

19TH ANNUAL

# HUMANITARIAN HEALTH CONFERENCE

Poster Presentation  
Participants and Award Recipients

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KANSAS CITY, MO  
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# About the Humanitarian Health Conference

The Humanitarian Health Conference (HHC) is an educational event with the goal of equipping learners to take the next step in partnering with the world's most marginalized people.

Target Audience: The HHC is focused on educating those involved in humanitarian health around the world, including in the USA. This includes physicians, pharmacists, dentists, advance practice providers, nurses, allied health professionals, public health professionals, healthcare administrators, students, and service-minded volunteers.

## Poster Presentations

Conference organizers welcomed participants to present posters of their completed and/or ongoing professional work during the conference.

Poster Presentation Categories for Professionals and Students Included:

- Case Study
- Research and Innovation
- Global Health Education

Special consideration was given to the following topics:

- Impact of international rotations and experiences on learner development
- Impact of implementing public health services in communities with limited resources
- Clinical issues in resource-poor communities
- Sustainability implications for short-term international projects or partnerships
- Global Impact of medical mission
- Innovative approaches in global health

## INMED

The Institute for International Medicine (INMED) exists to equip healthcare professionals & students with the unique skills necessary to effectively serve the world's most forgotten people. INMED is a graduate school offering didactic instruction in the full range of global health topics via online, hybrid, and in-classroom courses, as well as through conferences. We also complement such instruction with supervised service-learning experiences at over 45 INMED Training Sites in 25 low-resource countries. INMED learners can earn a Graduate Certificate, a Graduate Diploma or a Master's Degree in International Health. For more information, please visit [inmed.us](http://inmed.us) or contact us at [office@inmed.us](mailto:office@inmed.us)



# Award Recipients

## Case Study:

Nicholas Maxwell, Washington University Dept of Emergency Medicine  
Creating a Network of Free Hospitals in South-South Nigeria

## Research or Innovation:

Lafayette Loper, University of Nebraska Medical Center  
Pediatric Asthma Screening within an Emergency Family Homeless  
Shelter

## Global Health Education:

Olivia Langton, Kansas City University  
Analysis of Smoke Exposure-Related Esophageal Cancer Risk Factor  
Prevalence in a Rural Western Kenyan Population



## A Systematic Review of PAHO And WHO Documents for Neurological Disease Burden

*Shreya Anand<sup>1</sup>, Kiran Thakur, MD<sup>2</sup>*

The availability and distribution of neurological treatment and intervention vary greatly around the world. To address these issues, the World Health Organization (WHO) introduced the Intersectoral Global Action Plan that aims to improve and prioritize neurology implementation globally. The Pan American Health Organization (PAHO) is a specialized international health organization for the Americas (composed of 52 countries). It works to advance and defend public health by combating communicable and noncommunicable diseases and their causes. A comprehensive search on neurodegenerative diseases was conducted by three reviewers through the Institutional Repository for Information Sharing (IRIS) database, PAHO and World Health Organization (WHO) websites.

The articles were then thoroughly reviewed and categorized by:

1. Disease (Stroke and Traumatic Brain Injury (TBI))
2. Scope/Type of Article (Guidelines, Epidemiological data, Plan/strategy, Educative, Meeting Summary, or Observational/experimental studies)
3. Target Population (Healthcare Professional, Public Health Professional, General Population, Researchers/Academics, or Other Profession)
4. Gaps in Literature (Inadequate and/or Unreliable Data, Timeliness, Quality of Studies/information/data, or Not Found)

A total of 7 publications found on Stroke and 7 publications specific to TBI across the PAHO/WHO databases. The publications were categorized by scope, gaps in literature, and target population. The result of the study revealed gaps in the following categories quality of studies published, inadequate/unreliable data and unknown burden of disease. These gaps contribute to the Global Burden of Neurological Disorders need to be addressed in future studies.

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## **Missed opportunities and The Case for Universal Aspirin Therapy- Clinician Compliance with Low-Dose Aspirin Therapy for The Prevention of Pre-eclampsia in a High Risk Patient Population**

*Cicilia Ariga, M.D.<sup>1</sup>, Ann Abbott Marin, D.O.<sup>2</sup>, Gregory Smith, D.O.<sup>3</sup>,*

**Introduction:** Pregnancy related hypertensive disorders are the leading cause of maternal and perinatal mortality world wide<sup>1</sup>. Low dose aspirin (LDA) therapy is an evidence based intervention that provides significant risk reduction in preeclampsia, preterm birth, intrauterine growth restriction, and perinatal mortality<sup>2,3</sup>. Both the ACOG and the U.S. Preventive Services Task Force recommend low dose aspirin therapy for pregnant women who have at least one high risk factor or more than one moderate risk factor for pre-eclampsia<sup>1, 2</sup>. Some institutions have found that only 46% of women who met criteria for aspirin received the recommendation<sup>4</sup>. We suspect that there is a high rate of missed opportunity to prescribe LDA in a high-risk population.

**Methods:** Retrospective data review using: Electronic medical chart review. Pregnant women who received prenatal care at UH LMC maternal care clinic and family medicine residents' clinic without covid-19 infection from May 2021 –May 2023. Exposures were moderate and high risk factors for preeclampsia and LDA.

**Outcome:** Pregnancy induced hypertension.

**Results:** Of the 783 patients that we studied, 71% (553) met criteria for ASA prophylaxis. Of the 553 patients that met criteria, only 38% (209 patients) of that population actually received the recommendation for ASA while the remaining 62% did not. Of the patients that were prescribed ASA, 30% (63 patients) went on to develop PreE or gHTN. When looking at those patients that developed PreE or gHTN, 49% of those patients met currently established criteria for ASA ppx and were missed, resulting in a potentially avoidable hypertensive disorder of pregnancy.

**Conclusion:** These results show that at least 62% of the time, clinicians are missing the opportunity to recommend a safe medication that has been shown to reduce the risk of preeclampsia. Of all patients who were diagnosed with a hypertensive disorder of pregnancy, 49% were potentially preventable if they had received appropriate prophylaxis. Given the high rate of missed opportunity to prescribe LDA universal aspirin therapy maybe a cost effective approach to reduce preeclampsia.

## Abstract

*Gautam Desai, DO, FACOFP dist.<sup>1</sup>, Hemanta Paudel, MS-4<sup>2</sup>, Alexis Nelson, MS-4<sup>3</sup>, Kayla Calandro, MS-4, OMM Fellow<sup>4</sup>*

Preventative screening exams are an imperative component of quality healthcare among all populations as they provide early identification and subsequent intervention of life-threatening conditions, leading to significant reductions in morbidity, mortality, and health-care costs. Because of the critical role of preventative screening exams, we reviewed the current literature detailing institutional and provider-driven factors that prevent patients in rural Guatemala from accessing adequate preventative health exams. We then developed and conducted a survey-based study to identify the degree to which patient-centered economic, social, and personal barriers impede preventative health screening efforts. Our goal is to further elucidate the most prevalent and modifiable factors currently limiting the use of preventative health services particularly in rural areas where access to care is more limited.

Our survey-based study is designed as a qualitative cross-sectional analysis. We compared the frequency of identification of all barriers listed on the survey to identify patterns pertaining to specific age, gender, and socioeconomic groups using statistical measures such as linear regression, simple means, and analysis of variance.

The results demonstrated major economic concerns of participants included inability to afford screening tests and inability to access care due to work and family related responsibilities. Social and cultural barriers did not appear to negatively impact patients' willingness or ability to obtain screening results. Though nearly all patients ranked their health as "very important," only 25% reported that they were "very likely" to request preventative health screening tests. This indicates that patients do not have a clear understanding of the link between preventative medical care and promotion of health. This is an important area for future education and intervention on behalf of providers and governmental organizations in Guatemala.

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## **Literature Review: Safety, Cost, Legal and Environmental Implication of Reusing 'Single-Use Devices' Globally and a Practical Guide to Reprocessing in Low-Resource Communities**

*Alma Vida Datario<sup>1</sup>*

Driven by the invention of new plastic polymers in the late 20th century and the need to minimize the risk of infections, many medical devices today are labeled as "single-use." Despite this labeling, many facilities worldwide reprocess these single-use devices (SUDs) using third-party processors in high-resource economies like the US, as well as through largely unregulated in-house reprocessing in developing countries such as China, India, and Brazil. The greatest concerns with reusing SUDs are the risk of infection and safety. The major driving factor for reprocessing SUDs (rSUDs) in any economy is the associated cost savings, which can be as much as paying only 10% of the cost of a new device in facilities that process SUDs in-house. There are also legal implications regarding liability and patient consent. Additionally, reprocessing SUDs can have a positive impact on the environment by reducing waste and greenhouse gas emissions. After exploring the literature on the impact of rSUDs, the author included a practical guide to reprocessing SUDs in low-resource communities.

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## **An Introduction to the BLUE Protocol: A Literature Review**

*Reese Foster<sup>1</sup>*

Ultrasound has become more frequently implemented in the world of diagnostics and medicine. Various curriculums have been implemented to progress current and future practitioners ability to utilize ultrasound in their practices. However, there has been little to no research that has shown how often these practitioners are using ultrasound in their practices, and if they feel capable of doing so. This literature review was guided by the results of a brief survey given to a subset of current and future providers. The survey reviewed respondents familiarity and comfortability in various POCUS protocols, and respondents noted their unfamiliarity in lung ultrasound. Therefore, this brief literature review serves to delve into a review of the BLUE protocol, a protocol developed to guide the diagnosis of respiratory distress.

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## The Prevalence of Symptomatic GERD and Access to Esophageal Cancer Diagnosis in Rural Kenya

*G. Howell MS3<sup>1</sup>, O. Langton MS3<sup>2</sup>, G. Desai DO, FACOFP dist<sup>3</sup>*

In 2018, a statistical study found that in Kenya, the leading cause of cancer-related mortality in men is esophageal cancer, with squamous cell carcinoma (ESCC) more prevalent than adenocarcinoma. The gold standard is esophagogastroduodenoscopy (EGD) with biopsy for diagnosis, but it has proven ineffective in lowering cancer incidence due to the cost and the lack of access. Risk factor mitigation may be most efficacious method for decreasing ESCC incidence and related mortality. Risk factors such as gastroesophageal reflux disease (GERD) and smoke exposure have been identified worldwide as risk factors for ESCC. The authors sought to analyze GERD affecting patients at Mama Pilista Memorial Health Centre (MPMHC) and provide education on modifiable risk factors to alleviate the disease burden in the community.

After KCU IRB approval, a survey instrument was distributed to patients presenting to care during KCU's Global Health Outreach in Kenya during November/December 2023. Patients did not have to participate to receive free care and medications. 72 adult patients (ages 18 and older) were surveyed at MPMHC. After survey completion, participants received educational pamphlets regarding risk factor mitigation for esophageal cancer. Survey data was numerically input into Excel and analyzed using SPSS statistical software. A participant was considered to have GERD if they had a known diagnosis of GERD, heartburn, chest burning, or regurgitation of food.

Almost half of the participants were found to have GERD (48.6%, n=23), but only 15% of those who were diagnosed with GERD were treated with medication (n=6), and 66.7% of the patients who were medicated experienced refractory reflux (n=4). 33% reported experiencing three or more symptoms. Having GERD correlated with experiencing fatigue (p=0.005), fevers (p<0.001), the sensation of food being stuck in the throat (p=0.004), and a history of pneumonia (p=0.017). Despite the prevalence of GERD and associated symptoms, only 4.2% had an EGD in the past (n=3).

Despite a strong prevalence of GERD with associated red-flag symptoms, access to disease-modifying treatment and diagnostic studies remains problematic. While MPMHC does provide medication to patients, esophageal cancer awareness, transportation, and cost may all pose as barriers to ESCC risk factor mitigation. Further patient and provider education in the region may highlight the importance of symptom reduction to decrease risk. The small sample size is a limitation of this study.

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# Super Giant Basal Cell Carcinoma: A Systematic Review

*Genelia Kang<sup>1</sup>, Ajaipal S. Kang<sup>2</sup>, MD FACS*

**Introduction:** Basal cell carcinoma (BCC) is a common skin malignancy. Super giant basal cell carcinoma (SGBCC), defined as a lesion greater than 20 cm in diameter, is a rare oncological entity, with few descriptions of its characteristics, risk factors, and outcomes. Therefore, we completed a systematic literature review to better understand this rare form of cancer.

**Methods:** A systematic literature search for the years 1972-2023 was conducted with PubMed, Google Scholar, Medline Ultimate, and Cumulative Index to Nursing and Allied Health Literature databases using the search terms “basal cell cancer,” “basal cell carcinoma”, “giant basal cell cancer”, and “super-giant basal cell cancer”, and “super-giant basal cell cancer management”. We identified 20 case reports for our analysis.

**Results:** Most cases were reported in North America and Europe. Males outnumbered females approximately 2:1. The mean age at diagnosis was 61 years. The lesion was located on trunk in 16 out of 20 cases. In 13 patients, the lesion had been present for more than 10 years and 7 cases reported metastasis. In 9 of 20 cases, low socioeconomic status and poor mental health were identified as risk factors. Severe autism, schizophrenia, self-neglect, lack of insurance, chronic alcoholism, and avoidance of medical care were specifically reported. Regarding treatment, eleven patients underwent surgery, six patients underwent radiation, and four patients were treated with immunotherapy.

**Conclusion:** Although basal cell carcinoma (BCC) is known to have a favorable prognosis, SGBCC is highly aggressive with ability to metastasize. The time to diagnosis of SGBCC was more than 10 years duration and is more common in males in their sixth decade. In the absence of identifiable histologic factors, we believe self-neglect is the likely etiology of the large size. Treatment options may be multimodal with a combination of surgery, radiation therapy or immunotherapy. The very high incidence of low socioeconomic status and poor mental health makes this entity an opportunity to educate the mental health patients, their families, and providers.

**Statement of Significance:** The data suggests that SGBCC has a disproportionate impact on patients with low socioeconomic status and mental health issues. These findings emphasize allocation of resources for education and earlier detection in that subgroup.

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## A Narrative Approach to Challenging Situations with Patients

Aroog Khaliq, B.A.<sup>1</sup>

**Introduction:** This project restructured a 2021 lecture on challenging patient care situations in the introductory block at the University of Kansas School of Medicine. The original slide deck typified patients and considered only provider perspective. The revised slide deck, piloted in 2022 and since then, delivered annually in July, adopted a narrative medicine approach. Narrative medicine, pioneered by Rita Charon, focuses on patient-physician, physician-physician, and physician-society relationships.

**Methods:** To make the presentation more patient-centered, we interviewed 14 patients, 7 from a Nepali-speaking, refugee background and 7 English-speaking chronic pain patients. A grounded theory approach was used, and patients were interviewed to point of saturation using the same open-ended questions in each group. Interviews were then compiled into cases for the final presentation. Student responses were assessed using questions from the Pre-Mess CCTI (an AAMC cultural competence assessment tool), modified from Arntfield et al (2013). Students were also asked open-ended reflective questions before (N=182) and after (N=75) the presentation. Qualitative data from participant interviews and student responses were analyzed using thematic coding in Dedoose.

**Results:** Major themes isolated across patient groups included a hesitance to critique the system, the influence of cultural health taboos, variations in health literacy, disconnectedness from the provider, provider affect/cruelty, and patient quality of life. Student themes included the beliefs that doctors should be using narrative medicine; students had unconsciously used narrative medicine/found it synonymous with “holisticness;” and that there should be a greater emphasis in later medical curriculum on reflection, social determinants of health, and non-dominant cultural approaches to health. Pre-Mess CCTI responses were compared between ethnic minorities and non-minorities, and humanities and non-humanities undergraduate backgrounds, showing no statistical difference in cultural competence domains based on these demographic stratification markers.

**Conclusions:** Existing literature suggests there is an “empathy drop” that occurs during the second half of medical school, and this project highlights that incoming medical students arrive with an appreciation for cultural competence and narrative medicine, regardless of personal or academic background. This project is a springboard for future medical education quality interventions at KUSOM, as well as other institutions. The issues of declining empathy, burnout, and limited time with patients intersect and compound one another, and with the shortening of the latter, these issues will worsen. Narrative medicine can provide a plethora of opportunities to resist this tide and re-center the humanity and artistry that makes medicine truly healing. As this project and others note, medical school is training out the very skills students find valuable coming in. Further studies must urgently examine how this happens, how it can be reversed effectively, and if narrative medicine skills can be retained and/or re-activated.

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## Pain Levels Associated with Occupation Risk Factors with Knee Osteoarthritis in Guatemala

James Kim<sup>1</sup>, Zachary Hollander<sup>2</sup>, Pedro De Castro<sup>3</sup>, Saahil Golia<sup>4</sup>, Edith Riggs<sup>5</sup>,  
Gautam Desai DO<sup>6</sup>

**Introduction:** Osteoarthritis (OA) is one of the most prevalent joint diseases globally. Impacting approximately 10-15% of adults, it emerges as a primary driver of chronic pain and disability. Among the affected joints, the knees are one of the most common body parts that are diseased. Many common contributing factors are age, genetics, prior joint injury, excess load bearing, and occupations that lead to frequent joint overuse. Patients in rural Guatemala are prone to more labor-intensive jobs and have a large population of patients with osteoarthritis. The aim of this study is to compare the pain levels of manual laborers with osteoarthritis and sedentary patients with osteoarthritis.

**Methods:** After receiving their routine care, patients were recruited to the study by asking them if they would like to participate. They were offered the survey in Spanish or English, whichever was their preference. A Mann-Whitney test using the SPSS software was performed to compare the pain levels at the end of the workday in those with osteoarthritis in manual laborers versus sedentary workers with osteoarthritis.

**Results:** The Mann-Whitney U Test revealed a significant difference in pain levels at the end of workday in patients with osteoarthritis who were manual laborers compared to sedentary patients with osteoarthritis ( $p < 0.01$ ). The mean pain rank of the manual labor patients was 9.45 and the mean pain rank of the sedentary patients was 6.00.

**Conclusion:** Patients reported higher levels of pain when they were exposed to occupational risk factors associated with manual labor. Patients in manual labor are prone to spend much more time kneeling and squatting, which could exacerbate their symptoms.

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## Human Milk Exchange Toolkit for a Low Resource Setting

*Emily Laker<sup>1</sup>, Pami Ellis<sup>2</sup>*

The current human milk bank model is costly, and a birthing center sought assistance in pasteurizing milk for a breastmilk exchange. High Temperature Short Time Pasteurization (HTST) is an affordable option for increasing equity of access to treated donor milk in rural or low resource settings. This evidence-based practice initiative utilized a program evaluation design to develop, implement, and evaluate a toolkit for improving the safety of donated human breastmilk and increasing accessibility. Implementation took place at a maternity center located in rural Philippines. Based on current pasteurization research and milk banking recommendations from the WHO and the Human Milk Bank Association of the Philippines, a protocol was developed for donor selection, milk collection, HTST, storage, and thawing of milk. Eleven registered midwives participated and completed the training. At one- and three-months post-implementation, the toolkit was being utilized regularly with over 1000ml of donor human milk and requests from other facilities for the trained registered midwives to pass on the training and toolkit. Toolkit supplies cost less than \$7 USD.

Local healthcare workers are important stakeholders in promoting an equitable resource for infants in rural communities and instrumental in sustaining a safe and effective human milk exchange in resource-limited areas of the world. Partnership and training between lactation experts, nurse educators and midwives makes pasteurized donor human milk available in low resource settings. This project is a story of partnership and providing current HTST knowledge to midwives able to help moms and babies in need. Lives are being saved through donated breast milk for a fraction of the cost after simple training with basic supplies gathered locally.

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## **Analysis of Smoke Exposure-Related Esophageal Cancer Risk Factor Prevalence in a Rural Western Kenyan Population**

*O. Langton MS3<sup>1</sup>, G. Howell MS3<sup>2</sup>, G. Desai DO, FACOFP dist<sup>3</sup>*

Esophageal cancer is common worldwide, with increased prevalence in Eastern Africa and Eastern Asia. A 2018 study concluded that in Kenyan males, esophageal cancer is the leading cause of cancer-related mortality, with squamous cell carcinoma more prevalent than adenocarcinoma. This differs from patterns seen in Western countries which demonstrate an increased risk of adenocarcinoma due to gastroesophageal reflux disease (GERD) and obesity. Risk factors such as tobacco, household open fires, alcohol, hot beverages, and GERD have been identified worldwide as risk factors for esophageal squamous cell carcinoma (ESCC). The authors sought to determine the prevalence of smoke-related ESCC risk factors in patients receiving care at the Mama Pilista Memorial Health Care Center (MPMHCC) located in rural Western Kenya. From past outreach, they hypothesized that many patients use open flames to cook, and that patients may not be aware this could be detrimental to health. Furthermore, they aimed to evaluate the prior awareness of esophageal cancer risk factors and their prevalence to help inform patients of lifestyle modification to potentially minimize their risk.

After Kansas City University (KCU) IRB approval, the investigators asked adult patients presenting for care at the MPMHCC in November/December 2023 whether they wished to participate in the study. Patients were given the same free care and medications as part of KCU's Global Health Outreach irrespective of their participation. A total of 72 patients ages 18 years and older participated. The most prevalent risk factor amongst our population was exposure to an open flame through cooking (95.7%, n = 66), with many patients also stating they heat their homes with an open flame (52.2%; n = 36). However, the prevalence of tobacco usage was nearly non-existent (2.9%, n = 2) within this population. Data was affected by small sample size and incomplete surveys. Additionally, a statistically significant correlation with moderate strength (p-value = 0.034; R = 0.403) was found between the awareness of esophageal cancer risk factors & prevalence and the level of education of the surveyed population.

The data collected from this study suggests that many patients in Western Kenya utilize a heating/cooking method which may increase their risk for ESCC. Future public health efforts should focus on patient education, and further research is needed to evaluate the social determinants of health within the population to identify barriers in acquiring alternative options to open flames and barriers to education surrounding the awareness.

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## **Pediatric Asthma Screening within an Emergency Family Homeless Shelter**

*Lafayette K. Loper, MD<sup>1</sup>, Shaker Dukkipati, MD, PhD<sup>2</sup>, Dale Agner, MD<sup>3</sup>*

Asthma is the most common chronic illness among children in the United States and disproportionately affects persons of low socioeconomic status and racial/ethnic minorities. This Quality Improvement Project aims to expand on a previous pediatric asthma screening project that was performed in 2019 at the “Lydia House”, the emergency family transitional housing unit of the larger Open Door Mission (ODM), one of the largest homeless shelters in Omaha, NE. In this ongoing project, an asthma screening process is being conducted according to the current Global Initiative for Asthma (GINA) guidelines. General health assessment forms, Asthma Control Test (ACT) forms, and pre-albuterol/post-albuterol Peak-Flow assessment are administered to all participants. In accordance with the current GINA guidelines, the diagnostic criteria for asthma used in this project is either an ACT score of  $<19$  and/or a pre/post albuterol Peak Expiratory Flow (PEF) ratio of at least 20%. Improvements to the previous project design include the use of financial incentives in the form of gift cards to increase participation and limit selection bias. Additionally, language and literacy barriers are being addressed by the implementation of bilingual verbal announcements and the use of in-person Spanish interpreters. All participants are ages 4-18 and are residents of the Lydia House at the time of screening.

Herein, we report 34 children to-date that have been screened according to our protocol. With our screening process, 4 of the 34 children met diagnostic criteria for asthma (11.8%). Two participants were diagnosed from ACT scores  $< 19$  and two were diagnosed after demonstrating post-albuterol reversibility with PEF ratios of  $>20\%$ . Those children diagnosed with asthma were initiated on montelukast therapy and were scheduled for follow up either at Clarkson Family Medicine or with their PCP. In contrast to the 36% asthma prevalence rate demonstrated in our clinic in 2019, the current project has demonstrated a prevalence much nearer the national prevalence of 8.4%. As hoped, the gift card incentive appears to be limiting selection bias by attracting participants across a diverse range of respiratory acuities. Additionally, verbally advertising the project in Spanish led to the participation of an immigrant family with literacy barriers. We hope to continue to screen up to 100 children with this project given our current funding.

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## Creating a Network of Free Hospitals in South-South Nigeria

*Nicholas Maxwell, MD<sup>1</sup> Fr. Andrew Ekpenyong, MS, Ph.D<sup>2</sup>*

Inspired by the suffering seen around him growing up in rural South-South Nigeria and the call to “Heal the Sick” in Matt 10:8, Fr. Andrew Ekpenyong felt called to start the Joseph Ukpo Hospitals and Research Institutes (JUHRI) there. This Catholic mission is building a network of Catholic research hospitals that provide free care to the underserved while striving to perform cutting edge research and uplift the communities it serves.

JUHRI, led by the call in Matt 10:8 to “Heal the sick”, strives to provide top tier healthcare to those who need it the most. It does this through the provision of 100% free care to the communities it serves. This includes outpatient care, inpatient care, mobile clinics, and even surgical care. However, JUHRI also recognizes that to provide the highest quality care, the whole human person needs to be cared for. This led to the opening of a nutrition bank for malnourished children, clinical pastoral care, research to improve care locally and globally, creating a skills acquisition center to train local women in employable skills to break the cycle of poverty, and educational activities with local schools. Despite the wide range of services it provides, the mission is entirely funded by grants and donations with an average monthly cost of only around \$4,000 total.

Since its founding, JUHRI has provided free care to over 25,000 patients. Over 19,000 of these have been at Site 1 which opened in the summer of 2018 and almost 5,000 of these have been at Site 2 which opened in the summer of 2022. Our mobile clinics have provided free care to over 4,000 patients as well. In addition, we have graduated over 20 students from our skills acquisition center after they completed two years of free training and hosted numerous educational activities with local schools. Furthermore, we have published in a wide range of fields including, but not limited to, public health, heart disease, ultrasonography, and infectious disease.

JUHRI has created and is continuing to grow a network of Catholic research hospitals that are of the communities it serves and for the communities it serves which provides 100% free healthcare to its patients. While doing this, it uplifts the local communities further through social justice focused interventions like child nutrition banks and education of youth and adults as well as research to improve the health locally and globally.

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## **Fascial Distortion Model as a Treatment Method for Chronic Lower Back Pain During Global Health Outreach: A Case Report**

*Haley Nelson<sup>1</sup>, OMS-II; Raj Watson<sup>2</sup>, OMS-II; Dr. Jodi Flanders<sup>3</sup>, DO; Dr. Bob Schneider<sup>4</sup>, DO*

Amongst manual laborers, chronic lower back pain is a common complaint with various origins. Despite it being a common issue, chronic lower back pain has few options for long-lasting, non-pharmacologic relief. The fascial distortion model (FDM) is a manual treatment model that combines a patient's verbal and non-verbal description of pain with history of injury and palpatory findings to diagnose musculoskeletal injury. FDM is a relatively new treatment model that has become popularized because it has been shown to provide significant and continual pain relief along with rapid restoration of range of motion. In this case study, a 48-year-old brickmason presented with a four-year history of right-sided lower back pain that radiated down his right leg. Upon examination, a 1-cm mobile, soft mass was palpated on the patient's right posterior inferolateral flank. After a single application of the fascial distortion model, the patient reported complete symptom resolution and was observed to have a markedly improved gait. This case demonstrates success in using a single application of FDM to treat musculoskeletal causes of chronic lower back pain, thus becoming specifically useful with patients treated during global health outreach trips in which the physician may not be able to return for follow up treatment.

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## Use of a novel information technology solution to deliver continuing medical education to low-resource settings

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Through the creation of a novel device to address the unique barriers to delivering continuing medical education (CME) in low-resource settings around the world, Techies Without Borders (TWB) is changing the way we equip, connect, and go to empower the underserved around the world. As a global non-profit dedicated to providing equitable access to information technology for all, we, as part of TWB, have developed an innovative technology solution called the CME-On-Stick (CMES) and associated server (CMES-Pi) to address numerous common barriers to CME in low-resource settings such as cost, limited internet access, variable pathology prevalence, and variable resources. The solution enables users to access CME on their phones or USB devices and create customized content suited to their contextual needs. Participants will leave the session with an understanding of how to use the novel solution for ongoing CME delivery in areas with limited infrastructure, as well as gain ideas on how such methods can be adapted for their own practice.

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## **Assessing the Use of Educational Interventions Promoting Preventive Measures for Sun Exposure in Rural Guatemala**

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**Background:** Chronic sun exposure is a well-known risk factor for skin cancer. Preventative education regarding sun damage protection has been shown to be an effective intervention among uninsured and immigrant populations<sup>1</sup>. However, the efficacy of educational intervention regarding knowledge and use of proper sun protection among patients in rural Guatemala is unclear. This study aims to assess how educational interventions affect patient understanding of risk factors for skin cancer, methods of sun damage protection, and willingness to implement recommendations into daily skincare routines.

**Methods:** Participants were adults living in Guatemala who attended a free community clinic in February 2024 and were provided a 7-minute educational video in Spanish discussing skin cancer types, warning signs, and sun protection. Patients were administered a 12-question pre-survey using yes or no responses to evaluate baseline understanding. An 8-question post-survey was administered to assess changes in willingness to use sun protection, comfort in identifying warning signs, and understanding of risk factors. Descriptive statistics and Chi-square analysis were performed.

**Results:** 29 participants completed the study. 58.6% were aged 18-30y, 24 (82.8%) were women and 5 (17.2%) were men. After watching the video, participants were more willing to use sun protection methods daily (58.6% pre-intervention vs 96.6% post-intervention;  $p=0.001$ ), more comfortable with identifying warning signs of skin cancer (3.4% pre-intervention vs 96.6% post-intervention;  $p<0.001$ ), and had a better understanding of sun exposure as a risk factor for skin cancer irrespective of Fitzpatrick skin type (37.9% pre-intervention vs 96.6% post-intervention;  $p<0.001$ ).

**Conclusion:** Patients who underwent the educational intervention were significantly more likely to implement sun protective measures into their daily routine, were more comfortable identifying skin cancer warning signs, and had a better understanding that all skin types can get skin cancer. Providing education regarding sun protective measures is crucial for increasing awareness and improving healthcare outcomes.

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## Breaking Barriers: Advancing Health and Education Equity for Refugees with Disabilities

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Refugee health is a complex issue and our multifaceted project, including a needs assessment, curriculum development, and policy recommendations, attempts to address various inequities for overlooked populations through an investigative lens. Drawing on background research, including findings indicating that 70% of Persons with Disabilities (PWD) do not receive any education, this study evaluates existing healthcare provisions and identifies specific challenges faced by refugees with disabilities.

We administered a needs assessment across three different refugee camps in Pakistan, which highlighted significant inconsistencies and gaps in policies, funding, and educational services. Camps report minimal formal policy frameworks guiding inclusion and accessibility and funding shortages. There were significant challenges in identifying educationally disadvantaged students, as identification is mostly passive and relies on self-reporting. Special education is not differentiated by type of disability, further contributing to a lack of appropriate educational offerings. Language barriers and a lack of psychological support further isolate students with disabilities in refugee settings.

In response, this project proposes training programs for teachers and educational staff to ensure they have the skills necessary to support students with disabilities effectively. Educational curricula should be adapted to be inclusive of neurodevelopmental disabilities, integrating specific accommodations. This curriculum can be incorporated into healthcare training programs, as well as the training of educators and camp administrators to ensure a holistic approach to disability inclusion in refugee contexts. Policymakers can be provided a policy brief on funding standards and curriculum requirements to facilitate its widespread implementation. By advocating for targeted interventions and policy reforms, this initiative seeks to empower marginalized communities and foster inclusive educational and healthcare environments for refugees with disabilities worldwide.

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