2022 Poster Presentation Participants and Award Recipients

June 10-11, 2022

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 2022 HHC was focused on educating those involved in humanitarian health around the world, including in the USA. This included 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 2022 HHC.

Poster Presentation Categories for Professionals and Students Included:

- Global Health Education
- Research and Innovation

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
- Global health research

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Universal Risk and Protective Factors in Mental Health among Children Worldwide

Andrea Nguyen, M.S.[1], Joshua Manlutac, M.S., MPH[2]

Estimates from the World Health Organization (WHO) and United Nations International Children's Emergency Fund (UNICEF) suggest that 10 to 20 percent of children worldwide suffer from mental health conditions, with suicide as the third leading cause of death in adolescents aged 15 to 19. Half of these children's mental health struggles began by age 14, but oftentimes it is undetected or left untreated. While research and documentation for adult mental health conditions continues to grow, the psychological status and impacts of children remains to be further investigated. Therefore, this study focuses on determining universal risk and protective factors to evaluate the global prevalence of child mental health outcomes, emanating from the ongoing, coordinated efforts between UNICEF and corresponding Special Representatives of the Secretary General (SRSGs), biostatisticians, physicians, and other health advocates. Objectives are to: 1)Describe the burden of adverse mental health outcomes among children; 2)Recognize common risk factors and protective factors in different geographical regions. Methodology includes a formal literature review employing a two-fold search criteria. Risk factors were defined as characteristics that result in adverse mental health outcomes. Significant factors were found to be low socioeconomic status, lack of resources, violence, conflict, coercement, and social media usage. Protective factors were defined as characteristics that resulted in favorable mental health outcomes in children. These include familial support, community support, institutional support, resilience, and cultural factors.

Our findings suggest risk factors for developing mental health disorders often exceed or equal the number of protective factors in all geographical regions. Evidence also indicated that most significant protective factors against developing mental health disorders relies on strong support systems. With this analysis and information, we developed a comprehensive action plan for the promotion, protection, and care of children's mental health. Main recommendation is: Establish a human rights-based and child-centered framework that increases a child's connections to protective factors and support systems. Integrating essential region-specific implementations into present and future mental health programming plans can improve mental health outcomes and decrease the global burden of mental health disorders for children worldwide.

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Combating Period Poverty in Kenya

Kyla R. Graeser[1], Savanna K. Rosenbaum[2], Anna G. Buck[3]

In January of 2022 while on a medical outreach trip with RVUCOM and the Hands for Health Foundation, we sought to help with efforts to alleviate period poverty among underserved women and girls in Kenya. Period poverty involves lack of access to adequate education about menstruation and to hygienic menstrual products and facilities. This has serious detrimental effects on the health and wellbeing of those it impacts including financial burden, lack of education, social stigma, and risk of infection. Our project was aimed at providing reusable feminine hygiene kits and education about menstruation and associated topics, with the goal to decrease the negative outcomes associated with period poverty.

Our project consisted of a fundraiser for the purchase of Makini reusable feminine hygiene kits and an educational poster focused on common misconceptions surrounding menstruation. It also included information on how patients can keep themselves clean and healthy during menses. We collaborated with our Kenyan contact, Christine Njihia, for information about the population, cultural practices related to menstruation and women's health, and distribution of the products and education. We raised a total of $4,587 and have distributed 572 kits thus far. The women and girls receiving the donations were also provided education on how to use and clean the products, as well as education about women's health and wellbeing. Our educational poster was given to Kilimanjaro Mission Hospital to be displayed for patient viewing.

Our goal in providing these products and education to young Kenyan women and girls was to help combat period poverty and open the discussion about the normalcy of menstruation. A byproduct of fundraising in the US was bringing of awareness to our local communities about period poverty, where it exists, and how people are affected by it. This encouraged us to continue spreading awareness to other global healthcare providers about the importance of education around menstruation and feminine hygiene. The very act of having a conversation about menses with our patients helps reduce the stigma and normalizes menstruation and, maybe even more importantly, empowers women about their health.

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Patient perceptions of the use of a novel, minimally invasive sampling method to detect esophageal cancer in rural Kenya

Marah Kays, OMS 4[1], Jordan Clement, OMS 4[1], Gautam Desai, DO, FACOFP dist.[2]

Developing countries bear over 80% of global esophageal cancer (EC) deaths and exhibit the highest incidences of disease. Kenya is located within what is called the African EC Corridor, in which EC is the 4th most common cancer and 3rd most common cause of cancer-related deaths. The cause of this inequity of distribution is currently unknown but is exacerbated by the lack of access to screening and treatment, particularly in rural areas. Esophageal sponge cytology is a proposed solution for facilitating the study and detection of early asymptomatic esophageal dysplasia in these resource limited settings. In this cross-sectional pilot study of 52 patients at the Mama Pilista Bonyo Health Centre, (a health clinic in Wanjaya Village in Western Kenya), we collected demographic data, esophageal cancer risk factors, attitudes regarding esophageal cancer testing, and patient preferences for/against esophageal sponge cytology use after being shown a video outlining a device and the sampling procedure. Thirty-nine respondents (75%) would feel comfortable receiving the procedure if they had symptoms of EC and 33 (63.5%) would feel comfortable receiving the procedure without symptoms of EC. 39 (73%) respondents were very likely to accept the procedure if they had a family member with EC. Esophageal sponge cytology has been shown to be effective in the detection of Barrett's esophagus, a precursor of adenocarcinoma of the esophagus, with additional data supporting its utility in discovering squamous cell carcinoma. Our findings suggest the acceptance on the part of patients of utilizing esophageal sponge cytology in rural Kenya. These tools could prove incredibly useful in supporting widespread study of esophageal dysplasia in underserved or rural areas in addition to increasing screening efforts for EC in the African EC Corridor and other regions.

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Poster

Girls Inc. programming may improve cardiovascular health and pregnancy outcomes through diet and stress reduction.

Rebecca Slotkowski,[1] Matthew VanOrmer,[2] Anum Akbar,[3] Taija Hahka,[4] Aaryn Mustoe,[5] Keyonna King,[6] Melissa Thoene,[7] Corrine Hanson,[8] Ann Anderson Berry[9]

Cardiovascular complications are the leading cause of maternal mortality in the United States. The burden of poor cardiovascular health falls disproportionately on impoverished and non-White communities where structural racism limits access to quality care, thus impacting health outcomes. Social health programming (SHP) is designed to mitigate adverse social experiences by empowering communities to address modifiable risk factors for poor health. SHP for adolescents has been shown to mitigate some cardiometabolic risk factors, including poor nutrition. However, the long-term impacts of adolescent participation in SHP on cardiovascular health and future pregnancy outcomes are not known. We will partner with Girls Inc., Omaha, a nationally recognized after-school program offering SHP, to address this gap. We hypothesize that SHP with nutritional and emotional resiliency components will positively impact adolescent cardiovascular health. To test this hypothesis, we will compare nutritional antioxidant status (Aim 1), hair/saliva cortisol levels (Aim 2), and vascular elasticity (Aim 3) in current/former SHP participants versus age-matched controls. Our research will inform the design of SHP for adolescents and contribute to the elimination of sociodemographic disparities in maternal mortality due to cardiovascular complications.

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Elderly Male with Vascular Mass in Rural Guatemala: A Case Report

Garrett Jackson[1], Sadie Thompson[2], Lauren West[3]

Vascular malformations and tumors are often congenital lesions that can appear as subcutaneous or submucosal swelling. They may, however, appear later in adulthood as well proliferating secondary to developing collateral channels of blood flow, or may expand with infection, trauma, or hormonal disturbances.

In February 2022 medical students in conjunction with local Guatemalan physicians hosted mobile clinics in rural towns in the Zacapa region of Guatemala. A 72-year-old Mayan, Guatemalan male presents to the mobile clinic adamantly requesting resection of a large 4-5cm temporal mass. His past medical history was positive for hypertension controlled by atenolol which he purchases from his local pharmacy independent of supervision from a primary care physician. The patient denies any surgical or family history. Upon examination, his vital signs were within normal limits aside from his slightly elevated blood pressure at 139/87 mmHg. The lesion demonstrated a palpable thrill, audible bruit, surface telangectasias and hyperkeratosis. Point-of-care ultrasound visualized the blood flow and played an essential role in educating the patient as to the nature of the lesion and the kinds of risks that a surgical approach would introduce. After viewing the image the patient was reluctant to push for a surgical approach and was able to endorse that he understood and trusted our clinical judgement. In rural, Mayan Guatemala where folk medicine replaces health literacy and there is a high mistrust of the healthcare system, POCUS can provide a concrete visual which can help build trust and improve outcomes.

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Multidimensional Model for Free Clinic Improves Outcomes within an Omaha Homeless Shelter

Sarah Joanna S Jacob[1], Lafeyette K Loper[2], Dale Agner[3]

Introduction: Open Door Mission's (ODM) free clinic and Clarkson Family Medicine Residency (CFM) have uniquely partnered with a tertiary medical center, Nebraska Medicine (NMC), to coordinate continuity care for ODM guests across the spectrum of the shelter, outpatient care at CFM, specialty treatment, and inpatient care.

Methods: CFM has developed a specific three-way memorandum with ODM that entails NMC covering malpractice for CFM physicians to oversee a physician-resident-student clinic at ODM. CFM residents coordinate care between inpatient, specialty and routine outpatient care. NMC coordinated a 340B Drug Pricing Program for ODM guests. NMC waives copays for ODM guests to be seen at the CFM clinic. ODM receives grants as incentive for decreased Emergency Department (ED) visits which has helped fund three clinic nurses. ODM has an infirmary for the homeless who need a higher level of care, but do not qualify for a skilled nursing facility.

Results: A comparison of the number of ED visits by ODM guests prior to the ODM-CFM-NM collaboration to the number of ED visits 18 months after establishment of the partnership shows a 69% decline (602 potential ED visits avoided). In 2020, the ODM free clinic evaluated and treated 190 patients. Close follow up visits with a primary care provider (PCP) at the CFM clinic were set up for 20%(38) of these patients, of which nearly 50%(18) attended these appointments. 1 in 7 ODM guests seen at the free clinic go on to establish a relationship with and continue to see their PCP at CFM, some even after leaving ODM. In 2021, ODM cared for 62 patients for a total of 959 “bed days” for an average of 15.5 days per ODM guest.

Discussion: This model has decreased the number of ED visits and hospitalizations of ODM’s guests and has resulted in health savings. Other outcomes include longitudinal care with CFM primary care providers, improved management of complex medical conditions outpatient, and improved adherence to rehabilitation programs. NMC’s support has encouraged more physicians to volunteer at the clinic. The clinic is a valuable medical education resource for volunteer residents and students.

Conclusion: This unique yet replicable partnership model has benefited the healthcare system and the homeless population in Omaha.

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Poster

Hazard Mapping to Support Mass Casualty Response Plan on Isolated Island of Sint Maarten

Nicole Roberson[1], Lekha Vuppalapati[2], Michael Steflovich[3], Heather Yoder[4], Natasha Pavlinetz[5], Dr. Earl Best[6], Dr. Sally-Mae Abelanes[7], Dr. Derrick Tin[8]

The Caribbean island located approximately 170 miles east of Puerto Rico is divided as Dutch Sint Maarten and French Saint Martin. Despite having an estimated two million visitors annually and approximately 100,000 residents, there are only two hospitals on the island with low resources and capacity. In low- and middle-income countries such as Dutch Sint Maarten, just a few seriously injured patients can overwhelm an already stressed healthcare system leading to a limited capability to respond to a mass casualty incident (MCI).

After consulting with a disaster management expert from Dutch Sint Maarten, five vulnerable areas have been identified as high-risk hazard areas that could overwhelm local emergency medical resources if an incident was to occur. Hazard mapping allows for geographic visualization and analysis of which areas pose threats to the people and economy in the event of a disaster. Although Sint Maarten has an established disaster management plan, a MCI would overwhelm the 70-bed capacity hospital; the dissemination plan for critical patients in the event of an overwhelmed hospital is to medevac off island. Analysis of the hazard maps, disaster management plan, and available resources of Sint Maarten, therefore, determines it to be at high-risk of health system failure in the event of a MCI. Increased collaboration with the French Government and Dutch islands of Curaçao, Aruba, and Bonaire, however, is the key to risk mitigation. Implementing risk mitigations prior to catastrophic events such as MCIs, therefore, is a humanitarian responsibility to reduce the potential loss of human lives. Hazard mapping in Sint Maarten allows for visual representation of data for disaster management personnel to utilize in future treaty negotiations.

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The Burden of Disease in St. Maarten and Public Health Recommendations for Addressing Disparities in a Resource-Limited Country

T. Newsome, P. Pinnamaneni, N. Isic, C. Stribbell, C. Flores

There is a high prevalence of non-communicable diseases (NCD) in the Caribbean Islands due the strained infrastructure and limited resources. The island of Sint Maarten is one such country in the Caribbean that faces health care disparities due to these constraints. There has been an increase in the elderly adult population leading to an increase in the number of people developing NCDs. High blood pressure presents as the leading NCD in the country followed by diabetes mellitus, and asthma. For NCD related deaths, heart disease was the leading cause followed by diabetes mellitus. Two studies conducted on children also revealed that obesity was prevalent in the younger population as a result of nutritional behavior and physical inactivity. An increase in disease prevalence is creating a burden on the resources available as there is an increased demand for health resources and interventions.

The Health Caribbean Coalition has developed a transformative action plan to address NCDs and health disparities in resource-limited communities. These interventions address the five main risk factors that lead to NCD deaths and promote factors which will reduce childhood obesity. Other action plans consist of social inclusion and participation for policy development; people-centered, primary health care-based health systems for universal health, partnerships, networks, and resource mobilization; and accountability for decision making. By controlling these modifiable risk factors and government/community interventions to reduce NCDs in the Caribbean, 80% of all heart attacks, strokes, and type 2 diabetes, as well as 40% of cancers can be prevented. However, as well-intentioned as this action plan is, its implementation has left out many of the smaller Caribbean islands, such as Sint Maarten, and has been stilted by lack of resources, competing priorities, and limited knowledge. Thus, future recommendations should address these shortcomings in order to ensure success in decreasing the burden of NCDs in these communities.

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Poster

Clinical outcomes of COVID-19 in patients with sickle cell disease and sickle cell trait: A critical appraisal of the literature

*Wouter S. Hoogenboom[1,4], **Tharun T. Alamuri[1,4,5]**, Daniel M. McMahon[1], Nino Balanchivadze[2], Vrushali Dabak[2], William B. Mitchell[3], Kerry B. Morrone[3], Deepa Manwani[3], Tim Q. Duong[1]*

There has been conflicting evidence whether those with SCD or SCT are impacted by COVID-19 differently than the general population. Thus, a literature review on COVID-19 in SCD and SCT patients was conducted. A structured literature search was conducted using PubMed to find all relevant articles from January 1, 2020 to October 15, 2021. A total of 71 articles were identified and analyzed, 67 with 2,290 total SCD patients and 11 with 1937 total SCT patients. Adult SCD patients showed a 2- to 7-fold increased risk of hospitalization and a 1.2-fold increased risk of death in comparison to adult non-SCD patients. No differences were seen when compared to controls with similar comorbidities and end organ damage, and most adult SCD patients showed mild to moderate disease course. Pediatric SCD patients show mild disease course and low mortality that are more promising than adult SCD patients, but pediatric SCD patients with SCD-related comorbidities are at higher risk of hospitalization and escalated care than pediatric non-SCD patients. Findings on patients with SCT are much more limited due to low number of articles as well as varying results. Most studies reported mild disease course for adult SCT patients, hospitalization rates ranged from 17.6% to 61.1%, and mortality rates ranged from 2.2% to 28.6%. There was insufficient data to analyze pediatric SCT patients. SCD patients do not appear to have increased risk of COVID-19 hospitalization and death when compared to similar controls. However, larger future studies with risk-stratification and matched-controls are needed to confirm these findings as well as provide more insight into SCT patients and the effect of SCD-modifying therapies on outcomes.

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This abstract is for a poster presentation

The effectiveness of aromatherapy in reducing anxiety and pain in Guatemalan patients receiving intra-articular injections

R. Christian[1], T. Koochin[2], G. Desai[3]

Introduction: Intra-articular corticosteroid injections are a necessary and appropriate non-surgical, pharmacologic treatment to relieve joint symptomatology for moderate to severe osteoarthritis of the knee. Anxiety from these injections may be associated with increased physical discomfort which could become a barrier from receiving treatment. Aromatherapy could be a non-invasive, cost-effective approach to decreasing anxiety and pain. The cost-effectiveness of this intervention is an important advantage in resource-poor countries like Guatemala, where this study was done.

Methods: Patients who were designated to be receiving an intra-articular injection, met the research criteria, and consented were given a scented cotton ball (lavender, orange, or no scent (water)) to smell until the procedure was complete. Patients completed a brief questionnaire pre and post procedure. This was a double-blinded study.

Results: ANOVAs with a p-value of 0.95 were conducted on pain and STAI-6 data resulting in F-values of 0.072384 (for pain) and 0.281578 (for anxiety). Neither of these F-value are significant. The cumulative average STAI-6 score of all scents pre-injection suggests clinically significant symptoms for anxiety based on the normative STAI cut-off score. All scent anxiety scores improved enough to move below the cutoff for anxiety. The orange scent and water had a statistically significant decrease in anxiety based on paired t-tests with a confidence interval of 95%.

Conclusion: Although there were no significant findings in pain perception, patients who received the orange scent and water experienced a statistically significant decrease in anxiety. However, since there were no patients without an intervention as a control, we do not know how this decrease in anxiety would have compared to those who received no intervention. To improve findings, it is recommended to conduct a similar study across multiple trips to increase sample size as well as comparing different forms of sensory stimuli. It also prompted questions regarding how language, cultural, and literacy barriers affect patient responses to questionnaires.

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