care, children should undergo hearing screening as a newborn and then again at ages 4, 5, 6, 8, 10, once in early adolescence, and once in late adolescence. We aimed to improve the pediatric hearing screening rate at our clinic with a goal of screening 50% of patients aged 1-17 receiving preventive care.

Methods: Our original process for pediatric hearing screening was for Pediatrics to place a consult order to Audiology who would then call patients to schedule them. For cycle 1, staff from Audiology would come to well visits and perform hearing screening. For cycle 2, Pediatrics would give patients a pass so they could stop by Audiology after their appointment for their hearing screen. In cycle 3, Audiology trained nurses in Pediatrics to perform hearing screening which they then performed at designated well checks. During cycle 4, we repeated the cycle 3 process but the Pediatric clinic was not experiencing nursing shortages.

Results:

- Baseline (Nov 2019 – Jan 2020): 24%
- Cycle 1 (Dec 2020 – Feb 2021): 64%
- Cycle 2 (Apr 2021 – Jun 2021): 45%
- Cycle 3 (Aug 2021 – Sep 2021): 41%
- Cycle 4 (Nov 2021 – Dec 2021): 62%

Conclusions: Our initiative resulted in significant improvement in the hearing screening rate at our clinic. We found that when we brought hearing screening to our patients at preventive care visits, we were able to meet our goal of a 50% hearing screening rate. This indicates that sending patient to a different location for screening is a barrier.

#16 **Promoting Young Child Wellness in the Pediatric Clinic within the Chickasaw Nation**

Beth Mittelstet, Misty Boyd*

Purpose: Hofanti Chokma is a collaborative, multi-department effort of the Chickasaw Nation to support young child wellness as a way to promote long term physical and mental health. Hofanti Chokma selected the Healthy Steps program to provide universal screening, developmental supports and positive parenting guidance using a team approach with children, families, medical providers and behavioral health providers to meet this goal. This program focuses on young children ages 0 months to 3 years.

Methods: The universal screening that Hofanti Chokma has selected for this initiative is the Survey of Well-Being of Young Children (SWYC). This screens young children and their families for developmental delays, behavioral issues, and social determinants of health. Follow-up with a behavioral health provider is determined by using a tiered approach based on results of the SWYC.

Results: 5,028 SWYCs were collected between October 2021 and September 2022. The highest percentage of concerning screening results include family needs (42%) and social-emotional development (36% in infants <18 months of age). Other results showed that parents often did not express concern regarding developmental milestones, social-emotional development, or autism despite not passing these areas of the SWYC. Family needs that have been identified on the SWYC include, 25% interpersonal violence, 22% tobacco use, 18% substance abuse, 17% caregiver mood concerns, 8% food insecurity. 53% of completed SWYCs have reported reading to their children 3 or fewer times in the past week.

Conclusions: Applying the Healthy Steps program to patient care within the Chickasaw Nation Pediatric Clinic, not only provides early identification of developmental, behavioral and social concerns but has allowed patients, families, medical providers and the medical family therapists to build connections to improve the overall quality of life of the Chickasaw people. Families are provided with supportive services and early interventions to improve children's outcomes, including development as well as physical and emotional well-being.

#17 Building a knowledge exchange platform for interrupting toxic stress and supporting well-being of Indigenous youth : stories from sport, art and culture

Emma Mortimore, Kate Dunn, Lynden Crowshoe, Rita Henderson*

Purpose: Toxic stress (TS) disproportionately impacts Indigenous youth through the interplay of political, psychosocial, material and economic pathways. This prolonged state of stress creates chemical imbalances in the brain, disrupting development, and evidenced by increased likelihood of chronic health issues. Acknowledging Indigenous youth as experts in their own wellbeing, we strive to build youth capacity in research and policy change in interrupting TS. Building on previous conversations from a regional congress involving Indigenous health stakeholders in 2018, we aim to discuss: How can health literacy be utilized to encourage the agency of Indigenous youth as leaders and change-makers for wellness?

Methods: A youth advisory circle (YAC) was created to collaborate and set parameters for a literature search investigating art/sport/activity as a novel approach to interrupting TS impacting Indigenous youth. Following review of over 6000 articles, no article met inclusion criteria, however, several discussed mentorship through activity as positive for youth wellbeing. Two sharing circles with 15 youth and activity facilitators guided conversations on these findings, prompting further investigation into the role that skills acquired through activity may play in protecting against TS. Further interviews are planned to investigate, taking a strengths-based approach and applying a critical realist lens for thematic analysis.

Results: Literature review findings indicate a lack of specificity about TS affecting Indigenous youth in existing literature. Articles pointing to sport and art enhancing wellness and promoting lifelong wellness in youth redirected our investigation to TS interventions that lay outside the traditional scope of health care. Common themes of culture and activity as protective to wellbeing arose during the sharing circles, placing importance on skills gained during sport or art, such as confidence, self-efficacy and problem solving. Next steps involve discussing, what is it about sport/art/culture that is protective? And how can this be reproduced to promote wellness in Indigenous youth?

Conclusions: As a fundamental public health concern for Indigenous youth, interventions are needed to increase awareness of the long-term impacts of TS and place value in preventative healthcare for protecting and interrupting TS. Grounded in the voices of Indigenous youth and local community programs, our work aims to culminate in several research presentations, publications, and a set of guidelines for those who work with Indigenous youth to promote wellness in sport and art-based activities. Through this novel approach to health promotion, we strive to encourage resiliency and leadership in Indigenous youth, creating sustainable change at individual, community, system, and structural levels.

#18 Screening for Symptoms of Traumatic Stress in Primary

Jackie Nelson, Louisa Mook*

Purpose: Identification of pediatric patients who are being impaired by traumatic stress.

Methods: Pediatric patients coming to the clinic for well or mental health visits between 9/1/2021 and 9/7/2022 completed a validated Traumatic Stress Screening Tool.

Scores were calculated with mild, moderate and severe trauma scores. Those with scores suggestive of trauma-related sleep disturbance were considered for treatment with prazosin.

Results: 6-10 year old - 80% mild, 10% moderate, 10% severe - (N=10)

11+ year old- 54% mild, 14% moderate, 32% severe - (N=96).

58% of 11+ with severe trauma symptoms reported severe sleep disturbance

32% of 11+ with moderate trauma symptoms reported severe sleep disturbance

2% of 11+ with no/mild trauma symptoms reported severe sleep disturbance

No 6-10 year old patients reported severe sleep disturbance

30% of all patients screened (n=106) reported severe trauma symptoms

Conclusions: During the collection period, 30% of total patients screened (n=106) had severe trauma symptom scores and thus met criteria for evidence-based trauma focused therapy, a service which is not currently available via in-person or telehealth. Clinically significant sleep disturbance was most common in the group of patients with severe trauma symptom scores. These results highlight the importance of not just screening for depression in the primary care setting, but also trauma symptoms which respond better to therapy treatment than medication and often contribute to suicidality. There remains a large unmet need for trauma-specific mental health services for patients receiving care at Fort Washakie IHS.

#19 Determinants of positive well-being among First Nations children WITHDRAWN

Sawayra Owais, Maria B. Ospina, Camron D. Ford, Troy Hill, John Krzeczkowski, Jacob A. Burack, Ryan J. Van Lieshout*

Purpose: Indigenous peoples, especially children, have profound strength and resilience. Despite this, the majority of studies examining Indigenous children's well-being and their determinants focus on pathology and other negative health outcomes. Moreover, these studies frequently fail to acknowledge and examine Indigenous-specific determinants (e.g., knowing an Indigenous language) and their impact on well-being. Many studies also aggregate Indigenous peoples into a single group, despite the rich diversity that exists between and within these groups. The purpose of this study was to identify Indigenous-specific determinants, in addition to well-established determinants of socioemotional and behavioral well-being among 2-5-year-old First Nations children living in Canada.

Methods: We utilized data from the Aboriginal Children's Survey, a nationally-representative study on the well-being of Indigenous children in Canada. A total of 2,990 First Nations children (2-5 years old) were included in our sample. Indigenous-specific determinants of well-being examined included: speaking an Indigenous language, being taught an Indigenous culture, community cohesion, and parental experience of family separation. Other well-established determinants that were examined were parental health, nurturing behavior, and household size. Socioemotional and behavioral well-being was measured using the Strengths and Difficulties Questionnaire (Total Difficulties and Prosocial Scale). Multiple linear regressions were conducted to explore associations between determinants and well-being.

Results: Determinants of fewer total difficulties (i.e., better well-being) included: being taught an Indigenous culture, living in a community with high cohesion, having a parent not experience family separation, good parental health, positive nurturing behavior, fewer members in the household, living in a household above the low-income threshold, older child age, and being female. Determinants of more prosocial behavior included: being taught an Indigenous culture, living in a community with high cohesion, positive nurturing behavior, fewer members in the household, older child age, and being female.

Conclusions: A number of Indigenous-specific determinants of socioemotional and behavioral well-being are unique to First Nations children. These data can guide First Nations community members, policymakers, and researchers in leveraging these cultural factors, along with previously established determinants, and identifying

targets for intervention to promote healthy child socioemotional and behavioral well-being. Ultimately, our data contribute to the growing literature on highlighting strengths among Indigenous peoples, especially young individuals, and help provide a more wholistic understanding of the well-being of First Nations children in Canada.

#20 Outcomes of Remote First Nations Residency Program Stream (RFNRS): A tri-partite Agreement Between Northern Ontario School of Medicine University (NOSM U), Matawa First Nations Management (MFNM), and Eabametoong First Nation (EFN) in Northern Ontario Canada

Jacinta Oyella, George Drazenovich, Paul Capon, Robert Baxter, Centre for Rural and Northern Health Research (CRaNHR)*

Purpose: The RFNRS is a unique three-way partnership between a Remote First Nations Community (EFN), a tribal council (MFNM), and a medical school (NOSM U) supported by the Ministry of Health Ontario within NOSM U Family Medicine Residency Program. It was established in 2016-2017 to respond to identified needs for physicians prepared to deliver independent and culturally safe primary health care in Remote First Nations communities in Ontario Canada. The hope is that the collaboration between EFN, MFNM, and NOSM U and lessons learned through this pilot might serve as a model for physician services development with other First Nations communities.

Methods: This was a qualitative research study conducted by the Centre for Rural and Northern Health Research (CRaNHR) at Lakehead University Canada. It focused on 3 unique aspects of the Program from 2017-18 through 2021-22: 1) Program structure; (2) Resident application and selection process; and 3) Program curriculum and supports (Elders support, interdisciplinary team practice and virtual curriculum). Semi-structured interviews were conducted with Matawa First Nations and NOSM U representatives. Interview data were analyzed using a rigorous method for analyzing qualitative data called the "Rigorous and Accelerated Data Reduction (RADaR) technique. Twenty-three Program Documents were reviewed to assist in providing a detailed description of the Remote First Nation Residency Program Stream elements. A separate analysis was undertaken for each of the three domains of interest emphasized.

Results: Key outcomes included a strong collaborative, community-driven approach in the area of equal partnership; the co-equal selection process; the recruitment of skilled, motivated residents with prior experience in northern and rural places; the development of the Elder Program and the curriculum that is overseen and delivered by them; and the strong inter-disciplinary approach of the Program. Much has been accomplished: a unique curriculum has been developed, a co-admissions selection process is in place, 5 cohorts of residents have begun the Program. These and other key outcomes will be more fully elaborated in the presentation.

Conclusions: Overall, participants had positive impressions of the RFNRS and felt the Stream is an "amazing program" with many strengths, representing a "very significant and promising endeavor." The Program contributes positively to the Truth and Reconciliation agenda and helps to heal and bridge Western and Indigenous ways of knowing. Further its an exceptional. community-led Program. Though it has many strengths, the RFNRS has not been without its challenges. These include navigating a complex structural environment, limited human resources, difficulties securing physician housing in the community and COVID-19 pandemic.

#21 Dermatology Access and Needs of American Indian and Alaska Native adolescents

Micah Pascual, Sarah J. Schmiede, Doug Novins, Spero Manson, Lucinda L. Kohn*

Purpose: Common, treatable skin diseases such as acne and eczema are prevalent amongst children who identify as Native. Yet, American Indian and/or Alaska Native children have poor access to dermatologists, which is even more exaggerated in rural communities, such as American Indian reservations. Inadequate treatment of skin diseases is associated with poorer quality of life, sleep disruptions, learning difficulties, mood disorders, and school absenteeism. We surveyed adolescents who identified as American Indian and/or Alaska Native in the community setting to determine prevalence of skin disease and access to dermatology care.

Methods: Data was collected via paper surveys administered in person at two community powwows in Denver, Colorado in 2021 and 2022. We selected these events because we expected a substantial number of people in attendance who self-identify as American Indian and/or Alaska Native (AIAN). Survey questions assessed presence of skin disease and healthcare access for skin disease. All powwow attendees aged 11 years and older who passed

by our booth were invited to participate in the survey, without exclusion of ethnic or racial identities or presence of skin disease. The Colorado Multiple Institutional Review Board approved this study.

Results: Of 306 respondents total, 78 were AIAN adolescents. Survey data from these 78 AIAN adolescents were selected for data analysis. Seventy-three adolescents (73/78, 93.6%) reported at least one active skin disease. The top three skin diseases were acne (n=52, 66.7%), scarring (n=32, 41%), and eczema (n=24, 30.8%). Only 9.6% of AIAN adolescents saw a dermatologist for their skin disease. Only a minority of AIAN adolescents were interested in telehealth as a visit modality: 21.8% (17/78) AIAN adolescents were interested in using teledermatology in their home, 34.6% (27/78) were interested in using teledermatology in their local clinic, and 47.4% (37/78) were not interested in using teledermatology from their home or in their local clinic.

Conclusions: Skin disease is prevalent and dermatology access is poor among AIAN adolescents. In order to address these barriers and establish fruitful interventions, it is important to understand the barriers to care arising from the social determinants of health and historical trauma that AIANs face.

#22 **The burden of atopic dermatitis and bacterial skin infections among urban-living Indigenous children and young people in high-income countries: a systematic review**

Bernadette Ricciardo, Asha Bowen, Heather-Lynn Kessar, Prasad Kumarasinghe, Jonathan R. Carapetis*

Purpose: A high burden of bacterial skin infections (BSI) is well documented in remote-living Indigenous children and young people (CYP) in high-income countries (HIC). Atopic dermatitis (AD) is the most common chronic inflammatory skin condition seen in CYP and predisposes to BSI. Despite the rate of urbanization for Indigenous people increasing globally, research is lacking on the burden of AD and BSI for urban-living Indigenous CYP in HIC. Indigenous people in HIC share a history of colonization, displacement and subsequent ongoing negative impacts on health.

Methods: A systematic review of primary observational studies on AD and BSI in English containing epidemiological data was performed. MEDLINE, EMBASE, EMCARE, Web of Science and PubMed databases were searched for articles between January 1990 and December 2021. The primary objective was to provide a global background on the burden of AD and BSI in urban-living Indigenous CYP in HIC.

Results: From 2278 original manuscripts, 16 were included: seven manuscripts documenting eight studies on AD; and nine manuscripts documenting nine studies on BSI. Current and severe symptoms of AD were more common in urban-living Indigenous CYP in HIC compared with their non-Indigenous peers, with children having a higher prevalence than adolescents. Urban-living Indigenous CYP in HIC had a higher incidence of all measures of BSI compared with their non-Indigenous peers, and were over-represented for all measures of BSI compared with their proportion of the background population. Limitations include incomplete representation of all Indigenous populations in HIC.

Conclusions: A significant burden of AD and BSI exists in urban-living Indigenous CYP in HIC.

#23 **Describing skin health and disease in urban-living Aboriginal children: co-design, development and feasibility testing of the Koolungar Moorditj Healthy Skin pilot project**

Bernadette Ricciardo, Asha Bowen, Heather-Lynn Kessar, Uncle Noel Nannup, Aunty Dale Tilbrook, Brad Farrant, Carol Michie, Lorraine Hansen, Richelle Douglas, Jacinta Walton, Ainslie Poore, Alexandra Whelan, Timothy C. Barnett, Prasad Kumarasinghe, Jonathan Carapetis*

Purpose: Indigenous children in colonised nations experience high rates of health disparities linked to historical trauma resulting from displacement and dispossession, as well as ongoing systemic racism. Skin infections and their complications are one such health inequity, with the highest global burden described in remote-living Australian Aboriginal and/or Torres Strait Islander (hereafter respectfully referred to as Aboriginal) children. Yet despite increasing urbanisation, little is known about the skin infection burden for urban-living Aboriginal children. More knowledge is needed to inform service provision, treatment guidelines and community-wide healthy skin strategies. In this pilot study we aimed to test the feasibility and design of larger multi-site observational studies, provide initial descriptions of skin disease frequency and generate preliminary hypotheses of association.

Methods: This project has been co-designed with local (Noongar) Elders to provide an Australian-first description of skin health and disease in urban-living Aboriginal children. In collaboration with an urban Aboriginal Community Controlled Health Organisation (Derbarl Yerrigan Health Service), we conducted a week-long cross-sectional observational cohort study of Aboriginal children (0-18 years) recruited from the waiting room. Participants completed a questionnaire, skin examination, clinical photos, swabs and received appropriate treatment. We assessed the feasibility and impact of the pilot study.

Results: From 4-8 October 2021, we recruited 84 Aboriginal children of whom 80 (95%) were urban-living. With a trusted Aboriginal Health Practitioner leading recruitment, most parents (or caregivers) who were approached consented to participate. Among urban-living children, over half (45/80, 56%) of parents described a current concern with their child's skin, hair and/or nails; and one third (26/80, 33%) reported current itchy skin. Using a research-service model, 27% (21/79) of examined urban-living participants received opportunistic same-day treatment and 18% (14/79) were referred for later review.

Conclusions: This co-designed pilot study to understand skin health in urban-living Aboriginal children was feasible and acceptable, with high study participation and subsequent engagement in clinical care observed. Co-design and strong involvement of Aboriginal people to lead and deliver the project was crucial. The successful pilot has informed larger, multi-site observational studies to more accurately answer questions of disease burden and inform development of healthy skin messages for urban-living Aboriginal children.

#24 CREE LEUKOENCEPHALOPATHY (CLE) AND CREE ENCEPHALITIS (CE) AWAASH AAHKUSUWIN AAKAA CHII NITIKUTAACH Educational and Carrier Screening Program

Martine Roberge, Stéphanie Sicard-Thibodeau, Leigh Ann Gates*

Purpose: CLE and CE are two rare, severe, and hereditary diseases that present themselves in the first months of life. They are autosomal recessive non-curable conditions, leading to the death of affected children early in their life. 1/ 11 are carriers of CLE and 1 / 17 are carriers of CE. CLE or CE can affect 1/400 children. Our purpose is to introduce an innovative indigenous Public health prevention program, where community members, schools, clinics and Public health professionals gather to design and deliver a population-based carrier screening. Since 2006, the program offers screening, which is different to screen everyone.

Methods: The program has been developed in a 3-stage approach:

- a) Its starts by a community mobilization of parents and family who lost children to CE and CLE, leading to the creation of the Eeyou Awaash Foundation (EAF) in 1999;
- b) The regional Public health stepped in 2002, proposing to offer a screening program that came to life in 2006;
- c) Nowadays the program is a tri-partite collaborative work between communities (local schools and clinics), EAF, and PHD supported by the provincial specialized genetic laboratory of Ste Justine Hospital.

Results: The program, managed by the Cree Health Board, covers the 9 communities in Eeyou Istchee. As of today,

- over 2800 people have been screened, whether at schools or in Awash clinics
- yearly presentation and screening campaigns are offered in all 9 communities Schools to raise awareness and promote screening
- Presentation and training of the clinical staff (Nurses-PCCRs-Midwives)
- Accompaniment provided to more than 200 community members (Individual-couples and family) yearly.

Conclusions: This Public Health screening program is a good example of how PH Departments could build on community strengths, skills, knowledge and structure. The program was built with a bottom up approach in a culturally safe and respectful way. Educational program and development of materials for the professionals and the community members will lead to a better screening offer.

#25 Spirometry testing during a community health fair in rural areas of the Navajo reservation.

Ann Salvator

Purpose: Approximately 13% American Indian/Alaska Native (AI/AN) children have asthma, versus 8.6% children in the U.S. general population (USPOP) and reported asthma attacks per year were higher (67.3% AI/AN vs 60.7% USPOP). Spirometry reliably detects asthma in children over 6 years, yet AI/AN are screened at lower rates than

USPOP (Lowe et al). Poor screening contributes to undiagnosed asthma and pneumonia in the Navajo who live long distances from medical facilities. In 2019, a non-profit charity received a community service grant from the CHEST foundation for a portable spirometer and gift cards used for community health screenings on the Navajo reservation.

Methods: Nine health fairs on the eastern Navajo reservation were successfully held from March 2021 to July 2022. The medical teams included pediatricians, pre-med/dental students, adult volunteers, Navajo young adults, staff from the Saint Bonaventure Mission and School and a community health representative (CHR). Participants took part in surveys, spirometry, vision and physical exam screenings. The surveys included community need assessment, COVID-19 exposure and/or infection, asthma diagnosis and environmental exposures. The participants were given a gift card, food box, hand sanitizer and school supplies after completing all the health stations.

Results: There were 5 health fairs in 2021 (211 participants) and 4 in 2022 (188 participants). Ninety-seven responded to the asthma survey with 17% reporting a previous asthma diagnosis. The mean (standard deviation (SD))/median age in years of diagnosis was 13.4 (17.4)/5. The largest reported distance to a clinic/hospital was 20-45 miles (41%), less than 20 miles (39%) and greater than 45 miles (20%). There were 234 spirometry test results reported as z-scores. The mean (SD)/median age in years was 29.3 (22)/18.3. Sixty-two percent were females. The spirometry tests results were all lower than expected for the population (negative z-scores).

Conclusions: The CHEST foundation grant provided funds to screen the Navajo for asthma and medical issues discovered during the health fairs. The physicians encouraged participants to seek medical attention when an issue was found with the help of the CHR. The gift cards and food boxes were an effective incentive for attendance. Results of the surveys and spirometry tests will be used to write more grants to provide medical services in the future. Given how much COVID has affected the health of the Navajo people, more opportunities to diagnosis and educate regarding lung and general health should continue in the future.

#26 **Changes in preschool children's body mass index following dental surgery to treat early childhood caries**

Robert Schroth, Mariah Arches, Victor Lee, Betty-Anne Mittermuller, Tara Kennedy, Aaron Szucsik*

Purpose: Associations between early childhood caries (ECC) and increased body mass index (BMI) in young children have been reported. There has been little research, however, on whether there are changes in BMI following dental surgery using general anesthesia (GA) to treat ECC. The purpose of this study was to investigate the relationship between BMI and ECC, and to investigate the effect of surgical treatment on BMI in children following treatment for severe ECC under GA.

Methods: Children < 72 months of age undergoing dental surgery to treat severe ECC (ASA-1 or ASA-2) were recruited into a prospective cohort in Manitoba, Canada. Heights and weights were captured at baseline (on day of surgery) and follow-up (minimum three months after treatment) to calculate BMI z-scores (BMIz). Both World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) classification systems were used to determine children's BMI health status and whether it declined, remained the same, or improved. Descriptive statistics and Chi-square tests were used. A p value of ≤ 0.05 was considered statistically significant. Data were analyzed using NCSS (Kaysville, Utah).

Results: A total of 150 participants were recruited (mean age 47.7 ± 14.2 months). More than half (56.7%) of participants were registered First Nation based on their dental insurance status. 106 children returned for follow-up. Mean BMIz increased significantly following dental surgery (WHO BMIz: 0.86 ± 1.33 to 1.21 ± 1.47 , $p < 0.01$; CDC BMIz: 0.61 ± 1.29 to 0.97 ± 1.30 , $p < 0.001$). According to WHO, 44% of children remained in the healthy category based on BMI following dental surgery (43% for CDC), while 30% declined from the healthy to unhealthy category based on WHO at follow-up (29% CDC).

Conclusions: Children that underwent rehabilitative dental surgery under GA to treat severe ECC experienced significant increase in BMI, and a decline in health. Both ECC and BMI likely share similar risk factors, but the association also suggests that oral health status may affect childhood health and well-being. Children undergoing treatment of ECC using GA may be at risk for obesity and would benefit from dietary and lifestyle interventions.

#27 Eruption time of the first primary tooth as a risk factor for early childhood caries in Indigenous children

Robert Schroth, Saif Goubran, Betty-Anne Mittermuller*

Purpose: Indigenous children are disproportionately affected by early childhood caries (ECC), which is decay involving the primary teeth in children < 6 years. The timing of eruption of the first primary tooth may be a significant risk factor for ECC, as newly erupted deciduous teeth are susceptible to earlier colonization by cariogenic bacteria, and may be at greater risk for decay. The purpose of this study was to determine the association between the time of eruption of the first primary tooth and the presence of ECC, and to investigate whether Indigenous children (First Nations and Métis) erupt teeth at an earlier age than non-Indigenous children.

Methods: Relevant demographic and dental data were extracted from two previous prospective cohort studies investigating prenatal levels of vitamin D and ECC in infants, and the influence of prenatal vitamin D supplementation on ECC development in infants. The ethnicity, caries status, eruption times, and oral health behaviours for 309 child participants (< 72 months of age) were examined. Descriptive statistics, t-tests, Chi-square tests, ANCOVA, and regression analyses were used. A $p \leq 0.05$ was considered statistically significant. Data were analyzed using NCSS (Kaysville, Utah).

Results: A majority (73%) of participants self-identified as Indigenous. Ethnicity ($p < 0.001$) and a first dental visit ($p = 0.03$) were significant determinants of ECC. A greater number of Indigenous children (36.6%) than non-Indigenous children (16.9%) had ECC ($p < 0.001$), and had greater dmft scores (1.4 ± 2.6 vs. 0.6 ± 2.0). Indigenous children also experienced the eruption of their first tooth at a younger age (5.9 ± 2.5 months) than non-Indigenous children (7.7 ± 2.5 months). Earlier eruption times were associated with ethnicity ($p < 0.01$), caries status ($p = 0.01$), and dmft (cumulative score of the number of decayed, missing due to caries, and filled primary teeth) scores ($p = 0.05$).

Conclusions: This study provides evidence that earlier eruption times of primary teeth are associated with ECC. Furthermore, the primary teeth of Indigenous children erupted at an earlier age than non-Indigenous children. Determinants of eruption time are still under investigation, and include many biological and behavioural factors. These findings highlight the importance of ensuring Indigenous children receiving their first dental visit within the first year of life, as recommended by professional dental organizations.

#28 ~~Standardizing and Improving Hyperbilirubinemia Management in the Nursery~~ WITHDRAWN

Jonathan Walther, Karis Butler, Tiffany Layton; Kathryn Conyer, Ashley Kreis, Mallory Henderson, Kathy Gilchrist*

Purpose: Hyperbilirubinemia is a common diagnosis in the newborn period, with more than 80% of infants having some degree of jaundice. Management of this process has been quite provider dependent, especially in the first few days of life. Variations in management can lead to confusion between patients and nurses, as well as increased readmissions for hyperbilirubinemia. This purpose of this project is to attempt to standardize treatment in the nursery as well as decreased readmission rates for hyperbilirubinemia to less than 3% by December 2023.

Methods: In 2021, the level 1 nursery at the Chickasaw National Medical Center in Ada, OK had 978 total deliveries. Several interventions were performed during the study time including creation of a hyperbilirubinemia team, implementation of a new phototherapy source, provider education on 2004 guidelines, implementation of Hyperbilirubinemia algorithm for the first 24 hours of life, and most recently a change in the hyperbilirubinemia guidelines by the AAP. Data was collected and run charts made to show progress.

Results: Five months of retrospective data were collected and noted to have an average readmission rate of 6.5%. The first interventions of the hyperbilirubinemia team as well as additional of the a new brand of phototherapy equipment took place in December of 2021. During this 3 month period, readmission rates were 6.2%. Provider education was performed in March 2022 with discussion of 2004 guidelines and importance of monitoring risk factors. The next 4 months period had a readmission rate of 5.1%. During this time there was a development of a hyperbilirubinemia algorithm, however with the release of the 2022 hyperbilirubinemia guidelines, implementation was delayed until November of 2022.

Conclusions: Over the first half of our quality improvement project, we have seen a slow steady decrease in our readmission rates. It also appears that when interventions occur, and the focus is more on hyperbilirubinemia, there seems to be much less readmissions. This study does have a few limitations in that frequently babies are discharged close to 24 hours to continue to have ample bed space for the OB unit as well as potentially higher risk

of hyperbilirubinemia in the First American population. We will continue to provide interventions in hopes to can reach our goal by December of 2023.

#29 The formation of urban Aboriginal community advisory groups to develop and evaluate culturally relevant health literacy and health promotion resources on mooritj (strong) healthy skin

*Jacinta Walton, Bernadette Ricciardo, Heather-Lynn Kessar, Uncle Noel Nannup, Aunty Dale Tilbrook, Brad Farrant, Carol Michie, Richelle Douglas, Nadia Rind, Jodie Ingrey, Brenda Warner, Ainslie Poore, Ingrid Amgarth-Duff, Hannah Thomas, Asha Bowen**

Purpose: Skin is the largest and only visible organ of the body, and skin health is important for overall health and wellbeing. Different populations have different experiences of skin health, informing targeted health literacy and health promotion resources. Working with Aboriginal Elders, Aboriginal community members, and Aboriginal Community Controlled Health Organisations through the Koolungar Mooritj Healthy Skin (KMHS) project, our team has been investigating the skin health needs of Western Australian urban-living Aboriginal children. We have identified eczema, skin-sores, tinea, scabies, head-lice and sunburn to be prevalent; yet there is a lack of targeted health literacy and health promotion resources.

Methods: Motivated from the learnings of the KMHS pilot, two Aboriginal Community Advisory Groups (CAGs) were established; one representing Whadjuk boodjar (Perth Metropolitan Region) and one representing Wardandi boodjar (Greater Bunbury Region). The CAGs were formed to provide local leadership, direction, and cultural guidance on all aspects of the KMHS project; and to co-design and evaluate health literacy and health promotion resources on mooritj (strong) healthy skin. Appointment to the CAGs was by expression of interest, with community members self-nominating. Quarterly face-to-face meetings (with each CAG) were carried out for the duration of the KMHS research project (2022-2023).

Results: Health Literacy:

Clinical factsheets on eczema, skin-sores, tinea, scabies and head-lice were co-created by Aboriginal and non-Aboriginal clinicians for use in the paediatric dermatology clinics. These were reviewed and modified by CAG members for suitability, who co-developed a parent feedback form evaluating readability, utility and acceptability of the factsheets. Health Promotion: CAG members designed health promotion resources on mooritj healthy skin incorporating Noongar language and culture; specifically a factsheet for parents and infographic for children. The infographic messaging was used in various child-friendly resources, including a short educational presentation where a pre- and post-quiz was used to evaluate knowledge gain.

Conclusions: Having identified the skin health needs of urban-living Aboriginal children, and an absence of culturally appropriate health literacy and health promotion resources, CAGs were formed to develop factsheets and infographics with healthy skin messaging for urban-living Aboriginal children. Further health promotion activities are underway, including development of a mooritj skin music video and children's eczema storybook. These resources, that are designed by community for community, will fill a gap in health literacy and health promotion materials, build on community knowledge of healthy skin, and will help achieve the ultimate goal of mooritj healthy skin for all urban-living Aboriginal children.

#30 Co-Creating Mental Health Interventions

Gabrielle Warren, Anna Giesbrecht*

Purpose: Start2Finish is a national non-profit that operates in over 70 communities, providing equity-focused, trauma-informed approaches to support mental and physical health for Indigenous and other equity-deserving children. Our work nurtures participants' minds, bodies, and social health, empowering them to succeed and become role models for change within their communities and the nation. Our community research study aims to develop better collaboration processes between Indigenous and non-Indigenous agencies. As our organization has worked in the mental and physical health field for over 20 years, we believe that creating stronger culturally relevant collaborations allows us to impact Turtle Island better.

Methods: Start2Finish has informally surveyed our collaborators to improve our relationships and partnerships; however, recently, we have begun to employ action research methods in our work. This method helps us to better

include our collaborators in our process and not assume the needs of the students with whom we work. The target group for this project is the practitioners at the Native and Family Child Services in Alberta, with whom we collaborate. As we have an existing relationship, the conversations will build on previous work done. The number of participants is to be determined.

Results: The desired outcome of this research is to understand better what collaboration between non-Indigenous and Indigenous organizations has looked like in the past and work together to create better methods for the future. As a Black-led organization, we are curious to see if this fact adds a different perspective to our praxis. We hope this research will be a needed addition to Truth and Reconciliation in practice.

Conclusions: The results will be discussed.

#31 **Dental Therapy's Impact on Alaska Native Children & Communities**

*Brett Weber, Ahniwake Rose**

Purpose: This presentation will explore dental therapy, an innovative dental health provider type working in Indigenous communities in Alaska and the Pacific Northwest, and the impact that these providers have had on children's oral health, comfort, and confidence.

Methods: A presenter will provide an overview of dental therapy's workforce model, present data on the health impacts, and show a short video featuring Alaska Native children interacting with their dental therapist.

Results: The University of Washington found that children in Alaska Native communities served by dental therapists had more preventative services and fewer extractions compared to communities without DTs. The short video will explore children's confidence in being seen by a DT and the level of care and comfort offered them.

Conclusions: Alaska Native communities have benefitted from dental therapy since 2004, and other tribal communities may be interested in bringing this provider model to their lands.

#32 **Métis Girl's mental health and wellness in British Columbia, Canada WITHDRAWN**

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Purpose: In partnership with McCreary Centre, Métis Nation BC has monitored the self-reported wellness of Métis girls ages 12-19 for the past three Ta Saantii report periods. Girls reported intentional self-harm / cutting at 27% in 2008, 36% in 2013, and 42% in 2018 which is compared to 28% in non-Métis girls. MNBC hopes to impact this trend for the 2023 reporting period by introducing culture as healing to Métis girls as it is abundantly clear that there is a dire need within the Métis community to greater support mental health and wellness – as it relates to self-harm amongst Métis girls.

Methods: McCreary administered a 130-question survey to youth ages 12-19yrs every 5 years through the public school system since 1992. In 2018, 58 of the 59 School Districts participated and 32% (1150) of the Indigenous respondents identified as Métis which is 1/3 of the Indigenous population in BC. Métis Youth are three times as likely to be in government care (11% vs 4%). 24% of Métis Youth have had a family member attend residential school, which was associated with having a family member attempt or die by suicide (50% vs 25%) and increased their likelihood of experiencing government care (17% vs 10%).

Results: Decreasing intentional self-harm as an indicator of wellness in Métis girls is reflected as a target in MNBC, and the OPHO (Office of the Provincial Health Officer - Dr Bonnie Henry) report "Taanshii Kiiya" public health baseline report. Targets by 2030 are 1) to increase how female youth rate their mental health as "very good" or "excellent" from 49% to 61% (25% increase), and 2) to decrease by 25% reports of Self Harm from 42% to 32%. The four joint priorities and recommendations of the OPHO and MNBC include "Lifestyle as Medicine" as a resiliency-building factor for youth.

Conclusions: The upward trend of Métis girls' self-harm is alarming and must be addressed. The data indicates disproportionate mental health concerns within the Métis Nation, we also know that there are resilient or "mentally healthy" communities rooted in the strengths of Métis culture and worldviews. Métis-wisdom and ways of knowing believe that community-based approaches contribute to resilience and mental wellness. With this, MNBC proposes a project that will lean on the protective factors that come from building community and

connection. Fostering connections can act as a protective factor in promoting life, reducing risk, and promoting greater mental wellness for Métis youth.

#33 Improving Adolescent Sexual Health Through an Educational Toolkit for Providers in Rural Alaska

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Purpose: Alaska Natives experience significantly higher rates of sexually transmitted infections (STIs) such as chlamydia and gonorrhea. Adolescents account for half of all newly acquired STIs and naturally engage in more risky behaviors. Adequately addressing an adolescent's sexual health is essential during development. Yet, thirty-three percent of adolescents have health visits with no mention of sexual health and when it does occur, primary care providers spend only thirty-six seconds discussing sexual health issues with adolescents. The purpose of this evidence-based practice project was to implement and evaluate a comprehensive educational toolkit regarding various sexual health topics for rural healthcare providers in Alaska. The toolkit aimed to improve communication in addressing adolescent sexual health.

Methods: Larrabee's Model for Evidence-based Practice Change guided the project team's development, implementation, and evaluation of an evidence-based sexual health toolkit. Content topics included cultural humility, creating confidential, youth-friendly environments, and communicating with adolescents about sexual health. The toolkit targeted rural healthcare providers caring for Alaska Native adolescents. The toolkit was accessible for download online through Iknowmine.org. To assess the utility, accessibility, and overall impact of the toolkit, healthcare providers completed a 34-item evaluation.

Results: Eight healthcare providers accessed and utilized the toolkit in their practice, with greater than 70% identified American Indian or Alaska Native as clients. Healthcare providers practiced in various specialties and represented each of the five geographical areas of Alaska. Healthcare providers found the most beneficial topics within the toolkit were, answering adolescent questions and tips to create a confidential, youth-friendly environment ($M = 4.4$, $SD = 0.98$). After a review of the toolkit, there was a slight increase in a provider's likelihood to initiate sexual health discussion with an adolescent and a statistically significant increase in a provider's confidence in talking with youth about sexual health ($p = .004$). Healthcare providers somewhat to strongly agree that the toolkit taught them something new, is easily accessible, and aids in sexual health care delivery.

Conclusions: The Adolescent Sexual Health Toolkit is a concisely formatted toolkit that includes evidence-based information for rural healthcare providers. The toolkit is easily accessible and is available on Iknowmine.org and aids healthcare provider communication with adolescents about sexual health topics. Healthcare provider feedback addressed the need for sexual health resources, improved provider's confidence in talking with adolescents, and shared eagerness to use evidence-based resources to improve practice.