FRI_001

Acculturation and Depressive Symptoms Among Syrian Refugees in Germany

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Background: Since 2015, the number of Syrian refugees in Germany has risen to over 500,000. This population is managing both the acculturation process and mental health issues. There is a dearth of research with this group, and much of the current work is focused on acute medical concerns or mental health outcomes without consideration of acculturation pressures. To improve measures to address this, we tested a modified, 26-item version of the Acculturation Rating Scale for Arab-Americans-II (ARSAA-II) and measures of depressive symptoms among Syrian refugees in Germany.
Methods: We conducted a cross-sectional study of Syrian refugees between 18-and 64-years old living in Germany. Written informed consent was obtained, and the University of Michigan IRB approved the study. We recruited through refugee accommodation centers, direct contact, and snowball sampling. 100 people completed surveys that met criteria for exploratory factor analysis (EFA) and 91 met criteria for assessing depressive symptoms. We performed an EFA using R v.3.5 and calculated the means and Cronbach's alpha for the factors and other measurements. Based on the original ARSAA-II EFA, a 2-factor solution was reproduced, and a 3-factor solution provided interpretable results.
Findings: The full scale and factors had adequate reliability (a=.85; a=.74, a=.76, a=.75). The means of each factor indicate a higher attraction to Syrian than German culture and moderate levels of social interactions (scores=1-5; F1=3.89, SD=0.68; F2=3.08, SD=0.79; F3=2.69, SD=0.93). Depressive symptoms were assessed with CES-D-12, (item scores=0-3; a=.872) A score³10 indicates depressive symptoms and we found a high prevalence in this population (mean=14, SD=7.68, n=91).
Interpretation: This study presents a reliable instrument to measure acculturation among Syrian refugees in Germany. The depressive symptoms measure showed good reliability and the mean was high, indicating the need for improved mental health services. As the study utilized a small convenience sample, the findings are not generalizable. However, the sample is demographically representative of Syrian refugees in Germany. With increasing numbers of refugees globally, it is critical to improve our understanding of health issues among these populations through validated measurements, and this study provides important insight into acculturation and depressive symptoms among a large refugee population in Germany.
Source of funding (if none, enter "None"): University of Michigan International Institute

FRI_002

Integrating Gender, Mining and Health Governance in Zambia

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Background: Extractive industry projects are shifting to low- and middle-income countries, where mines drive the development agenda with the promise of wealth. These projects fundamentally transform landscapes, societies and culture, raising community concerns over livelihood security, distribution of benefits, protection of human rights, and environmental degradation. For women caught in these spaces, there exists a clear gender bias in the unequal distribution of risks and benefits that, in turn, disproportionately affects their health and wellbeing. Oft-overlooked governance challenges are revealed.
Methods: This ethnographic research project explores the consequences of mining development in Northwestern Province, Zambia, with a particular focus of these effects on women's health and well-being. Twenty interviews were conducted with representatives who focus on gender-related issues from local and national government, civil society organizations, a local mining company, and with women from the region. Thematic analysis of the data was conducted to reveal preliminary findings.
Ethics approval was received from the University of Zambia Biomedical Research Ethics Committee Research and the University of Waterloo Office of Research Ethics.
Findings: Mine-affected communities experience profound shifts in gender dynamics. Compounded by the on-going effects of colonization and longstanding cultural practices, power relations are intensified. Women, especially those with lower incomes and education levels, experience the effects of growing income inequality, stigma and social isolation, increased risk of physical and mental health impacts, sexual violence and risk of sexually transmitted infections and HIV. Despite experiencing these effects, women often find themselves with a limited role in decision-making in mining-driven projects. Yet some women find ways to exercise their agency and exert power in local spaces. Their efforts are aided by certain national and local governance initiatives that support their empowerment; though, much work remains if more equitable outcomes are to be achieved.
Interpretation: Despite attempts to overcome them, gaps in governance efforts arise between the supports offered through government policy, mining company programs, and the conditions of daily life that women experience. In these spaces women continue to face significant challenges that are perpetuated by unequal power relations in mined communities.
Source of funding (if none, enter "None"): Social Sciences and Humanities Research Council of Canada – Insight Development Grant and SSHRC Bombardier Canada Graduate Scholarship – Doctoral

FRI_003

Using the Socio-Ecological Framework to Design an Intervention for Breastfeeding in Indiginous and Rural Communities in Mexico

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Background: Breastfeeding (BF) offers multiple health and economic benefits to children and mothers. However, no country worldwide meets the WHO's standards. Mexico has one of the lowest prevalences of BF worldwide, leading to devastating health and economic repercussions, especially for its most vulnerable populations. It is therefore necessary to implement culturally competent interventions that address BF barriers. Thus, using the socio-ecological framework, this qualitative research aimed to understand the influence of fathers, grandparents, and medical providers on BF practices in indigenous and rural communities in Mexico in order to recommend an evidence-based intervention package that includes family and health care systems level efforts to improve BF outcomes.
Methods: In-depth interviews were conducted with mothers, fathers, and grandparents of children less than 2 years of age from marginalized backgrounds in two indigenous communities in the State of Mexico. Interviews were also conducted with medical providers from various clinics in those communities. In total, 65 interviews were completed, and two focus groups were conducted: one with mothers and another with nurses.
Findings: The findings suggest that mothers and their family members believe BF is the best nutrition for infants. However, mothers are not BF exclusively nor for the recommended length of time. While the majority of medical providers indicated that mothers tend not to follow their recommendations due to cultural practices, the majority of mothers and family members reported listening to the recommendations of medical providers over those of others. This discrepancy could explain the lack of quality support and care given for BF at the various clinics. This includes time of consults, provider sensibility, and clarity and uniformity in the information provided to families.
Interpretation: In order to ensure that children receive all the benefits of BF, an intervention must focus on increasing the rates of exclusive BF as well as extending the duration of BF to two years or more, as was traditionally done in indigenous and rural communities. Training should be provided so that medical providers make clear and homogenous recommendations, especially for first-time and working mothers.
Source of funding (if none, enter "None"): Yale University School of Medicine and School of Public Health, Un Kilo de Ayuda.

FRI_004

The Global Cohort of Doctoral Students: A partnership to build global health research capacity

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Background: Doctoral students face unique challenges as they develop their capacity to improve global health. Disciplinary, institutional, and geographic silos can impair the exchange of skills and ideas, as well as the ability to effectively communicate. Founded in 2016, the Global Cohort of Doctoral Students (GCDS) is a community at the Harvard T.H. Chan School of Public Health and at participating institutions in low and middle income countries (LMICs) who engage in shared experiential learning. GCDS seeks to enhance the ability of doctoral students to identify and pursue impactful global health research and to foster lasting cross-continental networks of research professionals.
Methods: Students in GCDS engage in three activities: 1) developing a learning contract, in which student pairs outline learning goals and how they will help one another achieve them, 2) participating in a monthly web forum, where students present their research and solicit feedback, and 3) attending an annual conference to reflect and engage in skill-building sessions. An advisory board composed of faculty and students at participating institutions oversees strategic decision-making for GCDS. Program costs include travel and accommodation at research sites and travel to the annual conference, resulting in an estimated cost per student of $3,170. To assess the impact of our program, we have developed a short online survey that contains questions on comfort completing specific research tasks, as well as interpersonal relationships with other members of the cohort.
Findings: The program's pilot year (2016-17) at Haramaya University (Ethiopia), Harvard University (USA), and the University of Botswana established agreement with the GCDS aims and interest in the program's activities. Two pairs of students formed, who have prepared two manuscripts and been successfully awarded one grant. In 2017-2018, two additional pairs were formed at the University of Gondar and the University of Rwanda.
Interpretation: Attunement to GCDS stakeholder priorities (students, faculty, and administrators) has facilitated progress to date. Students are keen to equitably engage with colleagues abroad in a sustained and structured manner. Faculty benefit from students' enhanced research capacity. Administrators across partnering institutions support novel approaches to advance experiential learning. Our biggest challenge has been identifying travel funding for students at LMIC institutions.
Source of funding (if none, enter "None"): None

FRI_006

Implication of HbA1c Monitoring in Preventing ESRD Progression – A Short Term Analysis

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Background: Reports have shown that Taiwan has the highest incidence and prevalence rate of End-Stage Renal Disease (ESRD) in the world. Diabetes Mellitus (DM) is believed to be the primary cause of ESRD in 40-50% of ESRD patients globally. Considering the increasing global prevalence rate of DM, there is a need to develop strategies to help reduce the disease burden. To date, there are few conclusive studies regarding the use of $HbA1_C$ to monitor ESRD progression. In this study, we investigated the association between $HbA1_C$ level management and yearly eGFR change in pre-ESRD patients. The goal is to help reduce the disease burdens by exploring the usefulness of such information.
Methods: This is a retrospective analysis of pre-ESRD individuals (eGFR <60mL/min/1.73m²) between 2015 and 2017. Selected individuals had CKD and HTN, but no history of heart disease or stroke. Three-year $HbA1_C$ levels were calculated and individuals were divided into three groups: a negative control group (eGFR<60, without DM), a well-controlled group (eGFR<60, 6%<$HbA1_C$<7%), and a poorly-controlled group (eGFR<60, $HbA1_C$>7%). The measured eGFR values were averaged for each year, the eGFR change were calculated from 2015-2017, and statistical significance was measured via one-tail t-tests.
Findings: The average eGFR change from 2015-2017 for the negative control is -1.82, for the well-controlled group is -1.81, and for the poorly-controlled group is -4.08. From 2015-2017, significant differences were observed in the average eGFR change between the negative control and poorly-controlled groups ($p=0.0441$) and between the well-controlled and poorly-controlled groups ($p=0.0485$). There was no significant difference observed between the negative control and the well-controlled groups ($p=0.4620$).
Interpretation: The significant difference in eGFR changes observed between the well-controlled and poorly-controlled groups suggest that $HbA1_C$ monitoring may help prevent ESRD progression. Based on the promising result from this short-term study, future effort should investigate the long-term relationship between $HbA1_C$ and eGFR changes.
Source of funding (if none, enter "None"): None

FRI_007

Evaluating HIV 90-90-90 Targets For Individuals Undergoing Drug-Resistant Tuberculosis Treatment in South Africa.

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Background: TB remains a substantial source of morbidity and mortality for people living with HIV. Here we evaluate the 90-90-90 benchmarks for drug resistant TB (DR-TB) patients with HIV co-infection in South Africa and identify areas for improvement with examining the HIV treatment cascade among this group.
Methods: This is a cross sectional, secondary data analysis of PLWH from an ongoing cluster randomized trial in South Africa. We evaluated the 90-90-90 targets through patient interview along with medical and laboratory record abstraction from both TB and HIV programs. We used the national South African DR-TB provider guidelines to determine the time points for testing individuals for HIV, initiate ART, and test for viral suppression.
Findings: Among 1,280 patients in the study, 75% were co-infected with HIV with a median CD4 count of 171 (range 1-1076), 51% female, median age of 36, and 51% unemployed. On presentation, 91% knew their HIV status and another 8% tested, resulting in a first 90 of 98%. At baseline, 84% of individuals were previously taking ART. 37% of individuals with knowledge of HIV at baseline also had documented viral load, with 30% achieving viral suppression. Of the individuals reporting to a week-8 study visit, 97% received ART. 97% of individuals with a CD4<50 at baseline were prescribed ART within two weeks. Viral load evaluation for individuals followed for eight weeks was available in 45% of individuals taking ART, with 36% being virally suppressed.
Interpretation: There was a high percentage of individuals aware of their HIV status prior to initiating DR-TB treatment and only a small percentage found to have HIV though testing. A high percentage of individuals were initiated on ART per the latest South African treatment guidelines. However, viral load testing and suppression remains well short of the 90% goal for individuals taking ART. Further analysis will determine factors associated with ART initiation and viral suppression, the effects of changing ART medication with DR-TB, and conduct a stratified analysis to understand differences in ART initiation and viral suppression for individuals randomized to nurse case management vs. standard of care in the parent study.
Source of funding (if none, enter "None"): Parent study funded by National Institute of Allergy and Infectious Disease (R01 AI104488-01A1)

FRI_008

The effect of seasonal floods on health: A time series analysis of facility-based data and flood maps in Cambodia

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Background: Floods occur annually in Cambodia, but can be unexpectedly severe. Previous research from large-scale disasters has shown that floods are a threat to health, yet populations that are regularly exposed to seasonal flooding are likely to have different health needs than those exposed to flood disasters. The aim of the study was to quantify the effects of floods on selected health indicators at public healthcare facilities in eleven districts in Cambodia, a flood-prone setting.
Methods: The study was a six-year time series analysis set in eleven districts that flood either seasonally or occasionally. Monthly counts of inpatient discharge diagnoses and outpatient consultations for diarrhea, acute respiratory infections, skin infections, noncommunicable diseases, vector-borne diseases, and injuries were retrieved from the national health management information system for all public healthcare facilities in each district, between January 2008 and December 2013. The total area of flood water, in square kilometers, was mapped for each month from satellite data. Poisson regression models with three lag months were constructed for the health problems in each district, controlled for seasonality and long-term trends. Ethical approval was given by the National Ethics Committee for Human Research in Cambodia.
Findings: During floods and after three months, the rate of visits to healthcare facilities increased by 4 – 182% for skin infections, 3 – 44% for acute respiratory infections, and 6 – 55% for diarrhea, corresponding to a ten square kilometer increase in flood water. At one to two months after floods, the rate of visits for diarrhea declined by 6 – 26%, but no associations were seen for acute respiratory infections or skin infections. No clear pattern was seen for noncommunicable diseases or vector-borne diseases, or injuries.
Interpretation: The results indicated a link between floods and diarrhea, skin infections, and acute respiratory infections in the immediate and longer term in a flood-prone setting, although most associations were small to moderate, and few of the results were significant.. The largest change in rates were seen in a district that does not flood seasonally, but experienced two severe floods during the study period.
Source of funding (if none, enter "None"): Swedish National Board of Health and Welfare, Swedish Research Council

FRI_009

Toxic Sites Vulnerable to Climate-mediated Flooding in Bangladesh

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Background: The increase in climate-mediated flooding threatens to mobilize and remobilize soil-based pollutants expanding the burden of terrestrial pollution to populations historically unaffected. This study aims to identify known toxic sites in Bangladesh vulnerable to projected flood zones.
Methods: This observational study analyzed data collected by Pure Earth's Toxic Site Identification Program (TSIP) in Bangladesh compared with Intergovernmental Panel on Climate Change and National Center for Atmospheric Research (NCAR) global climate projection models. All Bangladesh TSIP locations with valid coordinates were included in analysis. All sites include locations identified by field research team to have toxins exceeding EPA lead hazard standards. Sites were plotted using geographic information system (GIS) and geostatistics software provided by NCAR Climate Change Scenarios available at the GIS Climate Change Portal website. Systematic literature review of major river and flood events was completed to determine the estimated distance of alluvial and terrestrial pollutants from index site.
Findings: We identified 91 of 218 (42%) sites within the current flood plain. An additional 58 sites (27%) were identified to be within 500 meters of current flood plain, 26 sites (12%) within 501-1000 meters, and 30 sites (14%) within 1001-2000 meters from the current flood plain. Literature review found reliable evidence of heavy metal mobilization up to 2000 meters from index site, with variance based on soil type, water and soil pollutant concentration, elevation and land contour. In total, 114 additional sites (increase of 125%) identified are vulnerable to climate-mediated flooding events. Based on current climate-mediated flooding projections, 205 of 218 (94%) TSIP sites in Bangladesh are at risk of flooding.
Interpretation: Climate-mediated flooding in densely populated Bangladesh threatens to dramatically increase the spread and distribution of soil-based toxins, thereby increasing the burden of disease secondary to heavy metals and other pollutants found in soil. Our study provides strong evidence for hasty mitigation of toxic sites in Bangladesh, and larger implications for studying and modeling the interaction between climate-mediated flooding and soil-based toxins.
Source of funding (if none, enter "None"): None

FRI_010

The Impact of Maternal Education on Late Childhood and Early Adolescent Mortality in 56 Countries: A Pooled Analysis of Demographic and Health Survey Data from 2003 to 2016

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Background: Health during late childhood through early adolescence (defined here as ages 5-14) is an oft-neglected topic in discussions on global health. This is despite the existence of large between-country variation in cause-specific mortality for this age group and the soaring population size of adolescents in most LMICs (low and middle income countries). Because health during this period is critical to the accumulation of the capital necessary to become a contributing citizen to nations' economies, it is crucial that the drivers of health during youth and adolescence not be overlooked. Maternal education is a well-documented driver of under-5 mortality, but it is unclear to what extent its importance persists throughout the rest of childhood and into adolescence. This study seeks to determine the correlation of maternal education and poor health outcomes in conjunction with other parental and community socioeconomic characteristics on 5-14 mortality.

Methods: This study used pooled complete birth histories data from 103 Demographic and Health Surveys for 56 countries conducted between 2003 and 2016. Using a mixed effects Cox proportional hazards model, we analyzed the impact of community and household factors on 5-14 mortality. Covariates included maternal education, paternal education, household wealth, urbanicity, average community education, a proxy of intergenerational wealth, birth year, and various interaction terms.

Findings: Of the 1,942,408 live births still alive at 5 years of age, 19,385 died before age 15. Maternal education persists as the most salient predictor of mortality in this period. For a child born in 1990 to a mother with 6 years of education as compared to a mother with 0 has a 0.711 (0.709,0.713) RR of dying, while the child of a father with 6 years of education as compared to a father with 0 has a 0.811 (0.810,0.813) RR of dying.

Interpretation: Despite the increase in independence that occurs throughout childhood and adolescence, adolescent health outcomes are still influenced by parental characteristics, with maternal education remaining a particularly important driver. Possible mechanisms underlying the effect of maternal education on adolescent mortality include vertical transmission of HIV and indoor air pollution from unsafe cooking habits.

Source of funding (if none, enter "None"): Institute for Health Metrics and Evaluation

FRI_011

“It’s not easy to visit a health facility after you go to your husband’s home”: cultural barriers to health access for newly-married women in Nepal

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Background: Globally, women face gender-based disparities in health access, especially where women’s status is low. There has been much focus on improving care seeking behaviors and outcomes among pregnant women, with little focus on preconception health, despite preconception health being essential for both maternal and child health. Our study aimed to identify barriers to care seeking among newly married women (preconception) in rural Nepal, to inform the development of a more targeted approach to improving access.
Methods: We performed qualitative interviews with 20 newly-married women (married in the last 3 months), their husbands, and mother-in-law’s and collected quantitative data from 200 newly married women in rural Nawalparasi district, western Nepal. Data was analyzed by a team of three researchers using a grounded theory approach in Atlas-ti.
Findings: In the quantitative data, 25% of women had seen any health care provider in the last 6 months, with only 17% going to a health facility since moving into their new husbands home. Three primary factors were identified as impeding the women’s visit to the local health post. First, all of the women reported being unable to leave the house at all, or without a chaperone, to go to the health post if needed. The quantitative data supported this, with only 9% of women reporting that they could go to a health facility alone. Second, qualitatively, the majority of women expressed feeling frightened or uncomfortable sharing their medical needs with their in-law family, husband, or a doctor. Third, qualitatively, many women had been married from across the border in India, and thus women cited not knowing enough about Nepal or the language as reasons for not going to the health post. However, quantitatively, being born in India was not associated with a woman’s odds of visiting a health facility.
Interpretation: Social and factors are impeding newly married women’s access to health care in rural Nepal, which could impact maternal and child health. Public health interventions in western Nepal need to account for not just the logistical accessibility but also cultural influences such as women’s agency within the household and community as well as their standing as immigrants.
Source of funding (if none, enter "None"): 5K01HD086281-03

FRI_012

High Prevalence of Intimate Partner Violence is Associated with Disclosure of HIV Status and Delayed ART Initiation Amongst Women Living with HIV in Durban, South Africa

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Background: Women living with HIV (WLHIV) in low- and middle-income countries experience high rates of intimate partner violence (IPV), which may impact their engagement in HIV care. We assessed factors associated with IPV in a cohort of women receiving antiretroviral therapy (ART).

Methods: We conducted a cross-sectional analysis of non-pregnant women (aged ≥18 years) receiving ART for six months at a public clinic in Durban, South Africa. We assessed participants' experiences of past year emotional, physical and sexual IPV using the WHO Violence Against Women Questionnaire. We conducted logistic regression to assess associations between sociodemographic variables and IPV, as well as IPV and HIV-care outcomes.

Findings: Among 235 WLHIV, the median age was 30 years (Interquartile range [IQR] 26-37). Forty [17%] women reported any IPV in the past year; 29 [12%], 23 [10%], and 4 [2%] reported emotional, physical, or sexual violence, respectively.

In univariable analysis there was no association between IPV and income, contraception, depression, self-reported ART adherence, CD4 count or HIV viral load (p>0.1). An association between having no children and IPV was due to confounding and excluded from the multivariable model. In both univariable and multivariable analyses, age ≤24 years (adjusted odds ratio [2.68], 95%CI 1.20-5.98, p=0.016), completing primary school education or less (aOR 10.57, 95%CI 2.34-47.70, p=0.002), and harmful alcohol use (aOR 2.46, 95%CI 1.06-5.73, p=0.036) were associated with any IPV. Among 182 women with a partner, HIV-disclosure to partner was associated with 3.87-fold odds (95%CI 1.07-14.02, p=0.039) of IPV. In a separate model of the 221 women with a known HIV diagnosis date, reporting any IPV was independently associated with having initiated ART >6 months after diagnosis, when adjusted for age, education, and alcohol use (aOR 2.00, 95%CI 0.94-4.29, p=0.073).

Interpretation: In our setting, women living with HIV reported a high burden of recent IPV, which was greater among younger women, those with low educational attainment, those with harmful alcohol use, and those who had disclosed their HIV status to their partner. Experiencing IPV was associated with delayed ART initiation. Addressing IPV among all WLHIV is crucial and may aid in achieving 90-90-90 HIV diagnosis and treatment targets.

Source of funding (if none, enter "None"): IDSA, NIH: AI124719-01

FRI_013

The Impact of Heathcare Directed Ridesharing Applications on Reducing Transportation Barriers for Refugee Women

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Background: The Refugee Women's Health Clinic (RWHC) at Boston Medical Center provides OBGYN services for refugees, asylum seekers, and new immigrants in the Greater Boston area. Refugees are a particularly vulnerable population of patients, and caring for them necessitates addressing the myriad of challenges they face, including significant trauma histories, and social, financial, and cultural barriers to care. Analysis of 2017-2018 RWHC data indicated a 38% no show rate. This rate was particularly high amongst new patients scheduled for annual exams (40%). The elevated no show rate maybe related to the women's low prioritization of such preventative healthcare exams. A previous study at BMC supports this hypothesis, and showed that less than half of the surveyed Somali and Congolese women had received routine gynecological exams in 2016 (Mehta, 2017).

Methods: Surveys of RWHC's patients conducted in 2017 identified transportation as one of the greatest barriers to women coming to their visits. To address this, we conducted a pilot study assessing the impact of providing women with transportation via a ridesharing app, UberHealth. All new GYN patients who stated they had transportation needs were given round trip rides to and from the hospital, regardless of where they lived. The goal of this study was to decrease the no show rate percentage by 10% by December 2018.

Findings: Preliminary results indicate a 12% no show rate amongst RWHC patients receiving the UberHealth service, which is a 31% improvement from baseline. Qualitative surveys with women receiving this service indicated they were satisfied and appreciative. There were no reports of negative experiences.

Interpretation: Future directions include further data analysis to identify women most likely to benefit from the service, in order to improve resource allocation.

Source of funding (if none, enter "None"): BMC OB/GYN Department Research Seed Grant

FRI_014

Translation and Cross-Cultural Adaptation of Research Questionnaires in Indonesia: A Team-Based Approach

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Background: Cross-cultural adaptation of questionnaires is a key step for ensuring that translated items achieve functional and conceptual equivalence in the target population and setting. The objective of this study was to translate and culturally adapt a set of questionnaires from English to Bahasa Indonesia prior to implementing an HIV-related behavioral health study in Indonesia.
Methods: Researchers convened an expert panel (N=12) consisting of bilingual psychologists, HIV service providers, and peer educators. We used methods of cognitive interviewing to ensure precision and cultural congruence in questions and response choices. During a single 5-hour session, panelists were presented with 120 questions and response choices. They were encouraged to “think aloud” about each item followed by a brief discussion and polling of the panelists to resolve differences of opinion. Panelists were asked at the end of the session whether they felt engaged in the translation process and would recommend a team-based approach in the future.
Findings: Panelists were actively engaged in the translation process and perceived cognitive interviewing as an effective approach to achieve context-appropriate translations of questionnaire items. Challenges included translating colloquialisms and medical terminology to reflect local vernacular while preserving conceptual meaning. Cultural adaptation also involved wording items in a way that would be culturally relevant and easily understood by members of the target population.
Interpretation: Using cognitive interviewing techniques to translate research questionnaires can be efficient and may increase the precision and comprehension of translated items. Using an expert panel of translators who understand both the scientific objectives of the study and linguistic conventions of the target population may also enhance validity of translated items. Involving research staff who perform data collection in the translation process may also increase their familiarity with the purpose and meaning of individual questionnaire items, thereby improving their confidence and ability to administer translated questions.
Source of funding (if none, enter "None"): This study was supported by an NIH award for research training (NIDA K23 DA041988 to GJC).

FRI_015

Exploring the Feasibility and Sustainability of Reusable Menstrual Hygiene Products and Pilot Education Programs for Menstrual Hygiene Management in a Remote Himalayan Community in India

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Background: Remote Himalayan communities in India suffer from an absence of menstrual hygiene education programs and limited access to menstrual products. This project delivered reproductive health workshops and piloted a qualitative research study to better understand menstrual product preferences based on personal, cultural and geographic factors in remote, low-resource Himalayan communities. The study explored alternative Menstrual Hygiene Management (MHM) strategies like reusable cups and pads that may help reduce the personal, social and environmental burden of current practices.
Methods: Munsel-ling Boarding School, located in Spiti Valley, India and UBC have a longstanding partnership, collaborating oncommunity-driven projects and educational programs to improve students' longterm health outcomes. Female students aged 14 years and older who had started their first menses were recruited during annual health screens. Each study participant was invited to a women's health workshop and informational session. Participants were provided with 1 menstrual cup, 4 reusable pads, cleaning supplies and 1 menstrual diary. Training on proper usage and cleaning were provided for each product.
Participants were asked to document their product choice(s) monthly for 1 year, along with their rationale and experience with each product. At the end of the study, diaries were collected and the participants were invited to focus groups which consisted of an anonymous Q&A period followed by semi-structured individual interviews. The interviews were used to assess the same quantitative variables as the menstrual diaries, while also using open-ended questions to collect detailed qualitative data.
Findings: Of the 42 eligible girls recruited, 100% chose to enroll in the study, 35.7% submitted completed diaries and 23.8% attended focus groups. Attrition was due to graduation/withdrawal from Munsel'Ling, lost diaries and absences/schedule conflicts with focus groups.
The qualitative and quantitative data collected was analyzed to assess participants' product preferences, pain/discomfort, fear, embarrassment, leaks and parental perceptions regarding each product.
Interpretation: Reusable cups and pads are feasible, culturally appropriate and sustainable alternatives to current MHM practices utilized by women in remote, low-resource settings. Reproductive health education efforts and increased access to more sustainable and practical MHM methods can improve wellbeing, reduce environmental impact and empower young women to be leaders and advocates in their communities.
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FRI_016

Discovering Barriers to Filter Use for Potable Water in Rural Honduras

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Background: The UN has recognized access to safe potable water as a human right; however, it is estimated half of the world's population will still be living in water-stressed areas by 2025. Virginia Commonwealth University's Global Health and Health Disparities Program has been addressing clean drinking water in Yoro, Honduras since 2016 by introducing Sawyer Point One Water filters to villages. While previous studies showed the filters decrease rates of parasite/diarrheal illnesses, it remains unclear their utility in the field over time, and barriers being encountered with use. With 70% of villagers now having received filters, this project aims to evaluate the utility of the filters over time, as well as barriers to their use.
Methods: In June 2018, interviewers administered a voluntary 31-question survey at a free clinic in Yoro, Honduras. Villagers were only approached and interviewed after they had received all health needs. Topics addressed on the survey included Education, Logistics, Confidence and Reliability of the filters.
Findings: 92 interviews were conducted. 88% had their filter for 1-2 years. 41% use river water as their main source of water. 98% confirmed they had been given instructions on how to use the filter, and 98% believe they are using the filter correctly. 15% were found to be using the filter according to the instructions. 58% stated they learn best with words, 16% learn best with pictures and 26% prefer both. 14% found the filter difficult to use. 31% stated there was no one to help them if they had difficulty with their filter. 16% stated their filter no longer works.
Interpretation: It has been found that although filters seem to be well tolerated, there is a large discrepancy in how villagers are using the filters versus how the instructions state to use them. We must address this to optimize correct filter use and receive optimal health benefits. Villagers reported learning best with words, which will direct how further instruction is offered. A reported barrier is the need for help when filters become difficult. We must address this issue in the future to ensure the sustainability of this project.
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FRI_017

Point-Of-Care Ultrasound in the Amazon Jungle: a Case Series

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Background: Point-of-care ultrasound (POCUS) is a portable and cost-effective tool that can be invaluable in resource-limited settings. We present a case series of three patients in whom POCUS was used as a key to diagnosis, and thus to facilitate treatment.
Methods: Over a 2-week period, a group of physicians provided direct patient care in multiple remote villages in the Amazon jungle of Peru. This “mobile” clinic served over 1400 patients who would otherwise have to travel several hours by boat to seek health care.
Findings: A 38-year-old female presented to the clinic with abdominal pain. The pain was located in the epigastrium and was worse after eating fried foods. Physical examination was remarkable for tenderness in the right upper quadrant. POCUS was consistent with cholelithiasis. The patient was advised on dietary modification and was referred to general surgery.
A 53-year-old post-menopausal female presented to the clinic with vaginal bleeding. She also reported dyspnea on exertion. Pelvic exam showed active bleeding from the cervical os. POCUS showed a thickened endometrial stripe, the largest diameter was 55mm. The patient was advised to take iron tablets and was urgently referred to gynecology.
A 14-year-old male presented to the clinic for dyspnea. His mother reported that the patient appeared to be shorter and thinner than his peers, and was having difficulty with weight gain. On examination, he was found to be cachectic with a loud systolic and diastolic murmur. POCUS showed a ventricular-septal defect, as well as mitral and tricuspid valve regurgitation, with a bicuspid aortic valve. He was urgently referred to cardiology.
Interpretation: Utilizing POCUS in remote, resource-limited areas can help to facilitate definitive diagnosis and management. POCUS can also be used for therapeutic interventions, assisting in safety and accuracy of procedures that includes incision/drainage of abscesses or joint injections. POCUS was particularly useful in generating appropriate referrals, reducing the time to definitive treatment for the patient. Ensuring that an accurate diagnosis was made with ultrasound provided confidence that the resources of the patient and the healthcare system were being utilized appropriately. Our team intends to pursue further research into the effects of POCUS on clinical decision making in the Amazon jungle.
Source of funding (if none, enter "None"): None

FRI_018

A Model of Global Public Health Education in Low-Resource Settings

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Background: Public health (PH) promotes and protects the health of people and the communities where they live, learn, work and play. How does one teach public health? A strategy is to utilize the communities as the pedagogical platform. Such approach is used in global PH education to expose students to health issues of communities and to health promotion strategies. This “classroom in the field”model of interprofessional education presents raw experiences to graduate and undergraduate students from different academic disciplines in rural Mayan Villages of Guatemala. The goal is to challenge students to articulate multiple dimensions of global health issues and the policy contexts in which health care is delivered in low-resource environments.
Methods: There are multiple levels of innovation to the full quarter course. These include: 3-way hybrid design (online, face-to-face classroom session, and fieldwork in Guatemala); 3-way academic-community partnerships involving University of Washington, Guatemala Village Healthand Aldeas Sanas Guatemala; and inclusion of graduate students. Online activities and classroom sessions precede fieldwork. After on-site orientation, fourteen students engage in primary health care alongside multidisciplinary teams from partner organizations. Seven to eight remote villages are visited during each trip. Reflections through synthesis of field experiences, research/education activities and course readings are emphasized.
Findings: Many students desire to pursue careers in global health and to return to the villages. Students gained knowledge and skills in community health needs assessment, data collection, primary care, health systems, interprofessional collaborations, logistics and challenges of healthcare delivery related to building partnerships, cross cultural communication and access issues. Students articulated the importance of primary care and health education in the context of cultural relativism in health outcomes improvement efforts.
Interpretation: Tackling global health issues require joint multidisciplinary efforts. Experiential learning introduces future professionals to global health issues, and policies and politics of care delivery in developing countries. Carefully designed interprofessional education enables articulation of effective collaborative practice grounded in communities’ needs to strengthen health systems and improve health outcomes. This education model is adaptable to different contexts and has been successfully used in Togo and Guatemala.
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FRI_019

Employment Outcomes of Global Health Graduates: 6 Years of Trends

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Background: The Mailman School of Public Health at Columbia University has offered an MPH degree along with certificates in global health, humanitarian assistance, and related areas for many years. Since 2012, the Office of Career Services at the Mailman School has been tracking the employment outcomes of graduates by certificate.
In addition, the Association of Schools and Programs of Public Health (ASPPH) has been gathering and compiling employment outcomes data for graduates of member schools and programs for the last 2 years. Employment data is available for 667 Global Health MPH graduates from member schools/programs. Also, the Mailman School's Office of Career Services has conducted employer surveys, and the staff in the center have ongoing discussions with recruiters in global health.
By analyzing employment outcomes of these graduates, we can better inform our curriculum design.
Methods: We will attempt to determine whether the employment outcomes of global health graduates are different from those of public health graduate students in other fields, in terms of the employment sector, job function, salary, employment status, etc. To our knowledge, few similar studies have been conducted; we believe that the approach will provide a new lens with which we can assess our educational offerings. We will be analyzing data related to the graduates of the Mailman School of Public Health, from 2012-2017, as well as data collections conducted by ASPPH in 2016 and if available, 2017.
Findings: From our preliminary analysis, we have found that global health graduates obtained jobs in international NGOs or international government at a rate ~5 times the rate of other graduates. However, these graduates also had a slightly higher rate of part-time employment our unemployment in comparison to graduates from other certificates. The ASPPH data shows Global Health graduates had a 7.4% unemployment rate, nearly double the 3.8% average, higher rates of part time employment, and lower salaries than other graduates. Thus the job market for global health graduates may be relatively competitive.
Interpretation: By identifying any patterns in the employment outcomes of graduates and surveying employers, we can build career-related programs or interventions which can help these graduates obtain relevant employment, even in a competitive job market.
Source of funding (if none, enter "None"): None

FRI_020

Sanctuary Doctoring: Assisting Health Professionals in the Care of Patients Who May Be Undocumented or Suffering Stresses Related to Immigration Status

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Background: Changes in immigration policy in the United States have increased stress and vulnerability among immigrants. Healthcare professionals are likely to encounter patients with health concerns stemming from immigrant status. The concept of "sanctuary doctoring" encompasses healthcare professionals' duty to treat patients regardless of immigration status. This project extended the concept to address the unique needs of undocumented immigrants and their families through provider training. We illustrated this through a Sanctuary Doctor demonstration video and training materials. The learning objectives of these materials are to assist providers in opening a dialogue, providing reassurance, providing resources, and assisting creation of an emergency plan.
Methods: The Sanctuary Doctor demonstration video was originally created in 2017 and includes a presentation of key points and a simulation of a clinical encounter. A flyer was also made available. The materials were presented at the Annual Meeting of the American Society for Bioethics and Humanities (ASBH), the annual Ethics and Theology Colloquium of the Catholic Health Association (CHAUSA), and the Department of Pediatrics at Lurie Children's Hospital. Additional presentations have been invited for the coming year. Audiences have included physicians, nurses, clinical ethicists, social workers and all manner of clinic personnel.
Findings: Feedback through conference evaluation and website visitors yielded ideas for improvement. Suggestions resulted in creation of buttons worn by healthcare providers that state, "Immigration worries? Talk to me". This intervention helps to signal an openness to discussion of immigration concerns. Feedback also included suggestions on video length and streamlining of content. Overall, approximately 500 unique visitors have made use of the web site. Participants describe the video and materials as useful and many are beginning to implement the program at the clinical level. Two large health in Wisconsin and Illinois and several small clinics in Oregon and New York City are in the process of deploying the materials.
Interpretation: Initial feedback on the training materials yielded suggestions for busy clinical settings. We continue to gather insights from users of the materials. The next stages will include dissemination to more clinical settings. The potential impact of this project is wide-reaching given the role health systems can play in creating safe, welcoming environments for undocumented patients and their families.
Source of funding (if none, enter "None"): None

FRI_021

Academic Global Ophthalmology Fellowship Program: An Initiative to Reduce the Worldwide Burden of Preventable Blindness Through Education and Training

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Background: The Academic Global Ophthalmology (AGO) fellowship program via the Center of Academic Global Ophthalmology (CAGO) at Wills Eye Hospital (WEH) is focused on improving eye care globally, through strengthening ophthalmological training and education. One effort of this program is to prepare US ophthalmologists to transfer knowledge and skills to partners abroad. In doing so, local providers become empowered to address eye care in their own countries.
Methods: This is a year-long program (now in its 4th year), where the fellows spend 6 months at WEH and 6 months at partner sites. While at WEH, the fellows work with residents and experts in the field to better their own skills and roles as educators. While abroad, they train regional eye care providers and help strengthen residency programs. Support for partners comes not only via direct interactions with the fellows, but also through research, tele-education and bilateral exchange of faculty and trainees.
Findings: The AGO fellowship has been a driving force in the formation of the first ophthalmology residency training program in Rwanda. This has subsequently led to CAGO being the first center in the US to be selected for a LINK (VISION 2020 LINKS program created by London School of Hygiene and Tropical Medicine) with an African country. This LINK is facilitated in the US by Surgical Eye Expeditions (SEE) International. The efforts of the AGO fellowship in Rwanda will continue to be formally evaluated through the established LINK. This is a novel approach, to have an academic institution find its own international partners, collaborate on goals and then seek non-governmental organizations (NGO) to help support the needs of the new partnership.
Interpretation: Partnering with training programs abroad and preparing US ophthalmologists for international work, helps to produce quality ophthalmologists overseas who can then confidently practice where eye care is scarce. Academic institutions taking a lead in finding partners allows for effective alignment of mutual goals. This endeavor is scalable to any academic institution wanting to collaborate with international training sites in need of support. By doing so, the ophthalmology community can continue to tackle preventable blindness in a sustainable way.
Source of funding (if none, enter "None"): The program is currently funded by WEH, grants and donations.

FRI_022

Undergraduate Courses in Global Health: Study Results & Building a Community of Practice

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Background: While Global Health undergraduate majors, minors, and concentrations are a growing phenomenon in higher education, there remains lack of clarity about course content, curricular elements, and learning objectives. Since 2016, CUGH has convened the Sub-Committee on Master's and Undergraduate Degrees in Global Health (SMUDGH) that focuses, in part, on building a community of practice for undergraduate Global Health education. This study presents perspectives of faculty who teach undergraduate courses in global health in order to build a community of practice and clarify benchmarks for undergraduate Global Health education.
Methods: In 2017-2018, a collaborative team led by University of Maryland (UMD), Child Family Health International (CFHI), SMUDGH-CUGH, and American Association of Colleges and Universities (AAC&U) distributed an online survey to faculty who have taught a course with global health-related content. The Institutional Review Board (IRB) at UMD approved the survey. In addition to completing the survey using Qualtrics, participants were invited to provide syllabi. Data were analyzed using excel and thematic analysis was conducted on open-ended responses using Microsoft Word.
Findings: Of 82 instructors who completed the survey, 37% reported that courses are offered as part of a public health or other major. Only 10% were offered as part of a Global Health major, minor, or pathway. Courses were offered at all stages of undergraduate education and pre-requisites were likely to be required. Departments offering courses included Anthropology, Public Health, Public Policy, and Nursing. Only 16% required fieldwork, 21% encouraged it, and 48% neither required nor encouraged it. Of those that require fieldwork, 75% require pre-departure training. Instructors overwhelmingly noted "lack of student experience/exposure to global health" and "sustainability and usefulness of field experiences" as challenges. Other challenges were lack of support from administrators and funding. Top themes addressed in courses were global burden of disease, health disparities, social determinants of health, communicable diseases, organizations, culture, NCDs, and Maternal and Child Health. While global health competencies were not likely to be followed, 51% reported following discipline-specific competencies.
Interpretation: This session will provide essential data and practices to further development and quality improvement of Global Health undergraduate programs, as well as build peer networks to broaden the field.
Source of funding (if none, enter "None"): None

FRI_023

The Global Health Capstone: An Innovative Educational Approach in a Competency-Based Curriculum

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Background: Global health educational programs for health professionals have grown substantially in recent years, but more work is needed to make programs practical, reciprocal, and oriented towards longitudinal engagement. Additionally, programs must be built around teaching and assessing identified competencies. The University of Illinois at Chicago began a global medicine program for select medical students in 2012; three cohorts have graduated. One significant requirement of this program is the completion of a global health capstone project. We analyzed the capstones completed by the first 35 program participants. Our aim is to understand how participation in a global health capstone might contribute to students' attainment of global health competencies.
Methods: The global health capstone is designed as a longitudinal 4-year skills-building process. The capstone must address a global health issue with a focus on low- and middle-income countries (LMICs). Strategies for completing the capstone requirement include field research, clinical research, or a systematic review of a global health topic. Students complete a literature review, prepare a scientific poster, and present their findings in several forums throughout the process. The final requirement of the capstone is a presentation and written reflection paper. Faculty reviewed capstone products for 35 graduates to assess for attainment of competency in each of 11 global health competency domains.
Findings: Students completing global health capstones were found to adequately address the competency domains of global burden of disease; social determinants of health; capacity strengthening; collaboration, partnering, and communication; professional practice; health equity; program management; and strategic analysis. The majority of capstones involved original research, travel to an LMIC, and alignment with students' residency choices. Approximately one third involved working with the same project and mentor for four years and resulted in peer-reviewed publications or presentations.
Interpretation: Through the design and implementation of a global health capstone, we demonstrate an innovative approach to global health education that may be used to teach targeted global health competencies. Further refinement of the capstone may allow instructors to target additional domains. Opportunities for enhancement of the capstone include increased mentorship and scholarship resulting in student abstracts and publications. Additional assessment tools are needed to improve evaluation and documentation of proficiency of global health competencies.
Source of funding (if none, enter "None"): None

FRI_024

Incorporating Point of Care Ultrasound Training into the Creation of a Global Health Tract: A Model for Resident Education

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Background: Point Of Care Ultrasound (POCUS) is a promising new modality that has many potential applications for global health. Due to its low cost, broad application, and relative portability POCUS is a useful tool for any clinician planning on working in a resource limited setting. Unfortunately training resources for POCUS is lacking. As interest in global health grows among residents, many residency programs are creating new global health tracts. This represents an opportunity for residents to receive the training they need to be effective global health clinicians and educators. Western Michigan University (WMU) offers a global health tract for Internal Medicine, Pediatrics, and Internal Medicine-Pediatric residency. In addition to online modules, in-country clinical experiences, and domestic public health experiences, POCUS training is integral to the global health tract. Unlike other educational requirements however, POCUS training requires in-person instruction. Due to the relative novelty of POCUS though there were few faculty available that felt comfortable with POCUS. We present a model for incorporating POCUS training into residency-based global health tracts with a specific focus on barriers and applications.

Methods: The first step in creation of a global health tract was faculty development. In the year prior to the creation of the global health track two WMU faculty participated in week long intensive POCUS courses as part of continuing medical education. These two faculty members utilized POCUS during rounding shifts and created global health orientated curriculum they felt comfortable teaching. Additional guest lecturers from Cardiology, Sports Medicine, Critical Care, and Emergency were recruited to assist the core faculty in training for their various topics. A flipped classroom model with at home instructional videos and 10 hands on sessions for residents to practice on one another was utilized. Residents who subsequently passed the final exam were invited to participate as POCUS instructors for subsequent years.

Findings: Residents that completed the POCUS course were given preference for future international clinical electives. POCUS instructors obtained an ultrasound to continue with in country instruction of POCUS in a global health setting.

Interpretation: Incorporating POCUS training into resident education is both feasible and practical for future clinicians interested in working global health.

Source of funding (if none, enter "None"): None

FRI_025

Innovative Global Health Educational Methodology With A Global Reach: Use Of An Open-Access Resource In Global Health Educational Programs Helps Promote Women's Health And Empowerment.

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Background: Health Actions for Women: Practical Strategies to Mobilize for Change (HAW), published by Hesperian Health Guides, is an open-access resource that provides innovative methodological tools to raise awareness about the impact of gender inequality and other social determinants on women's health, as well as strategies to organize communities to advocate for change. A global health study abroad program has used this book as an effective educational tool for community engagement with global partners.
Methods: HAW was developed in collaboration with partners in 23 countries, ensuring it's adaptable use in diverse contexts. We used this resource to teach US university students in a six-week summer study abroad program in Oaxaca, Mexico in 2016-2017. Students used HAW to develop service-responsive projects with local NGO's, clinics and schools. Combining popular education methods with community organizing and advocacy strategies, this book helps people understand and take action on the root causes of women's health inequities. This approach builds on existing pedagogical methods in global health education, emphasizing participatory community health education and research with international partners.
Findings: HAW has been field-tested in many countries, evaluated, and translated in multiple languages. Faculty and students in the Oaxaca program used it to develop a youth-focused educational project on sexual health with a local clinic and school, and a participatory action research project on maternal health with a local NGO.
Interpretation: HAW has been praised by global health leaders, academics, and human rights activists, emphasizing the importance of civil society in advocating for women's health and empowerment. Using this resource in global health education provides students with analytical and methodological tools that support such efforts. Developed in collaboration with global partners, the teaching methods are relevant and adaptable across borders. Faculty, students and community leaders may access this resource on Hesperian's open-source digital platform, used by millions of people around the world. Innovative approaches using participatory methods focused on women's health and empowerment that involve long-term collaboration with global partners have the potential to transform global health education, practice and policy. Health Actions for Women offers faculty, students, and communities tools for community-led transformation.
Source of funding (if none, enter "None"): None.

FRI_026

Cleft Surgery Training in a High Volume Subspecialty Center in India

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Background: The majority of people in low and middle-income countries (LMICs) lack access to surgical care. One of the primary reasons for this is a lack of health care providers. Traditional Western training methods are unlikely to produce enough surgeons in a timely manner. The Guwahati Comprehensive Cleft Care Center (GCCCC) utilized the high volume of patients to develop a unique and effective training model for cleft surgery.
Methods: Twelve fellows were identified who came to GCCCC after completing surgical residency training, but with limited to no experience with cleft surgery. A retrospective chart review was performed of the surgical logs of GCCCC from March 2011 through March of 2014. Additionally, a survey was created by the authors directed towards evaluating the learning experience of the fellows at GCCCC.
Findings: 8060 cases were recorded in the GCCCC operative logs. Fellows averaged over 40 cases per month. The mean number of primary cleft lip repairs per month was 15, and the average number of primary palatoplasties performed per month was 9. Ten surveys were completed resulting in an 83.3% response rate. 100% of respondents agreed this fellowship was valuable for intensive teaching about the surgical care of cleft patients. Likewise, all respondents felt they improved their ability to evaluate and design operative plans for cleft patients. All respondents felt they saw a wide range of cleft pathology, and all were satisfied with the volume of patients. Respondents reported doing on average 169 cleft operations in the prior year with one respondent reporting 520 cleft operations. 100% of respondents would recommend this fellowship to another surgeon. All fellows from LMICs returned to practice in their country of origin.
Interpretation: By developing a training system to fit the overwhelming surgical burden of disease in the region, GCCCC provided a high volume and high frequency of cases that expedited training and promoted a culture of volunteerism and social responsibility. The result was well-trained cleft surgeons that continue to be productive in practice with trainees from LMICs returning to their respective country of origin.
Source of funding (if none, enter "None"): None

FRI_027

The Evolution of Global Health Initiative at Wright State University Boonshoft School of Medicine

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Background: Upon its foundation in 2000, the Global Health Initiative (GHI) at Wright State University's Boonshoft School of Medicine (WSU BSOM) has maintained a strong presence among medical students. The steady involvement helped establish the Global Health Scholars Program (GHSP) which provides students with learning opportunities in global health beyond the general curriculum. Recent data show that approximately 30% of each medical school class complete the GHSP by graduation and nearly 50% of students participate in at least one global health elective. WSU BSOM is transitioning to a new curriculum which provides the opportunity to evaluate the GHSP, recognize areas of improvement, and create new objectives for the new curriculum. Additionally, the GHI alumni community is now in the heart of their professional careers, and their global health involvement would exemplify the impact of GHI on practicing clinicians. Goals of this program evaluation are to evolve a well-functioning global health curriculum for all medical students into the next phase where global health is recognized as local impact for communities and the physicians who serve them.
Methods: Mixed methods were used to conduct a program evaluation spanning 18 years. Focus groups of current students enrolled in the GHSP and an alumni survey were conducted. In-depth interviews with current school faculty and leadership were also completed.
Findings: Collection and analysis of focus group feedback (n=50) and alumni survey (n=167) are ongoing. Interviews with school leadership suggest strong support of the GHSP and an interest to expand curricular components to all medical students. Through the course of this program evaluation, there is strong encouragement to involve the local refugee and immigrant population in feedback and future plans.
Interpretation: The GHSP is an important component of curricular success and is at an important crossroad of program evolution. Based on ongoing analysis and program evaluation, we have a collection of important lessons learned and next steps to share with others including: 1) Important components needed for Pre-trip, Trip, and Post-trip student preparation, 2) Effective and preferred approach to securing student feedback of global experiences, 3) Alumni career impact globally and locally, 4) Aspects of school leadership engagement and support of global health curriculum needed for future program evolution.
Source of funding (if none, enter "None"): None

FRI_028

Perceived Needs of Internal Medicine Residents in Global Health Educational Curriculum

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Background: Demand for global health (GH) education has increased among academic institutions over the last decade. The University of Colorado internal medicine (IM) residency program has experienced similar demand; however, formal evaluation of our program's GH education needs was lacking. The aim of this project was to determine our IM residency educational needs and resident preferences as related to GH thus, informing development of our local, competency-based curriculum.
Methods: IM trainees (PGY 1-4, academic year 2018-2019) were administered an eleven-question survey to assess perceived GH educational needs. Survey items included prior experiences in GH, desired GH educational topics, preferred learning modalities, and time commitments.
Findings: Of forty-eight resident respondents to date (25% of total residents), 95% indicated a need for more education in at least one GH topic. Most respondents desired more education in tropical medicine (66%), health policy (60%), GH ethics (56%), sustainable development (56%), and health systems strengthening (56%). Preferred learning modalities in order of preference were the following: GH electives (international or domestic/local), experiential learning (i.e. community service), online modules, in-person classes, and self-directed learning with faculty guidance. We identified a significant need for increased GH clinical opportunities internationally (77%) and locally with underserved populations (62%) and refugee populations (52%). Over one third of residents were willing to commit time to GH training commensurate with a GH track (8-16 weeks). 58% indicated that a GH track would have increased our residency program's recruitment potential.
Interpretation: This assessment revealed a need for increased GH education and opportunities within our IM residency program. Furthermore, it provided insight into what local trainees endorse as ideal educational modalities. This step is helping to inform and guide the development our IM residency program's novel GH competency-based curriculum, which we believe is critical to its success. Our approach of conducting a local needs assessment and using data-driven measures to inform curriculum development can be generalized to other academic training programs intending to expand GH education. As training programs nationwide address increased demand for GH education, completing a local assessment of trainee needs and opportunities is paramount to developing effective GH curriculum.
Source of funding (if none, enter "None"): None

FRI_029
High Altitude Medicine for Global Health Providers

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Background: It is estimated by World Health Organization that 35 million people travel to altitude over 3000m annually. Many villages and cities in developing countries that receive medical aid are located at high altitude. Anyone who travels to high altitude, regardless of fitness level, age, or race, is at risk of developing acute altitude illness. High altitude exposes travelers to many problems, such as cold weather, low humidity, increased UV exposure, with hypoxia being the most concerning issue. Potentially lethal illnesses can develop if acute altitude illness is not promptly diagnosed and treated. Providers and volunteers who travel from low altitude to high altitude are at high risk for developing these conditions. As most health care providers do not practice at high altitude, there might be a knowledge gap regarding high altitude illness and its treatment. Most global health education focus on patient care in developing area, but rarely address the issue of providers who become ill when visiting these high needs areas. This workshop will provide the tools needed for providers to identify and treat high altitude illnesses.
Methods: A workshop with simulated scenarios will be provided based on a grand rounds presentation previously given at the MedStar Franklin Square Family Medicine Residency and the “Venice 2018 Endurance & Sports Medicine Conference”.
A five-question pre-test was used to assess the baseline knowledge in high altitude medicine of the participants. One-hour grand rounds presentation was given on this topic. The same questions were given post presentation for comparison.
Findings: Data collected at MedStar Franklin Square Family Medicine Residency grand rounds presentation showed statistically significant increase in knowledge gain after participating this presentation. Average score of pre-test: 3.35 out of 5 compared to post-test: 4.44 out of 5. P value calculated to be 0.00000174. This demonstrated that attendees gained new knowledge and found the presentation valuable, independent of level of training.
Second set of data from “Venice 2018 Endurance & Sports Medicine Conference” will be analyzed in similar fashion.
Interpretation: Pre and post-tests scores. A five-questions multiple choices quiz was given as pre-test and post-test. They are stratified by training level.
Source of funding (if none, enter "None"): None

FRI_030

Linking Researchers and Policy Makers to Generate Relevant and Timely Evidence through Rapid Reviews

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Background: Demand for relevant, credible, and timely evidence to aid policymakers in strengthening health policy is increasing. Rapid Review (RR) has emerged as a streamlined approach to address this need. However, RR in developing countries is underutilized due to limited capacity and lack of policy-makers engagement. Faculty of Public Health University of Indonesia (FPH-UI) in collaboration with the City University of New York (CUNY) carried out a rapid review course targeting public health policy-makers. The course provided participants with the skills needed to carry out a rapid review.
Methods: The course is designed to prepare participants with a robust understanding of rapid review concepts and approaches, applying WHO and Cochrane guidelines. Students were divided into groups, and by the end of the course, each group produced a review protocol. The course was followed by hands-on practice in conducting rapid reviews in public health priority areas in Indonesia, as identified by the course participants and outlined in the protocols produced. Rapid reviews were completed in 10-14 weeks following the hands-on practice.
Findings: The outcome of the course was the actual implementation of RR by policymakers together with the team from FPH UI and CUNY. Having policymakers as the key actor in RR along with researchers facilitated the generation of relevant and credible evidence linked to real-world changes. Two reviews were carried out. The first explored implementation approaches that address barriers and facilitators of ART provision among HIV-infected pregnant women. The second reviewed implementation approaches that address barriers and facilitators on the use of magnesium sulfate (MgSO4) treatment for management of hypertensive disorder in pregnancy (compared to other anticonvulsants).
Interpretation: Strengthened capacity in conducting RRs to produce actionable evidence supporting public health program and policy by involving policymakers as key actors in RRs will facilitate the uptake of evidence and accelerate its translation into policy. Bringing together the different skills of health policymakers and researchers allows research to respond more appropriately to real-world challenges. The collaboration between FPH-UI and CUNY facilitates knowledge sharing that will enhance research and learning.
Source of funding (if none, enter "None"): United States Agency for International Development Health Evaluation and Applied Research Development Project (USAID HEARD Project)

FRI_031

Visiting Clinicians Performing Outside Scope of Training during International Global Health Activities

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Background: Clinical health professionals trained in highly-resourced settings who participate in short-term experiences in global health (STEGH) in low- and middle-income countries (LMICs) may face ethical challenges. A common dilemma is being asked or feeling pressure to perform outside their scope of training (POST). Although this challenge is well recognized, the frequency and circumstances of visiting professionals and trainees performing outside their scope of training (POST) is unknown.
Methods: We conducted an online survey with a convenience sample of 223 health professionals and trainees who had conducted STEGH in the past five years. Quantitative data were analyzed with SPSS; qualitative data were manually coded using a priori and emergent codes and subsequent thematic analysis.
Findings: Nearly half (48.9%) of respondents were asked to POST in the previous five years; of those asked to POST, more than 60% did. POST was more common among trainees than licensed professionals. The common reasons for POST included a mismatch between hosts' expectations and visiting health professionals' training, a suboptimal level of supervision at host sites, inadequate preparation to decline to POST, and a perceived lack of alternative options. While POST was generally viewed as acceptable during emergencies, many clinicians who engaged in POST expressed feelings of moral distress and questioned the appropriateness of their decision.
Interpretation: Clinicians doing STEGH must prepare to make informed decisions about the procedures that are legally, ethically, culturally, and morally acceptable for them to perform at a host site based on their licensure status, training, experience, and personal values. This requires pre-departure training, open communication with hosts, and a commitment to local capacity building.
Source of funding (if none, enter "None"): none

FRI_032

Addressing the Occupational Health, Safety, and Wellbeing of Public Health Students Participating in Global Health Fieldwork

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Background: The field of global public health has dramatically grown within academic institutions, through the expansion of research and internationally-based placement opportunities. These training opportunities represent unconventional worksites, usually in unfamiliar and precarious environments, where students often undertake unpaid or underpaid work, with limited support and resources. Participating in global public health practice (GPHP) affects graduate students, and current and future practitioners; however, little is understood about the long-term occupational health and safety impacts of this work. Additionally, few articles reflect on the vulnerability of women in this field. As such, there remains a lack of critical scholarship on research in global work environments, and their occupational health and safety implications.

Methods: This interpretive and exploratory qualitative study is situated within van Manen's phenomenology of practice, aimed at meaning-making. Experiential data is gathered through written descriptions and in-depth interviews of females who participated in GPHP, during their graduate-level studies.

Research Question:What is the lived experience of the North American female graduate student participating in GPHP?

Objectives:

Explore the tacit and existential (spatial, corporeal, temporal, relational, material) structures affecting female graduate students' lived experience of GPHP.

Understand opportunities, challenges, distresses, and traumas experienced during GPHP.

Create a space for open and honest GPHP dialogue, inclusive of gendered-lived experiences.

Findings: At times, GPHP can be challenging, with additional hardships faced by female students. These practitioners are at greater risk than the general North American population for moral distress, vicarious trauma, burnout, stress, and anxiety. Preliminary findings identify contributing factors such as: sexual harassment/violence, insecurity and anxiety while living in conflict/unstable settings, complex and distressing relations that raise issues of privilege and power, difficulty returning to the data after work in the field. Further analyses of results are forthcoming. Initial results will be presented for the first time at CUGH's Global Health Conference.

Interpretation: This study offers an opportunity to positively affect the experience and future practice of global health, by offering ways to describe, conceive of, and respond to individual experiences. By giving voice to the lived experience of female graduate students, public health institutions may better be able to recognize, validate, respond to, and support students and practitioners participating in GPHP.

Source of funding (if none, enter "None"): Ontario Trillium Scholarship

FRI_033

Competency-Based Education in Low-Resource Settings: One Year Experience with a Novel Training Program in the Surgical Mission Setting

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Background: A lack of trained providers is a critical component of the unmet burden of surgical disease worldwide. Competency-based training (CBT) has been advanced in high-income countries, improving technical skills and decreasing training time, but it has not been widely applied to low and middle income countries. The Cleft Surgeon Training Program (CSTP) was designed to improve training for local surgeons by combining structured evaluation with intensive hands-on mentoring during Operation Smile surgical missions.
Methods: The program was implemented over a fourteen month period with 16 participants at ten sites in Latin America and Africa. At each site one to three local trainees were identified through a locally based nomination system. The primary outcomes of the program were competency in general technical surgical skills, cleft specific skills and non-technical surgical skills. A program-specific evaluation tool was designed through a combination of several previously validated instruments and further refined through a Delphi method utilizing senior surgical volunteers.
Findings: The 16 trainees participated in 24 week-long mission experiences, with the majority completing multiple training missions. Across the first training, average general technical competency scores improved from 26% ($p=0.01$), as did procedure-specific competency scores for both cleft lip repairs, (28%, $p<0.01$), and cleft palate repairs (44%, $p<0.01$). Trainees involved in secondary trainings continued to improve their scores in general technical skills (18%), lip (37%) and palate procedures (37%). Four participants have gone on to successfully complete the program. Program satisfaction has been high with 100% of participants reporting an improvement in skills and a desire to continue in the program.
Interpretation: There has been a call to link mission-based work with surgical training, but this is the first program that utilizes CBT principles in the surgical mission setting. Based on initial success the program continues to scale to additional participants and peri-operative specialties within the organization. Our experience not only proves the feasibility of incorporating such training programs into existing service delivery platforms, but demonstrates the potential to expedite the learning curve by capitalizing on the high case volume and procedure repetition inherent to the surgical mission setting.
Source of funding (if none, enter "None"): Operation Smile

FRI_034

Factors that Govern Sub-specialty Choice in Northern Tanzania: The Medical Student Perspective

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Background: Countries in Sub-Saharan Africa continue to face a vast shortage of physicians, limiting their capacity to address their local disease burden. It has been estimated that Tanzania has approximately 0.31 physicians per 10,000 individuals – 3x below the WHO guidelines. As the future of medicine on the continent unfolds, it is imperative to evaluate the future workforce. The study aims to understand what factors drive students' career choices, and how the current medical education system influences career plans.

Methods: A 29-item questionnaire was distributed to 520 3rd, 4th and 5th year medical students at - Kilimanjaro Christian Medical College (KCMC). A total of 267 responses were received – a response rate of 51.3%. A demographic profile each student was documented followed by desired specialty choice, preferred work setting, and open-ended questions inquiring for methods to improve medical education analyzed via inductive analysis.

Findings: Almost all medical students surveyed were from Tanzania (99.5%) and the majority (74.77%) prefer to practice within Tanzania. 25.3% of students indicate a preference to work abroad.

Students select Ob/Gyn, Internal Medicine and General Surgery as one of their top 3 specialty choices with 47.8%, 46.4% and 35.9%, respectively. Students also rate these specialties within the top 5 clinical rotations offered at KCMC.

The factors that best describe career choice include personal interest (75.2%) ability to conduct research (31.8%) and influence from mentors. Students also express a desire for more constructive faculty feedback, mentorship opportunities, and improved tutoring.

Interpretation: Tanzanian medical students report a need to improve the quality of medical education by implementing opportunities to interact with faculty constructively, especially in clinical rotations, and greater post-graduate opportunities. It should be noted that in addition to potential loss of trainees abroad, there is a critical shortage of physicians trained in sub-specialty surgical fields. Lack of orthopaedic surgeons, in particular, is exacerbated by a growing burden of highly morbid, but treatable musculoskeletal trauma. A focus on improved exposure to a diverse array of disciplines, and increased opportunities to practice medicine within Tanzania will help improve deficits within the workforce.

Source of funding (if none, enter "None"): University of Pennsylvania

FRI_035

Safe Quality Services: Post-Ebola Infection Control and Emergency Care Training in Liberia

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Background: The West African Ebola Epidemic of 2014 exposed gaps in the Liberian healthcare system in infection prevention and control (IPC) and basic emergency care. Safe Quality Services (SQS), a package created by the World Health Organization and the Liberian Ministry of Health, was developed to address these gaps through teaching IPC practices and emergency care clinical skills. It was then paired with a novel mentorship program to apply the training.
Methods: SQS was a four-day course taught over a six-month period in 2015/2016 using a training of trainer model. The Academic Consortium Combating Ebola in Liberia (ACCEL) taught the package to 3,987 healthcare workers in 29 facilities across Liberia. SQS training was followed by a hospital based, year-long mentorship program run by ACCEL using facility-based mentors to apply the SQS concepts in the clinical environment. SQS pre and post testing was done to evaluate initial knowledge acquisition with six- and twelve-month follow-up testing conducted to assess knowledge retention. Mentorship hours were recorded on a monthly basis to assess their relationship with SQS knowledge retention.
Findings: Baseline knowledge gain on didactic testing (pre-test over post-test), when adjusted for effects of baseline pre-test score, mentorship hours invested at each hospital site, clinician vs. non-clinician, and public vs. private hospital, was 26.4% (25.6%, 27.3%). At six-month knowledge retention assessment (difference over post-baseline) there was a 1.3% (-5.0%, 7.54%) increase. Twelve-month knowledge retention assessment was -4.7% relative to post-baseline (-4.7%, 3.3%) and -6.0% (-11.5%, -0.4%) relative to 6-month follow-up.
Interpretation: Six-month testing showed SQS knowledge retention during the incentivized mentorship program. Twelve-month follow-up testing showed a trend toward decline in SQS knowledge retention from both baseline and six-month testing though not statistically significant. The declining retention period in the second six months was when the incentive for mentors was phased out. These results suggest that knowledge retention can be supported through a mentorship program that offers mentor compensation, but more work needs to be done on behavior and workplace culture change to allow for a mentorship intervention to transition to non-incentivized for long term sustainability.
Source of funding (if none, enter "None"): U.S. Centers for Disease Control and Prevention

FRI_036

Public Health Without Borders: Reducing Health Disparities in Partner Communities Around the World Through Education and Outreach

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Background: Public Health Without Borders (PHWB) is a service-learning student organization that aims to reduce global health disparities while educating students about sustainable interventions, health literacy, and cultural competency in global health. Through our intervention and needs assessment models, our organization aims to provide a global health education platform for students to gain invaluable experience and make tangible changes in the lives of others through improving health.
Methods: Since its creation at University of Maryland (UMD) in 2012, PHWB has conducted global health projects with a team of more than 200 undergraduates, graduate students, and faculty advisors on three active projects: Compone (Peru), Calaba Town (Sierra Leone), and Varanasi (India). Through initial needs assessments, our teams identify the health disparities in a community. The underlying concept behind our interventions is a train-the-trainer model, in which our members have the opportunity to deliver interventions which can then be repeated by members of our partner communities.
Findings: Over the past six years, our intervention and needs assessment model have allowed us to reach over 2,000 students and community members. Our Sierra Leone team found that the community faces burdens from tropical diseases due to lack of resources and health education. They subsequently delivered workshops to more than 300 students, 10 faculty members, and approximately 50 community members focusing on handwashing, oral hygiene, and malaria prevention. In Peru, the community faced issues involving mental health and anemia. In response, our team conducted workshops on nutrition and road safety, and held stress relief and yoga programs. In India, our team recently found that a concern of both students and parents in the community was nutrition and water potability. Our team is currently planning an intervention for January 2019 where we will deliver nutrition education workshops to both students and parents, as well as build water treatment systems.
Interpretation: The model our organization follows has shown success globally in a variety of health interventions. Public Health without Borders is scalable beyond UMD and is developing a toolkit and training to help other universities to establish a PHWB programs, allowing students to see health disparities and gain experience in designing effective and sustainable solutions in a culturally conscious manner.
Source of funding (if none, enter "None"): None

FRI_037

A Systematic Debrief for Formative Feedback in International Medical Education

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Background: Formative feedback by medical instructors is a valuable tool to help medical students consolidate and reinforce what they have learned during clerkships and further develop clinical skills. While debriefs providing feedback have become commonplace throughout medical education in United States, the role of similarly structured feedback sessions in global settings has not been fully evaluated.
Methods: Five fourth-year medical students studying at a US-based allopathic medical program and participating in an international clinical rotation in Western Uganda were challenged with developing a systematic approach that international learners could use to request qualitative feedback. The students and their faculty mentors used a structured debrief session with a host international institution to facilitate summative feedback at the end of an international rotation. Cultural and social challenges to the delivery of high quality feedback were identified throughout the rotation and specific methods to mitigate these during the debrief session were devised during a series of preparatory meetings.
Findings: Barriers to delivery of high quality feedback to students included reluctance to provide criticism, difficulty articulating observations, and unfamiliarity with formative feedback. In partnership with their host institution, students developed a successful debrief method that included participants spanning all departments of the hospital for obtaining feedback that addressed what students and their hosts viewed as strengths and potential areas of improvement for their international clinical experience. The students unanimously found the feedback to be of high quality and relevant to their future careers.
Interpretation: When studying in an international setting, students often find that their clinical impact is limited due to language barriers, familiarity with pathology and customs, and limited knowledge of hospital systems. However, international rotations present opportunities to develop new clinical and critical thinking skills and cultural awareness. We recommend a fromalized, collaborative debrief system for delivering and eliciting high quality feedback from host instructors and visiting students during international clinical rotations. This has potential to improve students' performance as future healthcare providers, as well as educators' skill and comfort in delivering feedback in a manner not commonly used.
Source of funding (if none, enter "None"): University of Michigan Global REACH

FRI_039

Evaluation of Journal Club leaded by Residents in Seven Residency Programs in Haiti

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Background: In Haiti, as in many other resources-limited countries, research remains a weak point in medical education. This situation limits the ability of health care providers to apply evidence based medicine. In many post-graduate medical programs, journal club (JC) is used as a way to arouse critical appraisal skills, teach evidence and contribute to improvement of the quality of patient care. For these reasons Zanmi Lasante (ZL) trained and made it mandatory for its residents to lead JC. The objective of this work is to evaluate the performance of ZL residents in leading JC in seven residency programs during three years.

Methods: The training of the residents contained a theoretical part done during the research course (40 hours) in their second year and a practical part consisting in mentoring each time they would lead a JC. Trainers were one epidemiologist, one physician and two statisticians. The model of 15 minutes presentation and 45 minutes discussion was chosen for the JC in each residency program. Relevance and applicability of the articles, critical appraisal skill and discussion moderator skill of the residents were evaluated resulting in a total grading for each JC leader. Evaluations of JC done from September 2015 to August 2018 in internal medicine, pediatrics, family medicine, surgery, obstetrics-gynecology, emergency medicine and anesthesiology of two hospitals managed by ZL were analyzed on Epi Info using descriptive statistics and ANOVA test.

Findings: Overall, 85 JC were leaded by residents, 35.29% by second year residents, 64.71% by third or fourth year residents; 15, 39 and 31 respectively were done in the first, second and third academic year, 23.53% of them were done in family medicine residency. The mean score for relevance and applicability was 8.92 and 7.03 over ten. The mean score for moderator skill and critical appraisal skill was 7.14 and 6.74 over ten. The mean total score was 77.23 over 100, increasing each academic year (p=0.0009), higher for pediatrics (81.54) and family medicine (81.30) p= 0.0004.

Interpretation: With the delivery of a research course and mentoring, JC were successfully leaded by residents in ZL residency programs. This experience could be replicated in other residency programs in Haiti or other resources-limited countries.

Source of funding (if none, enter "None"): None

FRI_040

Impact of Health Care Personnel Capacity Building as an Intervention for GBV Case Identifiaction and Post GBV Care Service Uptake in South Eastern Nigeria.

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Background: The health care system in most countries is often a key entry point through which victims of Gender Based Violence (GBV) are identified and provided with very vital care. Health Care Providers (HCPs) therefore often become the earliest points of contact for survivors of violence and those who are not trained to recognize abuse may treat only the immediate complaints and miss opportunities to provide more comprehensive care or referrals. In Nigeria a major drawback to recognizing the sometimes subtle signs of GBV and providing much needed interventions has been a lack of capacity. In this review we evaluated the impact of a GBV capacity building training for care providers on the uptake of Post GBV care services within selected states in 3 Eastern and 1 South South state of Nigeria.
Methods: 45 participants (39 Gender champions, 3 Police gender focal persons, 3 state Ministry of women affairs gender desk officers) from 39 Partner facilities and 3 state police clinics across 3 South Eastern and 1 South South State in Nigeria participated in a 3 day GBV capacity training. Capacity was built in the area of screening for and understanding the symptoms of GBV, creating a friendly, confidential and safe space, provision of clinical services, rapid HIV testing with referral to care and treatment as appropriate, Post exposure prophylaxis (PEP), STI screening/testing and treatment, emergency contraception, provision/referral for psychosocial counselling, legal, law enforcement and child protection services.
Findings: The training intervention took place in May 2018. Comparative analysis of GBV uptake before and after the intervention was carried out in all participating health facilities. Before the training intervention, a total of 104 cases of GBV (sexual, physical and emotional violence) had been reported by the HCPs across the 4 states over a 7-month period (October to April). Reported cases however rose to 854 (a 700% increase) by the same HCPs over a 2month period following the training intervention.
Interpretation: Inadequate knowledge and capacity amongst HCPs on GBV and post GBV care services impacts the uptake of services. Capacity building on gender and GBV is therefore a key strategy for increasing uptake of Post GBV care services by survivors.
Source of funding (if none, enter "None"): PEPFAR

FRI_041

PA Students Educating Healthcare Providers in Botswana

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Background: Our previous medical mission trips impressed upon our PA faculty and students the importance of maternal health issues. According to the World Health Organization, 99% of maternal deaths during pregnancy occur in developing countries. Globally, the risk of an infant dying in the first year of life is 30.5 deaths per 1,000 live births. In the WHO African Region, the infant mortality rate during that first year of life is 52 per 1,000. Nearly two thirds of newborn deaths are preventable if mothers and newborns receive skilled care during and immediately after birth. Our most recent medical mission trip to Botswana provided healthcare workers with a culturally-sensitive interactive program focusing on caring for infants in the first minute of life.
Methods: PA faculty and students introduced the Helping Babies Breathe curriculum to healthcare workers (nurses, nursing assistants, and midwives) teaching proper resuscitation within the first minute of life. The program included pre-tests, oral presentation, hands-on skills sessions utilizing neonatal manikins and Ambu bags, and post-tests. Pre- and post-test scores were calculated and analyzed for statistically significant changes. Qualitative data was collected to reflect on satisfaction with the hands-on learning process.
Findings: The neonatal resuscitation program was offered to 40 healthcare clinic workers in the Maun district of Botswana. The learning process was preceded by the distribution of pre-tests and followed by post-tests. Mean score for the pre-tests was 71% (range 11-89%) and 82% for the post-test (range from 22-100%). Statistical analysis demonstrated a significant improvement after participation in the learning process ($p=0.06$). An analysis of qualitative feedback demonstrated strong participant satisfaction with the hands-on approach and participant requests for the group to return for additional training.
Interpretation: We believe that these results may be related to our culturally-sensitive approach, use of active learning modalities, and interactive manikins and equipment. The commitment of our PA faculty and students to global medicine lead us to provide an effective culturally-sensitive interactive educational program that addressed an important healthcare concern in Botswana and other developing countries. We hope to continue with our endeavors and provide the additional training requested by the healthcare clinic workers of Botswana.
Source of funding (if none, enter "None"): PA Foundation IMPACT Grant

FRI_042

Mentoring Future Leaders In Biomedical Research – The Case Of Manhiça Health Research Centre

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Background: Since Mozambique's independence, the major emphasis of its higher educational institutions has been on didactic education. Because of fiscal and human resource constraints, basic and applied research activities have been relatively modest in scope, and priorities have often been set primarily by external collaborators. The Centro de Investigação em Saúde da Manhiça – CISM" aims to promote and conduct biomedical research (BR) in health priority areas to safeguard the health of the most vulnerable populations and retain talent in Mozambique by investing on the training of leaders in BH and healthcare professionals in collaboration with academic institutions highlighting the partnership with Eduardo Mondlane University (UEM), Universities of Barcelona (UB) and Ghent, the ISGlobal in Barcelona. The CISM hosts internees with the aim of contributing to the education of future leaders in BR. The program provides direct experience through involvement in research projects carried out in the Centre. Internees are expected to understand the ways research is conducted, best practices, participate in scientific forums.
Methods: CISM hosts internships for students, resident MD and health professionals, who have the opportunity to work on research projects, for this the Centre has an agreement with universities based on which it coordinates and supervises internees during their internships at the Hospital including a collaboration within the scope of research and lecturing. 100 internships/year for 2 months minimum. CISM presents its researchers projects, Universities selects their best students. In case of international candidates the selection process is through collaboration with ISGLOBAL a leading research institute in Global Health (GH) in Europe.
Findings: the programs ensures direct experience in research methodology focussed on research projects within the Center and within the scope of obtaining a degree and possibility for post-graduate training. A written report is part of the internship. The research/faculty supervisor may require additional written assignments such as manuscript or research papers .
Interpretation: The program has potential impact in GH by contributing to the training of future leaders in research and health professions. While CISM has made these strides since it was established, there is need to do more to reduce the imbalances between the centre and similar centres in the developed countries in terms of Biomedical research
Source of funding (if none, enter "None"): None

FRI_043

Educating Nurses in an Era of Globalization: A Cultural Exchange Between the US and India

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Background: In August 2017, four nursing students and a faculty member from a Midwestern university spent two weeks at a residential nursing college affiliated with a hospital offering specialized care to HIV positive individuals in Maharashtra, India as part of a cultural exchange. These institutions have a relationship dating from 2004, yet this was the first student group to visit India.
Methods: In addition to clinical observation at the hospital, the students were “embedded” with the Indian nursing students. Together, they attended seminars, prepared presentations on global health issues, participated in a community-based rural health fair, went on field trips, played volleyball, ate meals, celebrated holidays, and socialized.
Findings: The intense sharing assisted the students in understanding that differences in educational approach and practice are valuable as differences without preferencing one approach over the other. For the faculty, the main challenge was managing students’ expectations to focus on the cultural exchange, rather than a service learning experience. For the students, the experience opened their eyes to a different way to provide healthcare in settings where technology is limited and resources, such as medical supplies, are precious. They noted that the reliance on and integration of the family into patient care is an approach they hope to bring back to their nascent nursing practice. While cherishing their independence and privacy, the students also recognized how the strong sense of collectivism and shared purpose fostered by the residential nature of the school is an asset in developing a nursing practice rooted in a team-based approach.
Interpretation: This inaugural visit to India highlighted the importance of exchanges being two-way. These partner institutions will continue these cultural exchanges into the future to foster the deveopment of nurses prepared to engage in a global manner.
Source of funding (if none, enter "None"): None

FRI_044

Paraguayan Pediatric Emergency Medicine Exchange: A Model for Mutually Beneficial International Rotations 10 Years in the Making

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Background: Best practices in Global Health Education encourage adherence to WEIGHT guidelines for ethical engagement. During short international rotations, limited experience with cultural context, practice environment and licensing hurdles imped opportunities for residents and fellows to practice clinical medicine abroad. We describe an international rotation partnership focused on project development to meet bilateral needs allowing intercultural teamwork, development of teaching and clinical skills, and introduction to new health systems and culturally appropriate care.
Methods: Rather than focusing on clinical observerships, two university hospital residency and fellowship programs develop educational projects surrounding month-long visiting rotations in their respective countries. The hosting hospital identifies a clinical need for which teams develop educational solutions implemented during the trainees' visits. Since 2009, faculty, fellows and residents from Jacksonville, Florida and Asuncion, Paraguay participate in university teaching hospital pediatric emergency medicine (PEM) programs.
Findings: Trainees and faculty from both programs have delivered case conferences, procedural skills labs and simulations abroad. A trauma registry developed during the program allowed the Paraguayan hospital to successfully lobby for a full time pediatric orthopedist. A shock quality assurance program and multidisciplinary simulation training were organized in response to an outbreak of dengue hemorrhagic fever. Two Paraguayan faculty were awarded scholarships from the American College of Emergency Physicians to attend an ACEP Scientific Assembly. Three UF faculty, two UF PEM fellows, two UF EM residents, two Paraguayan faculty and two Paraguayan PEM fellows have traveled with the program. All participants informally report high rates of satisfaction with the exchange and the development of new knowledge and skills as a result of the partnership.
Interpretation: The Paraguayan PEM Exchange model demonstrates a partnership addressing locally identified challenges and allows trainees to work with intercultural teams to solve problems. Leveraging these experiences has influenced not only the participating trainees and patients but also provided ongoing benefit in the community, particularly when a pediatric orthopedist was secured as a result of the work of the bilateral team. The model is easily scalable to other sites as investment is limited to focusing on preparation and collaborative work. Future opportunities for improvement include developing formal project evaluation and securing regular funding for expanded collaboration.
Source of funding (if none, enter "None"): None

FRI_045

A model for equitable global health research: Uganda Research Training Collaborative

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Background: The Uganda Research Training Collaborative (URTC) model was piloted in 2016 with the aims of 1) creating a novel model of research training that benefits students from Ugandan partner institutions and from the University of Minnesota Academic Health Center; 2) developing mentorship skills among faculty and building a community of global health mentors; and 3) providing global health research capacity- and skill-building opportunities for students in Uganda and the University of Minnesota (UMN).
Methods: The model recruited 15 students from across health science disciplines at Makerere University, Mbarara University of Science and Technology, and the University of Minnesota and formed four multidisciplinary teams. Each team was assigned one mentor per trainee to provide oversight and guidance on the development of the team research project. Teams worked together to develop student-initiated research projects. Over the 18-month program period, students were mentored through the stages of research planning, research ethics approval processes, and conducting research.
Findings: Through surveys and focus groups, Center for Global Health and Social Responsibility staff and affiliated faculty mentors have assessed the effectiveness and adaptability of the model for broader implementation at other international partner locations. Initial evidence demonstrates a high level of engagement from faculty mentors and trainees, increased awareness of collaboration between UMN and partner institutions in Uganda, and successful progression by student teams to implement research plans and disseminate findings through manuscripts and conference presentations. Additional interventions will be required to achieve program goals around mentor engagement and skill building. Program challenges include financial and logistical sustainability due to limited inputs such as funding, staffing, and mentor experts.
Interpretation: The URTC model's significance is to demonstrate the potential and adaptability of a model for research training that is built on equitable principles for learners and mentors from each institution.
Source of funding (if none, enter "None"): Funding for the program is provided by the Center for Global Health and Social Responsibility at the University of Minnesota.

FRI_046

Using a Twinning Training Model to Explore Access to Medicines for Non-Communicable Diseases in Uganda: a case study of Yale and Makerere Universities

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Background: Twinning trainees from low- and high-income countries in mentored research fellowships enhances efficient use of resources for training, research and capacity building. In 2016, an innovative training model was implemented by twinning two students from a high- and a low-income country with different academic backgrounds to pursue a clinical research fellowship. The goal was to create and foster a rich, collaborative experience for the trainees and build capacity in conducting research for strengthening health systems for management of non-communicable diseases in low income countries.
Methods: Twinning model: a medical student from Yale University School of Medicine was twinned with a Master of Public Health trainee at Makerere University School of Public Health to participate in the Doris Duke International Clinical Research Fellowship (DDICRF). Selection of both trainees was merit-based and each was supervised by a mentor from each institution.
Fellowship activities: for a period of 10 to 12 months, the fellows conducted a mixed methods study to explore access to medicines that treat non-communicable diseases at private and public health facilities in Uganda. The fellows were also engaged in scientific writing activities, abstract presentations, knowledge sharing including peer-to-peer mentoring and university exchange visits.
Findings: The Twinning model enriched the fellows with professional skills, augmented their research capacities through peer-to-peer mentoring, hands on research training with field activities and on-site mentorship. The twining model supported the blending of knowledge and skills, giving the medical and public health students an outstanding clinical research experience. The exchange visits have promoted exposure to global activities and networking for the twins. Similarly, the mentors have continued with an inter-university collaboration and career development opportunities.
Interpretation: The twinning model realised institutional collaboration, promoted academic advancement and interdisciplinary development. The program built capacity for the fellows and professional partnership for the mentors. Collaborative research trainee partnerships between institutions in high- and low-income countries can promote institutional capacity to develop human resources for health and build sustainable professional relationships.
Source of funding (if none, enter "None"): Doris Duke International Clinical Research Fellowship (DDICRF)

FRI_047

Global Surgical Volunteerism: Identification of Barriers to Surgical and Anesthesia Provider Involvement.

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Background: Advancements in global surgical services are growing at an exponential rate, namely due to innovations in technology, education and evidence-based research. While these advancements have transcended borders to meet the global demands for better surgical outcomes, there continues to be an overwhelming disparity among services provided in low and middle-income countries (LMICs). Many who live in LMICs lack access to safe, affordable surgical services. The causes are undoubtedly multifactorial, stemming from a lack of providers and resources, financial restraints, and weakened infrastructure. Medical providers from high-income countries (HICs), such as the United States, have been volunteering their time and skills in LMICs for many years to help offset growing surgical demands. However, availability, accessibility and participation in the provision of surgical services remains inconsistent. Potentially, there are significant barriers that exist, preventing qualified surgical care teams and anesthesia providers from participating in global work. Understanding these barriers and constructing resolutions could serve to increase the global surgical workforce and support collaboration.
Methods: A literature review was conducted by searching PubMed for articles from 2008-2018 relating to global surgery in LMICs and barriers to international volunteer involvement. A total of 7 articles, directly identifying barriers, were chosen for descriptive analysis. Analysis of data from all members of the surgical team, including surgeons, residents and anesthesia providers, was performed due to the similarities in volunteer requirements and inseparability of these professions for provision of surgical services.
Findings: Common barriers to international surgical volunteerism include lack of financial support and cost, lack of support or coverage from work, lack of information regarding opportunities and needs, and family obligations.
Interpretation: Current research suggests interest in global volunteer work does not match actual participation. Common barriers to participation identified can be overcome through scalable initiatives such as the Global Surgery Initiative (GSI) established at Massachusetts General Hospital (MGH). The GSI provides funding, global health education to surgical residents, coordination of ongoing global surgery programs and establishes long-term partnerships with academic departments in LMICs. Overcoming the barriers to global surgical volunteerism for HIC providers will allow for increased training and education of providers in LMICs which can help to address the surgical and anesthesia workforce shortage.
Source of funding (if none, enter "None"): none

FRI_048

Engaging Undergraduate Students in an Innovative “Student Leadership Development Model” to Promote Global Health Learning and Strengthen Cross-Cultural Partnerships

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Background: The Global Health Program (GHP) at Cornell University embraces and utilizes undergraduate student knowledge, lived experience, passion and commitment to sustain and strengthen programmatic partnerships, curriculum and activities. Each year, new student leaders are invited to participate in the GHP, ranging from the advisory board to program and teaching assistant positions (PTA). In the past year, 28 undergraduate students participated in our “Student Leadership Development Model” (SLDM), a cyclic model that capitalizes on student experience and creativity to improve courses, programs, and partnerships. The model cornerstones are critical reflection, partnership reciprocity, integration of academic and experiential learning, and cross-cultural relationship building.
Methods: The GHP directs programs in Tanzania, Zambia, India and the Dominican Republic, which create 45-50 experiential learning placements each year. Student leaders are key stakeholders; PTAs in particular provide important support for the summer programs and act as mentors for the next cohort of students. Each PTA works closely with a teaching team, receiving mentorship and learning to facilitate critical reflection, intercultural competency, and risk management. PTAs help lead our pre-departure seminars, and return to the field as part of the program leadership teams. This role is a unique opportunity for undergraduates to serve as near-peer mentors and develop critical skills for careers in global and public health.
Findings: In our SLDM, we use teaching as a means to provide opportunities for mentorship by involving students in curriculum development. Specifically, we developed two courses to engage student leaders in teaching: Leadership Development in Global and Public Health and Supervised Teaching Apprenticeships. These courses are characterized by their responsiveness to student feedback, intercultural discussion and the practice of critical reflection. In these courses, students complete writing assignments and engage in weekly discussions to integrate and apply their learning.
Interpretation: Our student leaders are held to a high standard of professional conduct, and become models for future cohorts of students studying global and public health. They are adept at facilitation, program evaluation, and challenge response, whether on the Cornell campus or abroad. Our SLDM has created an active and meaningful space for students to learn, lead, and strengthen the GHP as a whole.
Source of funding (if none, enter "None"): None

FRI_049

Analysing Global Health Education Framework for Public Health Education in India: A Multi-Stakeholder Perspective

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Background: Despite the existence of several courses in public health in the Asia-Pacific region, there is a great variation in the global health education curriculum. A recent analysis found that delivery of global health education in India is presently fragmented and called for academic institutions to work towards closing the developing country/developed country dichotomy. The aim of this research study was to analyse multi-stakeholder feedback regarding global health education for public health courses in India.
Methods: This study used qualitative research methodology with semi-structured interviews of stakeholders in public health education in India. Potential stakeholders included faculty members and program coordinators of public health institutes and other key stakeholders from national and non-government organisations and multilateral organisations. Thematic analysis was conducted with data from field notes taken during interviews and audio recorded interviews by the researcher.
Findings: A total of 17 semi-structured interviews were completed which involved 12 faculty members from five public health institutes and five other key stakeholders from national and multilateral organisations. Initial results of the qualitative data analysis from the field notes during interviews and five representative audio transcripts were available. Global health was considered interconnected with public health and viewed as the application of public health in real-world setting and at a broader, deeper and transnational scale. Understanding of multilateral organisations and big donor agencies was critical. Regarding competencies for global health, there was general agreement with competency domains that are currently described with emphasis on core public health skills along with health system strengthening, global burden of disease and globalisation of healthcare. Other 'soft skills' of political awareness, collaboration and health diplomacy were mentioned. Faculty exposure to global health and 'sensitisation' of stakeholders was a key constraint to offer global health education programs.
Interpretation: Global health is considered important but there was consensus that public health education in India needs to be strengthened and established before a separate program in global health can be initiated. This study has provided a platform for critical reflection on global health education at the Indian public health institutions to ensure that public health education meets the needs of future students and practitioners of global health in the context of sustainable development.
Source of funding (if none, enter "None"): None

FRI_050

A Review of Best Practices to Prepare Medical Students for Responsible Global Health Experiences

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Background: There is an increasing interest in medical students participating in short-term global health experiences and international electives, and such programs are gradually becoming more established at several medical schools. With this comes a striking need to establish the “best practices” for students to have responsible global health experiences. Much of the reviewed literature realized the need to have standardized ethical training for the students with an added component of cultural sensitivity and clinical skills.
Methods: A review of the existing literature was conducted searching the U.S. National Library of Medicine. Online databases such as PubMed and Google Scholar as well as journals such as Medical Education, Globalization and Health, and JAMA were used to develop a synopsis of the existing efficacious themes in preparing medical students for global health experiences.
Findings: The most common of the recommendations for standardized global health training is the establishment of proper pre-departure training and post-return debriefing with an input of local hosts in the selection process and needs assessment. Furthermore, the potential exists for students to unintentionally do more harm than good during these short term-experiences, so a commitment to standardizing training in sustainability, collaboration, and service should be made to maximize the efficacy of such trips. Every global health experience is unique, and it is difficult to propose a single standardized training module that is applicable for all experiences, but suggestions have been made to provide some consensus on which competencies of students would be considered “essential” for any trip, including training in clinical research, health disparities, and the global burden of disease. When it comes to specializing a training process for a particular international elective, research suggests employing multiple-mini interviews with specific cases as a pre-screening tool and employing case simulations and discussions in the pre-departure training.
Interpretation: Overall, the literature suggests that properly training medical students to have responsible global health experiences involves standardizing training to develop certain “essential” clinical and ethical competencies with added discussions, interviews, and case simulations specific to the host experience a student will have during their elective. Employment of these preparatory practices that are tailored to specifics of a particular international elective can provide enriching experiences.
Source of funding (if none, enter "None"): None

FRI_051

Utilizing Video-Based Situational Judgement Tests to Involve Host Institution in the Selection of Trainees for Global Health Electives

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Background: Participation in global health electives in low and middle income countries has become increasingly popular among medical students from high income countries. As volume of global health elective programs increases, it is important to ensure that ethical and logistical challenges are addressed so these programs offer benefits to both trainees and hosting institutions. It is well established that formation of partnerships with mutual respect, shared vision, and collaborative effort helps ensure that both parties benefit and learn from each other in meaningful ways. The selection of suitable trainees is an important aspect of the maintenance and growth of the partnership between two institutions because the trainees themselves play a key role in the quality of global health experiences, and their actions may have far-reaching implications on the partnership. It is important to select trainees with qualities such as flexibility, professionalism, humility, ability to navigate new situations, cultural awareness, and awareness of role and limitations. It has been established that situational judgement tests (SJTs) are an effective method for the assessment of these non-academic tributes. We predict that SJTs would be useful in the selection of trainees for a global health elective, particularly if the host institution could be involved in the selection of students via video-based SJTs. While the video-based SJT has been shown to have added value over cognitive tests in the medical school admissions process, there is no pre-existing data on the use of video-based SJTs in selection of trainees for a global health elective.
Methods: Our study aims to explore the incorporation of the host institution in selection of trainees for a global health elective via video-based SJTs, in the setting of a pre-existing partnership between the University of Colorado School of Medicine in the United States of America and Stellenbosch University Faculty of Health Sciences in South Africa. Each summer, six rising second year medical students from the University of Colorado are selected to participate in the Emergency Medicine Elective at Stellenbosch University. This October as we select candidates for next summer, we will incorporate a video-based SJT sent to the host institution for evaluation of candidates, and measure outcomes utilizing a post-interview survey.
Findings: n/a
Interpretation: n/a
Source of funding (if none, enter "None"): None

FRI_053

The State of the Vasectomies in Colombia: How to Adapt Health Services to the Needs of Men?

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Background: The vasectomy is a contraceptive method available for men, but its use is limited in the majority of countries. To involve men in family planning has been an important goal for a long time; however, contraception is still considered a women problem, rather than a shared issue between men and women. The purpose of this investigation was firstly to characterized demographically men who undergo vasectomy, and secondly to generate evidence to guide the adaptation of health services with a focus on gender equity to the needs of men

Methods: A descriptive study was based on the Demography and Health Survey (DHS) in 2015 and the Registry of Sexual Health Services Users who accessed to the vasectomy in Profamilia during 2015 and 2016. The variables used were age, level of education, place of residence, ethnicity, area of residence, marital status, number of children and variables related to gender roles.

Findings: The percentage of men who have access to vasectomy has increased, although not with the expected intensity. Overall, the profile of the man who decides to have a vasectomy in Colombia is between 30 and 40 years old, medium class(In strata 2 and 3), resident in urban areas, at least with a secondary education level, married and with children, and also covered by contributor health insurance scheme. The persistence of social and cultural barriers has affected the widespread and sustained use of this contraceptive method over time.

Interpretation: This study allowed identify the state of the vasectomy among Colombian men. Also, particular issues deserver more attention such as: to extend vasectomy as an option of easily available and accessible method for men; to eliminate gender stereotypes and promote shared contraceptive responsibilities for men and women; as well as the implementation of models of sexual and reproductive health care, which become more inclusive and also focused on the reproductive needs of men.

Source of funding (if none, enter "None"): None

FRI_054

Ethical Dimensions of Scaling up a Ketamine Package to Address the Anesthesia Gap in Resource-limited Settings

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Background: The anesthesia gap remains a critical problem in resource-limited settings, often limiting access to critical operative procedures. In 2013, the authors deployed the ESM-Ketamine package in rural Kenya to address this gap, by equipping non-anesthetist providers to use Ketamine to support emergency and essential surgery, when no anesthetist is available. The package includes a training program and a toolkit comprising wall charts, checklists and a Ketamine kit. Providers included medical officers, nurses, and clinical officers. This work analyzes the ethical dimensions of scaling up the package across resource-limited settings.

Methods: Based on the Beauchamp and Childress framework, the ESM-Ketamine package was analyzed in 4 common scenarios: a) emergent condition where life or limb is at risk and 'standard anesthesia' is unavailable b) conditions where delay will compromise care, and 'standard anesthesia' is not immediately available c) acute painful conditions in which anesthesia would not have been provided by the standard of care and d) when standard anesthesia is available but patient refused a critical procedure because of cost, but consented to proceed with ESM-Ketamine. Analysis focused on the pharmacological and clinical effects of Ketamine, the health system context in resource-limited settings, and ethical principles of beneficence, non-maleficence, respect for persons and justice.

Findings: Strengthening standard anesthetic care in resource-limited settings is the definitive and long-term solution. However, an interim measure is ethically desirable. Despite ketamine having more side-effects relative to standard anesthesia, extensive clinical and pharmacological data in the anesthesia literature, as well as the ESM-Ketamine package evaluation data, indicate a satisfactory safety profile for the ESM-Ketamine package in this context. We argue that the ethical implications of providing the ESM-Ketamine package can be scenario-dependent. In specific situations when critical procedures would have been forgone due to health systems constraints, the principles of non-maleficence, justice and respect for persons imply that patients be given the option of choosing anesthesia provided by a trained ESM-Ketamine provider.

Interpretation: Scaling up the ESM-Ketamine package in resource-limited settings is ethically warranted. Understanding feasibility and other dimensions of scaling up the package deserves more attention, while health systems are being strengthened to eventually provide universal access to standard anesthetic care.

Source of funding (if none, enter "None"): Ujenzi Charitable Trust, R2HC Programme, SLAB partners.

FRI_055

Malnutrition and Postoperative Outcomes Among Pediatric Patients: A Comprehensive Literature Review

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Background: Across low resource countries, malnutrition is a growing challenge, especially among patients who require surgical intervention. This challenge is currently twofold, with malnourishment preventing the ability to provide care, as well as contributing to poor surgical outcomes when surgery is available. This problem is further exacerbated in pediatric populations because of both the extremely high rates of undernutrition and increased complexity of surgery. We conducted a literature review to understand what is currently known about the relationship between either short or long-term nutrition intervention in lower and middle-income countries and surgical outcomes.
Methods: A literature search was done using Pubmed, EMBASE, and CINAHL evaluating all papers published in the past 10 years that reported statistics related to nutrition and postoperative outcomes in pediatric patients. Papers including adults, obesity related malnutrition, cancer, and burn victims were excluded due to the unique metabolic demands of these groups
Findings: Only 9 studies from 7 different countries met inclusion criteria, including 5 prospective cohort studies, 2 literature reviews, and 2 retrospective cohort studies. The majority of these studies focused on congenital heart defect patients, though other surgeries were also reported including spinal surgery, general surgery, and thoracic and abdominal surgery. Each study used different methods for categorizing nutritional status, making it difficult to compare results across studies, however, all but one study showed a correlation between nutrition status and either mortality, morbidity, or length of stay within the hospital.
Interpretation: We concluded that there is evidence that nutrition status can have a major impact on surgical outcomes, however a great deal more research is needed. Nutrition supplementation was not the primary intervention in any of the studies, so although it was measured, no conclusions can currently drawn from existing work. The lack of data demonstrates the need for high quality studies that use nutritional intervention as the primary treatment for malnourished pediatric patients to allow true understanding of the impact on patients. This is particularly important in the global context, where surgical resources are scarce, because nutrition status represents a modifiable risk factor that could improve survivability and lower the risk of complications.
Source of funding (if none, enter "None"): None

FRI_056

Utility of the South African Triage Scale for Predicting Emergency Department Patient Outcomes in Ghana

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Background: An effective triage system is critical to appropriately prioritize patient care and resource allocation in emergency departments. Ghana Ministry of Health recommends the South African Triage Scale (SATS), which has good inter-observer reliability and correlation with clinical outcomes in many low resource settings. This study aimed to evaluate SATS accuracy and validity in an urban, tertiary care hospital in Ghana.

Methods: This was a prospective observational cohort study of adolescent and adult patients at the Surgical and Medical Emergency Unit (SME) of the Korle Bu Teaching Hospital (KBTH), Accra, Ghana. Demographic and clinical data were abstracted from triage records over three months and linked to patient outcomes. Evaluation included SATS sensitivity, specificity, over- and under-triage rates, and the negative predictive value of GREEN for death or hospital admission beyond 48 hours. Analysis used Microsoft Excel and SPSS version 19.0.

Findings: 1,782 patients were triaged from 1st December 2016 to 28th February 2017. 716 were excluded due to illegible or missing data. The sample was 58.3% male with an average age of 48.6 years (range 13 to 95). Final triage scores were GREEN in 165 cases (15.9%), YELLOW in 339 (32.7%), ORANGE in 361 (34.8%), and RED in 172 (16.6%). 202 patients (19%) were discharged within 48 hours, 124 (11.6%) died in the unit, and 722 (68%) were admitted to inpatient services.

Review identified 230 cases (21.6%) in which a more acute final triage score was indicated based on available information; 78 were due to vital signs coding errors and 152 represented failure to consider chief complaint. The sensitivity of RED or ORANGE for predicting death or hospital admission beyond 48 hours was 82.4%. The specificity of GREEN for predicting discharge within 24 hours was 43.6%. The over-triage rate was 10.3% and the under-triage rate was 15.2%. Negative predictive value of GREEN for death or hospital admission beyond 48 hours was 34.2%, and three patients triaged GREEN died in the unit.

Interpretation: Initial SATS scores can under-estimate patient acuity. In particular, misinterpretation or under-utilization of chief complaint in assigning final SATS score is a potential safety risk.

Source of funding (if none, enter "None"): Korle Bu Teaching Hospital departmental research allowance

FRI_057

Physiological Health Impacts of Frequent Tear Gas Exposure among Palestinian Refugees: Results of a Population Survey

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Background: There is limited information on long-terms impacts of chemical irritants such as tear gas despite its frequent use worldwide. In Aida refugee camp in the occupied Palestinian territory, the community has reported high tear gas exposure, up to several times a week for much of 2017. We sought to understand how tear gas exposure is associated with health impacts among Palestinian refugees by describing the frequency and duration of exposure, and examining associations between exposure and self-reported physiological outcomes.
Methods: An exploratory study, approved by UC Berkeley IRB, was conducted in Aida camp utilizing household cluster sampling in August 2017. Consenting participants, males and females 10 years and older, were interviewed on tear gas exposure, including frequency, types of chemical, and short and long-term health symptoms. Data were analyzed using descriptive measures and Fisher exact tests.
Findings: At some instance in their life, 99.6% of 289 participants were exposed to tear gas. Within the past month, 70.7% were exposed more than three times, including 18.5% exposed 11-20 times. The most common symptoms within 24 hours were eye irritation (92.1%), increased tearing (91.5%), oropharynx burning (88.5%), skin irritation (82.6%), and headaches (79.5%). After 24 hours, the most common symptoms included headaches (27.2%), difficulty concentrating (24.6%), eye irritation (23.6%), sweating (22.7%), and difficulty breathing (22.5%). Long-term increased perspiration ($p=0.04$) and increased headaches ($p=0.05$) were most significantly associated with greater than five exposures in the past year. Increased tearing ($p=0.01$) was also most significantly associated with greater than five exposures to tear gas in the past month. Greater than 10 minutes of exposure was most significantly associated with blurred vision ($p=0.03$) and increased tearing ($p=0.01$).
Interpretation: Our findings highlight the pervasive nature of tear gas exposure in the camps. While symptoms are expected to resolve within 30 minutes of exposure, participants noted some symptoms (skin, ocular and neurological) persisted beyond this time-frame. The presence of long-term symptoms suggests there could be unanticipated consequences of repeated, prolonged tear gas exposure. Our study was limited by recall bias given the self-reported measures, but nonetheless was a novel exploratory study for an otherwise neglected public health issue and highlights the need for more rigorous study on this topic.
Source of funding (if none, enter "None"): None

FRI_058

Human Rights Clinic of Miami: A Medical Student-Run Clinic for Asylum Seekers in Miami, Florida

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Background: The Human Rights Clinic of Miami (HRC) is an independent collection of medical students, residents, and attending physicians who provide impartial physical and psychiatric evaluations for asylum seekers and refugees seeking legal residence in the United States. In this presentation, we will elaborate on this student-run model, which provides systematic documentation of torture and/or human rights abuses.

Methods: Our model allows for resident and medical student involvement in the the evaluation of asylum-seeking clients. HRC evaluations are a team-based effort, attended by: the client, medical-legal team, and translator. The evaluation consists of a physical and psychological evaluation, the results of which are written as a legal affidavit with contributions from the entire team.

Alongside providing physical and psychological evaluations, the HRC also provides an invaluable opportunity for mentorship, education, and partnership across different fields. With our professional partnerships, the HRC is creating a growing network of medical and public health professionals dedicated to advocate for vulnerable populations. Due to increasing demand for our evaluation services, we have recently expanded our clinic to serve clientele from all over South Florida. With our team-based model, we have two main goals. First, we hope to contribute to a cadre of future professionals who will continue to train others and provide similar relief services. Second, we aim to make our model replicable and accessible to asylum seekers nationally.

Findings: As of July 2018, the HRC has evaluated over 300 clients requesting legal affidavits to accompany their petitions for legal protection within the United States. The affidavits we write play a crucial role in the subsequent legal decisions made about an individual’s case, increasing success rate in South Florida from 20% to 90% asylum approval. Our psychiatric evaluations have documented post-traumatic stress disorder, depression and anxiety; and our physical evaluations have documented, for example, scars and cigarette burns consistent with the testimony of the asylum seekers.

Interpretation: Ongoing challenges include access to and navigation of care for asylum seekers. Our patient navigation program aims to reduce an existing health disparity by establishing a needs assessment and linking patients to existing local and regional resources to ensure they receive appropriate care and referrals.

Source of funding (if none, enter "None"): None

FRI_060

Unintentional Firearm Injury Deaths, among 0-19 year olds according to States' Firearm Law Strictness in the United States.

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Background: Approximately 12,000 children aged 0-19 years die yearly of unintentional injury in the United States. Firearm injuries are among the top ten causes of unintentional injury death in US children. All states allow some firearm access, but gun legislation restrictiveness varies widely by state.
Methods: Data from CDC WONDER (1999-2016) among 0-19 year olds for each state (n=50) in the United States were used. Grifford Law Center Firearm data were used to grade legislation restrictiveness by state, from least (Grade=0) to most (Grade=9) restrictive firearm legislation. Linear regression was used to assess relationship between legislation restrictiveness and unintentional firearm injury death rates in persons aged 0-19 years. Unintentional firearm injury mortality rate in states with least strict firearm legislation combined was compared to rate in states with strictest (Grades 6-9) legislation combined were compared.
Findings: Increasing firearm legislation strictness was strongly and inversely proportional to unintentional firearm injury death rate (Slope=-.042; $F=24.71$, $p<0.0001$). States with least restrictive firearm legislation (N=20) had over four times the rate of unintentional firearm injury death rates among 0-19 year-olds of states with strictest legislation (relative risk=4.4; $p<.0001$.).
Interpretation: These data suggest that more restrictive firearm legislation may reduce firearm-related mortality in US children. There could have been other confounding variable that could have accounted for the observed relationship nevertheless data gotten from vital statistics are reliable and the data collected was from a reasonable year range (1999-2016) and age range (0-19 year old).
Source of funding (if none, enter "None"): None

FRI_061

Recidivism Prevention Approaches in Incarcerated Rapists (REPAIR)

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Background: Sexual violence against especially woman and children has been an international human rights scourge since the dawn of time and has, despite international, regional and national efforts on all levels of society, escalated to such an extent that the need for clinical and neurological research into the cause and effect of sexual violence has become critical. South Africa is loosely nicknamed as the “rape capital of the world” where 110 rape cases are reported daily while 28% of these offenders are repeat offenders. Violence against women in the form of rape and sexual assault is one of the major international public health problems and violations of women's human rights (WHO, 2017). Furthermore, there is a paucity in research conducted to understand the neurological changes in rapists to assist with the rehabilitation of the offenders and reduce repeating offence. Therefore, the aim of this study was to 1. Establish an animal model of sexual defeat using the appropriate rodent strain. 2. Conduct a translational bio-psycho spiritual exploration to investigating the socio-demographic profile of convicted, incarcerated male rapists in KwaZulu-Natal. Method:
Methods: Aninal Model-Sprague-Dawley rats were used in this experiment to assess the behavior in forced and consensual mating situations. Translation to Humans-A questionnaire was designed and will be used in the interview with incarnated rapist
Findings: Our preliminary findings show that social isolation perpertuates aggressive behavior and sexual aggression towards females.
Interpretation: Black South Africans suffered segregation and violence during the colonial era social isolation of urban blacks has been shown to increase black violence. These issues may need to be addressed in a rehabilitative manner in prisons and in the society in genral.
Source of funding (if none, enter "None"): DRILL (NIH)

FRI_062

Interdisciplinary Assessment of Digital Technologies to Improve Transparency, Accountability and Combat Corruption in Medicines Procurement

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Background: The fundamental motivation for this study was to better understand how digital technologies used in procurement systems can enable improvements in population health outcomes through better transparency and accountability that can enable improved medicines access and affordability. Whether during the related processes of bid tendering, contract acquisition, product supply, inventory management, or distribution/dispensing, procurement of medicines enabled by new technologies that fights corruption has the potential to save money, lives, and improve health.
Methods: We conducted an interdisciplinary review on medicines procurement and digital technology by searching for journal articles, original research, conference papers, case reports, technology reviews, commentaries and news reports indexed in four scholarly databases. This included conducting search term queries on PubMed (Medline), IEEE Xplore, ACM Digital Library, and Google Scholar.
Findings: Though our search was not limited to specific types of technology, the vast majority of the literature focused on medicines e-procurement systems. This is not particularly surprising given that e-procurement systems intersect with key characteristics associated with good governance for medicines (e.g. promoting transparency and accountability), broader open government and e-government initiatives (e.g. ensuring greater citizen participation and public oversight), and activities aimed at deterring corrupt activities. However, in order to be successful, research indicates that the ability for e-procurement systems to generate cost-savings are a key driver of adoption and utilization. In this sense, anti-corruption advocates should be explicit in tying cost-saving measurements as an output of good governance and anti-corruption approaches including purposeful measurement of anti-corruption data points as part of the evaluation assessments. A few studies discussed the use of emerging technologies such as machine learning and blockchain solutions.
Interpretation: Corruption in the pharmaceutical sector is a significant global health challenge and one that impacts progress towards shared Sustainable Development Goals promoting health and justice as well as achieving Universal Health Coverage. Strong empirical evidence supporting further public and private investment in e-procurment systems and other digital technology to tackle related health financing, patient safety, and public health consequences of corruption in medicines procurement is needed.
Source of funding (if none, enter "None"): This study was funded by the World Health Organization - Essential Medicines and Health Products Department, through an Agreement for Performance of Work with the lead author.

FRI_064

Implementation Factors and Recent Population-based Payment Reforms: A Rapid Review

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Background: Population-based payments is an innovative contractual arrangement between the payer and the providers for the health of a group of patients for capitation payments. In the field of health policy, population-based payment models are also known as accountable care. Policy interventions such as accountable care programs are complex and vary widely in terms of implementation. However, little is known about which implementation factors contribute to successful population-based payment reforms.
Methods: A rapid review of the PubMed database was conducted. We searched for original and empirical articles published during 1 June 2013 to 31 May 2018. We included English-language trials and observational studies of adult patients that evaluate population-based payment reform programs/pilots targeting health care providers at the individual, group, managerial, or institutional level. Studies examining patient-targeted financial incentives were excluded. We reviewed abstracts and full-text articles. As we selected articles that are eligible for full-text review, we used snowballing to include relevant articles. Data were extracted into tables to summarize results. Study quality was assessed by Newcastle-Ottawa Quality Assessment Scale for observational studies.
Findings: Among 864 titles and abstracts, 205 were selected for full-text review. 50 primary studies met inclusion criteria and were included for qualitative synthesis. Study designs included descriptive study designs (23 studies), quasi-experimental study designs (20 studies), mixed-method study designs (4 studies), and qualitative study designs (3 studies). These studies were conducted in the US, Germany, Spain, Singapore, New Zealand , the Netherlands, and Portugal. Regarding implementation, 21 studies examined program design features, 14 examined implementation processes, 10 the outer setting, 12 the inner setting, 3 provider characteristics, and 1 provider responses; 10 studies were included in more than one category. The evidence for the impact of payment reform implementation on health care quality, costs, and services utilization is heterogeneous, while underlying mechanisms are largely unclear. Many studies highlight the importance of forming partnerships, sophisticated information systems, and long-term leaders.
Interpretation: While the conclusions that can be drawn from this review are modest, there are three implications for health policy, program design, program implementation, and future research. Gradual implementation of interventions, research on specific mechanisms of payment reforms, and timely program evaluations are essential to better inform health policy-making.
Source of funding (if none, enter "None"): None

FRI_065

Infant and Young Child Feeding (IYCF) Practices Promotion using Bangladesh's Expanded Programme on Immunisation (EPI)

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Background: In Bangladesh, inadequate IYCF practices continue to perpetuate poor maternal and child health outcomes. Although Bangladesh's breastfeeding initiation rates are nearly universal, the exclusive breastfeeding rate (EBR) has decreased from 64% in 2011 to 55% in 2014. Additionally, complementary feeding, which is measured through minimum acceptable diet (MAD), was only at 23% in 2014. This has led to a high prevalence of stunting (36.1%), wasting (14.3%), and underweight (32.6%) in children under-5 (BDHS 2014). Meanwhile, routine immunization services through EPI have resulted in 99.5% of children receiving the BCG vaccine, and 95.1% receiving all required vaccinations. EPI's high attendance rates make it an ideal location to incorporate an IYCF counseling intervention that is aimed at improving maternal and child health outcomes.

Methods: Pushti Apas (nutrition sister in Bangla) are local mothers who are trained on IYCF practices and counseling. They provide counseling to mothers at EPI centres and manage a counseling hotline that previously counselled mothers can use. They also refer malnourished children and mothers who need further assistance with breastfeeding to the community health clinic. Pushti Apas will monitor these IYCF practices and report findings at monthly EPI meetings to help promote government integration and accountability for IYCF. To promote early initiation of breastfeeding, Pushti Apas will work alongside existing government employees, the Family Welfare Assistants (FWA). FWA's will provide them with pregnancy lists, which will be used to call and counsel expectant mothers on early initiation of breastfeeding. The intervention will be two years, and is currently being implemented at 16 EPI centres in a sub-urban and a rural ward in Bangladesh.

Findings: Thus far, relevant government structures have approved the project, and have welcomed the addition of Pushti apas to their EPI programming. This is promising as the ultimate goal is to integrate it into government policy.

Interpretation: By grounding IYCF counseling within government based health services, and having counselors whom mothers can relate to, we expect to see an increase in early initiation of breastfeeding, EBR, and MAD. Eventually we expect this to lead to a decrease in childhood stunting, wasting, underweight, and mortality.

Source of funding (if none, enter "None"): UM SPH OGPH Coleman Global Experience Scholarship

FRI_066

RunFree 2030: A Global Strategy for Clubfoot

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Background: Annually, 174,000 babies are born with clubfoot, making it one of the leading causes of childhood physical disability in the world. The majority are born in low-income countries where under 15% gain access to effective treatment. Many children face lifelong mobility impairment and disability. However, the non-surgical Ponseti method treats clubfoot with 95% effectiveness for less than $250. A consortium of implementing NGOs has established a Global Clubfoot Initiative, with a strategic plan to ensure treatment for at least 70% of all newborns in LMIC with congenital clubfoot by 2030.
Methods: Countries are prioritized for clubfoot program based on World Bank population data, the birth rate, and the global incidence rate of 1.24 in 1000. GCI members emphasize training healthcare providers, initiating community awareness campaigns, developing curricula, and advocating to leverage existing policies. Standardized indicators have been adopted to ensure quality in treatment, and M&E is enhanced through a mobile app developed for patient record management. Programs are then integrated into government policies for long-term sustainability.
Findings: Between July 1, 2017 – June 30, 2018, 21 implementing partners treated 5,253 new children, trained and supported 154 providers and 367 birth attendants, and operated clubfoot clinics in 113 hospitals. 59% of clinics achieved the target of 75% of children starting treatment before their first birthday, 78% of clinics averaged fewer than 8.0 casts per child (target: 4.0-8.0 casts/child), 30% of clinics reported performing a tenotomy on the targeted 80% of children, 34% of clinics achieved a corrective phase completion rate of 90% and 61% of clinics achieved an 80% completion rate of two years in the bracing phase.
Interpretation: Prevention and treatment of physical disabilities has not traditionally been a focus for countries with limited resources. Poverty and political instability often prevent families from pursuing treatment, and there remains a gap in awareness that clubfoot is treatable. Data collection and retention in treatment remain a challenge. Nevertheless, these results represent a fraction of global activity. GCI has calculated that with a total investment of $160 million over 1.2 million children can be treated, generating $154 billion in additional lifetime earnings and creating global capacity for ongoing management of clubfoot.
Source of funding (if none, enter "None"): MiracleFeet

FRI_067

Health Professionals, Population Density, and Adequate Antenatal Care in Nine Sub-Saharan African Countries

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Background: While sustainable development goals call for at least 4.45 skilled health professionals per 1000 population (WHO 2016), many sub-Saharan African regions fall below this standard (Physicians for Human Rights 2004). Health professional shortages are a barrier to achieving health goals, such as adequate antenatal care (ANC). A common perception is that health shortages have the greatest impact in rural areas, but data limitations are a barrier to empirical testing, and WHO's per capita measure does not consider population density. More health professionals per capita may be needed in rural areas, due to distances between people and communities. We hypothesize that 1) more health professionals per capita will be associated with a greater likelihood of women receiving adequate ANC, and 2) this effect will be significantly smaller in low-density, compared to high-density, areas within African countries.
Methods: We used nationally representative health survey data on ANC for children under five, taken from IPUMS DHS (www.idhsdata.org, Boyle et al. 2017), coupled with corresponding close-in-time census data on health professionals per capita (using census microdata samples from IPUMS International) and Gridded Population of the World data on population density. Adequate antenatal care was defined as: 1) having first antenatal visit in the first trimest and 2) having at least four visits in total. Children who had experienced this level of medical attention were coded as one; all others, including children receiving no ANC, were coded as zero. The DHS data were linked to the other sources using GIS information on the location of sample clusters, providing estimates of health professional availability at the second administrative level and population density within a 10-kilometer radius. The analysis includes Cameroon, Ghana, Malawi, Mali, Mozambique, Nigeria, Rwanda, Uganda, and Zambia (N=63,787).
We used logistic regression with robust standard errors clustered at the subnational regional level. The dependent variable was receipt of adequate ANC; independent variables included ppulation density, availability of health professionals, and the mother and household characteristics.
Findings: Our two hypotheses were confirmed.
Interpretation: Our findings provide a more nuanced understanding of how and where health professionals make a difference in ANC, with subnational variation and population density having a significant effect.
Source of funding (if none, enter "None"): NICHD

FRI_068

SafeSurgery2020 in Ethiopia: Year One Results and Lessons Learned

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Background: SafeSurgery2020 (SS2020) is a multi-stakeholder initiative funded by GE Foundation that aims to improve access to surgical, obstetric, and anesthesia care in developing countries. The following describes year-one results (2016-2017) after implementation of four interventions in two regions of Ethiopia: leadership and surgical safety training, on-site mentorship, facility accelerator funds, and SPECT training.
Methods: The study included three components: 1) a facility-based surgical assessment tool administered at baseline and midline, 2) longitudinal prospective data collection of surgical volume and referral (transfer-out) rates, and 3) 36 retrospective qualitative interviews with administrative and surgical staff. The three components were administered in 10 hospitals across two regions of Ethiopia.
Findings: In Region 1, facilities showed a statistically significant decrease in referral rates and a non-statistically significant decrease in surgical volume. In Region 2, facilities trended toward increasing referral rates and decreasing surgical volume. The surgical assessment tool and qualitative interviews revealed persistent infrastructure challenges, including non-functioning equipment, lack of supplies, and unreliable electricity. Despite these findings, the qualitative assessments revealed that all ten hospitals perceived improvement in processes of care attributable to the SS2020 suite of interventions.
Interpretation: The improved surgical service delivery perceived in qualitative interviews was not reflected in aggregate quantitative data. Reasons for this discrepancy include: 1) faults in overall M&E design, including inappropriately selected process and outcomes indicators to measure efficacy of SS2020 interventions, insufficient time between implementation of interventions and data collection, and unmatched controls that precluded their inclusion in our analysis; 2) facility-level factors, including infrastructure and human resource challenges, service interruptions, and varying facility goals. Furthermore, three hospitals in close proximity to our sample sites introduced surgical services during the study period, influencing surgical volume and referral rates; and 3) data quality, including baseline data gaps, survey tool modifications and subjectivity, and lack of training on monitoring and evaluation and quality data collection and reporting at the facility-level. This assessment informed our study design for SafeSurgery2020 year-two in Ethiopia and year-one in Tanzania with a particular focus on data quality strengthening.
Source of funding (if none, enter "None"): GE Foundation

FRI_069

The Burden of Musculoskeletal Disease Presenting to a Tertiary Referral Hospital in Northern Tanzania

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Background: In low and middle-income countries, country specific data is scarce regarding the burden of surgical disease, with most estimates extrapolated from indirect methods. In June 2015, our research team first collected data at Kilimanjaro Christian Medical Center (KCMC), the only referral hospital serving 10 million people in northern Tanzania, with the aim of quantifying the musculoskeletal burden of disease at KCMC. This study aimed to re-evaluate that burden, with the ultimate goal of helping to improve access to orthopaedic surgical care in northern Tanzania.
Methods: Prospective data was collected for 6 weeks in June/July 2018 for 190 patients admitted to the Orthopaedic Ward at KCMC. Retrospective review of available records for 12,723 patients presenting to the Emergency Medicine Department, Orthopaedic Clinic, and Orthopaedic Ward over the previous 12 months was also performed.
Findings: KCMC treats an average of 15,115 orthopaedic patients each year. Approximately 74.5% of these patients are seen as outpatients in clinic, 14.4% are seen in the emergency department and 11.1% are inpatients on the orthopaedic ward. Road traffic accidents (RTAs) represented the most common etiology of injury requiring ward admission at 47.1%, followed by falls (25.1%), and infections (7.3%). The majority of RTAs (67.8%) were a motorcycle-related and 28.9% involved pedestrians. 77.9% were admitted for fracture treatment, with infection (8.4%) and hardware removal (4.2%) being the next most frequent reasons. Femur fractures were the most common injury (29.1%), followed by tibia (19.6%) and fibula (13.2%) fractures. Average time to surgery was 4.2 days and hospital length of stay was 13.1 days. While 95.8% of admissions had indications for surgical fixation, only 69.0% received surgery. Furthermore, many patients taken to the operating theatre received only surgical debridement without appropriate definitive internal fixation. As a result, only 42.6% of patients received definitive treatment for their fracture.
Interpretation: KCMC sees an approximately identical volume of surgical orthopaedic trauma as a Level 1 Trauma Center in the United States, but has significantly fewer material and intellectual resources to meet this burden. These data give a more complete picture of orthopaedic patient demographics, mechanisms of injury, types of injury, and management capabilities in similar resource-limited locations.
Source of funding (if none, enter "None"): None

FRI_070

Establishing a System for Surveillance of HIV Infected Infants in Nampula Province, Mozambique

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Background: While many countries have seen a dramatic decrease in mother to child transmission (MTCT) of HIV, Mozambique is one of 6 countries contributing the majority of pediatric HIV infections worldwide[1]. Despite high knowledge of HIV status among pregnant women and high ART coverage for HIV positive pregnant women, Mozambique's MTCT rates are quite high ranging from 3% in Maputo to 13% in Nampula[2]. The aim of the project was to pilot an early infant diagnosis (EID) Surveillance tracker to assess major bottlenecks in the prevention of mother-to-child transmission (PMTCT) care cascade in order to inform targeted interventions to remediate challenges.
Methods: An excel based HIV infected infants surveillance tracking tool was designed and implemented at 19 health facilities across Nampula province. HIV infected infants were identified using the infant testing PCR log book for the statistical period of January – June 2018. Information such as confirmatory testing, availability of child's ART file as an indication of linkage to care for ART initiation and ART file for the mother were ascertained and information inputted into the surveillance system.
Findings: A total of 378 infants across 19 health facilities were identified to have a positive PCR result between January and June 2018. While only 79% (n=298) of infants could be traced from the PCR log book to clinical files, of those infants 96% (n= 285) could be linked to their maternal records. Challenges within the existing health system of Nampula included difficulty of tracing infants to mothers via maternal care registrars and inconsistencies found across registrars which reveal a barrier as the registrars are essential to inform programs and implementing strategies to tackle vertical transmission.
Interpretation: By triangulating information, the tool highlights challenges with the completeness of data while emphasizing the urgent need for tracking mothers enrolled in PMTCT services. Recommendations moving forward included keeping infant and mother files within familial unit folders to facilitate tracing of mother-infant pairs, as well as performing tracking every trimester to analyze new bottlenecks in the PMTCT cascade in order to strengthen existing health system and reduce vertical transmission.
Source of funding (if none, enter "None"): Supported by ICAP Columbia and National Institute on Minority Health and Health Disparities of the NIH under Award Number T37MD008637.

FRI_072

Birth Outcomes of Indigenous Pregnant Women Living in the Tropical Rainforest of Suriname

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Background: Perinatal care (PNC) is part of the overall care portfolio provided by the Medical Mission Primary Health Care Suriname (MMPHCS) that is responsible for primary health care in the tropical rainforest interior of Suriname. This study evaluates the effect of PNC on birth outcomes among indigenous pregnant women in Suriname's interior.
Methods: 2015-2016 routinely collected perinatal data on low birth weight (LBW <2,500gr), preterm birth (PTB <37wks), low Apgar score (<7 at 5 min) and antenatal visits (ANC ≥4) by MMPHCS in 7 interior villages were retrospectively analyzed. The study population was 186 indigenous women with singleton pregnancy, potentially exposed to mercury (Hg), receiving prenatal care in the targeted clinics and is included in the overall environmental epidemiologic cohort study as part of the Caribbean Consortium of Environmental and Occupational Health (CCREOH).
Findings: Mean age of women was 24 years, 63 were <20 years (34%), 134 women (72%) had four or more ANC, 21% sought ANC in the first trimester, ANC data was missing in 19% of cases. A total of 178 children were born, 27 (15%) had LBW, data on birth weight was missing in 4% of cases. One newborn had a low Apgar score, Apgar score data were missing for 8% of children. Maternal age was associated with LBW (χ^2=9,79, p<0.001), and the number of ANC with low birth weight (χ^2=12,84, p<0.001). There was no association between maternal age and PTB or number of ANC and PTB.
Interpretation: LBW was more prevalent among newborns from adolescent (<20yrs.) indigenous women and slightly higher albeit comparable to country-wide statistics (13.9%). Women in the study population who had at least four ANC visits were higher than national health services utilization data (72 vs. 67%). CCREOH will prospectively evaluate the impact of exposures to Hg and pesticides on birth outcomes. Hair Hg data analyzed to date show that more than 80% of the CCREOH sub cohort of women from the interior region show levels above the US Environment Protection Agency action level. Quality and effectiveness of the PNC provided by the MMPHCS will be integrated as key variables.
Source of funding (if none, enter "None"): Research supported by Fogarty International Center of the National Institutes of Health under Award Number U01TW010087-01.

FRI_073

Correlates of Financial Preparedness of Birth among Rural Zambian Women

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Background: Zambia has some of the highest maternal and neonatal deaths in the world.[1,2] Utilizing skilled birth attendants (SBAs) and delivering in health facilities has shown to be effective in decreasing such unacceptably high number of deaths.[3,4] However, lack of money is one of the biggest barriers for women to receive these services.[5,6] Therefore, the purpose of this study was to examine the relationship between sociodemographic and personal factors and the Zambian women saving money for their most recent birth.

Methods: A secondary analysis was conducted from baseline data collected for an impact evaluation of a maternity waiting home (MWH) intervention in Zambia. Data were collected using a cross-sectional quantitative household survey design and multistage random sampling procedure with probability proportionate to population size randomly selected. A total of 913 samples were analyzed using binary logistic regression models to estimate OR's and AOR's with 95% confidence intervals. Head of household, age, marital status, number of births, education level, religion, last delivery location, and depression were independent variables. Saving enough money for last delivery was dependent variable.

Findings: Roughly 68.3% of the sample indicated saving enough money for their last delivery. Data analysis revealed none of the independent variables influence account for why some mothers saved money for delivery. However, mothers who delivered at a health post/facility were more likely to have saved enough money, while women with higher levels of depression were less likely to have saved enough money.

Interpretation: Saving money for delivery allows women to access various means for safer delivery. However, our analysis shows that it is difficult to determine whether woman will save for delivery by examining factors such as household head, age, marital status, number of births, woman's education level, religion, last delivery location, or depression level. Additional research is needed to understand factors that influence women's decisions and actions in saving money for delivery.

Source of funding (if none, enter "None"): This program is funded by Merck, Bill & Melinda Gates Foundation, and The ELMA foundation.

FRI_074

An Integrated Review of Healthcare Provider Recommendations Regarding Postnatal Newborn Care in Sub-Saharan Africa

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Background: Almost half of newborn deaths in sub-Saharan Africa occur during the early to late postnatal periods (days 2 to 42 after birth) when the newborn may be outside the formal healthcare system and late complications from birth, prematurity, or infections arise. Most postnatal assessment and counseling to families on newborn care is performed by formal and informal healthcare providers (HCPs) with various levels of training and knowledge of evidence-based care guidelines. Although HCP knowledge of postnatal care and the counseling they provide is critical to newborn health, little is documented about the recommendations they know and provide. This study was an integrative review to document formal and informal HCP knowledge and counseling of newborn care recommendations and use of care guidelines during the postnatal period in sub-Saharan Africa.
Methods: A search of PubMed, CINAHL, EMBASE, and four African healthcare journals was conducted for studies published from 2000-2018. Twelve studies were included. Study quality was assessed using the Mixed Method Appraisal Tool. Evidence of HCP knowledge, counseling, or use of guidelines was tabulated.
Findings: There were six qualitative, four quantitative, and two mixed-methods studies from seven countries. Breastfeeding and other feeding practices was the most frequent recommendation (67%). Cord care, recognizing illness, referrals, treatment by healers, immunizations, thermal care, recognizing low birthweight, and sleeping with a bed net were also documented. Most studies documented one to three recommendations (83%) and reported on informal HCP recommendations in the community setting. Only two studies were of formal HCP recommendations in clinical facilities. Of studies that included formal and informal HCPs, formal HCP findings were minimal. Formal and informal HCPs conflicted on protective and harmful care recommendations. Only four studies (33%) documented use of evidence-based guidelines.
Interpretation: Formal and informal HCP knowledge and counseling of evidence-based newborn postnatal recommendations varies and is often incomplete. Governments and educational institutions should increase uptake of guidelines and improve collaboration between informal and formal HCPs to maximize consistency in dissemination of recommendations. Findings on formally-trained HCPs are alarming. Additional research on HCP knowledge and counseling regarding newborn postnatal care is warranted.
Source of funding (if none, enter "None"): Robert Wood Johnson Foundation; The University of Texas at Austin School of Nursing

FRI_075

Building Collective Competence for Public Health Impact

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Background: In response to critical public health needs, there have been tremendous changes to public health training models for both the current and future work force. Following other professional workforces, public health adopted competence models which focus on applied knowledge, skills, attitudes, and values to guide classroom learning, continued education, and performance improvement. Despite an ever-increasing focus on the role of community-based partners in achieving public health impact, comprehensive competence-focused training for community implementers is lacking.
Methods: A systematic desk review was used to identify competencies expected of the existing and future public health workforce; these were compared to the competence needs of community collaborators.
Findings: The new graduate-level public health training model in North America requires students to demonstrate competence in at least 39 areas.
Public health professionals in the U.S. invest in self-assessment and professional development to assure competence. National standards related to accreditation include 90 core competencies.
There are no public health competencies defined for community collaborators, but given the role many play in designing and delivering public health services, competence is indicated; public-health-aligned competency areas have been elucidated by researchers focusing on Public Health 3.0 and Collective Impact.
Schools and programs of public health are encouraged to use real world activities to assess student competence, and are expected to be meaningfully involved in community-focused public health activities. Community Engaged Learning (CEL)—a pedagogical approach that facilitates learning through project-based work with mutual and reciprocal benefit for students and community hosts—is used by many universities. Student competence development benefits from CEL are well researched; many align with public health competencies: critical thinking, collective problem-solving, leadership, communication, intercultural competence, empowerment, organizational development, data collection and analysis, strategic program design, and community-centered decision-making.
While community benefit of CEL are well understood, research on community competence development is sparse.
Interpretation: A competent public health workforce, working meaningfully with community collaborators, can improve global health, but to maximize potential, community competence is also indicated. With more systematic planning using CEL, universities could catalyze learning and build collective capacity among the multiple sectors involved in public health.
Source of funding (if none, enter "None"): none

FRI_076

Clinical Evaluation of An Mhealth Intervention on Quality of Care Provided by Community Health Workers in Southwest Niger

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Background: Under WHO's integrated community case management (iCCM) Rapid Access Expansion program (RAcE), World Vision Niger and Canada and the Niger Ministry of Public Health introduced iCCM of malaria, pneumonia, diarrhea and malnutrition in four districts in Niger in 2013. Community Health Workers, or Relais Communautaire (RCom), were deployed to diagnose and treat children under five years presenting with illness and refer those with severe illness to higher-level facilities. Two of the districts piloted RCom using smartphones equipped with an application to support quality case management and data collection.
Methods: A two-arm cluster randomized trial, from March to November 2016, in Dosso and Doutchi districts, SW Niger, assessed the impact of the mHealth intervention on quality of care (QoC), motivation, retention and supervision. The intervention arm comprised 66 RCom equipped with a smartphone and 64 in the paper-based control arm. Trained clinicians observed each RCom assessing four sick children presenting to them (264 in intervention group; 256 in control group), re-assessed each child with the same protocol, and made further observations regarding motivation, retention, supervision, drug management and caregiver satisfaction. The primary outcome was a Quality of Care (QoC) score composed of diagnostic and treatment variables.
Findings: mHealth equipped RCom showed a 4.7% higher QoC score. They were more likely ($p<.01$) to ask about and identify the main danger signs: convulsions; capacity to drink or eat and vomiting; lethargy or unconsciousness; and were better at examining for swelling feet and advising caretakers on diarrhoea, drug dosage and administration. They performed non-significantly better when examining cough and breathing rates, treating and referring all conditions, getting children to take prescribed treatments immediately and having caregivers understand treatment continuation. The control group was significantly better at diagnosing fast breathing, bloody diarrhoea and malnutrition; and somewhat better at treating fever and malaria.
Interpretation: Results suggest the mHealth application led to modestly improved QoC delivered by RCom. The application may be useful for drug and data management and enhancing motivation but its potential impact at scale is questionable considering cost and benefit. Added gains may be improved by enhancing training, supervision and capacity building.
Source of funding (if none, enter "None"): None

FRI_077

Factors Associated with Postpartum Family Planning Uptake in Rwanda: A Mixed Methods Analysis

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Background: Family planning is an most effective method to improve reproductive, maternal, newborn, and child health (RMNCH) outcomes. Globally, there is a large unmet need for family planning in the postpartum period. Despite numerous infrastructure and health workforce developments, approximately 62% of Rwandan women have unmet family planning needs in their first year postpartum. Thus, a key priority action to continue and accelerate progress in RMNCH for Rwandans includes strengthened efforts in the area of PPFP.
Methods: This mixed methods secondary data analysis explored both system-level factors, such as health facility type (government or faith-based) and individual-level factors, such as respectful maternity care, locus of control, mental health (perceived stress scale and Edinburgh postnatal depression scale) and associations with PPFP. Current attitudes of men, women and community health workers towards PPFP were also analyzed. Data was derived from the Preterm Birth Initiative (PTBi) Rwanda parent study. A total of 68 participants completed the required baseline and follow-up survey; 55 lost to follow-up participants were included.
Findings: A significant difference is seen between the completed and lost to follow-up groups demographic measures in occupation ($p=0.02$), cooking methods ($p=0.05$), and openness in partner discussions ($p=0.05$). Most women (87%) did not want a pregnancy within the next year, however, only half (53%) utilized PPFP. Health facility type was not significantly correlated with PPFP uptake. Respectful care and locus of control showed a significant difference between answers recorded at baseline and follow-up time points ($p=0.03$, $p=0.04$); mental health measures did not. An individually evaluated locus of control item, partner as healthcare decision-maker, and PPFP uptake was correlated ($p=0.04$). Attitudes of men, women, and community health workers towards PPFP were summarized in four themes: 1) information about family planning could be disseminated more effectively, 2) the wait time for postnatal care (PNC) discourages attendance, 3) the purpose of family planning specifically in the postpartum period is not clear, and 4) men want to participate in PPFP decision making.
Interpretation: These results illustrate that a gap exists in the utilization of PPFP services. Attendance to PNC services, improved quality of PNC services, and partner (male) involvement can improve PPFP approaches.
Source of funding (if none, enter "None"): Gates Foundation

FRI_078

Predictors of Ambulance Transport to First Health Facility for Injured Patients in Southern Sri Lanka

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Background: Injuries account for about 13% of all registered deaths in Sri Lanka and are the leading cause of admission to public hospitals. Prehospital trauma care is new to Sri Lanka and began with the launch of a free ambulance service in 2016 in the Western and Southern provinces. Because the ambulance service was recently established, the characteristics of patients who use an ambulance and the locations where the ambulance is dispatched to are not well understood. Thus, the objective of this study was to assess the proportion of admitted injury patients at a tertiary care center who used an ambulance to get to the first health facility and examine patient demographics and injury characteristics as predictors of ambulance transport.

Methods: A cross-sectional survey was administered to 405 adult patients with externally-caused injuries that were admitted to the emergency trauma center at Teaching Hospital Karapitiya (THK) in Galle, Sri Lanka. Written consent was obtained from each patient prior to administering the survey. Descriptive statistics were tabulated to summarize prehospital transportation and care variables. Logistic regression models were created to examine predictors of the primary outcome ambulance transport, and ArcGIS Pro was used to calculate the distance between injury location and THK.

Findings: The proportion of patients that used an ambulance to get to the first health facility was 20.5% (n=83). Factors that were associated with decreased odds of ambulance transport include oldest age group (OR 0.42, 95% CI 0.22-0.81) and being injured at home (OR 0.26, 95% CI 0.14-0.48). People that consumed alcohol within six hours of the injury event were more likely to be transported via ambulance compared to those who did not to alcohol (OR 2.04, 95% CI 1.16-3.59). Distance from injury location to THK was not associated with ambulance transport to first health facility.

Interpretation: Knowledge about characteristics associated with ambulance transport to first health facility could aid in developing strategies to reach injury patients who are not using ambulances. This data could aid in expanding the existing EMS system.

Source of funding (if none, enter "None"): Duke University Global Health Institute

FRI_079

The Effect of Providing Patient Feedback on Provider's Attention to Patient Experience; A Cluster Randomized Controlled Trial in Rural Tanzania

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Background: Recent evidence demonstrates that patient experience is important to communities for both its intrinsic value (everybody deserves to be treated with dignity and respect) and for its instrumental value (better patient experience could lead to increased future health system use). However, little research has evaluated providers' value measures of patient experience, how they incorporate them into their views of quality of care, and whether providing feedback can change their opinion. We conducted a cluster-randomized study in rural Tanzania to assess these three questions.
Methods: We randomized 75 government-managed primary healthcare facilities in Pwani, Tanzania to one of three arms: public feedback, private feedback, and control. Feedback consisted of patients' (parents/guardians of sick children) ratings of their patient experience. We assessed the most commonly reported aspects of a high quality visit for a sick child through a free-list. These represent the aspects most salient to providers. We used a discrete choice experiment (DCE) to determine the quality aspects most important to providers.
Findings: There were 130 providers who participated at baseline and 120 after the feedback period. At baseline in the control group, the most cited aspects needed for a high quality visit for sick children were "test for malaria" (82%), "measure temperature (80%), and "physical exam" (74%). In the same group, the most commonly reported measure of patient experience was "greet the parent and child" (33%). After the intervention, the proportion of providers who cited "greet the parent" was unchanged in the private feedback arm, but increased by 35 percentage points in the public arm, above the change in the control arm (p=0.009). The most valued aspect of care from the DCE was "physical exam", with "greeting" ranked fifth out of the six characteristics. There were no changes to the DCE due to the intervention.
Interpretation: Providing feedback publically caused patient experience to be more salient to healthcare providers, even though it did not change how they valued patient experience. Public feedback may be one way to draw healthcare providers' attention to aspects of care that are important to the community, one step toward providing better quality of care.
Source of funding (if none, enter "None"): Weiss Family Program Fund USA

FRI_080

Establishing Master Programs in a Resource- Limited Setting Trough the Medical Education Partnership Initiative In Mozambique: The University of Lurio Experience

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Background: Low-income countries often suffer from a vicious cycle of shortages of financial and human resources, so important to train health professionals with didactic and research capacity. Through the Medical Education Partnership Initiative (MEPI), formed between Eduardo Mondlane University (UEM) and the University of California San Diego in 2010 and supported by President's Emergency Plan for AIDS Relief (PEPFAR) and the National Institutes of Health (NIH) we established for the first time in Mozambique three master programs at Lúrio University (UniLurio) in northern Mozambique's resource-limited settings.

We describe here the innovative strategies and processes adopted to design and implement these Master's programs and the outcomes, as a way to ensure sustainable institutional and country's development as a whole.

Methods: A longitudinal descriptive case study was carried for the period 2013-17 at UniLurio. The study was developed in 3 main phases: Needs Assessment (2011), Design of implementation strategies (2011-2012) and Testing of implementation strategies (2013-2017).

By addressing each barrier and sharing critical resources among multiple institutions, we implemented postgraduate education at UniLúrio with the active engagement of key domestic and international partner institutions. UniLúrio enrolled 120 students in 3 Master's degree programs: Master of Tropical Medicine and Global Health, Master of Health Professions Education and Master on Nutrition and Food Security between 2013 to 2016.

Findings: Eighty five students have successfully defended dissertations, been 25% UniLurio's faculty members. Four published their research in peer reviewed manuscripts. Five presented their abstracts in international meetings, several manuscripts are under preparation and two faculty members enrolled in a PhD programme at UEM.

Interpretation: The innovative strategies we employed to create and implement postgraduate training in an underserved geographical region by sharing human and educational resources, e-learning tools, and laboratory materials and equipment among different institutions helped to establish a training program in a newly launched university.

The Master's programs allowed the establishment of long-lasting partnerships among institutions with common goals, developed competency-based training, leveraged research and eLearning and potentially enhanced faculty retention. This effort strengthened institutional capacity and the central goal of internationalization.

Local leadership and ownership, good coordination and collaboration among the involved teams and institutions were all critical for the success in implementing this program.

Source of funding (if none, enter "None"): None

FRI_081

Is Universal Health Care Possible in Geographically Isolated & Disadvantaged Areas in the Philippines?

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Background: Access to health facilities and services in islands or Geographically Isolated Disadvantaged Areas (GIDA) is a big challenge in implementing Universal Health Care in the Philippines. Limited public transportation linking coastal communities and health facilities contribute much to the delays in seeking medical care and getting to the health centers. Because of this, mothers with complications and/or sick newborns die unnecessarily. Zumarraga is a 5th class fishing municipality in Eastern Visayas, comprised of 25 barangays covering 38.55 sq. km of total land area with a total population of 16, 295. Tertiary health facilities are in cities requiring land and sea travels up to 4 hours. To refer an indigent patient with no access to boats, many are disturbed each time due to lack of boat stationed at health center and no existing system in place to ensure immediate assistance for fuel.
Methods: This inspired us to establish a sustainable health referral system, through provision of service boats to health facilities and its supporting mechanisms for sustainability as a priority strategy in implementing UHC in the island. Service boats were used to visit barangays to deliver vaccination, health education and pre-natal check-ups. These were also used to transfer patients or pregnant to higher facilities. Boats were assigned to different barangay health stations (BHS). Rural health midwives managed the operations of the boats while contracted boatmen took care of the needs.
Findings: Because of the project, 94% of pregnant delivers in the facility. Philippine Health Insurance Corporation pays the health facilities $ 200 where the members and dependents will deliver their newborns. From a zero income, Zumarraga now earns US$60,000.00 annually. This additional revenue enabled the Health Facility to provide essential medicines, increase working staff, provide staff incentives, support other health services and maintain the boats.
Interpretation: Having low maintenance, fuel-efficient, cost-effective service boats at the BHS level manned by skilled boatmen, maintained using Philhealth Revenues did unprecedented impact not only to health referral system but also to health service delivery, economic status of boatmen, health workforce performance, and ultimately towards improved health outcomes making UHC a bit closer to reality even in the island.
Source of funding (if none, enter "None"): CS Foundation LGU Zumarraga DOH VIII LJ Institute/Bakhaw

FRI_082

Integrating Non-HIV Healthcare Provision for HIV/AIDS Patient at Community Health Centers in Southwest China: Projected Economic Impact

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Background: Multiple areas of the HIV/AIDS healthcare provision in low-middle-income-country health systems require attention. In Southwest China, the coverage of HIV/AIDS healthcare services remains insufficient. By 2016, the proportion of ART treatment in the Southwest Yunnan province had reached as high as 76.7%. However, there were reported 93,437 of HIV/AIDS infection and 9,723 new cases. Hence the existing system of HIV/AIDS prevention and treatment need to be extended to cover the population who cannot afford care or do not seek care due to stigma, and promote the access of HIV/AIDS medical services to the high-risk groups. Current HIV/AIDS care is provided through vertical programs with specialized workforce, separate laboratories, and specific clinics, which limits its coverage and efficiency. HIV/AIDS should be deemed as a health condition like others such as hypertension and diabetes, which is called commonization. HIV/AIDS stigma is a major barrier to accessing prevention, care, and treatment services. Among a sample of 2,000 people living with HIV in China, 41.7% had experienced at least one form of discrimination, and 12.1% had been denied care at least once.
Methods: We evaluate a hypothetical policy change of the communization, i.e., providing non-HIV care for HIV/AIDS patients at community health centers. We collect related cost parameters and effect size for policy simulation from existing literature and from participants and community health centers. Economic evaluation is used to estimate the changes in medical cost associated with the hypothetical policy change and its cost-effectiveness. Sensitivity analysis is used to examine the impact of change in parameters on the project economic impact.
Findings: Substantial savings for the public sector and the patients were projected if we integrate non-HIV care for HIV patients in the community health centers. Reducing HIV stigma is key to such integration.
Interpretation: Better knowledge of HIV/AIDS and care among non-HIV patients would contribute into reduction of HIV/AIDS stigma in healthcare setting and thus enable the integration of non-HIV care for HIV/AIDS patients into routine primary care at community health centers.
Source of funding (if none, enter "None"): None

FRI_083

Usability and Effectiveness of a Smartphone Application for Tracking Oncology Patients in Gaborone, Botswana

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Background: Most cancer diagnoses are expected to be in low and middle-income countries (LMIC) by 2025, and 65% of cancer deaths occur in LMIC. Treatment adherence and patient monitoring are essential to cancer care but are often not possible in LMIC. OP Care, a smartphone application developed to fill this gap, stores medical records virtually and texts appointment reminders to patients. This study assessed its usability and effectiveness.
Methods: OP Care was piloted at Princess Marina Hospital in Gaborone, Botswana. The study was a cross-sectional study using surveys. All providers using the application were surveyed, along with all patients who were previously enrolled in the application and attended the Gynecological Oncology clinic during the three-week survey period. Staff demographics, reaction, opinions on usability, and patients' reactions to the appointment reminders were collected. Answers were recorded on a 1 (Not at all) to 7 (Extremely so) scale. Primary outcomes were the application's usability and the effectiveness of the text reminders. The UPenn IRB and Ministry of Health and Wellness in Botswana gave approval for the study. Patients provided written consent before enrollment.
Findings: Nine staff and 15 patients were surveyed. Staff included three doctors and six nurses, all of whom own a smartphone and use a computer at home. Most staff (78%) did not feel OP care would increase their work burden and were willing to use the application if implemented permanently (median 6, IQR 1). Most usability questions (17/19), such as "I feel comfortable using this system", scored a median of 6. Most patients felt that the reminder text messages were helpful (median 6, IQR 1) but wanted the text reminders to be in Setswana (median 7, IQR 1).
Interpretation: High usability scores indicate the application is adaptable to other clinics. Although patients appreciate OP Care, the option for call and text reminders in Setswana is indicated. A potential limitation is that patients for whom the appointment reminders were not helpful were not necessarily included, because only patients in clinic were surveyed. Strengths were inclusion of all involved staff, uniformity in survey administration, and inclusion of numerical analysis.
Source of funding (if none, enter "None"): ONE BCG Pty Ltd, University of Pennsylvania Department of Radiology Oncology, UPenn, Center for Global Health.

FRI_084

Health Leadership and Management: A key Element of Health Improvement and System Performance

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Background: Strong leadership and management competencies are essential in well-functioning health systems, and fundamental to any quality improvement strategy or initiative. There is clear evidence that health quality initiatives fail to realise their desired outcomes without strong and consistent leadership and management across the health system. In fact, most current quality improvement efforts are focused on correcting operational management and health system challenges, and not necessarily on patient or clinical issues to improve the quality of care. Where there are perceived weaknesses in leadership in the health system, strategic interventions can improve capacity to ensure implementation and build commitment together with improving management and leadership competency to strengthen accountability.
Methods: Leadership and management competencies were assessed in self-report surveys, routine data was assessed to review facility performance in HIV and TB service delivery and health outcomes, and assessments were done of quality improvement efforts in three sub-districts in rural Eastern Cape, South Africa in 2017. Tools used included the Leadership Competency Framework (LCF) developed by PAHLM (Partnership for Health Leadership and Management), the Institute for Healthcare Improvement (IHI) project progress scoring tool, an adapted QI Proposal Assessment Tool (QIPAT-7), the QI Knowledge Application Tool – Revised (QIKAT-R) and routine health information from DHIS and Tier.net.
Findings: Self-report scores for the Leadership Competency Framework (LCF) and IHI Project Progress tools were artificially high, as most facilities were failing to achieve targets, performing poorly on routine data metrics and had ongoing operational management and supply-chain challenges. Clinical governance needed support as aspects such as clinical protocols were observed to be inconsistently implemented and clinical meetings to discuss patient management were not routine, all affecting the quality of care delivered.
Interpretation: Self-report scores for the Leadership Competency Framework (LCF) and IHI Project Progress tools were artificially high, as most facilities were failing to achieve targets, performing poorly on routine data metrics and had ongoing operational management and supply-chain challenges. Clinical governance needed support as aspects such as clinical protocols were observed to be inconsistently implemented and clinical meetings to discuss patient management were not routine, all affecting the quality of care delivered.
Source of funding (if none, enter "None"): President’s Emergency Plan for AIDS relief (PEPFAR), Centres for Disease Control (CDC) under GH15-1574

FRI_085

Risk Factors and Health-Seeking Behaviors among Adolescents in Moshi, Tanzania.

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Background: Adolescents are often a neglected group in terms of policy priorities regarding improving their health and well-being. Out of 1.2 billion adolescents worldwide, an estimated 1.4 million die each year from largely preventable causes. These deaths are caused by risky health behaviors that include, but are not limited to, unsafe sex, substance abuse and untreated mental illness. Adolescents are often exposed to certain risk factors that make them more vulnerable to adverse health outcomes. In Tanzania, teen pregnancies, early marriage, HIV/AIDS, and violence are some of the key challenges presently facing this group. Adolescent-specific polices and services on health and social protection do exist, however implementation of national policies at the local and individual levels is often hindered by stigma, traditional beliefs and accessibility of services and health information. These factors also contribute to poor health-seeking behaviors among adolescents.
Methods: A qualitative cross-sectional study was conducted in June 2018 within Moshi, Tanzania. All eligible community stakeholders were identified, invited to participate in the study, and interviewed regarding their interests in and influences on issues related to risk factors and health-seeking behaviors of adolescents. Stakeholders interviewed included, but were not limited to community health clinic nurses, secondary school administrators, district government officials, clinicians and native adolescents. Relevant documents and publications published by stakeholders were also reviewed.
Findings: Various risk factors that affect the health-seeking behavior of adolescents were identified. These included lack of public awareness, globalization, lack of specific policies, poor implementation of current policies, inconsistent training for educators and lack of education and support for adolescents.
Interpretation: In order to effectively address issues pertaining to adolescents and their health, a holistic policy approach is necessary. Firstly, this can be done by standardizing and updating the education/training curriculum for families, educators, healthcare workers and adolescents. Furthermore, expanding the hours of adolescent-friendly health clinics and implementing a consistent mass media campaign increases accessibility and awareness. Finally, on a legislative level, establishing fines to prevent accessibility of the drugs and toxic substances to the adolescent population, and including adolescents' into the Health Management Information System (HMIS) as a distinct group will influence high-level evidence-based decision-making to support the health needs of adolescents.
Source of funding (if none, enter "None"): None

FRI_086

Social Vulnerability of Women Among Infertile Couples in Kilimanjaro Region, Tanzania

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Background: Infertility is a widely neglected global health issue with nearly 48.5 million couples suffering globally. In low and middle-income countries, issues surrounding infertility are often hidden by growing population rates, leaving the social consequences of infertility relatively unaddressed. The purpose of this study was to examine the social, political, and economic factors surrounding infertility and propose policy recommendations for limiting the social vulnerability of women among infertile couples. This investigation was conducted in the Kilimanjaro Region of Tanzania. Tanzania is a country that has been heavily shaped by the influence of cultural and religious traditions. These deeply rooted cultural and religious beliefs often shape the day-to-day interactions of infertile women and couples. These groups often face heightened adversity due to gender roles, cultural norms, misconceptions, religious beliefs, and poverty. Increased adversity and associated stress can often lead to overall poorer health outcomes.
Methods: Information was collected by interviewing stakeholders who could be influential in the development and implementation of future policies in this region. Important stakeholders in this issue include non-governmental organizations, religious leaders, fertility specialists, psychologists, infertile couples and family members.
Findings: It was determined that there were a number of existing policy issues that needed to be addressed in order to limit the social vulnerability of women in infertile couples. These policy issues include inadequate policies surrounding infertility, limited funding for the treatment of infertility, lack of public awareness about the causes of infertility, personal economic barriers to seeking care, and health system discontinuity.
Interpretation: The proposed policy recommendations address both decreasing the burden of infertility and limiting the social vulnerability of women in infertile couples. Decreasing the burden of infertility would require both an increase in fertility specialists and a decrease in out of pocket costs for those seeking care. These could be accomplished through multi-sectoral funding approaches and increasing the reach of insurance and public healthcare facilities. Limiting the social vulnerability of women focuses on initiatives that increase awareness around the predominant causes of infertility in order to quell misconceptions and provide an incentive to seek proper medical care. Further quantitative work should be done to better identify target populations and evaluate existing initiatives.
Source of funding (if none, enter "None"): None

FRI_087

Self-Medication Without Clinician Consultation in Urban Moshi, Tanzania

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Background: Self-medication is an international global health endemic, particularly in developing countries. In Tanzania, reports of self medication range from are 64.8% in rural areas to 55.7% in urban regions. Self-medication is defined as the use of medicines by individuals to treat self-recognized illnesses or symptoms. Self-medicating has extremely crippling consequences. Among them include antimicrobial resistance, unknown drug interactions, delays in seeking care, incorrect dosages, and the risk of drug dependence. This study explores the policy issues concerning self-medication without clinician's consultation in urban Moshi, Tanzania.
Methods: A qualitative cross-sectional study was conducted in June 2018 within Urban Moshi, Tanzania. All eligible stakeholders were identified, invited to participate in the study, and interviewed regarding their influence and role related to self-medication. Stakeholders interviewed included, but were not limited to, local community members, local and hospital pharmacists, district government officials, and clinicians. Relevant documents and publications published by stakeholders were reviewed as well.
Findings: Numerous factors and policy issues were found to influence self-medication practices among members of the community. These included a public culture of self-medication, healthcare provider culture, lack of pharmacist knowledge and ethical standards, and inadequate enforcement of existing regulations due to a lack of enforcement resources.
Interpretation: The challenges of self-medication practices in Tanzania can be overcome through numerous policy avenues. Firstly, this can be done by increasing resources for enforcement officials and the accountability of pharmacists. Furthermore, reshaping public awareness of self-medication, improving the healthcare system capacity through better education and an influx of resources, and enhanced pharmacist education especially surrounding ethical issues, can all serve to combat this issue.
Source of funding (if none, enter "None"): None

FRI_088

The Effect Of Providing Feedback On Patient Experience; A Cluster-Randomized Controlled Trial In Rural Tanzania

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Background: Patients accessing healthcare in low-income countries often encounter poor quality of care. We conducted a cluster-randomized controlled trial in Tanzania to assess whether giving patients' feedback to healthcare providers can improve the quality of patient experience, particularly in the dimensions of effective communication and respectful care.
Methods: We randomized 75 government-managed primary healthcare facilities to one of three arms: public feedback, private feedback, and a control (no intervention). Healthcare providers in the feedback arms received patient experience reports. In addition, in the public arm results were posted publically at the healthcare facilities and village offices. We conducted surveys of parents/guardians of sick children visiting the study facilities at baseline and approximately five to seven weeks after providing feedback (August 2017 - January 2018). The effect of the intervention was assessed using difference-in-differences analyses.
Findings: We interviewed 1,085 parents/guardians at baseline and 1,034 at endline. At baseline, 74% of parents/guardians in the control group stated the provider explained things in a way that was easy to understand, 23% said the provider encouraged them to ask questions, and 39% rated respect from the provider as very good (the top category). Within the private feedback arm, report of effective communication significantly increased after feedback (0.62 out of 6 points, 95% CI: 0.29, 0.94), whereas there was no significant change in the public feedback arm (0.18, 95% CI: -0.14, 0.50). There was no significant change in the level of respectful care. Parents/guardians in the private treatment arm reported a 10 percentage point increase in intent to return to the health facility (95% CI: 2, 18).
Interpretation: Offering private feedback on patient experience to healthcare providers resulted in improved provider communication, but not respectful care. Communication may be more easily modified than respectful care. The addition of public reporting of the feedback negated any gain in effective communication obtained by the private feedback. This may have resulted from changing expectations among parents/guardians after seeing the facilities' scores. While public reporting has potential to hold healthcare providers accountable, private feedback through report cards should be considered as a first step toward improving patient experience.
Source of funding (if none, enter "None"): Weiss Family Program Fund

FRI_089

An Exploratory Systematic Review of the Intersection of Global Health and Narrative Medicine

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Background: Both narrative medicine (NM; the use of creative writing and/or close reading of literature to enhance medical education, clinician development, or clinical practice) and global health (GH; clinical or public health practice in settings or issues specific to low- and middle-income countries [LMICs]) have become widespread in health education. Increasingly, students and early-career clinicians attend NM courses/sessions and/or GH programs or trips. Both are said to enhance attendees' abilities to communicate and empathize with patients, particularly across cultures or socioeconomic strata. Hypothetically, NM could help those engaged with international GH programs develop empathic skills and cultural knowledge before/during travel. However, it is unclear how NM has been used in GH education to date.
Methods: This systematic review examines published literature on NM in GH education. PubMed was searched in August 2018 with terms (1) "(((((("narrative medicine") OR "literary") OR "creative writing"))))) AND (((((((global health) OR humanitarian*) OR "lmic") OR "international aid") OR "development")))))"; (2) "("global health") AND "narrative medicine"; and (3) "((("global health/education") OR "global health education") AND "narrative medicine")." All studies on NM in GH education were included. Studies on only NM or GH, and all others, including anthropological/sociological studies using literature analysis, narrative theory, or close readings of texts, were excluded. Searches were performed by 1 researcher. Results were reviewed by title, potentially relevant articles by abstract, and relevant articles in full. No language restrictions were used.
Findings: The 3 search terms returned 1966, 388, and 0 results, respectively. Two articles met inclusion criteria: 1 describing using NM to assess GH trainees in Canada and another at the same university describing a GH educational effort to gather narratives on family medicine from universities worldwide. Five studies were near-matches: 3 describing NM programs in China, Chile, and Russia, and 2 describing narratives by youth in Nicaragua on intimate partner violence and Nigeria on HIV. These did not involve educating GH trainees but hint that clinicians and patients in countries that receive GH trainees might be interested in NM practice.
Interpretation: Academic literature shows little evidence of NM in GH education, but using NM in GH training contexts might be feasible with involvement of trainees and colleagues and patients in LMICs.
Source of funding (if none, enter "None"): None

FRI_090

Emergency Medicine Capacity Development at an Urban Caribbean Hospital

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Background: Estimates show the top 15 causes of death and disability-adjusted life years are due to emergent conditions defined as conditions with decompensations leading to disability or death, or conditions that need to be addressed emergently to avoid disability or death. Yet, emergency medicine (EM) has just recently become a distinct medical specialty, especially in Low- and Middle-Income Countries (LMICs). While emergencies disproportionately affect LMICs, statistics show that these citizens are less likely to receive emergency services. In the Dominican Republic (DR), Emergency Medical Services started around 1995 through the efforts of aid organizations, and the first EM residency program started in 2000 in Santo Domingo. As such, great opportunity exists for capacity development in this developing system.

Methods: Our study assessed EM capacities at an urban public hospital in Santo Domingo with the goal of establishing an initial assessment to inform future implementations and potential studies evaluating intervention outcomes. Data collection consisted of a hospital survey assessing human and physical resources, and key informant interviews with stakeholders. Observational data was analyzed to identify opportunities for improvement identified by the researcher and local staff.

Findings: The ED was staffed by four attending physicians with EM training and 25 EM residents. Residents participate in a formal curriculum with weekly didactic sessions and are required to complete ACLS, ATLS, and PALS, though many fail to complete this requirement due to cost. The department served about 24 patients/day over a 30-day period, all of whom were self-pay or publicly-insured Dominicans. Care quality was negatively impacted by a lack of personal protective equipment, laboratory supplies, diagnostic tools, and medications, as well as poor hospital throughput, consultations, and space utilization.

Interpretation: Staff universally identified a lack of resources as their biggest weakness. Governmental funding is a major challenge to increasing ED resources, and as such, recommendations will focus on efficiency of use of current resources to promote care quality. Specifically, implementations will seek to improve didactic sessions, in-hospital consults and throughput, utilization of current space to include an isolation area and facilitate efficacy, and point-of-care ultrasound capacities. A return trip is planned for February 2019, including implementation and continued data collection to analyze recommended intervention outcomes.

Source of funding (if none, enter "None"): None

FRI_091

Creation of a biomedical engineer training program as a cost-effective method to increase surgical infrastructure in Nicaragua

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Background: Physical infrastructure is essential for delivering safe and effective surgical care, but improperly sourced and maintained medical equipment remains a major barrier within low and middle-income countries (LMICs). According to the WHO, 80% of medical equipment in LMICs is received through donations, however 70% of complex medical devices are non-functional on arrival and 95% are non-functional within 5 years. As part of a larger hospital systems strengthening program in Nicaragua, we sought to determine feasibility and cost-effectiveness of a biomedical training program for refurbishment and maintenance of non-functional medical equipment.

Methods: Inventory of hospital equipment was performed at two rural district hospitals in Bonanza and Siuna. Equipment type and percentage requiring repair were categorized according to hospital sector including laboratory, operating room, neonatal unit, radiology, emergency department, and outpatient clinic. An international volunteer biomedical engineer completed repairs alongside two local engineers with background in mechanical and electrical engineering but no prior health care experience. Repairs utilized locally sourced parts and costs were compared to estimated costs of replacement equipment as determined by the Nicaraguan Ministry of Health.

Findings: A total of 287 equipment items were inventoried and 99 were repaired (34%) including 17% of laboratory, 52% of operating room, 46% of neonatal unit, 13% of radiology, 59% of emergency department and 40% of outpatient clinic equipment. The overall cost of repairs was $1,390.10 USD, compared to a projected $152,650.00 USD cost for sourcing new equipment, resulting in an 99% cost savings. Additionally, the two local engineers received training in biomedical maintenance and were subsequently hired as full-time hospital employees to continue long-term equipment oversight and repairs.

Interpretation: The absence of safe, effective and well-functioning medical equipment in LMICs impairs health care delivery and leads to poor patient outcomes. International donations, while well intentioned, are often ineffective and the cost of sourcing new equipment is significant. We demonstrate the feasibility of providing biomedical training to local engineers in Nicaragua and the significant cost-savings of rehabilitating existing equipment in low-resource settings. Ongoing work is dedicated to formalization of a training curriculum, expansion to other LMICs, and further evaluation to address department specific infrastructure needs.

Source of funding (if none, enter "None"): Operation Smile

FRI_092

Increasing Access to Maternal and Pediatric Specialty Care in Peru via Telehealth

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Background: Despite improvements in pediatric and maternal health outcomes in recent years, Peru faces inequalities in access to pediatric and maternal specialty care. A barrier to care access is the lack of specialist physicians in regions outside of the capital city, Lima. To overcome this barrier, specialized hospitals in Lima have begun developing telehealth programs to provide consults via video calls. Through a collaboration with Hospital Nacional Docente Madre-Niño San Bartolomé, a national pediatric and maternal reference hospital in Lima, we provided recommendations for how the hospital could better use telehealth to increase access to its specialty pediatric and maternal care services.
Methods: We conducted 38 interviews, focus groups, and meetings with health care practitioners at Hospital San Bartolomé and three consulting hospitals in different regions of Peru. At each site, we also distributed surveys assessing individual and organizational telehealth readiness, collecting 125 surveys total. Survey questions were drawn from e-Health readiness literature, including other validated surveys. Through thematic coding of interviews and focus groups and quantitative analysis of surveys, we created a framework for determining telehealth capacity of health facilities and proposed programmatic steps based on current capacity.
Findings: Analysis of survey, interview, and focus group data demonstrated that there is high engagement and desire by health care practitioners to access specialty care via telehealth. However, practitioners have low levels of trust in their facility's technological and organizational capacity to implement a successful telehealth program. Hospitals have seen investment in telehealth technology but not in systems and organization, leading to fragmented and unsustainable programs.
Interpretation: Peru's telehealth programs have largely focused on technology rather than systems-level approaches to program development. This reflects a trend in e-Health literature of framing telehealth as a technological endeavor rather than a programmatic initiative. Telehealth developers and researchers should consider implementation, sustainability, and evaluation of programs. A systems-level perspective is valuable for the development of telehealth programs in low- to middle-income countries seeking to increase access to specialty care.
Source of funding (if none, enter "None"): This project was funded by the Dartmouth College Dickey Center for International Understanding and the Rockefeller Center for Public Policy.

FRI_093

Staff and patient experiences with hospital performance measurement and quality improvement in five district hospitals in Ghana

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Background: A hospital performance measurement and collaborative quality improvement (HPM) initiative was implemented in five district hospitals in the Eastern region of Ghana. This qualitative study aimed to understand the expectation and benefits of HPM from the perspective of hospital staff and patients. This study also aimed to understand the barriers and facilitators to HPM implementation.
Methods: HPM implementation involved the formation and training of an HPM team that engaged stakeholders, selected relevant performance indicators for routine measurement, and developed action plans to improve performance at each hospital. Baseline qualitative data was collected in August and September 2015, just before the implementation of HPM. Endline data was collected in November 2017. Data was collected through in-depth interviews (IDIs) with hospital staff and through Focus Group Discussions (FGDs) with clients seeking antenatal care (ANC) and post-natal care (PNC) from study hospitals. A combination of snowball sampling and purposive sampling were used to recruit study participants. Study participants were interviewed after they had given a written consent.
Findings: At baseline, 28 IDIs and 7 FGDs were conducted. At endline, 29 IDIs and 8 FGDs were conducted. During baseline, there was more skepticism among IDI participants about how staff will react to HPM. However, at endline, all IDI participants reported staff have been receptive to HPM while acknowledging lack of time and remuneration for HPM activities, poor documentation, and limited training of staff as challenges to HPM implementation. IDIs observed several benefits of HPM including problem identification, improvement in quality of care, increase in hospital attendance, increase in revenue, and fostering good relationship between staff and clients etc. Clients were more likely to report having a positive experience at hospitals at endline compared to baseline. Some of the positive experiences reported included friendly staff, prompt treatment, and orderly environment. Clients also reported opportunities for improvement in the following areas: wait times in specific hospital departments, communication between staff and clients, and staff attitude.
Interpretation: Hospital Performance Measurement can lead to improved quality of services, to the benefit of both hospitals and clients. Staff support is an important facilitator of HPM. The challenges identified should be taken into account in the implementation of HPM.
Source of funding (if none, enter "None"): USAID-Ghana, Contract No. AID-641-A-15-00007

FRI_094

Needs Assessment of Community Disaster Preparedness in St. Kitts and Nevis

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Background: St. Kitts and Nevis is a small, two-island nation in the Eastern Caribbean which is at high risk for numerous environmental hazards. Efforts for disaster preparedness have been made at the national level; however, the degree to which preparedness strategies have been implemented at a local level remain largely unknown. The purpose of this study was to assess disaster preparedness within individual communities in order to further develop strategies that build local disaster preparedness capacity in St. Kitts and Nevis.
Methods: A community disaster needs assessment for St. Kitts and Nevis was conducted using a survey assessing demographic factors, personal preparedness, household preparedness, and community resilience over the course of 17 days. Randomization of participants was determined daily based on the district/geography of each parish. Verbal consent was obtained from each participant over the age of 18. Variables on demographics and resilience were categorized and analyzed. Descriptive analysis of the data was performed using SAS University Edition.
Findings: 343 residents evenly distributed through each parish/district were surveyed. 183 were males and 160 were females. The average age surveyed was 47 years of age. The average household size was approximately 3 people per household. 92% of people surveyed were black and the median level of education among those surveyed was secondary school. 72% of surveyed residents reported that they have never received disaster or first aid training, and 41% reported not having evacuation plans. 40% have never sought information about disasters. 42% of households have vulnerable populations, but 92% reported having social support through family or friends. In general, a strong sense of community exists across all communities in St. Kitts and Nevis.
Interpretation: Assessing and describing the level of preparedness and understanding within the community can be used to evaluate previous efforts for disaster risk reduction, as well as identify areas in need of improvement. Based on this assessment, targeted, community-level disaster preparedness trainings and interventions are needed and should be designed and implemented. One such recommendation is to increase first-aid training among vulnerable populations to improve baseline resilience and increase social cohesion.
Source of funding (if none, enter "None"): None

FRI_095

A Systems Practice Approach to Sustainable Implementation of Molecular HPV Test-based Screening in the Peruvian Amazon

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Background: Demonstration projects in LMICs have established the feasibility of HPV test-and-treat cervical cancer screening programs, but broad adoption, scale-up, and sustainability have proven elusive. We hypothesize that the lack of understanding of local screening system dynamics results in limited acceptability of practice change by all stakeholders and program plans that are not well adapted to the local system context.
Methods: To test this hypothesis, we are applying a Systems Practice Framework (SPF) to the development of HPV-based screening programs, adapted to the Micro Red Sur health network in the Peruvian Amazon. The SPF is a participatory, iterative process involving system understanding, finding leverage, acting, and learning/adapting. Mixed methods are used to create the shared understanding of the screening system by elaborating broad stakeholder perceptions and interactions using data collected from focus groups/interviews and monitoring and evaluation. An analysis tool was designed to facilitate comparison of the impact of improving participation and/or screening performance on program impact measures such as percent of disease prevented, overtreatment, and resource requirements.
Findings: We engaged more than 90 multi-level stakeholders, some of whom reviewed phase I (systems understanding) research findings in a 2-day design workshop. Elaboration of a system landscape map by triangulation of the mixed-methods data served to create a shared reference in participatory discussions. Significant leverage opportunities were identified, including reducing fragmentation, redundancy, inefficiency, and a lack of standardization in the current system to increase women's acceptability and adoption of screening. A variety of interventions were evaluated for impact on both disease prevention and reach, acceptability, feasibility, fidelity, cost, and sustainability. Ultimately, the working group recommended adoption of HPV testing/self-sampling to increase coverage and ablative treatment of all HPV-positive women in lieu of colposcopic referral to reduce loss to follow up and use of an electronic screening registry to ensure and monitor completion of continuum-of-care.
Interpretation: Continued success in engagement of stakeholders in shared decision making, including current development of a detailed implementation plan using similar user-centered design, suggests that using a SPF in designing implementation strategies increases a sense of ownership in the process, which may lead to more sustainable screening programs in LMIC compared with 'top-down' approaches.
Source of funding (if none, enter "None"): United States NIH/National Cancer Institute R01 CA190366-A

FRI_096

Impact of Self Instruction Manual based Training of Family Caregivers of Neurosurgery patients on Caregiver Strain- A Randomized Controlled Trial

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Background: Family caregivers of operated neurosurgery patients function as informal extensions of the health system. Providing care to operated neurosurgery patients is demanding and has a large impact on the emotional and physical condition of the caregiver. But, usually they are untrained and unprepared to new roles and responsibilities. It has often been felt that many of the problems related to care provision can be resolved at home level by the family care givers if they are appropriately trained during their hospital stay with proper instructions and also by doing follow up training at their home for some time. Present study aims to measure the impact Self Instruction Manual (SIM) based training of family caregivers of operated neurosurgery patients on caregiver strain.

Methods: A RCT was conducted among the operated neurosurgery patients and their caregiver dyads (n=90) in a tertiary care hospital setting in North India. They were randomized into two groups to receive either SIM and one-to-one training (Intervention group) or SIM only (Control group). Block randomization technique was used. Sequentially numbered sealed envelope was used for allocation concealment. Caregiver strain was the primary outcome variable which was measured using Modified Caregiver Strain Index (MCSI). Institute Ethical Committee approval and written informed consent from all the participants was taken. The study was registered in ICMR trial register on (CTRI/2011/07/001921).

Findings: At the end of 3 months, mean caregiver strain score was increased when compared with the baseline among both the groups. However, the increase was significant among the control group (2.92; 95% CI: 6.1, 0.34) and not significant among the intervention group (2.78; 95% CI: 5.5, -0.79). The trend of caregiver strain in the intervention group started decreasing after a month but the trend was consistently increasing in the control group. However, We could not find significant difference in caregiver strain score between the groups across the study period.

Interpretation: Training of caregivers by self instruction manual along with one-to-one training is an effective strategy for reducing caregiver strain among the family caregivers of operated neurosurgery patients. However, further studies are required to prove its long term impact on caregiver strain.

Source of funding (if none, enter "None"): None

FRI_097

Causes and Outcomes of Unintentional and Intentional Traumatic Brain Injuries among Children in Uganda: Analysis from Hospital-Based Traumatic Brain Injury Registry

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Background: Lack of data on traumatic brain injuries (TBI) hinders the appreciation of true magnitude of burden, and poses a barrier to defining risks, vulnerable groups, and impact of potential interventions. TBI registry was developed based on evaluation framework for injury surveillance systems. This study aims to describe causes and outcomes of unintentional and intentional TBI among children presenting to a tertiary-care hospital in Uganda.

Methods: This study was conducted at Mulago National Referral Hospital, Kampala, for 15-months in 2016-17. Patients under 18 years of age, males and females, presenting to the emergency department with suspected or documented TBI were enrolled. Patient demographics, intent of the injury, TBI causes, and outcomes were recorded. TBI severity was assessed using Glasgow Coma Scale (GCS) on arrival. Parental permission for children <11 years and oral assent was taken from children 11-18 years. Study was approved by ethics committees of JHSPH and MUSPH.

Findings: For 724 children who were enrolled, the intent was known for 685; of these 68.9% were unintentional TBI and 31.1% were intentional TBI. The average age of patients in both groups was similar (10±6 years) with over 65% males in both groups. Main causes of unintentional TBI were road traffic injuries (RTIs) (92.2%) and falls (7.8%). Pedestrians (40.3%) and motorcycle passengers (15.7%) were common road-users. Around 18.2% of RTI patients and 27.0% of fall patients had severe GCS category. Assault (96.7%) was the main cause of intentional TBI, followed by 7 (3.3%) self-harm cases. Common assault methods were bodily force (33.2%), iron bar (28.7%) and hammer (10.9%). TBI patients with self-harm were likely to be in severe GCS category (28.6%) compare to victims of assault (14.6%). Around 36.9% of the patients were admitted for inpatient care and 40.2% were sent home. There were 15 deaths, 11 due to RTIs and 4 due to assault.

Interpretation: m-Health based TBI registries can help measure the hospital burden of TBI in children. TBI caused by RTI and assaults are common among children in Kampala. This finding could help planning for TBI prevention strategies for Uganda which has a young population.

Source of funding (if none, enter "None"): NIH

FRI_098

Traumatic Brain Injury in Uganda – Development of Hospital Based m-health Registry Using Injury Surveillance Framework

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Background: Lack of data on traumatic brain injuries (TBI) hinders the appreciation of true magnitude of burden, and poses a barrier to defining risks, vulnerable groups, and impact of potential interventions. This work describes a scientific approach for hospital-based systematic data collection in a low-income country and details the steps of developing an internet-based TBI registry in Uganda.
Methods: The registry is developed and implemented based on evaluation framework for injury surveillance systems (EFISS) which comprises a four-step approach: (1)identifying characteristics that assess a surveillance system, (2)review of the identified characteristics(variables) based on adopted Specific, Measurable, Achievable, Realistic, Time-bound (SMART) criteria, (3)assessment of the proposed variables and system characteristics by an expert panel, and (4)development and application of a rating system. After extensive literature review on TBI surveillance and management, variables and implementation strategy were finalized by a peer-review panel and an mHealth platform was developed for data collection at the Mulago Hospital, Kampala. Ethics approval was taken from ethics committees of JHSPH and MUSPH.
Findings: The electronic hospital-based TBI registry is designed through a collaborative approach to capture comprehensive, yet context specific, information on each TBI case, from the time of injury until death or discharge from the hospital. It includes patients' demographics, pre-hospital and hospital assessment and care, TBI causes, injury severity, and patient outcomes. The registry in Uganda will open the opportunity to replicate the process in other similar context and contribute to a better understanding of TBI in these settings, and feed into the global agenda of reducing deaths and disabilities from TBI in low- and middle-income countries.
Interpretation: An m-Health-based TBI registry in Uganda will open the opportunity to replicate the process in similar context and thus contribute to a better understanding of TBI in these settings, and feed into the global agenda of reducing deaths and disabilities from TBI in low-and middle-income countries.
Source of funding (if none, enter "None"): NIH

FRI_099

Strengthening Health Systems Research Capacity of Young Health Professionals of Low- and Middle-Income Countries: Multidisciplinary and Decentralized Approach

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Background: Health Systems research in Nepal is in its primitive stage. Although there is a growing research interest among early-career healthcare professionals, there are so many factors stopping them. Inadequate knowledge and skills in global health and clinical research, unavailability of mentors and peer-groups, and lack of funding are few major obstacles. The main objective of our training, therefore, was to enhance the participants' knowledge and skills on Health Systems research project development. Nepal Academy of Science and Technology (NAST) is an apex scientific body affiliated to the Ministry of Science and Technology that facilitates capacity-building of early-to-mid-career researchers.
Methods: Young Health Professionals Research Training Project 2017 organized a series of workshops in three different cities: Kathmandu, Pokhara, and Chitwan targeting researchers of various health professions and covering broad geographical regions. An expert-panel of tutors nominated by Nepal Health Research Council developed course modules which covered nitty-gritty of Health Systems Research proposal development, data collection tools/techniques, data management and analysis skills, research ethics, report writing, and effective scientific publication. A feedback questionnaire was distributed to each participant at the end of the course.
Findings: A total of 154 health professionals, 102 females (66%) and 52 males (34%), comprising 55 clinicians, 45 nurses, 17 public health officers, 11 basic-science tutors, 10 pharmacists, and 6 Allied-Health Sciences researchers were directly benefitted by training. A vast majority (91%) strongly agreed that the content and quality of training was appropriate and useful for their research projects. They strongly appreciated the Academy's initiative of extending training beyond the central region (decentralized approach) and to allied-health professionals (multidisciplinary approach). After the completion of training, all participants were asked to submit a research proposal on a Global health-related topic. Top nine entries, including research on TB/Diabetes, cholera, oral health, neurological disabilities, and occupational safety, were awarded small research grants.
Interpretation: Our multidisciplinary-decentralized training model became successful in strengthening the research capacity of early-career researchers of Nepal. This approach could be replicated in other research-capacity lagging communities too. All stakeholders need to support the enthusiasm of young researchers by fostering mentorship, leveraging research funds, and reinforcing sustainable training approaches in LMICs.
Source of funding (if none, enter "None"): NAST-ResearchTrainingProject2017 received support from InterAcademy Partnership (IAP) to coordinate this project.

FRI_100

Tracking Donor Funding towards Achieving Universal Immunization Coverage: A Landscape Analysis(1990-2016)

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Background: Efforts driving universal coverage for immunization have recently been strengthened through implementation of the Global Vaccine Action Plan (GVAP) where cost estimates for continued immunization support were developed totalling to US$40billion of donor assistance by 2020. In adition to resource mobilization, there has been an increasing focus on targeted improvements for both vaccine access and delivery systems. We track donor assistance for immunization by funding objective and channel from 1990-2016, and illustrate projections through 2020 to inform progress of the GVAP.
Methods: Using data from existing project databases, annual reports and audited financial statements of multi-sectoral agencies supporting immunization, we categorize funding by objective, estimating allocations to vaccines, systems strengthening, and further disaggregate funding by antigen. We stratify time into pre-Gavi(1990-1999), pre-financial crisis (2000-2007), crisis(2008-2010) and post-crisis(2011-2016) periods and estimate annualized funding changes during these specific periods. Lastly, we perform a linear extrapolation through 2020 to predict the success of stipulated resource mobilization targets. Double counting was eliminated and results presented in real 2017 US dollars.
Findings: Over the last 27 years, funding for immunization increased by 10.5% annually, with Non-Gavi funding increasing by 7.1% and Gavi funding by 23.6% in the last 17 years. Gavi disbursements targeting vaccines and health system improvements have risen comparably at 15%, compared to 22.5% for vaccines and 11.7% for system strengthening from non-Gavi channels. Funding fluctuated over time, with non-Gavi channels remaining more resilient during the financial crisis. New and underused vaccines were prioritized by Gavi while non-Gavi channels focuused more on elimination efforts. Projected funding targets were estimated to be on track for Gavi whereas non-Gavi support was estimated to remain below 40% of the stipulated funding target.
Interpretation: Funding efforts need to be re-strategized and resource efficiencies strengthened in order to achieve current global universal coverage targets.
Source of funding (if none, enter "None"): None

FRI_101

Initiating Sustainable Behavioral Changes: A Participatory Design Improves Oral Self-Care in a Remote Pediatric Population

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Background: Previous health screens in a boarding school within the Himalayans have identified a large proportion of children with dental caries, oral pain, and poor oral self-care. Last year, a participatory design approach was used to devise community generated, self-sustaining solutions to improve oral health. Local community members sought to develop initiatives aimed at educating students and implementing systems which promote routine oral self-care. In 2018, compliance with and sustainability of the implemented interventions was investigated and their impact on the students' oral health was examined.
Methods: The specific objectives of this project were to: decrease the number of children with cavities and oral pain, increase brushing frequency, and assess whether changes in dental hygiene behaviours are sustainable. The main participants and stakeholders in this study were the 530 students age 3 to 19 attending the Spiti Valley boarding schools of Munsel-ling and Rongtong. The health screen process was explained to the children, and they were given the chance to decline. In order to generate solutions that would be supported by their society and be maintainable, community members were asked about how oral health could be improved and children and local adults acted as agents of change.
Findings: Over one year, there was a 22.8% decrease in dental pain and a 43.5% rise in the number of children brushing at least once per day. Surveys reveal that students and the school believed the changes were sustainable. By working with the school, the following community ideas were brought to life: giving donated brushes to children who needed them, installing additional toothbrush storage systems in the student hostels, starting a twice-daily brushing routine, and filming a student-driven collaborative video emphasizing the importance of oral hygiene and nutrition.
Interpretation: The improvement in brushing frequency coupled with a decrease in self-reported oral pain suggests that the participatory approach can cause significant behavioural changes in a pediatric population over a short period of time. Such changes, if sustained, can produce a long-term reduction in the burden of oral disease within the community.
Source of funding (if none, enter "None"): None

FRI_102

Human Resource and Gender Equity: Participation of Women in Heath Workforce Education at the College of Heath Sciences, Makerere University.

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Background: Most of the non-institutional care at household and community level is carried out by women. In the health sector women constitute 74% of the workforce. However, most of these are at the lower end of the hierarchy and salary grades. At senior professional, managerial and policy making roles women are relatively few. This situation is contributed to by multiple factors such as gender awareness, occupational choices, career patterns, working patterns, recruitment strategies and low representation in decision making.
Methods: This study documents gender ratio among academic, honorary teaching staff and post graduate students at College of Health Sciences (CHS), Makerere University, Uganda in 2013 and 2018. This was done through desk review of records at the CHS.
Findings: The study found that female postgraduate students and academic/honorary staff at the CHS each constituted 30% of the study population in 2013 and 2018. In 2018, 21.7 % of the women were at Lecturer level and 3.5% at Professorial level. Among honorary teaching staff there were 38% at the Lowest level (Medical Officer) and 13% at the most senior level (Senior Consultant). There was no female full professor among the 7 professors in 2013; there are now 3 female professors out of 18. In 2013 among the honorary staff, there were only 5 female senior consultants among 30, now there are 8 out of 22. In 2013 All 3 deans were male and there were 9 female departmental chairs among 22. In 2018, there are 2 female deans out of 4; however both Principal and his deputy are male. In 2013 the posts of Principal and deputy principal had not been created. The most popular departments for female post graduates are Pediatrics 50%, Radiology 30%, Internal Medicine 25.4%, and Obstetrics and Gynecology 24.3%. All these have female departmental chairs. Overall the number of staff and postgraduate students has increased but the gender ratio has not changed over a period of 5 years.
Interpretation: Gender Inequity is still an issue in the health workforce education as shown in this example. More work needs to be done to look at the factors that contribute to this disparity.
Source of funding (if none, enter "None"): None

FRI_103

Does Health Worker Motivation and Satisfaction Affect Patient Satisfaction in Rural UP, India?

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Background: Though health sector of Uttar Pradesh (UP), India is pluralistic maternal and child care (MCH) services are delivered, primarily, by public facilities. While the quality of essential MCH services such as antenatal care (ANC) often depends on the cognitive attributes of healthcare providers – such as job-satisfaction and motivation – their effects on quality of care are not well studied in low and middle-income countries. Addressing this gap, our study explores the association of motivation and satisfaction of healthcare providers at public facilities with ANC quality measured by patient satisfaction in rural UP.
Methods: Demographic characteristics and satisfaction with ANC consultation (ASAT, 13-item scale) of 323 pregnant women (15-49 years) were collected using exit-interviews from 124 facilities from two districts of UP. From the same facilities, 181 healthcare providers were surveyed to obtain sociodemographic, satisfaction (PSAT, 19-item scale) and motivation (PMOT, 10-item scale) information. Individual ASAT scores were created using principal component analysis (PCA), and facility-level average PSAT and PMOT scores were generated by PCA and factor analysis accordingly. Linear predictions of motivation and satisfaction scores were extracted using multivariate linear regressions after accounting the confounding effect of sociodemographic covariates. Considering facility-level PSAT and PMOT being correlated, their explanatory powers on ASAT were assessed by conducting path-analysis with Huber-White-sandwich-estimator to account for facility-level clustering.
Findings: Correlation coefficient between facility-level PSAT and PMOT was 0.57. Unadjusted path-analyses indicated individually both PSAT (Coefficient= 0.43, 95%CI= 0.21-0.63, p= 0.000) and PMOT (Coefficient= 0.38, 95% CI: 0.22-0.55, p= 0.000) significantly increased ASAT. However, accounting for both variables, one standard deviation increase in PSAT and PMOT was associated with a 31.55% (95%CI= 9.58-51.52, p= 0.004) and 21.02% (95%CI= 1.03-41.02, p= 0.039) increase in ASAT respectively.
Interpretation: Acknowledging the limitation of cross-sectional data, using path-analysis we showed that healthcare providers motivation and satisfaction are interrelated and having a satisfied and motivated workforce in the public facilities may lead to high-quality ANC service. UP health system should consider investing in improving the motivation and satisfaction of the primary-care providers as a pragmatic health system strengthening strategy to improve the quality.
Source of funding (if none, enter "None"): HCL Foundation, India

FRI_104

Development of a Risk Assessment Tool for Planning and Management of Religious Mass Gathering Events of India- A Health Systems Strengthening Initiative

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Background: Religious mass gatherings can lead to an increase in critical health risks when compared to other natural gatherings and pose special challenges for the community's existing health system. Risk assessment for mass gathering events is crucial to identify the potential health hazards which aids in planning and response activities specific to the event. But, it is often overlooked by the event organizers. The present project is an attempt to develop mobile application (app) based risk assessment tool to assess the health risks associated with religious mass gathering events in Indian setting.
Methods: Qualitative approach was followed to identify the risks associated with mass gathering events and to identify the domains and items to be included in the risk assessment tool. Firstly, an extensive review of literature about the risks associated with the mass gatherings, theoretical basis for risk assessment and available risk assessment tools for mass gathering events was done. Secondly, Key Informants (n=20) involved in planning and management of religious mass gathering events in the State of Tamil Nadu, India were purposively identified and interviewed using a semi structured interview guide. Principle of redundancy was followed. Content/Thematic analysis was done using Atlas.ti software. Currently, the project is in the phase of obtaining content validity of the developed tool followed by this a mobile application based upon the validated tool will be developed which will be further field tested for feasibility in a selected MG event in Tamil Nadu.
Findings: A sum total of 48 unique health risks were identified. Stampedes, fire accidents, structural collapse, drowning, outbreak of communicable diseases, exacerbation of existing medical illnesses (like cardiac diseases, asthma etc) etc are the some of the health risks identified. Six domains (characteristics related to event, participant, environment, disaster preparedness, medical service preparedness and pre event planning activities) and 21 items were generated from the content analysis of Key Informant Interviews.
Interpretation: The mobile app based risk assessment tool to be developed in this project is an attempt to systematize the risk assessment process in religious mass gathering event management. The tool will identify key health risks which will aid the public health preparedness of the Indian religious mass gathering events.
Source of funding (if none, enter "None"): None

FRI_105

Lead Exposure amidst the Resettlement Process for Refugee Children in Syracuse

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Background: Lead is a major environmental toxin that presents numerous health consequences for children. Refugee children are at a unique risk of lead poisoning post-resettlement due to urban housing and environmental inequalities. Both New York State and CDC guidelines recommend routine lead screening for refugee children upon arrival and again between 3 and 6 months post-resettlement.
Methods: This project addresses lead exposure in 705 refugee children (age 0-16 years) attending a University clinic in Syracuse, NY, a city with a large refugee population. Refugee children were screened for blood lead levels (BLLs) at arrival and within 6 months post resettlement.
Findings: Children were 51.2% female, mean age 8.0 years, and spent an average of 6.2 years in the country of refuge prior to resettlement. 17% of the newly arrived children had elevated BLLs (≥ 5μg/dl); 10% had elevated BLL upon follow up; 8.3% of the children's follow up elevated BLL were new exposures in Syracuse. The study identified anemia as a potential risk factor in increasing the risk of new lead exposure. 61.4% of children with new exposures hailed from countries within Africa. Gender did not play a statistically significant role in risk of new exposures post-resettlement. 19 children with normal BLL upon arrival had BLL over 5.0 ug/dl at follow-up. These 19 children were 42.1% female with a mean age of 5.63 years (range 1-13 years). While not all clinically significant, 211 (29.9%) children out of the 705 were found to have blood lead levels that increased from baseline to follow-up. Average ug/dl increase was 1.27 ug/dl.
Interpretation: Our analysis of new exposures shows that while the majority of new exposures were < 5 years old, there remained a significant proportion of children that would have been missed on routine screening recommended by NYS and CDC due to their age. It is important to remain aware of risk factors such as iron deficiency in older children who also warrant lead screening. Ultimately, ongoing efforts to address the source of the risks in housing through lead abatement programs will ultimately improve the health of all children locally, including the new Americans.
Source of funding (if none, enter "None"): None

FRI_106

Reducing Expired Pre-operative Laboratory Exams: a Public Hospital-based Quality Improvement Project in Lima, Peru

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Background: In low-resource settings, pre-operative wait times can be long given limited resources; optimizing process efficiency may increase access to surgery and reduce disability from conditions amenable to surgical care. At a large public hospital in Lima, Peru, expired pre-operative laboratory exams were previously identified as a major contributor to increased wait time for surgery. The aim of this quality improvement project was to identify and decrease the number of expired pre-operative exams by optimizing the general surgery waitlist. Data will inform a wider intervention project beginning 1 September 2018 to decrease surgical wait times, increase surgical volume, and improve patient satisfaction.

Methods: As part of "Improve" in a Define, Measure, Analyze, Improve and Control (DMAIC) framework, we developed an electronic general surgical waitlist to facilitate hospital data entry and implemented a chart review process by surgical residents to record patient data. Five Plan-Do-Study-Act (PDSA) cycles were performed in eight weeks of 18 chart review sessions to identify waitlist patients' laboratory exam expiration dates. Process efficiency was measured using completeness of data collected by residents during each 45-minute review session.

Findings: Through 31 May 2018, the elective general surgery waitlist comprised 219 patients after 14 duplicate entries (5.4%) and 25 post-operative entries (9.7%) were removed. Over eight weeks, 180 (73.8%) patient charts were searched for in the hospital archives; 36.7% (66/180) of charts were missing. Chart review sessions determined 70.2% (80/114) of patients' exams would expire by the intervention start on 1 September 2018, and 93.0% (106/114) would expire by 1 October 2018. Over the 18 chart review sessions, process efficiency increased over time with resident suggestions and strategy modification.

Interpretation: The review sessions and electronic surgical wait list have allowed hospital personnel to identify patients who require renewed pre-operative exams, and revealed other barriers to an efficient process such as missing hospital charts. As a part of a department-wide intervention, this data is being used to increase efficient use of hospital resources, ensuring laboratory exams are current prior to admission for surgery. The wider DMAIC project will continue through 2019 with goal of decreasing pre-operative wait times, increasing surgical access, volume, and patient satisfaction.

Source of funding (if none, enter "None"): Harold Williams Summer Research Fellowship

FRI_107

Results from a Randomized Controlled Pilot Comparing Group Antenatal Care to Usual Care Conducted in Malawi and Tanzania

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Background: The quality of antenatal care (ANC) in sub-Saharan Africa is poor and maternal and infant mortality is highest. At present, ANC visits are brief with minimal health promotion. Women value ANC; more than 90% attend one visit. However, given health system constraints and quality, less than half complete all recommended visits. Innovative approaches are urgently needed. CenteringPregnancy (CP), the only evidence-based group ANC model, is an innovative approach to improving quality despite midwife shortages. In CP, a group of 8-12 pregnant women with similar delivery dates meet with a midwife and co-facilitator for 2 hours per visit. In the US CP showed improved outcomes including reduced risk for preterm birth. We adapted and piloted a CP-based group ANC model in Malawi and Tanzania.

Methods: A randomized pilot was conducted in government clinics in Malawi and Tanzania. Pregnant women (n=218) were randomly assigned to usual or group antenatal care.

Findings: Significantly more women in group completed ≥4 ANC visits (94% vs 58%) and attended a postnatal visit (75% vs 50%) than women attending usual (individual) care. Women in group care also had greater improvements in HIV-related knowledge and fewer symptoms of mental distress. Their partners were more likely to be tested for HIV during this pregnancy (51% vs. 27%). Our findings established that group ANC can be offered in a rigorous RCT with high fidelity despite provider shortages.

Interpretation: Innovative, midwife-led and woman-centered participatory ANC models can improve care and health outcomes in low-resource settings. Our pilot findings suggest that group ANC can reduce missed opportunities and improve outcomes. Based on the small body of evidence available from low-resource countries, WHO recognizes the promise of group care to make a major public health contribution. However, rigorous research is needed to provide robust evidence to support policy change. Premature adoption of a new model can have serious negative consequences. Next, our team will conduct an adequately powered effectiveness trial using a Hybrid Type 1 design and simultaneously conduct a clinical trial with individual level randomization while closely examining implementation processes in real-world clinic conditions in Blantyre District, Malawi.

Source of funding (if none, enter "None"): NIH, National Institutes for Nursing Research (R21 NR014413 & R01 NR018115)

FRI_108

Patient Utilization and Perspectives of Traditional Bone Setting at an Outpatient Orthopaedic Clinic in Northern Tanzania

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Background: In Sub-Saharan Africa, road traffic accidents are rising, resulting in musculoskeletal injury. The current capacity of allopathic care is limited with traditional medicine providing the majority of care, and interest is growing in the role of traditional bone setters (TBS) in addressing this burden. Governments have called to train TBS and create a referral system to increase access to orthopaedic care. An important component of this is the relevance of TBS to the patient population. This study is the first in Tanzania to investigate patient utilization and perspectives of TBS.
Methods: Between June and July 2017, we randomly surveyed patients in the outpatient orthopaedic clinic at Kilimanjaro Christian Medical Center (KCMC), a large tertiary referral hospital in Moshi, Northern Tanzania. Surveys were either administered direct-to-patient or physician-to-patient. Summary statistics were calculated using XLSTAT. Patients gave informed consent prior to completing the surveys.
Findings: Of the 212 patients that completed the survey, 49 were administered direct-to-patient and 163 were physician-to-patient. Of all surveys, 6.3% (n=13) reported utilizing TBS for their injury prior to presenting to KCMC. Of the direct-to-patient surveys, 13.6% (n=6) reported utilizing TBS, while 4.3% (n=7) of the physician-to-patient surveys reported utilizing TBS (p=0.05). The primary reason for utilizing TBS was lack of improvement with allopathic care (25%, n=3). Similarly, the primary reason for subsequently presenting to KCMC was lack of improvement with TBS (55%, n=6). The main reason patients did not utilize TBS was concern for competency (35.8%, n=67).
Interpretation: The patients at KCMC reported a much lower incidence of TBS utilization than expected considering 60% of Tanzanians meet their healthcare needs through traditional medicine. This suggests the majority of patients utilizing traditional care for musculoskeletal injury are not seeking care at KCMC, and therefore collaboration with TBS through referrals could potentially expand allopathic access to these patients. However, patients were less likely to report TBS utilization to a physician than when by themselves revealing the stigma of seeking traditional care in an allopathic setting, which may present an obstacle for collaboration with TBS.
Source of funding (if none, enter "None"): University of Pennsylvania Perelman School of Medicine Center for Global Health, Dr. Bipinchandra Barahia Scholarship Fund

FRI_109

Training and infrastructure needs identified through an assessment of emergency care capacity in Kisumu, Kenya

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Background: The emergency medicine system in Kenya requires attention due to high mortality and morbidity rates from inadequate care in specific regions of the country. The disease burden from emergencies (DALYs of 42,779 per 100,000) is among the highest in low- and middle-income countries. Kenya's healthcare system of public and private care has not been able to meet the increasing burden of trauma and acute conditions. The Ministry of Health of Kisumu County, which houses the 3rd largest city in Kenya, has identified an urgent need to assess and build emergency care capacity.
Methods: A county-wide needs assessment was conducted in Kisumu at 22 facilities representative of the six-tiered health system. For each site, interviews of key medical personnel and focus groups were conducted with quantitative data collected relating to medications, medical equipment and resource availability, infrastructure, triage methods, stabilization measures, and training. A hospital assessment form was used as a survey tool to evaluate current emergency medicine capabilities and a qualitative analysis of interviews was performed to understand priorities in the region. Excel was used to perform descriptive quantitative data analysis.
Findings: Gaps exist in general infrastructure, with only 3 facilities having surgical capabilities and many lacking the necessary supplies. However, formal emergency medicine training is one major gap observed in all facilities. Only one third of personnel in Casualty areas have basic emergency medicine training, and less than a third of facilities have an adequate triage system in place. Additionally, misguided referrals from remote community level facilities, insufficient communication between hospitals, and limited means of transport lead to significant delays in care.
Interpretation: Three feasible steps have been suggested from the analysis for future work. To optimize limited resources, a 'hub-and-spoke' model of emergency care has been proposed by county health providers. In addition, establishing effective communication channels between facilities and improving patient flow can lead to efficient provision of emergency care. More immediately, triage training for effective recognition of acutely ill patients and development of clinical modules will enhance emergency care by current healthcare workers.
Source of funding (if none, enter "None"): None

FRI_110

Barriers to Surgical Care at a Tertiary Referral Hospital in Kigali, Rwanda

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Background: Access to surgical care is a major public health crisis for many living in lower and middle-income countries (LMICs). Patients must often overcome a number of barriers or delays in order to access needed care. Using the Three Delays Model we aim to describe factors contributing to delayed surgical intervention for patients presenting to a tertiary referral hospital in Kigali, Rwanda.
Methods: A cross-sectional interview based pilot study was performed in which all patients undergoing surgery were asked a series of questions to understand their pre-surgical interactions with the healthcare system.
Findings: Over a one-week period, there were 10 (32%) general surgery and 21 (68%) orthopedic patients. The average delay in seeking care was 3 days + 3 for general surgery and <1 day + .2 for orthopedic surgeries. The most common reason for delay included transportation issues (9, 29%) and not knowing medical attention was necessary (5, 16%). Transfer delays, defined as the average time from decision to seek care to presentation at the tertiary hospital, was 53 days + 108 with general surgery cases having an average of 122 days + 165 and orthopedics requiring an average of 20 days + 42. The most common cause for delay was difficulty traveling. Definitive care delays as defined by the average time from presentation to the hospital to surgery was 7 days + 13 for general surgery and 3 days + 4 for orthopedics. 16 (52%) patients identified a specific cause for definitive care delays with the most common causes being surgeon or operating room availability (9, 56%) and lack of hospital beds (4, 25%).
Interpretation: The largest contributor to delays in terms of both time and number of patients affected was delays due to difficulties with transportation. This factor is especially concerning because few facilities other than tertiary hospitals are capable of providing surgical care. This often forces patients to travel far distances. Systems based initiatives aimed at improving road conditions and modes of transportation could greatly improve patient care. Training providers at District Hospitals to perform rudimentary procedures could also greatly reduce delays.
Source of funding (if none, enter "None"): none

FRI_111

Reducing Neonatal Mortality and Morbidity In Haiti – Experience from a Referral Hospital In the South

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Background: Haiti has the highest rate of neonatal mortality in the Western Hemisphere, estimated at 32 deaths per 1000 live births in 2016-17, nearly 40% in the first week of life. Currently, advanced neonatal care is not available at most referral hospitals in Haiti. With increasing facility birth rates, advanced neonatal care will be essential. To address this gap, Dartmouth established a neonatal ward at Hopital Immaculae Conception, the departmental referral hospital in Sud department. The primary outcome of the project is to lower neonatal mortality among hospital births.
Methods: The project aims to develop and implement an effective maternal and newborn care model at the facility level in Sud.
Prior to 2017, there were no neonatal services at HIC. Most women and their babies with severe complications were referred out. The current ward is staffed by two pediatricians and eight nurses, all exclusive to the neonatal ward. All sick neonates are admitted. The project builds capacity within the hospital to improve neonatal care and address gaps laboratory and data management components. The goals of the project are aligned with those of the Ministry of Health and major donors such as UNICEF - who are planning external support to sustain neonatal care in the region.
Findings: There were 604 admissions to the neonatal ward in the past year with 15% mortality, nearly two thirds of it in the first week. The risk of death among preterm babies was 3.4 times that of term babies. The risk among low weight babies (<2kg) was similar. Females had a slight survival advantage. Nearly three-fourths of babies were born at HIC while 17% were transferred from other facilities. Rates of maternal-fetal infection and sepsis were high (42%) and 20% of babies were born premature. Nearly 44% of babies were admitted hypoxic.
Interpretation: Key challenges are lack of electricity, low hygiene, and failing infrastructure. Free-of-charge medications and laboratory testing remain a challenge. The importance of understanding how a model of care such as this can be made to work in Haiti is critical to developing neonatal care services at tertiary level public sector hospitals.
Source of funding (if none, enter "None"): The WK Kellogg Foundation The Children’s Prize

FRI_112

Live More Abundantly: An Adventist Development and Relief Agency Approach for Addressing Chronic Diseases in Low and Middle Income Countries

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Background: Non-communicable diseases (NCDs) have reached epidemic proportions in Low and Middle-Income Countries (LMIC) yet a gap exists for lifestyle approaches for prevention and management. ADRA is currently testing its “Live More Abundantly" (LMA) approach for reduction of NCD risk factors for effectiveness in LMIC.

LMA is a contextualized version of the evidence-based Complete Health Improvement Program (CHIP). CHIP has been shown to prevent and arrest chronic diseases in High Income Countries [1]. There are limitations in using CHIP in resource-poor populations and across cultures. ADRA developed LMA to contextualize CHIP’s key messages and utilize the REFLECT methodology[2], which is a contemporary empowerment and behavior change approach which facilitates adult learning and social change.

This presentation will provide brief background on LMA development then focus on LMA research underway in Cambodia, Nepal, Thailand, and Zimbabwe with a focus on data emerging from Nepal.

[1] Complete Health Improvement Program, www.chiphealth.com

[2] REFLECT. (2014). http://www.reflect-action.org/

Methods: For Fiji: 30-day cluster-RCT. For Nepal: a prospective cohort with no control.

Communities / participants meeting selection criteria were recruited.

Participants: adults with elevated risk determined by waist circumference (≥92 cm for men, ≥80 cm for women). In Fiji they were randomly selected into control or intervention arm.

Informed consent was obtained from the participants.

LMA facilitators (male, female) were selected by intervention community local authority and trained by ADRA.

Intervention participants received LMA sessions within 3 months. Fiji’s control participants received country-specific MOH literature at baseline.

Outcome assessments at baseline, 30 and 90 days included BMI; waist circumference; blood lipids total cholesterol, LDL, HDL and triglycerides; blood pressure and fasting plasma glucose.

Data analysis by IBM SPSS Statistics, version 20. General Linear Model was used to compare means for each group over time.

Findings: Significant reductions were found for most biometrics at 30 days with Live More Abundantly. Total cholesterol showed greater improvements by 90 days in Fiji. By presentation time 90-day results from Nepal can be compared.

Interpretation: Live More Abundantly outcomes are positive and comparable to CHIP. Study results will continue to guide ADRA in further development and expansion of the LMA program in LMIC. Contact: Sharon.Tobing@adra.org

Source of funding (if none, enter "None"): ADRA Australia, ADRA International

FRI_113

Toxoplasma Infection: Can it be an Initiator and Progressor of Neurodegeneration in Panama and/or the United States?

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Background: Toxoplasma gondii is a single celled parasite that undergoes sexual reproduction to make large numbers of parasites in the digestive tracts of cats. It can live in cysts in the bodies, especially in the brains, of humans lifelong. Approximately one third of the world's human population hosts this parasite across their lifetimes. T. gondii can interact with host physiology - it is the causative agent of toxoplasmosis, is linked to neurologic diseases such as epilepsy, and may potentiate the onset and progression of neurodegenerative diseases including Alzheimer's Disease (AD). This study intends to determine whether there is a correlation between the presence of Toxoplasma and markers that indicate the onset of AD, such as specific cognitive functions, inflammatory biomarkers, and sociodemographic attributes.

Methods: Elderly populations in the United States and Panama, i.e., Rush Alzheimer's Disease Center (RADC) and Panama Aging Research Initiative (PARI), are studied, with the intent to age match patients from the two cohorts. PARI utilizes both a clinical and community cohort and tracks health outcomes of patients, while RADC dataset is a compilation of data from 3500 people, with 800 toxoplasma infected patients, from RADC studies conducted previously. Our study is currently in progress, with LDBIO kits used to determine T. gondii seropositivity in PARI cohort, and with statistical analysis being conducted on RADC and PARI datasets. We also will examine brain tissue of deceased AD patients and determine whether there is DNA evidence of T. gondii in brains of seropositive persons, and if so, to identify genotypes of parasites.

Findings: In early analyses, Toxoplasma seropositivity in PARI clinical cohort is high in those who died with AD, with 24 out of 29 seropositive, without differences in early generation cognitive testing between subtests or seronegative and positive persons. Cognitive tests conducted on the community cohort in Panama demonstrate that cognitive impairments increase with age ($p<0.05$), with comparisons to determine earliest changes pending.

Interpretation: Additional data will be analyzed and presented. We will test for Toxoplasma seropositivity in 254 persons in the PARI community cohort. We will determine which cognitive domains are impacted first in AD progression, and which, if any, correlate with Toxoplasma positivity and inflammatory biomarkers.

Source of funding (if none, enter "None"): None

FRI_115

Epidemiological Profile of Amputees in the Surgical/Orthopedic Department of the University Hospital of Mirebalais, Haiti, January 2014 - December 2016

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Background: Despite of recent surgical, medical and technical advances amputation remains a big problem, worse in low income countries. Around the world, an annual incidence of 0.04% is recorded. In Haiti, data on such a practice are meager and largely related to the 2010 earthquake. At the University Hospital of Mirebalais (HUM), a considerable amount of amputation is performed annually. The aim of this work is to draw up an epidemiological profile of amputees at the HUM, a tertiary hospital of Haiti.
Methods: A retrospective descriptive cross-sectional study was conducted at the HUM in the surgical and orthopedic departments. It included any subject who had a limb amputation from January 2014 to December 2016, in the operating room (OR) by the surgical and / or orthopedic team. It excluded all complications of anterior amputation such resumption of stump for infection or bone regulation. The data was collected from the OR register, the electronic medical records and the handwritten patients' charts, processed on Excel and analyzed on Epi-info using proportion, median and interquartile range.
Findings: During the period, 348 amputations were recorded at the OR, 32 were excluded due to an inability to find the records. Of the remaining 316 amputees, the median age was 53 years (interquartile range: 41-75); 57.2% of them were aged between 36 and 65 years, 52.8% of them were men. Most of them came from the West and the Center departments of Haiti 51.3% and 36.1% respectively. Regarding to the type of amputation 68.4% were major amputations. Regarding to the level 85.8% of the amputations were in the lower limbs: 31.6% above knee and 31.3% below knee. Infectious causes were responsible of 59.8% of amputations. 53.5% of amputees had diabetes diagnosed at their admission.
Interpretation: Most of the amputations were major, in the lower limb and were done in the working population. Diabetes was the most common comorbidity and infectious causes were the most common etiology. Primary, secondary and tertiary level prevention measures are essential to lower this phenomenon and its impact.
Source of funding (if none, enter "None"): None

FRI_116

Intersectoral Forum to Fight NCDs in Brazil: an Initiative to Address SDG3.4 through SDG17 Targets

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Background: According to the World Health Organization, noncommunicable diseases (NCDs) account for 70% of all deaths globally. More than a third of them are premature and over 80% of these premature deaths occur in low- and middle-income countries. The United Nations' Sustainable Development Goal (SDG) 3.4 claims to reduce by one third this premature mortality by 2030. Align with this aim, in 2017, a strategic Forum was constituted in Brazil to, guided by the SDG 17, build capacity for cross-sectorial dialogue and partnerships to resolve NCDs threaten in Brazil; where NCDs are responsible for 72,6% of all deaths.
Methods: Its biannual convenings count with the presence of leaders and authorities from the health sector, including: 4-6 high level representatives from the public sector (including 2-3 from the federal Ministry of Health), 13-15 from the for-profit sector and 20-25 from the non-for-profit sector. The convenings include lessons from specialist on public health, legislation and contracts, public-private partnerships, projects development, as well as intensive discussions, interaction between the participants and intentional opportunities for partnership, collaboration and co-creation. In addition, events, announcement of opportunities, case studies, access to specialists and other resources are available to its members through a monthly newsletter, webinars, LinkedIn group and website: www.ForumDCNTs.org
Findings: As a result, 96% of the participants reveled that they have identified a new partner during the event and all participants declared that they would participate in future Forum convenings. Moreover, 44% of the group engaged in co-designing and implementation of initiatives to fight NCDs with other sectors, motivated by the Forum, in between the first and the second convenings, which means in less than 7 months.
Interpretation: This group is continuously monitored to identify achievements and supply needs, which is key for developing the agenda of the subsequent meetings and select resources.
Source of funding (if none, enter "None"): Medtronic Foundation

FRI_117

Immunization Initiatives, Progress and Challenges in Polio Eradication in Africa

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Background: Polio is a highly infectious disease and mainly affects children under 5 years of age, generally endemic in many African countries during the pre-polio eradication era. The consequence of polio in Africa was causing permanent paralysis of millions of children. We aim to investigate the polio eradication activities by assessing acute flaccid paralysis (AFP) surveillance and Supplementary Immunization Activities (SIAs).
Methods: The study population included all children less than 5 years old living in the Kassala state of Sudan. This was a descriptive cross-sectional study conducted between September and December 2006. Quantitative and qualitative methods were used during investigation and analysis. Data were collected through interviews and FGDs after verbal consent from parents, caregivers, health care providers, community key Informants and different investigation reports, which include routine, Expanded Programme on Immunization, SIAs, and surveillance data.
Findings: In 2006, the non-polio acute flaccid paralysis rate was 2.7, the stool adequacy rate was 100%, completeness of zero report was 100%, the percentage of AFP case with 60+days follow up conduction was 93% and the non-polio enterovirus (NPEV) isolation rate was zero. During 1st round of the 15th NIDs, the vaccination coverage was 97.67%, 76 children were unvaccinated out of 3,268, vaccination team were not reached 25 children and 51 children were absent, vaccination team did not mark the sign of 324 houses properly out of 1,631, and 70 cases found zero doses. In terms of the assessment of knowledge of the community people regarding the NIDs, 79% found good level and 55.4% gathered information from the radio.
Interpretation: The Kassala state performed effective strategies and high-quality NIDs due to the high level of motivation of all staffs. The key surveillance indicators were satisfactory except NPEV isolation rate. In contrast, the non-accessible road network in this region, and the large population movement across the borders were the major challenges. Community surveillance network was not found strong, and literacy level among few field staff and volunteers during SIAs was a hindrance to quality data capture and information dissemination. More intense cross-border coordination, post-campaign NIDs review, and re-strategic plans are recommended for global polio eradication.
Source of funding (if none, enter "None"): CDC, WHO, UNICEF, and Rotary International.

FRI_118

Perceptions and acceptability of mobile phone video directly observed therapy for tuberculosis patients in Kampala, Uganda: a qualitative study

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Background: Non-adherence to anti-tuberculosis treatment remains a critical barrier to the progress in TB control worldwide. It is associated with emergence of drug resistance, prolonged infectiousness and treatment failure. WHO recommends Directly Observed Therapy (DOT) whenever feasible. In-person DOT faces a lot of barriers such as, frequent travel requirements, stigma, inconvenience to patients and shortage of health workers. Emerging mobile health technologies such as Video DOT is process whereby patients record themselves taking their medication by mobile phone and send the videos to their TB care providers for observation via computer-based system. The aim of the study was to assess the perceptions and acceptability of VDOT among TB patients in Uganda.

Methods: We conducted six focus groups with adult TB patients on treatment (2), health workers involved TB services (2), care takers (1) and community health workers (1) in Kampala city, Uganda. Interview questions were structured around acceptability, perceived usefulness, perceived ease-of-use of the technology, performance expectancy, effort expectance, social influence and availability of the technology.

Findings: VDOT was very much embraced by participants. It was seen as a method that was going to improve health worker and patient communication, maintain patients' confidentially about their disease and save time both for the patient and health worker as opposed to in-person DOT. "For me am in support of the method…, for example I am a builder and anytime I travel very far, and go with my drugs so it is easy for me to take a video and send it to the health worker." However, patients noted the following barriers if they were to use VDOT; i) lack of a phone that has the capacity to record a video and send it, need for training on how to use the application, internet access and the costs associated with it, and fear that the information shared with the health workers could be used for other purposes, leading to inadvertent disclosure of their disease.

Interpretation: VDOT was generally acceptable to TB patients in Kampala, Uganda. In order to accelerate future adoption of emerging mobile technologies, further research on innovative ways to mitigate barriers of costs and access related to technology should be sought.

Source of funding (if none, enter "None"): University of Georgia

FRI_119

Assessment of Infant Feeding Options and it's Determinants among HIV-positive Women Accessing Prevention of Mother-to-Child Transmission of HIV Services in Public and Private Health Facilities in Enugu State, Nigeria

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Background: Vertical transmission of HIV from an infected mother to her child during pregnancy, labour, delivery or breastfeeding remains an important public health issue in Sub-Saharan Africa. Almost 70% of the global total new HIV infections occur in Sub-Saharan Africa with Nigeria having the 2nd largest burden globally. Infant feeding is crucial in the first year of life and a key determinant of child survival and development. This study aimed to ascertain the infant feeding options and it's determinants among HIV positive mothers accessing PMTCT services in public and private health facilities in Enugu State, Nigeria.
Methods: This comparative, cross-sectional hospital based-study was conducted from February to September, 2017 among randomly selected HIV positive mothers accessing PMTCT services in public and private health facilities across the three senatorial districts of Enugu State. Nigeria. Multi-stage sampling technique was used to select 328 eligible participants. A pre-tested, structured, interviewer-administered questionnaire was used to collect data on socio-demographics, obstetric history and feeding practices. Data obtained was analyzed using SPSS version 23. Bivariate and multivariate logistic regression analyses were used to assess association between the various feeding options and the predictor variables.
Findings: The mean ages of the respondents from the private and public health facilities were 27.4±5.10 and 29.16±5.63 respectively. Participants from private health facilities were 2 times more knowledgeable about infant feeding options compared to their counterparts from the public health facilities. (OR=2.2, CI=1.430-3.486, p<0.001). Positive attitude towards infant feeding was shown by participants from private health facilities compared to their counterparts from public health facilities.The practice of Exclusive Replacement Feeding(ERF), Exclusive Breast-Feeding(EBR) and Mixed Feeding was 53.7%, 35.9% and 10.4% in the private health facilities compared to 57.2%, 29.7% and 13.1% in the public health facilities. Education status of the mother, mode of delivery, fear of HIV transmission were significantly associated with ERF method while cost effectiveness, stigma and fear of discrimination were significantly associated with EBF practice after adjustment for confounders.
Interpretation: Continuing advocacy on the options of feeding is needed to change the attitude of HIV-positive mothers to utilise the various feasible and sustainable options.
Source of funding (if none, enter "None"): None

FRI_121

Contrast Between Incidence of Childhood and Adolescent Cancers: Using a Population Based Cancer Registry

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Background: Cancer is relatively rare in childhood compared to later in life. Worldwide, the common malignant diseases of childhood are leukaemia, lymphomas, central nervous system tumors and embryonic solid tumors whereas among the adolescents, sarcomas of bone and soft tissue, and tumors of the male and female genital tracts. In Africa, the distribution of childhood cancers is quite similar, commonest being Kaposi sarcoma, Burkitt's lymphoma, retinoblastoma, leukaemia and Hodgkin lymphomas. The study aim was to describe the incidence of cancer among children and adolescents in Kampala and Wakiso Districts, Uganda from 2009 to 2014 using data from a population based cancer registry.
Methods: This was a retrospective cross-sectional study which involved review of cancer patient's information from Kampala cancer registry which collects information on cancers diagnosed within Kampala and part of Wakiso districts and included children (0-14 years) and adolescents (15-19 years). The data was analysed using SPSS.
Findings: A total of 752 patients, 71.7% (n=539) were children (0-14 years) and 29.3% (n=213) were adolescents (15-19 years) diagnosed with cancer between January, 2009 and December, 2014. Among the children, Hodgkin lymphoma was 21%, 12% Kaposi Sarcoma, 9% nephroblastoma, 7% retinoblastoma, 11% unspecified malignancies and 40% others. Among the adolescents, 20% were Kaposi Sarcoma, 18% Non-Hodgkin lymphoma, 8% Hodgkin lymphoma, 7% Hodgkin Lymphoma, 6% Chronic Myeloid leukaemia and 41% other malignancies.
Interpretation: Cancer common among children compared to adolescents. Nephroblastoma and retinoblastoma cases were found in only the children. National cancer registries should be put in place to provide timely information on the changing incidences of childhood and adolescent cancers. New prospective studies should be done on children and adolescent cancers.
Source of funding (if none, enter "None"): None

FRI_122

Elucidating Rheumatic Heart Disease Treatment Barriers for Patients in Sudan

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Background: Rheumatic heart disease (RHD) is a preventable cardiovascular disease responsible for an estimated 1.4 million deaths worldwide annually. In Sub-Saharan Africa, it is one of the leading causes of heart failure, in both children and adults. RHD is a complication from untreated group A streptococcal infections and can be prevented by appropriate use of monthly benzathine penicillin G (BPG) injections. In July 2017, an RHD registry was created in Khartoum, Sudan. Using this registry, we sought to identify barriers RHD patients experience to accessing appropriate BPG therapy.

Methods: We conducted a quantitative survey, collecting data from 398 patients who had enrolled in the RHD registry between July 2017 and November 2017. The surveys included data on demographics (age, household income, education level), healthcare access (distance from facility, insurance status), and opinions on treatment barriers. To assess which demographic factors were associated with an increased likelihood of compliance, we created multivariate logistic regression models incorporating several demographic variables.

Findings: Our analysis revealed that female gender (Odds ratio (OR) = 1.78; 95% CI 1.06-2.99; p=0.03), increased household income (income brackets above 2000 Sudanese pounds; OR = 2.38; 95% CI 1.48-3.83; p<0.0001), and an appropriate level of healthcare staffing by doctors and nurses (as reported by patients; OR = 2.01; 95% CI 1.13-3.56; p=0.02) were all significant factors associated with increased odds of BPG compliance. Further, participants who listed "Lack of Awareness of the Severity of RHD" as their primary barrier to receiving care had a significantly reduced level of compliance with an OR of 0.248 (95% CI 0.09-0.64, p=0.004).

Interpretation: The primary barriers to RHD treatment include a lack of understanding of disease, as well as a lack of access due to inadequate healthcare staffing. Female gender and a higher household income were also found to confer a higher likelihood of compliance with RHD treatment. This study opens the door for simple, cost-effective interventions to increase compliance, including patient educational campaigns, public service announcements, and healthcare provider training. Additionally, development of a novel oral regimen of penicillin with comparable outcomes to BPG injections could alleviate the issue of understaffed healthcare facilities.

Source of funding (if none, enter "None"): Funded by the Medical Scholars Research Program Fellowship at Stanford University School of Medicine.

FRI_123

Taking healthcare to the patient: A collaborative practice for a mobile urgent care clinic in a refugee camp

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Background: In the refugee camp located in Cox's Bazar, Bangladesh over 1-million Rohingya people have made makeshift homes. Healthcare resources are primarily located on the periphery of the camp with large hospitals making it difficult a challenge to receive care due to travel. Our clinic is created with the focus of being mobile, providing urgent care, and being able to escalate care as needed.
Methods: A mobile urgent care clinic was created by the Islamic Medical Association of North America (IMANA) and Charity Society of Bangladeshi Doctors (CSBD) to address patient care needs in their locality. Local Rohingya refugee workers are hired to identify neighborhoods and locations to have the daily clinics. The physicians provide the care alongside Rohingya interpreters. A limited amount of medications is provided in the clinic for acute treatment. An ambulance is available to escalate care as needed to local hospitals.
Findings: Many patients that needed escalated or specialized care were not seeking care in the large local hospitals. The care that patients needed included chronic disease management, prenatal, pediatric, and critical care. Patients often required assistance escalating care to local hospitals. Having local Rohingya interpreters and clinic directors as well as Bangladeshi doctors that spoke the local language allowed us to provide direct care.
Interpretation: Patient's sought care in a local mobile urgent care clinic for a number of healthcare issues that needed continuity or acute care which our clinic was not equipped to provide. Mobile clinics addressing certain healthcare issues such as prenatal care may reach the patient where they are available and that a Western model of healthcare of a large local hospital does not meet the needs of the people. Local support with Rohingya refugees as clinic directors and employees allowed for the clinic to be sustainable and invested in local partners. Ensuring the ability to transport patients to higher level of care with an ambulance was imperative for appropriate care escalation when necessary.
Source of funding (if none, enter "None"): Internal fundraising performed by IMANA and CSBD

FRI_126

Impact of Video Presentations on Medical Students' Explicit Attitudes of Mental Illness in Nepal: A Randomized Controlled Trial

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Background: People living with mental illness worldwide receive improper healthcare due to stigmatizing attitudes among health providers. To combat this stigma, attitudes can be improved through social contact between health providers and persons living with mental illness. However, in low-and middle-income countries (LMIC), limited resources impede efforts to scale social contact interventions. Findings from a pilot study demonstrated that attitudes towards persons living with mental illness among medical students in Nepal were improved with both didactic and service user testimonial videos featuring depression, which suggests that videos might be a scalable solution to reduce stigma in LMICs. This randomized controlled trial (RCT) aimed to evaluate whether didactic or service user testimonial videos, featuring both depression and psychosis, were associated with better attitudes towards mental illnesses.
Methods: : At two medical universities in Nepal first and second year Nepali students (N=220), stratified by school and education level, were randomized to a) service user testimonial condition, b) didactic lesson condition, or c) control condition with no video. Participants were blinded to the purpose of the study as well as the alternative conditions to avoid biased responses. The primary outcome was explicit attitudes on the Social Distance Scale. Differences in attitudes between study conditions were analyzed per protocol using linear regression. Pilot and full RCT service user conditions were also compared with an independent-group t-test. Clinical Trials Registration: CTRN NCT03231761.
Findings: Incomplete data were excluded (n=7), so n=74 in control, n=70 in didactic, and n=69 in service user conditions were analyzed. There were no differences in social distance scores between the service user condition (M=44.39; SD=10.97), didactic condition (M=41.01; SD=9.43), and control (M=41.47; SD=9.49) ($F_{2,210}$=2.07, p=0.13, R^2=0.02). Among participants in service user conditions, social distance scores were significantly higher in the full RCT (M=43.06, SD=11.56) than the pilot (M=31.38, SD=10.73) (t(31)=-3.04, p=0.005), highlighting an adverse effect of the psychosis video.
Interpretation: Inclusion of the psychosis testimonial video was associated with increased explicit stigma among medical students. Bundling mental illnesses together in training packages implemented through LMICs might increase stigma towards less stigmatized illnesses, like depression, especially when conducting video-based social contact.
Source of funding (if none, enter "None"): Duke Global Health Institute, Duke University Bass Connections, National Institute of Mental Health (K01MH104310)

FRI_127

Data Quality Assessment of Family Planning & HIV Registers in Zambia

V. Pelaez[1], B. Senyana-Ouattara[2], S. Kayeye[3], P. Kasonde[4], T. Harris[5], F. Tsiouris[6]; [1]work done during Columbia University practicum, ICAP , Yonkers/US, [2]ICAP at Columbia University , Monitoring and Evaluation , Manhattan/US, [3]ICAP Zambia , Monitoring and Evaluation , Lusaka/ZM, [4]ICAP Zambia , Country Director in Zambia , Lusaka/ZM, [5]ICAP at Columbia University, New York/US, [6]ICAP, Columbia University, MSPH, New York/US

Background: Zambia has the fourth highest birth rate at 42.5 per 1,000 persons and the seventh highest total fertility rate in the world. However, contraceptive prevalence remains low at 40.8%[1]. Over a quarter (27%) of women living with HIV (WLHIV) report an unmet need for family planning (FP), increasing the risk of unplanned pregnancies, mother-to-child HIV transmission, acquisition of other sexually transmitted infections (STI's), and maternal and infant mortality[2]. The U.S. Centers for Disease Control (CDC), ICAP at Columbia University, and the Zambia Ministry of Health (MOH) are collaborating on implementation of an enhanced model for FP integration into HIV clinical services. Improving documentation and monitoring of FP service delivery is critical to determining success of the intervention. The objective of this project was to assess documentation and monitoring of FP service delivery within six health centers in Lusaka, Zambia.

Methods: A data quality assessment (DQA) tool was developed and piloted to assess completion and use of existing patient monitoring tools for documenting and reporting HIV and FP services. The first part of the tool verified completion and accuracy of the FP Integrated Register as well as FP provision within SmartCare, the electronic medical record system used for WLHIV receiving HIV treatment. The second part, measured the consistency of FP information reported in the client's medical chart, the FP Integrated Register and SmartCare.

Findings: Documentation of key HIV and FP variables that are used to report FP service uptake were inconsistently documented across the multiplicity of patient monitoring tools in use, including SmartCare, which is used to produce monthly indicators for national program monitoring resulting in potential under or over reporting of unmet need for FP services. Often healthcare professionals and data collectors had limited knowledge and training on data use, specifically documentation modules used for FP.

Interpretation: Conducting routine DQA to assess consistency and completeness of documentation of patient services is critical. Proper data collection and use can be used to uncover defects and successes of programs and policies. However, incomplete and poor quality data can lead to under or overestimating program success and challenges. Similarly, weak health information systems hinder the progress of a nation's overall health system.

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FRI_128

Clinical Validity of a Machine Learning Based Predictive Model for Traumatic Brain Injury Patients at a Regional Referral Hospital in Tanzania

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Background: Traumatic brain injury (TBI) is a leading cause of death and disability worldwide. A disproportionate burden of this injury occurs in low and middle income countries (LMICs). Limited access to diagnostic technologies and highly-skilled providers combined with high patient volumes contribute to poor outcomes in LMICs. The use of prognostic modeling as a clinical decision support tool, in theory, could optimize the use of existing resources and support timely treatment decisions. We developed a predictive model for a tertiary hospital in Moshi, Tanzania but have yet to investigate the clinical validity and utility of this model. In this study, we use our predictive to assess the risk profiles and outcomes of TBI patients at a tertiary hospital in Moshi, Tanzania.
Methods: Our analysis used a 3209 patient TBI registry at a tertiary hospital in Moshi, Tanzania, the same registry used for model construction. We calculated optimal cut-off points for low, moderate and high risk TBI patients using Youden's index. We then performed descriptive and survival analyses using the three different risk groups. For comparison, we repeated these analyses using mild, moderate and severe risk groups as classified by the Glasgow coma scale (GCS) score.
Findings: The risk ranges for low, moderate and high risk patients as defined by our model were 0-26%, 27-50% and 51-100% respectively. The risk ranges for mild, moderate and severe patients by GCS were 0-97% (IQR: 8-20%), 7-99% (IQR: 29-74%) and 21-99% (IQR: 77-98%) respectively. The survival analysis found surgical intervention had a significant reduction in poor outcomes for moderate (p=.02) and high risk (p=.00061) TBI patients but not for low risk patients (p =.16).
Interpretation: The three risk groups identified in this study differed from simple risk stratification using GCS. This difference underscores the potential for predictive modeling to augment current prognostic metrics used in low resource settings. The survival analysis showed surgical intervention has a significant impact on outcomes for moderate and high risk patients but not low risk patients. This study supports the clinical validity of our predictive model in discriminating low, moderate and high risk TBI patients. This model can support research and possibly clinical care in the low resource setting.
Source of funding (if none, enter "None"): None

FRI_129

Integrating Mental Health into Primary Care: Mentorship and Enhanced Supervision (MESH) model to address severe mental disorders in rural Rwanda.

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Background: The Monitoring and Enhanced Supervision- Mental Health (MESH-MH) model was developed by Inshuti Mu Buzima and the Rwandan Ministry of Health and aims to integrate mental health care into primary health care in Rwanda. The model follows World Health Organization mental health Gap Action Programme. The purpose of this program was to integrate mental health care into primary care across all health centers in the Burera district of Rwanda.
Methods: The MESH-MH model adapted structures of supported supervision initially designed to help health workers adhere to evidence-based practices in other clinical domains. MESH-MH includes training and clinical mentorship for general nurses to strengthen primary mental care delivery for patients with severe neuropsychiatric disorders. Experienced psychiatric nurses provide regular systematic clinical mentorship and supervision to general nurses in health centers, using a supervision checklist. Alongside this, system-based quality improvement activities were implemented. Community health workers (CHWs) were trained in mental health, and supported referral and follow up at the community level.
Findings: Since 2012, the MESH-MH program was scaled to 15 health centers in the Burera district. Preliminary results demonstrate that the quality of care provided by nurses at health centers has improved, with the proportion of accurately performed components of a psychiatric assessment and follow up visit increasing from 39% to 75% as measured by the supervision checklist. Systems based quality improvement projects have included supply chain management, physical facilities for patients care, and improved referral pathways from the community to the health center for care.
Interpretation: MESH-MH was found to be a feasible framework for integrating mental health care into primary care at the health centers in a rural district of Rwanda. The program has potential to be scalable to other districts in Rwanda.
Source of funding (if none, enter "None"): This work was funded Grand Challenges Canada

FRI_131

The Development and Distribution of Radiation Therapy Patient Education Materials

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Background: Radiation therapy (RT) is a cornerstone of cancer management in high-income countries and has been increasingly incorporated into cancer patients' care plans in low- and middle-income countries (LMICs). While adoption of RT is expected to improve patient outcomes, clinicians may face challenges adequately educating patients about RT side effects and RT's therapeutic rationale. Informing cancer patients about RT in LMICs poses unique challenges, as low literacy levels make educational resources outside of the clinical setting inaccessible to most patients. Without adequate patient education, fears associated with the cancer diagnosis and its treatment may adversely impact the well-being of patients and treatment adherence.

To address cancer care communication gaps in low literacy settings, Global Oncology (GO), a Harvard- and Stanford-affiliated non-profit, created culturally competent cancer education materials (CEMs) focused on chemotherapeutic treatment in 2014. Here, we describe the development of a new modality of CEMs for RT that complements GO's chemotherapy materials.

Methods: A literature review was conducted to identify unmet educational needs of cancer patients receiving RT in LMICs. Upon identifying information gaps, patient-centered, image-based information booklets that describe RT and its side effects were designed in collaboration with Botswana Oncology Global Outreach-affiliated personnel and a design consultant. RT CEMs have been translated into Acholi Luo, Luganda, Rukiga, and Setswana. GO's chemotherapy and RT CEMs are published online, and unique downloads have been tracked from August 2017 to August 2018. Additionally, RT booklets have been distributed to patients at Gaborone Private Hospital, and initial feedback was elicited from providers and patients.

Findings: GO CEMs were downloaded by 46 unique users who indicated they intended to use the CEMs in 23 different countries, with 16 users suggesting they would use the CEMs in 9 different countries in sub-Saharan Africa. Botswana-based helathcare personnel have provided positive initial feedback regarding the CEMs, though patient utilization of the booklets has been suboptimal.

Interpretation: Though patient-centered, image-based brochures may augment patient understanding and qualm fears associated with therapy, patient utilization of these materials requires improvement. In the coming months, we plan to distribute booklets to Gaborone's Princess Marina Hospital and conduct patient interviews to identify ways in which booklet utilization can be enhanced.

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FRI_132

Building Public Private Networks to Address NCDs Globally

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Background: Non-communicable diseases are intensifying the burden of disease in low and middle income countries. South Africa, India and Brazil are experiencing significant increases in diabetes, hypertension and heart disease. To help achieve the WHO mission to reduce premature mortality from non-communicable diseases (NCDs) by 25 percent by 2025, governments and non-profit organizations can no longer affectively address NCDs without establishing sustained intersectoral partnerships with the private sector.

Methods: The Public Health Institute's Global Health Leaders (GHL) fellowship program is using design thinking to create, deliver and build sustainable networks to drive Public Private Competency Building (PPCB) initiatives that increase the capacity and networking of local leaders from the government, corporate and NGO sectors to jointly address the NCD burden.

Findings: GHL fellows in Brazil, India and South Africa have created PPCB initiatives that are quickly becoming the go-to intersectoral network to address NCDs and the gender gap in health leadership in their countries.

GHL in South Africa has created the Pan African Women in Health (PAWH); an intersectoral group of 30 women and men from 11 African countries working in healthcare, public health, and development who are working to advance the position of African women in health through mentorship, storytelling and partnership.

GHL in Brazil has created the Intersectoral Forum to Fight NCDs to find alternatives to address NCDs by facilitating dialogue across sectors. Currently 45 Forum members representing all sectors are focused on knowledge sharing, creating intersectoral partnerships and collectively planning actions focused towards the achievement of the Sustainable Development Goals (SDGs) of Health (SDG 3) and Partnerships (SDG 17) in Brazil.

GHL in India has created the India Adolescent Nutrition Promotion Initiative to increase the number of professionals from all sectors with enhanced competencies around adolescent nutrition promotion. Currently 26 members are researching existing interventions and the link between adolescent nutrition and adult onset of chronic disease with plans to develop tools and technologies to address these challenges throughout India.

Interpretation: Each country PPCB initiative continues to gain momentum and visibility as the primary country-led intersectoral group of experts planning innovative strategies to collectively address NCDs.

Source of funding (if none, enter "None"): Medtronic Foundation

FRI_134

Pregnancy prevention in newly diagnosed drug-resistant tuberculosis patients in South Africa: room for improvement.

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Background: In South Africa, women represent nearly half of drug-resistant tuberculosis patients (DR-TB). Those who are pregnant during treatment are at risk of experiencing fetal and maternal complications. HIV co-infection increases this risk significantly. DR-TB Treatment Guidelines recommend pregnancy testing and hormonal contraceptive initiation among women of childbearing age prior to treatment, yet little data exists regarding adherence to these guidelines. This analysis describes the proportion of women of reproductive potential who receive the recommended care.
Methods: We conducted a cross-sectional, secondary descriptive data analysis of medical record and laboratory data as part of an ongoing cluster randomized trial across 10 hospitals in South Africa. Data were collected between November 2014 and July 2018.
Findings: Out of 1,277 participants enrolled, 594 were women and 501 (84.3%) were identified to be of reproductive potential, defined as between 15 to 55 years of age. The median age of these women is 31.1 (IQR=11.4 years). Prior to TB treatment, 217 out of 501 (43.3%) women had a pregnancy test, with 2 pregnancies identified. Only 28.5% (143/501) reported a contraceptive method (i.e. intrauterine device, oral or injectable birth control). The contraceptives prescribed were Depo-Provera (97/143, 67.8%), Nur-Isterate (23/143, 16.1%), Implanon (11, 7.7%), Triphasil and Nordette (4, 2.9%), and IUD (3, 2.1%). The majority were living with HIV (424/501, 84.6%), with 257 (60.6%) on antiretroviral therapy (ART) upon TB treatment initiation. Most (302, 71.2%) had a CD4 count below 200 cells/mm^3 (median CD4 count=213 cells/mm^3). Of women on ART with viral load evaluations, 114/185 (61.6%) were not virally suppressed. Regardless of HIV status, the number who received a contraceptive method were about the same (28.8%, 21/73 among HIV negative women versus 28.8%, 121/420 among HIV positive women).
Interpretation: The proportion of women receiving recommended pregnancy screening and prevention was low. Medical record evidence of contraceptive strategies was lacking and suggests DR-TB care, HIV care, and family planning are fragmented. Programmatic improvements are needed to enhance adherence to family planning guidelines among DR-TB women of reproductive potential, and efforts should emphasize integrating services to ensure best practices and clinical outcomes.
Source of funding (if none, enter "None"): The study was funded by the National Institute of Allergy and Infectious Disease (R01 AI104488-01A1; Farley, PI).

FRI_135

Diagnosis of Leishmaniasis by PCR-Restriction Fragment Length Polymorphism Analysis

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Background: The current clinical diagnosis of leishmaniasis is mostly carried out by microscopic examination of tissue smears and isolation of the parasite on culture media. However, the results of parasite isolation and histopathologic evaluation are often unreliable due to the limited amount of parasite in the lesion, which may lead to false-negative results. Subsequently, the introduction of Polymerase Chain Reaction (PCR) for identification of the existence of Leishmania parasite offered higher sensitivity. However, only PCR cannot distinguish the different species of Leishmania, which limits the different treatments to targeted Leishmania species. Therefore, molecular identification of Leishmania species using PCR-Restriction Fragment Length Polymorphism (RFLP) Analysis has been recognized as a more sensitive approach to identify different Leishmania species in laboratories with limited technological resources.
Methods: We extracted DNA from FTA filters containing lesion samples collected from patients with suspected cutaneous leishmaniasis as well as DNA from reference strains of Leishmania amazonesis, Leishmania braziliansis, Leishmania guyanesis and Leishmania panamensis. The DNA samples were amplified by the PCR. After cleaning the PCR products with ExoSAP-IT to remove primer dimers, they were double-digested with HpyCH4V and StyD4I (Promega) restriction enzymes. Digested DNA fragments were run in a 5% agarose gel electrophoresis. The patterns of DNA fragments of the unknown leishmaniasis status human samples were compare to the DNA patterns belong to Leishmania reference strains.
Findings: From PCR-RFLP analysis of ITS segment showed patter of DNA fragment specific for each Leishmania specie, based on DNA patter of reference strains, allowing a clear identification of Leishmania parasites belong to the genus leishmania Leishmania and leishmania viannia from lesions of human cutaneous leishmaniasis.
Interpretation: PCR-RFLP analysis of the ITS DNA segment can be performed directly on clinical tissue samples to identify Leishmania species present in the Americas. Moreover, PCR-RFLP analysis of Leishmania can be used in routine laboratory experimentation, which can replace DNA sequencing in endemic areas for identification of Leishmania species because of its advantages of sensitivity, convenience, efficiency, and low cost.
Source of funding (if none, enter "None"): Indiana University Bloomington

FRI_136

Cervical Cancer Screening- A Low- and Middle- Income Country Perspective.

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Background: In low- and middle-income countries, there is a lack of effective screening programs for cervical cancer with no clinically significant reduction in the incidence of cervical cancer during the past three decades. By contrast in developed countries there has been a major decline in cervical-cancer mortality after the introduction of large-scale cytology testing. Data specific to India shows that cervical cancer is the second most common cancer to occur at 22.9% with mortality rate of 20.7%.
Methods: We implemented periodic screening camps for cervical cancer at urban slums with three discrete end points. First, to provide access to underserved women to advanced cervical cancer screening methods at no cost, second, to co-ordinate services for women who get diagnosed with abnormal cervical screening and finally to reduce the incidence of cervical cancer in areas of high prevalence. Using the primary health center (PHC) in an identified block within a district as the access point for screening exams, we conducted two screening camps in Ranchi and New Delhi. Patients with abnormal results were referred to a predetermined tertiary center. Trained female health workers (FHW) identified and visited households to talk to the women individually about cervical cancer motivate them to attend the screening at the PHC.
Findings: Five blocks have had screening camps conducted, a total of 100 women were screened in Ranchi, 53 in New Delhi, 250 in Gharwa, 200 in Daltogunj and 350 in Jharkand of whom abnormal results were found in 2%, 2.9%, 2%, 10% and 14% respectively, these patients were referred to designated tertiary centers. Further studies are underway to account for the variability of the results. These camps were set up at a total cost of $1160 per session of 3 days of screening, this low cost was vital to increase sustainability. This initiative has been recognized by the local government and has led to increased cervical cancer screening camps at the tertiary sites.
Interpretation: Women of urban slums are generally unaware of risk factors for cervical cancer. Availability of routine screening and access to health care services are able to identify and treat cervical cancer earlier and can prevent unnecessary deaths of women.
Source of funding (if none, enter "None"): None

FRI_137

Head and Neck Cancer in South Asian Diaspora Living in the US, 2004 – 2013

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Background: Almost 58% of the global Head and Neck Cancer (HNC) cases occur in Asia, and a large proportion of these are from South Asia, mainly India and Pakistan. HNCs represent 30% of all cancers in males in India. However, not much is known about HNCs in this diaspora living in the US. The purpose of this study is to examine HNCs in South Asian males of Indian and Pakistani origin (SAMIP) living in the US and compare them to nH-White (NHW) American males.
Methods: Secondary data from National Cancer Database (NCDB) was used. Salivary gland tumors were excluded. HPV related analysis was limited to 2011 to 2013, while rest of the analysis included data from 2004-2013. Bivariate analysis and multivariate analysis was conducted to examine the association of HNC site with south Asian origin and other variables.
Findings: From 2004-2013, 887 SAMIP and 156927 NHW males were diagnosed with HNCs. South Asians males were more likely to be Human Papillomavirus (HPV) 16 negative, and have oral cancer (OC) (58% vs. 25%) but less likely to have oropharyngeal (OPC) (13% vs. 37%) and laryngeal cancer (14% vs. 29%; p<0.001 for all). They were diagnosed at a younger age (Mean age=57.7+13 vs. 61+11; p<0.001) and were more likely to live in urban area (99% vs. 93%; p<0.001) and have higher area level median household income and educational attainment. They were also likely to be diagnosed at an earlier stage but have higher likelihood of invasive growth and were less likely to survive >5 years after diagnosis (21% vs. 27%; p=<0.001). SAMIP had 7 times higher odds of having OC (aRR=7.1; 95%CI 5.7 – 8.7), and 5 times higher odds of having non-oropharyngeal cancer (aRR=4.9; 95%CI 3.8 – 6.3), compared to OPC.
Interpretation: HNC in SAMIP living in the US is more likely to be OC, whereas OPC is more common in NHW males. HPV 16 is of lesser concern for SAMIP. Despite having higher area level socio-economic indicators, SAMIP may be prone to risk factors that increase likelihood of oral cancer. HNC risk factors and survival need further study in this population.
Source of funding (if none, enter "None"): None

FRI_138

Genetic Counseling and Testing for Breast and Ovarian Cancer Patients for Risk Assessment in Ibadan, Nigeria

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Background: Breast cancer is the leading cause of cancer-related death among women and ovarian cancer has the highest case fatality rate of all gynecological cancers. In Nigeria, approximately 80% of breast and ovarian cancer cases are diagnosed at advanced stages. Genetic testing has the potential to reduce the morbidity and mortality associated with late cancer diagnosis. The introduction of genetic testing for cancer risk assessment at University College Hospital (UCH), Ibadan will serve as a model for the rest of Nigeria. The objective of this study is to assess the opinions of breast and ovarian cancer patients on their disease and genetic testing.
Methods: Female breast and ovarian cancer patients were recruited from 3 oncology clinics at University College Hospital, Ibadan. Following due ethical approval and written informed consent, all patients received genetic counseling and were offered Color Genomics Hereditary Cancer Panel Test, free of charge. All patients that received counseling and testing completed a semi-standardized questionnaire that took approximately 15 minutes to complete. The questionnaire assessed the socio-demographic information of the patients and the opinions of their disease and genetic testing.
Findings: Seven ovarian and forty breast cancer patients received genetic counseling, and all chose to undergo subsequent genetic testing. The average age at testing was 49 and the average age at cancer diagnosis was 47. Eight women reported a known family history of cancer. Sixty-one percent of patients reported having “no idea” what caused their cancer. Most women were willing to discuss their cancer diagnosis with their family members and reported more benefits than barriers to testing. The most common perceived barrier to testing was cost, and 34% of women reported that they were not willing to pay for genetic testing. The most common perceived benefit to testing was help with cancer prevention.
Interpretation: Breast and ovarian cancer patients at UCH associate genetic testing with benefits for their care. These results suggest potential for growth and sustainability of genetic testing for cancer risk management in Nigeria. The use of genetic testing has the potential to reduce the burden of late cancer diagnosis in Nigeria.
Source of funding (if none, enter "None"): University of Chicago Center for Global Health

FRI_139

Preliminary report on patient reported outcomes (Breast Q) among breast cancer patients planned for conserving surgery, mastectomy and breast reconstruction in Malaysia

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Background: The Patient-Reported Outcomes Measures (PROMs) are essential in the evaluation of surgical outcomes, especially in reporting patient satisfaction and quality of life. It also measures patient's perceptions in life following breast cancer surgery. The Breast Q has been validated and shown to have adequate psychometric properties in the local population. This study assessed baseline patient reported outcomes among breast cancer patients planned for breast conserving surgery, mastectomy and reconstruction using Breast Q.

Methods: This prospective cohort study data, were collected from 241 women of newly diagnosed breast cancer who were planned for breast cancer surgery at University Malaya Medical Center, from June 2015 to June 2016. Consented participants completed the questionnaire in the same visit following their diagnosis. The mean scores for the four domains; Satisfaction with breast, Psychosocial well-being, Physical well-being and Sexual well-being were obtained by averaging the responses to the items in each domain.

Findings: Almost more than 70% (n=179) were planned for mastectomy, fifteen percent (n=37) for breast conserving surgery and seven percent (n=18) for mastectomy with reconstruction. Result showed no difference in the scores for the four domains, all the p-values are more than 0.05. No significant difference in mean scores in all four domains between the mastectomy, breast conserving surgery and mastectomy with reconstruction groups. Overall, the mean score in Psychosocial well-being was higher compared to Physical well-being.

Interpretation: Breast cancer patients seems to have similar degree of satisfaction with the four domains between the different types of surgery at the pre-operative stage. In contrast, western finding Alves et al found that women undergoing mastectomy lacked knowledge about their surgeries and experienced fear and anxiety with what to expect before having surgery. Followed by the recent survey by Waliee et al revealed that pre-operatively, women tend predict postoperative outcome inaccurately, and this was most significant for patients undergoing mastectomy alone. We will be reporting the satisfaction with their treatments in the future as the study is designed to measure Breast Q at 3 weeks and 1 year after diagnosis. This is the first study to report baseline satisfaction of Malaysian patients with regards to the satisfaction with breast, Psychosocial well-being, Physical well-being and Sexual well-being.

Source of funding (if none, enter "None"): None

FRI_140

Chagas Disease Prevalence in Colombia: A Meta-Analysis and Systematic Review

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Background: Chagas disease is a major public health problem in Latin America. A neglected disease of poor and rural Latin American populations, it has now emerged in other regions and urban areas due to international migration. In Colombia, systematic data pertaining to the disease's magnitude in the general population and its distribution within regions are lacking. Our objective was to describe the prevalence of Chagas disease in Colombia through a meta-analysis and systematic review.
Methods: A comprehensive search using the electronic databases PubMed Central, Medline, Web of Science, LILACS and SciELO was conducted employing the following keywords and their combinations: "Chagas", or "Trypanosoma cruzi", or "American trypanosomiasis", and "prevalence", and "Colombia". Articles published between 1990 and 2017 in either English or Spanish were included. Additional strategies included screening of reference lists of selected studies and internet searches for grey literature. Prevalence data of Chagas disease were extracted from studies included for final selection. Information extracted from all relevant studies included author(s) name, study period, surveyed geographic region, human settlements (urban/rural), sample size, gender, number of positive cases, and type of serological test utilized. Pooled prevalence estimates and 95% confidence intervals were calculated for Chagas disease in the general population using a meta-analysis random-effects model. Subgroup analyses were performed to investigate potential sources of heterogeneity. A sensitivity analysis was conducted to assess for publication bias.
Findings: Seventeen articles with relevant prevalence data were identified from a total of 1,213 references. The initial pooled estimate of Chagas disease prevalence in Colombia was 4.10% (95% CI: 2.23 – 7.41). The sensitivity analysis, however, suggested publication bias may have influenced the estimate due to outliers from studies with large effect and small sample sizes. After excluding studies with outliers, the pooled estimate was 1.67% (95% CI: 0.95 – 2.92). A high degree of heterogeneity in most pooled estimates was observed, even after subgroup analysis. The Orinoquía region, rural areas, males, and persons aged > 15 years yielded the highest pooled prevalences.
Interpretation: Higher prevalence was observed in select regions, rural areas, and older teenagers & adults. Additional population-based studies within Colombia are recommended to provide more stable & reliable estimates and identify high-risk areas and groups.
Source of funding (if none, enter "None"): None

FRI_141

Assessment of Interfacility Ambulance Transfers in a Middle Income Country

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Background: Complex emergency medical systems (EMS) exist in high-income countries to facilitate transfers between hospitals. In Cali, Colombia, under the public insurance paradigm, a single public ambulance service provides transport for most interfacility transfers. Transfers between hospitals in low- and middle-income countries (LMICs) have not been explored, but represent an essential component of providing timely and high quality care. We seek to quantify the number and type of interfacility transfers in a large, MIC city, compare this between public and private hospitals, and provide a cost estimate.
Methods: A retrospective review of a large public, urban EMS was completed for 1-year of interfacility (hospital-to-hospital) transfers. Disease proportions among interfacility transfers were examined and comparisons made between patients being transferred from public to private hospitals and vice versa using fishers exact and/or chi-square tests. ICD9 codes were subcategorized for analyses. Cost estimates were performed using the 2016 ambulance fee schedule.
Findings: 31,659 patients underwent transfer, including 21,790 interfacility transfers. Diagnoses for transfer included 55% medical, 34% surgical, and 10% obstetric and gynecological. Pediatric patients were 22% of transfers. Top ten reasons for transfer included fracture (1227, 5.4%), fever (996, 4.4%), appendicitis (913, 4.1%), wounds (871, 3.9%), abdominal pain (818, 3.6%), unspecified medical conditions (776, 3.4%), myocardial infarction (770, 3.4%), pneumonia (751, 3.3%), cerebrovascular disease (690, 3.1%) and trauma (652, 2.9%). These made up 55% of the total transfers for the year. Private hospitals transferred patients to other private facilities 77%, and had 5.6x the odds of being transferred to a private hospital vs public hospital (CI [5.1-6.0], p<.01). The estimated cost over the year was 2,121,234 USD for all interfacility transfers.
Interpretation: Medical, surgical and obstetric conditions all contribute greatly to the burden of interfacility transfers in Cali, Colombia, with significant cost to the public health system. The major reasons for transfer represent common diseases with the majority being non-communicable. Public and private hospitals contribute unequally to transfer burden. More research is needed to link outcomes data to patient transfers, determine specific reasons for patient transfer, and optimize triage systems to reduce cost and improve outcomes.
Source of funding (if none, enter "None"): None

FRI_142

An Evaluation of Metabolic Syndrome Burden in a Hospital in Northern Guatemala

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Background: Cardiovascular disease is the leading cause of disability and death in Latin American countries. Metabolic syndrome is a major risk factor for cardiovascular disease with a prevalence of 31.6% of the adult population in Guatemala. There is a rising incidence in the components of metabolic syndrome: diabetes related deaths have increased by 110% in the past two decades and hypertension is now the leading risk factor for global disease burden. The purpose of this study was to evaluate the metabolic syndrome burden in a public hospital in northern Guatemala.
Methods: An observational, prospective study was performed on patients who presented to a public northern Guatemala hospital between June 11, 2018 and June 28, 2018. Inclusion criteria were any patients above the age of 18 whose past medical history included at least one of the three components of metabolic syndrome: Diabetes Mellitus, Dyslipidemia, or Hypertension. There was no exclusion criteria. The primary outcome was to calculate the prevalence of metabolic syndrome in this population. Secondary outcomes evaluated the prevalence of each of the three components of metabolic syndrome, the rate of patient presentation with unmanaged disease, and the rate of secondary organ damage due to disease progression. UTSW IRB approved the study without the need for patient consent.
Findings: A total of 230 patient charts were reviewed. We found that 21.71% of patients met the criteria for metabolic syndrome. The prevalence of each component was 60.4% for type 2 diabetes mellitus, 10.4% for dyslipidemia, and 50.0% for hypertension. Diabetes had the highest rate of secondary organ damage of the three components (30.9%). A significant percentage of patients with a history of hypertension presented with uncontrolled hypertension (82.6%).
Interpretation: Patients who presented with two or three of the components of metabolic syndrome presented at a higher rate for unmanaged disease and secondary organ damage than did patients who only presented with one of the components. This suggests that the components of metabolic syndrome work synergistically to pose a greater cumulative risk to patient health than the individual components. Future research is required to determine the factors responsible for the high rates of unmanaged disease and secondary organ damage.
Source of funding (if none, enter "None"): None

FRI_143

Role of Patient-Driven Groups in Improving Access to Medicines Used to Treat Diabetes at Public Health Facilities in Uganda

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Background: Diabetes is an increasingly prevalent non-communicable disease in Uganda. Although access to appropriate medicines is crucial for successful diabetes management, there exists a large gap between prescribed and dispensed medicines at public sector health facilities in the country. Since patient-driven diabetes associations are operating at a few public facilities in Uganda, we explored their influence on patients' access to medicines to treat diabetes.
Methods: We conducted a qualitative cross-sectional study at two purposively selected public facilities with "active" diabetes associations. We purposively selected adult patients with diabetes attending outpatient clinics and, healthcare workers who prescribed or dispensed medicines at the selected facilities. We conducted in-depth interviews (n=8) and focus group discussions (n=4) with patients, and key informant interviews (n=7) with healthcare workers. Interviews were audio recorded and transcribed verbatim. Transcripts were coded and emerging themes identified.
Findings: Diabetes associations are informal but organised patient-driven groups with registered members and a leadership structure which comprises expert clients. We identified three thematic roles: ensuring availability of affordable medicines, administrative support, and advocacy. The associations mainly mitigate the shortage of free medicines at public facilities by purchasing and selling diabetes medicines to members at subsidized prices. Association leaders mediate between patients and health facility administration to discuss frequent medicine supply and patient satisfaction. The association leaders also offer psycho-social counselling to improve patients' self-efficacy for treatment and medication adherence. Lastly, through organised advocacy often on media platforms, diabetes associations seek to improve patient care which culminates in improved supply of medicines at the health facility.
Interpretation: Apart from ensuring medicine availability for diabetes patients, these patient-driven associations appear to positively impact service delivery for diabetes patients at the respective health facilities where they operate. Diabetes patient-driven associations have the potential to catalyse improved access to medicines in the public sector and future work should quantify their impact.
Source of funding (if none, enter "None"): Doris Duke Clinical Research Fellowship

FRI_144

Paucity of Data Specific to the Critical Care Needs of Pediatric Hematology-Oncology Patients in Low and Middle-Income Countries

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Background: Mortality of pediatric cancer has fallen dramatically in high-income countries (HICs) over the last 50 years with overall survival rates now approaching 90%. It is widely accepted that this success is the result of multi-modal chemotherapy regimens, collaborative research efforts, and improved supportive care for patients. Unfortunately, there remain significant disparities in outcomes for pediatric hematology-oncology (PHO) patients in low and middle-income countries (LMICs) compared to HICs, which has resulted in a call to increase access to PHO care in LMICs. While there are many barriers to such programs, one cannot overlook the role that access to pediatric critical care (PCC) support must play in managing life-threatening complications of cancer and/or its treatment. As the initial step of a multi-phase project aimed at facilitating collaboration between PHO and PCC programs in LMICs, a literature review was undertaken to define what is currently known about the critical care needs of PHO patients in LMICs.
Methods: A PubMed search using key terms and synonyms specific to PHO, PCC, and LMICs was conducted between December 2017 and June 2018. All abstracts were then reviewed and included for analysis if the content was relevant to PHO and/or PCC in LMICs.
Findings: A total of 330 abstracts specific to either PHO or PCC in LMICs were identified. Publication dates ranged from 1987 to 2018. Of the abstracts reviewed, 52% (n=171) were specific to PHO, and 48% (n=159) were specific to PCC. Only 1.5% (n=5) were specific to critically-ill PHO patients in LMICs, and of these, 2 studies were from the same center.
Interpretation: This review demonstrates that there is a paucity of data specific to the life-threatening complications encountered by PHO patients in LMICs. In addition, there is even less known about availability of PCC support. Elucidating this data is paramount to establish effective collaboration between PHO and PCC programs in LMICs. To address this gap, a multi-centered needs assessment utilizing structured interviews and surveys is being conducted to identify existing infrastructure as well as areas for collaboration.
Source of funding (if none, enter "None"): None

FRI_145

Youth Photovoice: Engaging Youth as Change Agents For Community-Level Youth HIV Prevention

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Background: Over half of new HIV infections in Malawi occur among youth. Photovoice uses photographs to trigger in-depth analysis and develop action plans for community change, but has not been used in Africa to address community factors affecting youth HIV-risk behaviors. We used Photovoice to develop and implement youth-driven action plans to address community situations promoting youth risky sexual behaviors in Phalombe, Malawi.
Methods: We collaborated with a community-based youth organization (CBO) to conduct Photovoice with 24 youth ages 13-17. Using their photographs as triggers for small group critical analysis, youth developed action plans to reduce community factors affecting youth HIV risk. Eight months later, we interviewed youth, parents and 3 CBO volunteers to identify changes achieved.
Findings: Youth described several high-risk situations including activities that go on at local bars and rest houses, and risks associated with being in isolated places. They described community social events that provide opportunities for risky behaviors. They described schools and churches as mainly protective, but sometimes activities there encouraged risky behaviors. All youth agreed that parental supervision was protective. Youth developed action plans addressing community situations associated with HIV risk: initiation ceremonies that emphasize sexual engagement, celebrations and religious activities that end after sunset, and bars or rest houses that provide opportunities to engage in sex. After presenting these plans to parents and leaders, they worked with CBO members to implement plans to raise public awareness and reduce opportunities for risky behaviors. Eight months later, changes included relocating initiation ceremonies to churches, parent-initiated bylaw changes to discourage youth attendance at bars and rest houses, and shifting church-related activities to end before sunset. Parents and leaders observed less risky behaviors among youth and growth in Photovoice participants' confidence, communication skills, and abstract thinking.
Interpretation: Photovoice provided a developmentally appropriate way for youth to identify community problems and communicate with adults to promote collaborative change. This youth-led project uncovered ways that action plans can lead to implementation using an innovative, sustainable and participatory approach. Furthermore, this project provided opportunities for youth to not only tap into their own agency but also influence the agency and well-being of others in their community.
Source of funding (if none, enter "None"): National Institute of Nursing Research

FRI_146

Socio-environmental Determinants of Atherosclerosis in Rural Women: A Cross Sectional Assessment in Bangladesh

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Background: Early changes in atherosclerosis can be quantified during preclinical disease stages by the carotid artery intima-media thickness (CIMT) measurement. However, little is known about how the thickness varies in rural women in low-middle income countries. The GEOHealth study is examining cIMT among biomass fuel users in rural Bangladesh, which creates an opportunity to identify parameters that influence it.
Methods: The observational cohort study included 200 women aged 25 to 55 years from Matlab and Araihazar sub-districts in Bangladesh. Participants were non-smoker, biomass fuel user (main cook) in traditional stoves, had low (<5 µg/L) exposure to water arsenic and not known to have any cardiovascular disease. cIMT as a marker of atherosclerosis, was assessed using the SonoSite MicroMaxx ultrasound machine equipped with a L38e/10-5 MHz transducer. The mean of the near and far walls of the maximum common carotid artery (CCA) IMT from both sides of the neck was the outcome variable. We used structured questionnaire to record important social determinants and measured personal exposure to PM 2.5 (by gravimetric method using RTI MicroPEM™), black carbon (by reflectance measurement using an EEL-type smoke stain Reflectometer) and carbon monoxide (by Lasker EL-USB CO data logger).
Findings: Average cIMT value (in mm) was 0.738 (SD 0.068). Mean values for cIMT for women aged 25-34, 35-44 and 45-55 years were 0.711 (SD 0.496); 0.731 (SD 0.604) and 0.793 (SD 0.741) respectively. The upper limit for the maximum thickness varied from 0.851-1.022 mm. CIMT increased significantly (p=0.000) by 0.030 mm, in every decade. Multiple linear regression analysis revealed age (β=0.003, 95% CI: 0.002-0.005, p=0.000), BMI (β=0.002, 95% CI: 0.0002-0.004, p=0.029), Systolic blood pressure (β=0.0007, 95% CI: 0.00006-0.0014, p=0.033) and chewable tobacco use (β=0.028, 95% CI: -0.0006-0.057, p=0.055) as significant determinants of atherosclerosis. Personal exposure to PM2.5, black carbon or CO was not associated with atherosclerosis (mean cIMT) in this population.
Interpretation: The study characterized cIMT and its socio-environmental determinants in healthy rural female biomass users in Bangladesh.
Source of funding (if none, enter "None"): Fogarty International Center, NIEHS and CDC (Award Number U01TW010120 and U2RTW10122)

FRI_147

Developing Business Models for East African Laboratories to Sustain IHC Capabilities

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Background: Cancer mortality rates in Sub-Saharan Africa are the highest globally. There are many factors that account for these high rates such as education level, lack of infrastructure, and quality of care. In order to improve the cancer survival rate, there needs to first be capacity and capability improvements. The American Society for Clinical Pathology (ASCP) partnered with Novartis Pharmaceuticals to address these capability improvements by bringing Immunohistochemistry (IHC) capabilities to seven East African hospitals. IHC allows for an accurate and confident cancer diagnosis where routine histology cannot diagnose.
Methods: The ASCP-Novartis partnership negotiated and purchased five IHC automated testing machines and seven 6-month supplies of reagents. After this 6-month investment, the laboratories will be required to be self-sustaining for IHC capabilities in ordering new reagents, keeping accurate records of sample data, and expanding referral programs domestically. In order to ensure the labs will be self-sustaining after the initial 6-month investment, ASCP created business models for each of these laboratories in order to analyze the costs and revenues of this new program. ASCP worked directly with the heads of the laboratories and local pathologists to collect data on current volume, routine histology costs, types of samples, sources of revenues, and budget developments. With these data, individualized forward-looking business models were created that included overall operational and management budgets, estimated IHC test volumes, and recommendations to optimize current revenue sources.
Findings: These business models have been sent along with the initial 6-month investment to the seven East African laboratories in August 2018. Going forward, the labs will keep records of the types of samples and the tests conducted which will allow for the business models to be updated to more accurately assess the costs for each hospital thus creating more accurate budgets.
Interpretation: Results of the first 3 to 6 month deployment will be discussed.
Source of funding (if none, enter "None"): Novartis Pharmaceuticals

FRI_148

Prevalence and Correlates of the Metabolic Syndrome Among Patients with Severe Mental Illness in a Resource Constraint Setting

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Background: Resource constraint countries, including Botswana, are facing rising prevalence of obesity and obesity-related cardiometabolic complications. Metabolic syndrome (MetS) is a cluster of inter-related risk factors for cardiovascular diseases and type 2 diabetes mellitus. Deaths from coronary heart diseases, cardiovascular diseases and all-cause mortality has been shown to be significantly increased among patients with MetS compared to those without MetS. Severe mental illness (SMI) describes the presence of chronic psychiatric disorder that result in substantial functional impairment and typically includes the diagnosis of psychotic disorders, bipolar disorder, and recurrent major depressive disorder. People with SMI are more likely to have risk factors for cardiovascular diseases such as obesity, dyslipidaemia, hypertension, and smoking.Very little information is known about clustering of cardiovascular risk factors in patients with SMI in resource constrained settings. We aimed to assess the prevalence and to identify the correlates of MetS among patients with SMI in Botswana.
Methods: We conducted a cross-sectional study among patients with SMI admitted to a referral psychiatric hospital in Botswana. A precoded questionnaire was used to collect data on participants' sociodemographics, risk factors, and anthropometric indices. Blood samples were drawn and analyzed for glucose and lipid profile. Metabolic syndrome was assessed using National Cholesterol Education Program-Adult Treatment Panel III criteria.
Findings: In total, 137 participants were included, of whom 71 (55.4%) were males. The mean age of the total population was 34.1 (±12.2) years. The overall prevalence of metabolic syndrome was n(%;95% CI): 29(21.2; 14.7-28.9), with no significant gender difference (females =24.6.6%, males =16.9%, P=0.37). Independent correlates of MetS were age and increased waist circumference.
Interpretation: Metabolic syndrome is highly prevalent among patients with SMI. Efforts to address cardiovascular risk among people with SMI should ideally include measures to assess and manage cardiovascular risk factors such as the MetS.
Source of funding (if none, enter "None"): Penn Mental Health AIDS Research Center

FRI_149

Gogos Give Smiles: An Oral Health Promotion Project for children of the Ndebele Kingdom South Africa, 2018

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Background: Oral health (OH) is a neglected area in global health with the Global Burden of Disease Study, 2016, estimating that half of the world's population suffers from oral diseases. In rural South Africa, dental caries is prevalent in 60% of 6 year olds with 80% of these are untreated. In the last decade socio-economic and political factors in South Africa have burdened grandmothers (gogos) with the role of primary caretakers for their grandchildren.Our OH prevention and promotion project in the Nkangala Region, Mpumalanga Province in February - March 2018 was aimed at actively involving gogos in the process of behavior change in the children's daily routine to improve their OH.
Methods: With the goal of augmenting a cadre of positive change agents in the community, the outcome is to train gogos to improve the OH status of the children. We used a qualitative methodology to understand the grandmothers' role in the community schools in the Ndebele Kingdom. With these insights, gogos on the School Governing Bodies are selected and trained to promote supervised tooth brushing, make healthy food available, encourage traditional cooking and remedies and monitor the program. This capacity building was mobilized by setting up tooth brushing stations in the schools and sustainability supported by changing hygiene and nutrition policies at the school level.
Findings: Our success was in getting the gogos to actively participate in the workshops. Preliminary results show an increase in awareness of health, hygiene and nutrition among gogos, their adoption of tools and the implementation of an oral health policy in the school to change behaviors among the 1000 children reached. Evaluation through a survey showed that gogos are more confident in imparting knowledge to the children and changing their behavioral attitudes.
Interpretation: Primary challenge is the continuous political commitment of the local leaders in the project that reflects the unmet goal of creating an environment that facilitates reduced dental decay in the community. With this in mind, our future role includes strengthening ties with the leaders, providing ongoing guidance and technical assistance to the gogos combined with improving nutrition in and around school.
Source of funding (if none, enter "None"): Humble Smile Foundation

FRI_150

Vitality of Antiretroviral Compliance in HIV Associated Opportunistic Infection: Cryptococcal Meningitis – Survival Analysis

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Background: Cryptococcal Meningitis (CM), a formidable opportunistic infection remains one of the leading causes of mortality among PLHA in India despite repeated revised guidelines on initiation of Antiretroviral Therapy (ART) with currently “TREAT ALL”.
Methods: Retrospective cohort analysis was conducted at acute – care – in – patients. 9958 PLHA were admitted from 2010 through 2018. Records of 173 PLHA who carried additional burden of CM were reviewed for age, sex, laboratory reports, ART medication history, comorbidities, presentations and survival; of whom, 144 (83.24%) patients’ comprehensive data was available.
Findings: One hundred and forty four adults in WHO Stage IV, ages 18 – 60 (M = 38.66 ± 7.79); CD4 Counts 1 – 350 (M = 78.27 ± 75.59); 72.92% Males; and 66.67% were either not on ART or non-compliant. 93.06% presented with meningism and 56.25% had superadded infection as tuberculosis/toxoplasmosis/penumocystic pneumonia…etc. The CD4 counts did not differ by gender ($F_{(1, 142)} = 1.87$, $p = 0.17$) and neither gender had any association between ART compliance ($\chi 2_{(1)} = 0.16$, $p = 0.69$). The median follow-up was 244.57 weeks (IQR [149.86, 313.00]). The median survival was 89.40 weeks [CI: 29.10, 210.00]. The survival probabilities at 2, 10, 24 and 52 weeks was 83.30%, 59.10%, 52.70% and 48.40% in those not on ART or non-compliant group while 87.50%, 79.20%, 72.70% and 68.30% in ART compliant group. In Cox proportional hazard regression model after testing for assumptions; adjusting for age, CD4 count, sex, and comorbidity, only ART compliance was statistically significant (HR: 0.49 [0.29, 0.84], $p < 0.01$). Finally, Cox-Stuart test for trend analysis was not significant for HIV mortality at this hospital over the years and those associated with CM deaths.
Interpretation: ART compliance is the integral part in continuum of care for HIV and survival that needs to be prioritized. The current analysis accentuates continuing burden of HIV – associated with cryptococcal disease. Cryptococcal meningitis is a proxy for HIV treatment program non-performance; emphasizing ART compliance that needs to be validated by clinical and laboratory testing.
Source of funding (if none, enter "None"): None

FRI_152

Implementation of a national HPV vaccination program in Senegal: optimizing vaccine uptake across contexts

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Background: Over 85% of global cervical cancer deaths occur in low- and middle-income countries (LMICs), where there are nearly 450,000 new cases annually. Human papillomavirus (HPV) vaccines effectively protect against various papillomavirus subtypes including 16 and 18 which cause 70% of cervical cancers worldwide. However, by 2014, just 1.1% of LMIC adolescent girls had received at least one HPV vaccine dose. Senegal currently ranks 15th in the world in the incidence of cervical cancer, the number one cancer killer among Senegalese women. In 2019, a Global Alliance for Vaccines and Immunizations (GAVI) nationwide HPV program will be launched in Senegal.
Methods: This cross-sectional method study assesses HPV vaccine knowledge, attitudes, and behaviors of major stakeholders at nineteen sites (all the municipalities in the region) in the rural Kedougou Region of Senegal. Surveys are conducted through individual interviews parents of eligible children/ adolescents (ages 9-15). This study has been approved by the Senegal IRB at the Minister of Health and Social Action. The study is funded and data collection is ensured for September 2018.
Findings: Data collected on 1200 women across all sites in September 2018 are evaluated quantitatively for correlation between knowledge, attitudes, and behavior. Qualitative data in the form of focus groups reinforce quantitative findings and provide detailed information to inform a community-level educational program.
Interpretation: This research coincides with the real-time implementation of Senegal's national HPV vaccination program and assesses determinants of vaccine uptake. In the near term, the study findings informs the wide dissemination of a context-specific Communication for Development (C4D) framework education intervention to maximize future HPV vaccination initiatives specific to various populations and stakeholder groups in Senegal. Our long-term goals are to inform national- and international-level HPV policy that promotes universal coverage through gender neutral and target-age expanded national programs and advance the objective of global HPV elimination.
Source of funding (if none, enter "None"): University of Illinois at Chicago College of Medicine University Cheikh Anta Diop, Dakar, Senegal

FRI_153

Association between Gestational Weight Gain and Early Initiation of Breastfeeding among Women Attending an Urban Hospital in Ghana

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Background: Previous studies have shown that early initiation of breastfeeding (EIB) can increase the likelihood of longer duration, exclusivity and continuation of breastfeeding. Several sociodemographic, cultural, behavioral and biological factors influence EIB. However, research examining the relationship between gestational weight gain (GWG) and EIB, especially among African women is currently lacking. This study examined the association between GWG and EIB among women attending an urban hospital in Accra, Ghana.

Methods: A cross-sectional study was conducted using women (n=422) attending postnatal services at an urban hospital within two weeks after delivery. Data on prepregnancy body mass index and gestational weight gain were extracted from patient records. The Institute of Medicine's current guidelines were used to define categories of gestational weight gain: inadequate (less than the recommended guideline), adequate (within the recommended guideline) and excessive (above the recommended guideline). The main outcome of interest, EIB was assessed using a structured questionnaire and was defined as provision of mother's milk to an infant within one hour of birth. Descriptive statistics and multivariable logistic regression modeling were used to assess the association between GWG and EIB.

Findings: Breastfeeding was initiated within one hour of birth by 73.1% of women. Approximately 54.0% and 15.6 women had inadequate and excessive GWG, respectively. In the univariate analysis, women with excessive GWG were less likely to initiate breastfeeding within one hour of birth compared to women with adequate GWG (Odds ratio; 95% CI) (0.46; 0.24 – 0.89). After adjusting for potential confounders, there was a significant interaction between GWG and gestational age on EIB. Among women who delivered at ≥38 weeks of gestation, mothers with excessive GWG were less likely to initiate breastfeeding within one hour of birth compared to women with adequate GWG (Odds ratio; 95% CI) (0.30; 0.12 – 0.76).

Interpretation: With the increasing rates of excessive GWG, it is critical to identify mothers at increased risk of not initiating breastfeeding within one hour of birth and provide targeted breastfeeding support, especially in the early postpartum period.

Source of funding (if none, enter "None"): This study was supported by faculty start-up grant from the Heritage College of Osteopathic Medicine at Ohio University.

FRI_154

Knowledge, Attitudes and Practices Related to Self- Medication with Antibiotics, in Lilongwe, Malawi.

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Background: Antimicrobial resistance (AMR) is a public health threat to effective treatment of infectious disease, especially in developing countries. Antibiotic use and/or misuse accelerates the emergence of AMR and self-medication with antibiotics increases the risk of inappropriate use.The aim of this study was to describe knowledge, attitudes and practices regarding self-medication with antibiotics among residents of Area 25, Lilongwe, Malawi.
Methods: This study had a cross-sectional, mixed-methods design. Two focus group discussions (n = 15) were conducted to describe community attitudes towards self-medication with antibiotics, whereas a structured questionnaire collected individual knowledge, attitudes and practices regarding self-medication with antibiotics from 105 respondents.
Findings: Self-medication with antibiotics was commonly practiced. Sources of these medicines were market vendors, pharmacies, shared drugs with friends and family and leftover from previous treatments. Unavailability of medical supplies, long distance to health facilities, poor attitudes of medical professionals towards patients and past experience with the disease and treatment were main factors that influence self-medication. KAP respondents had low knowledge regarding antibiotics, their use and awareness of resistance. Seventy-four percent (n= 78) were unable to differentiate antibiotics from other categories of medicines and 92.4% wrongly responded that antibiotics can stop fever. Concerning attitudes, the majority had incorrect attitudes towards self-medication with antibiotics. For example, over 54% wrongly believed antibiotics are effective in treating common colds. About practice, 53% reported that they would use antibiotics to treat upper respiratory infections, and 41% agreed that they complete antibiotic therapy even if they are improving. Logistic regression analysis found that stocking antibiotics at home for future use significantly promotes self-medication whereas, awareness that antibiotic resistance would affect them would reduce self-medication with antibiotics.
Interpretation: Self-medication is a public health risk that needs to be addressed urgently. Findings from this study point to the need for multifaceted interventions.
Source of funding (if none, enter "None"): This study was funded by the Norwegian Agency for Development Cooperation under the Norwegian Programme for Capacity Development in Higher Education and Research for Development (NORHED) Grant QZA 0484 RSA 13/0010 on Antibiotic Stewardship and Conservancy in Africa

FRI_155

Energy Expenditure and Weight Change in African-origin Populations Across the Spectrum of Social and Economic Development

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Background: Evidence-based decision-making is vital for the setting of public health priorities. There has been ongoing controversy about the relative importance of excess energy intake (calories consumed) versus low energy expenditure (calories burned) for excess weight gain and incident obesity in populations around the world. We sought to define the relationship between energy expenditure (EE) and subsequent weight change in a longitudinal study among 5 cohorts of African descent currently living at differing stages of economic development.
Methods: We used objective measures of EE, including doubly labeled water method for total EE (TEE) and indirect calorimetry for resting metabolic rate (RMR), to assess the energy budget of 75 young adults, 25-45 years, in each of 5 sites (n=375 total): Ghana, South Africa, Seychelles, Jamaica and US. Physical activity expenditure (PAEE) was calculated as the difference between TEE and RMR. In addition, we recorded weight change over the subsequent 2 years. Mixed-effects, random-coefficient regression models were used to assess the association between EE parameters and weight change, adjusting for sex, age, baseline weight, site and years of follow-up.
Findings: Mean body mass index varied among the men, ranging from 22 in Ghana and South Africa to 29 in the US, and among women from 26 in Ghana to 33 in the US. Baseline TEE and PAEE were highest among US men (3320±684 and 1042±598 kcal/d, respectively) and lowest among Jamaican women (2060±318 and 384±237 kcal/d). Greatest mean weight change was observed among Seychellois women (3.2±5.7 kg) and men (2.0±2.9 kg). Regardless of sex or starting body weight, none of the three EE parameters measured objectively, TEE, RMR or PAEE, were significantly associated with weight change suggesting the number of calories burned is not the driving factor in weight gain in these 5 cohorts.
Interpretation: As low- and middle-income countries face ever-increasing rates of obesity, evidence such as this is needed to help inform public health policies. It has been clearly demonstrated that increasing PAEE is critical for overall good health, however, we have shown that PAEE is not associated with weight gain and should not be the focus of public health messaging on obesity.
Source of funding (if none, enter "None"): National Institutes of Health, R01 DK080763

FRI_156

Improving Housing for Vector-Borne Disease Prevention in Rural Areas

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Background: Vector-borne diseases are important causes of death in developing countries, especially in rural areas where one of the main risk factors is the housing condition. We propose a community-based approach to develop new construction techniques to improve housing in rural areas to prevent sand-fly proliferation, with focus on two prevalent diseases, leishmaniasis, and bartonellosis.
Methods: This is a pilot study conducted in a rural area of Peru, endemic for leishmaniasis and bartonellosis. The first phase included a housing architectural diagnosis; based on this diagnosis and using materials easily found in the area we design the housing modification with a special focus on eliminating sand-fly breeding sites and entry points. These modifications were worked together and implemented with the dwellers.
Findings: Ten households participated in the study, the main building material were mud bricks, 90% of the dwellers referred past history of leishmaniasis and/or bartonellosis, and the vast majority referred seen sand-flies inside the houses frequently. A plastered compound based on dust, sand, straw, aloe, lime and cast was applied in different layers closing the cracks on the walls. Additionally, modified windows and closings between the roof and the walls were incorporated. The first 5 houses were modified in conjunction with the dwellers, while the last 5 houses were implemented solely by the dwellers without any inconvenience and following the established processes and techniques.
Interpretation: An innovative construction technique can be developed in rural areas to improve housing conditions, using materials easily found in the area. The incorporation of these techniques in the usual construction habits of the rural population is possible, and have the potential to reduce vector abundance in the houses as a novel prevention strategy for vector-borne diseases.
Source of funding (if none, enter "None"): Kuskaya: An Interdisciplinary Training Program for Innovation in Global Health (NIH: 5D43TW009375-02) Multidisciplinary and Inter-University Research Award (Consortium of Universities - Peru)

FRI_157

Comparative Study of Conventional and Molecular Methods of Mycobacteria Identification

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Background: Mycobacterium tuberculosis, along with M. bovis, M. africanum, and M. microti all cause the disease known as tuberculosis (TB) and are members of the Mycobacterium TB complex. Each member of the TB complex is pathogenic, but M. tuberculosis is pathogenic for humans. Accurate identification of Mycobacteria to species level becomes very important. Comparison of the efficacy and sensitivity of conventional and molecular methods of identifying mycobacteria was carried out in order to propose a viable method for identifying the causative organism for the scourge, tuberculosis in Nigeria.
Methods: A total of 66 (36 females and 30 males) known adult patients aged between 18 and 50 years attending routine checks at the National TB reference laboratory Nigeria, Institute for Medical research Lagos were used for the study. Sputum specimens were aseptically collected and Mycobacteria isolated using standard microbiological protocols. These were characterized using conventional phenotypic methods and molecular genotypic method. Positive controls and negative controls were used to validate the tests.
Findings: Fifty eight, 58 (61.1%) of the specimens showed positive smear microscopy results. Forty two (42), 61, 58 i.e. 63.6%, 92.4% and 87.9% of the isolates were positive for Tween hydrolysis, Catalase and Nitrate reduction tests respectively with varying levels. The conventional phenotypic methods were able to identify 46 (74.2%) isolates as mycobacteria i.e. up to genus level, while the molecular genotypic methods were able to identify all 66 (100%) isolates up to species level with high level of sensitivity and specificity using the two and three-band hybridization system. Mycobacteria species isolated were MTBC with highest prevalence of 50 % followed by M. fortuitum 6.1%, while M. gardinae and M. scrofulaccum had the least prevalence of 1.5%. Some high GC Gram positive bacteria and one unidentified Mycobacterium-like bacterium were also isolated.
Interpretation: The superior sensitivity of the two-band technique suggests that it could be more useful in the diagnosis of tuberculosis and in differentiating M. tuberculosis complex from non-tuberculous mycobacteria. It can also be used in the early and specific diagnosis of clinically suspected tuberculosis patients. However, for smear- and MPCR-negative specimens from clinically suspected tuberculosis patients, the diagnosis should be confirmed by culture.
Source of funding (if none, enter "None"): None

FRI_158

Do Women Experience Greater Delays in Treatment Following Musculoskeletal Trauma in Low-and Middle-Income Countries? A Multicenter Prospective Observational Study

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Background: Within Low- and Middle- Income Countries (LMICs), significant health burden within trauma patients results from deficiencies in the pre-hospital network and hospital admission delays. Due to reduced autonomy, women can be at-risk for hospital admission delays.
Primary Aim: The association between sex and delay to hospital admission among orthopaedic trauma patients in LMICs.
Methods: Between 2014-2017, we conducted a prospective observational study of orthopaedic trauma patients in 39 hospitals across 17 LMICs; categorized into the regions China, Africa, India, Other Asia, and Latin America. Eligibility included that patients were ≥18 years old, sustained an orthopaedic trauma, and were admitted within three months of sustaining an injury. We constructed a logistic regression model, adjusted for 12 factors (region, age, education, employment, urban living, health insurance, referral, method of transport, >1 fracture, open fracture, mechanism of injury, and fracture location) to determine if sex predicted hospital admission delay (admission time >24 hours). Written consent was obtained, and patients were de-identified.
Findings: 26910 orthopaedic trauma patients were eligible, including 16976 (63.1%) men and 9934 (36.9%) women. In regression model analysis, sex did not predict delay (p=0·122). Faster admission was associated with: open fractures (OR 0·458, [0·410, 0·511]; p<0·0001); employment (OR 0·837, [0·779, .899]; p<0·0001); transport relative to falling injuries (OR 0·632, [0·585, 0·684]; p<0·0001); and ambulance (OR 0·414, [0·383, 0·448]; p<0·0001) and other modes of transportation (OR 0·766, [0·697, 0·841]; p<0·0001) compared to private vehicles. Delay was predicted by older age (OR 1·007, [1·005, 1·009]; p<0·0001); inter-hospital referrals (OR 3·310, [3·085, 3·550]; p<0·0001); residing in India (OR 1·479, [1·344, 1·628]; p<0·0001), Other Asia (OR 1·911, [1·727, 2·115]; p<0.0001), or Latin America (OR: 1·988, [1·719, 2·298]; p<0·0001) relative to China; and hip (OR: 1·205, [1·096, 1·325]; p<0·0001), spine (OR 2·580 [2·303, 2·910]; p<0·0001) and pelvic fractures (OR 1·568, [1·301, 1·890]; p<0·0001) versus lower extremity fractures. Inter-hospital referrals (45.1%) were the most common reason for delay. Clinical Trials Identifier NCT02150980.
Interpretation: Within orthopaedic trauma patients across 17 LMICs, fracture severity charactersitcs, but not sex, predicted hospital admission delay. Inter-hospital referrals substantially increased odds of delay. limitations include the under-representation of rural hospitals.
Source of funding (if none, enter "None"): Canadian Institute of Health Research, Regional Medical Associates, AO International

FRI_159

Identification and Analysis of Leishmania Exosome-Associated Proteins and Patient Demographic Information in Natal, Brazil.

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Background: Visceral Leishmaniasis (VL), a fatal parasitic disease caused by the protozoan Leishmania infantum,is emerging in a peri-urban pattern throughout Brazil. L. infantum releases vesicles called exosomes into its environment. The Wilson lab previously characterized differences between exosomal proteins from different life stages of L. infantum, and showed infected macrophages release exosomes containing parasite proteins. We hypothesized that Leishmania parasites' exosomal protein content incorporates into the exosomes released from host cells found within the circulation of VL+ patients.
Methods: Subjects were identified by sample ID number and obtained from an ongoing study in Natal, Brazil. Subjects were categorized with: (1) VL+ patients with positive symptoms and serology, (2) Asymptomatic L. infantum infection (AL) detected through positive serology but no VL symptoms, (3) uninfected endemic controls. Exosome protein concentration was analyzed using BCA assay. Demographic characteristics were extracted from laboratory records. Statistical analysis were conducted using Graph Pad Prism 7.
Findings: The mean±SD of exosome protein concentrations were as follows: Human VL+ 39.5±19.29 (n=80); AL 23.55±11.68 (n=34); C 19.09±15.27 (n=28); Dog VL+ 72.03±25.85 (n=35); C 45.31±19.98 (n=35). Of VL+ patients, 42.8% of age 0-11 years, 37.21% of age 12-49 years, and 30.77% of age 50+ were male. In AL subjects, 0%, 44.19% and 23.08% of individuals in each age group, respectively, were male (n=70).
Interpretation: VL+ dogs have the highest exosome protein concentration, with infected patients having a higher protein concentration overall. Our demographic findings reinforce previous studies that report male dominated Leishmaniasis infection, with the most common symptoms fever, weight loss, fatigue, and hepatosplenomegaly. The major risk factors were dogs in the home/neighborhood and contact with VL+ patients. AL subjects frequently donated blood. Although not yet reported, these subjects frequently have parasitemia and could present a new risk of spreading L. infantum to immunocompromised recipients. Further analysis of exosome content is being conducted at the University of Iowa. Exosome proteins and microRNAs will be assessed for novel targets that suppress host immunity and contribute to the pathogenesis of VL. We hope to generate hypotheses that can be tested in Natal, Brazil.
Source of funding (if none, enter "None"): UI CCoM NIH Training Grant T32 AI007343

FRI_160

Surgical and anesthetic care trends at a rural tertiary facility in Niger-Delta region of Nigeria: a retrospective study

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Background: Surgical conditions epitomize global health disparities. Health systems in developing countries lack the capacity to make surgical care affordable and available to patients who merit it. There is a need to understand the prevalent surgical conditions and the availability of skills to address these conditions. This study aims to identify the surgical and anesthetic care trends in a rural tertiary facility in Southern Nigeria.

Methods: We conducted a retrospective analysis of all surgical patients that underwent surgical operations at the Niger-Delta University Teaching Hospital from February 1, 2013 through August 31, 2015. The demographic and clinical data were descriptively analyzed in order to identify trends in surgical care delivery. This study received ethical approval from teh Niger Delta University Teaching Hosptal, Bayelsa.

Findings: About 565 patients were captured over the 30-month period. They ranged from 2days to 84 years, with an average of 33.2 years (SD=20years). Sixty-one percent were males. The majority of cases (67%) were elective surgeries, while 33% were emergency procedures. The leading diagnoses were hernias (18%), acute appendicitis (17%), fractures (7%) and benign tumors (7%). General anesthesia (42%) was the most frequently used form of anesthesia, followed by subarachnoid block (36%) and local anesthesia (10%). Anesthetic complications were rare and included laryngospasms (0.36%) and death (0.18%).

Interpretation: Surgical conditions are prevalent, particularly in rural areas and there is a need for skilled providers to be available to perform certain Bellwether procedures. In addition to having the capacity to perform emergency surgical procedures, elective conditions like hernias and lumps are of significance in rural areas where patients seldom seek care until complications or limitation of function occurs. Early access to hernia surgery may enhance productivity and quality of life particularly among rural people. There is a need to further explore the determinants of access to surgical procedures in such settings.

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FRI_161

A Psychosocial Assessment of Patients Receiving Orthopaedic Treatment in a Tertiary Hospital in Northern Tanzania

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Background: Musculoskeletal injuries from road traffic accidents are a major source of disability among young people in Sub-Saharan Africa. Patients presenting with these injuries often receive prolonged conservative treatment courses due to a lack of access to surgical care. Long hospital stays can impact the psychosocial health of patients, adding to disability and precluding rehabilitation. This study characterizes the psychosocial health of patients undergoing lengthy inpatient orthopaedic treatment at a tertiary hospital in Northern Tanzania.

Methods: A cross-sectional study was conducted to characterize the psychosocial health of orthopaedic inpatients at a tertiary hospital in Moshi, Tanzania. Three validated surveys assessing coping strategies, functional social support, and symptoms of depression were orally administered to all orthopaedic patients with a length of stay (LOS) ≥ 6 days.

Findings: Coping: 97% (57) of patients utilized more mature than immature coping strategies. Patients with chest or spinal column injuries significantly used more immature coping strategies (p=0.044). Functional support: Patients with head injuries had significantly more social support (p=0.009). Lack of insurance, limited education, and rural origins were associated with less functional social support, although not statistically significant. Depression: 23.7% (14) of patients surveyed had symptoms consistent with mild depression, 33.9% (20) with moderate depression, and 3.4% (2) with moderately-severe depression. 39% (23) of patients displayed minimal to no depressive symptoms. LOS was the only significant predictor for symptom severity.

Interpretation: Patients dealt with disabilities and drawn-out treatments using mature coping strategies and some functional social support. However, sixty-one percent of orthopaedic inpatients exhibited some degree of depressive symptoms. These results indicate that psychosocial health among patients recovering from musculoskeletal injuries is sub-optimal. Access to timely surgical care would greatly decrease LOS, the most prominent predictor of symptom severity.

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FRI_162

Development of An HIV Pre-test Counseling Video to Expand Uptake of Pediatric HIV Testing in Outpatient Settings

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Background: While universal provider-initiated testing and counseling (PITC) for children in outpatient settings is recommended, implementation remains sub-optimal in resource-limited settings. Video-based pre-test information has been used in high resource settings to increase uptake of PITC in emergency rooms by reducing healthcare worker time-related barriers. This study aims to develop a pediatric HIV pretest informational video in resource-limited outpatient settings.

Methods: This is a qualitative study based in Kenya Nyakach Sub County Hospital. We conducted 6 focus group discussions (FGDs) including healthcare workers (HCW) (N=2), parents who had tested (N=2) or not tested (N=2) their children for HIV before. FGD guides elicited participant preferences and insights along several domains: visual format, characters and narrator, tone, informational content, viewing in a group vs viewing alone, and viewing in a public or private space.

Applying a targeted qualitative data analysis approach, two independent analysts pulled excerpts from transcripts and meeting summaries relevant to each topic domain and categorized responses into positive and negative features using a matrix format, then used a consensus approach to decide on the video format based on FGD results.

Findings: Both HCWs and parents preferred a video to picture book format and preferred real humans to animations. Participants preferred that an HCW (for perceived legitimacy) or parent narrate the video using a second person voice to add a personal feeling. They preferred to see HCW, parent, and child characters.

HCWs and parents wanted a wide variety of informational messages, including the benefits and importance of testing, the possible outcomes of the test and how to cope, modes of HIV prevention and transmission for children, and eligibility for HIV testing for well-seeming children. Participants found all proposed formats for watching the video to be acceptable, but with different cost, privacy, and coverage benefits.

Interpretation: There were strong preferences and consensus among HCWs and parents about the visual format and content of a pre-test informational video. All proposed formats for watching the video were considered acceptable with different strengths. The filmed video will go through the second round of FGDs for refining and then be tested against counselor led information.

Source of funding (if none, enter "None"): US National Institutes of Health (NIH) Thrasher Research Fund

FRI_163

Social Determinants and Dietary Exposure to Pesticides in Tannia in Pregnant Surinamese Women

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Background: Suriname's (8.8 kg/ha) neurotoxic pesticides use is among the highest in the Caribbean, but pesticide policies are lacking. Pesticide exposure has been associated with neurobehavioral disorders and pregnant women and children are especially vulnerable. The Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) is assessing pesticide exposure in 1000 mother/child dyads. CCREOH's pilot produce assessment found a few pesticide residues in Surinamese produce exceeding maximum residue limits of the European Union, including prohibited endosulfan and lindane in the leafy vegetable tannia, Xanthosoma brasiliense. This study represents a dietary assessment of CCREOH participants to determine produce types and amounts consumed as well as demographic factors that may influence these parameters.

Methods: An interviewer-assisted dietary survey of 696 participants was conducted. The NHANES based dietary tool was adapted for use in Suriname. Associations between demographic factors (age, marital status, ethnicity, region, education, income) and produce consumption were examined using bivariate and multivariate analyses. High tannia intake rate, defined as an intake rate ≥75th percentile (≥35.69 gram/day), was the main outcome variable.

Findings: Most women reported consumption of leafy vegetables (99.4%) and of the respondents, tannia was the mostly frequently consumed (89.3%). High tannia intake rates were more often seen among women living in the urban district Paramaribo (44.3% vs. 34.3% for non-urban districts), and among lower educated women (39.2% vs. 26.0% for higher educated). Lower educated was defined as an educational level equal as or lower than secondary school. Multivariate analyses suggested that living in Paramaribo and having a lower education may be associated with higher intake rates of tannia; ORs respectively 1.5 [95% CI 1.0-2.2] and 1.9 [95% CI 1.2-3.2].

Interpretation: The associations of living in a non-urban area and having a lower educational level with a high tannia intake rate were in line with studies that examined the acceptance of indigenous vegetables in other LMIC countries. The perception that certain vegetables are food for the poor has been raised as a possible explanation. An important next step is to further investigate the determinants of high tannia exposure.

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FRI_164

Trends, Attitudes, and Action Surrounding Childhood Bronchopneumonia in the Ashanti Region of Ghana

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Background: Sanitation and environmental air pollution are major public factors affecting child health in sub-Saharan Africa; due to this, childhood bronchopneumonia has become a leading cause of under-five mortality in Ghana. This study aimed to identify the challenges faced by patients and hospital staff in preventing, diagnosing, and treating bronchopneumonia, as well as determine temporal and regional trends in the transmission of this infectious disease primarily in the Ashanti region of Ghana.
Methods: Interviews assessing patient demographics, knowledge about pneumonia, and experiences concerning the Ghanaian health system were administered to hospital staff and caregivers of pediatric patients with and without pneumonia. 60 interview subjects (20 key informants, 20 caregivers of patients with pneumonia, 20 caregivers of patients without pneumonia) were identified by ward doctors and nurses; verbal consent was obtained before administering interviews. Hospitals records of clinically-suspected and confirmed cases of pediatric bronchopneumonia going back three years were collected to determine the path of infection.
Findings: Despite seeking hospital care, the majority of caregivers knew little about pneumonia; those with some understanding of the disease could relay preventative measures. However, most caregivers could describe the causes and/or symptoms of malaria, another leading cause of under-five mortality, which has received significant government funding for awareness campaigns throughout the country. Hospital staff predict that the burden of pneumonia will significantly increase in the future unless education surrounding pneumonia prevention and identification is improved. Further, while satisfaction with hospital care was high, both staff and caregivers often noted concerns about the high personal financial cost of healthcare.
Interpretation: Thus, this paper recommends that health care officials invest in both pneumonia-focused health education, with an emphasis on prevention, and in targeted infection preparation in hospitals and clinics to curb the spread of infection in the central regions of Ghana.
Source of funding (if none, enter "None"): Funding for this study came from the University of Chicago Center for Global Health.

FRI_165

Exposure to Household Air Pollution and Blood Pressure in Children Aged Less than Five Years: A Study from a Birth Cohort of a Randomized Control Ethanol Cookstove Intervention Trial in Nigeria

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Background: Air pollution is associated with increased risk of high blood pressure (BP) among children. Exposure to household air pollution (HAP) during pregnancy is a risk factor for the development of chronic non communicable diseases such as asthma, hypertension and cardiovascular diseases. No study has evaluated the impact of HAP on BP in children (age<5 years), longitudinally.
Methods: We investigated the impact of pre- and post-natal HAP exposure on BP in children (age<5 years) born to healthy pregnant non-smoking women who participated in a Randomized Control Trial (RCT) in Ibadan, Nigeria (June 2013-October 2015). BP and pulse rates were measured (Microlife AG, 9443 Widnau Digital BP monitor) in 103 children, whose mothers were randomized to different cooking fuels during pregnancy (ethanol (E)=61, firewood(F)=22, kerosene(K)=20) at age 1 and 4 years. Pre- and post-natal household $PM_{2.5}$ monitoring was done using MicroPEM^{TM} monitor.
Findings: Children showed significant difference in their weight (11.73±1.78 K; 10.26±1.27 F; 11.16±1.40 E kg; p=0.005) and height (0.87±0.07 K; 0.79±0.04 F; 0.85±0.05 E m; p=0.001). Systolic (p=0.74) and diastolic BP (p=0.97) were similar in the groups. Pulse rate was significantly higher in firewood group (123.09±12.90 beats per minute [bpm]) compared to kerosene (105.35±16.49 bpm) and ethanol groups (116.62±14.44 bpm; [p=0.001]). Difference between pre- and post-natal household $PM_{2.5}$ levels differed significantly (p=0.01) across the groups (Prenatal: 83.8±66.07 F; 55.59±19.94 K; 62.00±38.76 E; Postnatal: 63.36±81.41F; 40.40±20.71K; 47.30±54.88E ug/m^3). Among firewood group, Spearman's rank correlation analysis showed significant positive correlation between prenatal $PM_{2.5}$ and pulse (p=0.007) and between postnatal $PM_{2.5}$ level and systolic BP (p=0.006).
Interpretation: Pre- and post-natal HAP concentration and pulse rate in children were high in all groups but significantly lower in ethanol group. Higher PM2.5 levels were associated with higher BP and pulse rate in firewood group. Cleaner fuel ethanol may have potential of reducing BP risk in children (age<5 years). Accordingly, clean cooking fuels and improved cookstove technology may be promoted for more use as they may help reduce adverse health impacts associated with household air pollution in children.
Source of funding (if none, enter "None"): Global Alliance for Clean Cookstoves through United Nations Foundation. Susan and Richard Kiphart Family

FRI_166

Environmental Conditions, Perceptions, Concerns, and Practices of Ecuadorian Ethnic Minority Households

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Background: Many ethnic minority groups are disproportionately affected by environmental pollution and contamination. However, data are limited on this important public health and social issue for Latin American populations. Even less is known about the environment-related perceptions, concerns, and practices of indigenous and afro-descent minority groups in the region. This study compares the sociodemographic and environmental conditions of Ecuadorian ethnic minority groups with the mestizo majority as well as perceptions of neighborhood air, water, soil, trash, and noise pollution, resource conservation and recycling practices, environmental concerns and activities.
Methods: 2013-2014 Ecuadorian Living Conditions National Survey data were used to examine the association of ethnicity with sociodemographic attributes and environmental conditions, perceived neighborhood air, water, soil, trash, and noise pollution problems, water and electricity conservation and solid waste recycling practices, environmental concerns and activities. Poisson regression with robust variance and multinomial regression was used to analyze the data.
Findings: Indigenous (13.4%) and afro-descent (5.1%) adults comprised one-fifth of the sample (n=17,366). Indigenous respondents were 5.7 times more likely to report poverty-level incomes, rural residence in the Andean highlands or Amazon, and significantly reduced education and literacy than mestizos while those of afro-descent were more likely to live in urban areas of the Pacific coast, and have slightly less education and literacy. Indigenous respondents reported significantly poorer housing conditions and reduced access to electricity, piped-in water, sanitation, and solid waste disposal compared to mestizos while that of Afro-descendant households was intermediate to both. Both minority groups reported a greater level of concern about the environment and more collaborated with environmental defense, but not other environmental organizations. Reported perceptions about local neighborhood air, water, soil, trash and noise pollution problems and water and electricity conservation and solid waste recycling practices differed by ethnicity.
Interpretation: The findings indicate that although Ecuador has made significant social and economic progress in recent years, existing structural inequities continue to impact the living conditions and environmental exposures of minority groups, particularly indigenous people, and need to be better addressed. These findings can inform environmental health policy, planning, and education programs involving ethnic minorities in Ecuador.
Source of funding (if none, enter "None"): None

FRI_167

Measurement of Ultrafine Particles on Heavy Traffic Roads in Quito, Ecuador

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Background: Ultrafine particles (UFP) are less than 100nm in diameter. Due to their very small size, they are able to bypass the body's airway defense mechanisms and travel deep into the alveoli inducing respiratory distress and inflammation. They are also able to translocate into the blood stream, thereby commencing a series of systemic processes that could result in adverse cardiovascular health effects particularly in sensitive populations. Quito Metropolitan District (DMQ), the capital city of Ecuador is noted for heavy vehicular traffic, with a good number of commercial and personal vehicles powered by diesel (main UFP source).
Methods: Three low income zones in Quito were selected on the basis of fine PM levels (Stationary air monitors, DMQ); El Camal (high), Cotocollao (intermediate) and Alangasi (low). UFP measurement was conducted using a Nanoscan Scanning Mobility Particle Sizer (TSI Inc., model 3910) on 5 roads with the most traffic in these 3 areas. Measurement was done at 7 points in 50m increments away from the selected road in a gradient fashion, at 1 minute intervals for a total 9 minutes per point and the average PNC was determined.
Findings: In Cotocollao, PNC on 2 roads on average decreased from 169,503 particles/cm^3 at point 0 to 37,757 particles/cm^3 at point 300m. In El Camal, average PNC at point 0 was 76,977 particles/cm^3 which decreased to an average of 41,949 particles/cm^3 at point 300m on 2 roads. In Alangasi, the single busy road observed showed reductions from 30,314 (point 0m) to 9,215 particles/cm^3. PNC did not always reduce consistently with increasing distance away from the main source.
Interpretation: These results show that vehicle emissions from road traffic is a main source of ultrafine particle exposure. Traffic present on smaller roads around the busy road (main source) most probably accounted for the varying pattern of PNC with increasing distance away from the road, which suggests that levels of ultrafine particle exposure may not necessarily correlate with distance from heavy traffic roads in heavily populated areas such as Quito. A study of the health effects of UFP on human health is needed particularly in Cotocollao and El Camal.
Source of funding (if none, enter "None"): Indiana University Bloomington

FRI_168

Drought and The Mountain Kingdom: The Effects of El Niño on WASH and Health in Lesotho

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Background: Beginning in November 2015, the El Nino Southern Oscillation triggered a drought in the southern African region that lasted 4 months. The consequences were catastrophic, and this is event was estimated to be the worst such disaster to affect the region in the last 15 years. Some of the most devastating effects of the drought were felt by Lesotho, a small, predominantly agricultural nation enclaved by South Africa. The goal of this project was to explore the impact of the El Nino induced drought on water, sanitation, and hygiene (WASH) practices and the resultant disease burden in the country of Lesotho in order to support future drought policy, planning, and mitigation strategies.
Methods: Investigation centered on the lowland regions of Matelile and Sekameng, both within the Mafeteng District. Cross-sectional interviews were conducted with individual household representatives, school headmasters, and community key-informants. Data was also surveyed from regional clinics regarding the incidence of disease during the drought period. Analysis consisted of regression and percent change calculations using R algorithms.
Findings: The drought period saw an increase in incidence of diarrheal diseases (minimum percent change 14%) in conjunction with a lapse in hygiene practices, particularly hand washing in both the clinics and communities. Interestingly, rates of intestinal parasitic infections and conjunctivitis decreased in both regions during the drought (minimum percent change -53% and 43%, respectively). Finally, the scarcity of water caused food insecurity in many households and nutrition deficiency disorders increased in one of the two geographic regions, Sekameng.
Interpretation: The El Nino induced drought had a severe impact on the WASH behaviors, and thereby the health of the people of Lesotho. The prioritization of limited water resources towards non-WASH activities resulted in an increase in diarrheal diseases. Additionally, underlying health issues were exacerbated by the debilitating effects of the drought on agriculture, the main source of livelihood for a majority of the population. Strategies for mitigating the consequences of a future drought include low maintenance communal water filters, education on efficient irrigation practices, and off-season rainwater collection and storage as a preventive measure.
Source of funding (if none, enter "None"): Dornsife School of Public Health, Drexel University

FRI_169

Breast Cancer and the Environment: A Pilot Study of Nigerian Women

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Background: Breast cancer remains the leading cause of cancer in women throughout the world, and its incidence has been increasing markedly in Africa. Women of African ancestry not only develop breast cancer at earlier ages, but also have more aggressive breast cancers, with higher prevalence of TP53 mutations and triple negative breast cancer. While environment-induced TP53 mutagenesis has been well described in liver and lung cancers, few studies have explored its role in breast cancer. In addition, most prior studies were done in Caucasian populations and lacked generalizability to women of other ancestries. This pilot study aimed to investigate the association between environmental risk factors and somatic mutation status. A sub-aim was to evaluate the feasibility and effectiveness of a questionnaire-based method for gathering environmental exposure data.
Methods: 29 breast cancer cases and 33 controls from Ibadan, Nigeria who had participated in the Nigerian Breast Cancer Study were contacted to complete an environmental risks questionnaire that assessed household air pollution, diet, occupational hazards, and sleep habits. The questionnaire was translated into Yoruba and conducted with local interpreters, who obtained informed consent from all participants. Both the institutional review boards at the University of Chicago and the University of Ibadan approved the project.
Findings: The results showed that cases were more likely to report living close to a major road, waste incinerator or factory ($p=0.046$). There were also significant differences in occupation ($p=0.000$), with cases more likely to report professional occupations. They were also more likely to report occupational exposures to mineral dust, exhaust, chemicals, and endocrine disruptors, night shift work, and prefer well-done meat although these did not reach statistical significance.
Interpretation: This study suggests that examining exposures to environmental risk factors is a promising avenue for future breast cancer research. The study design limited the validity of comparing exposures between cases and controls but demonstrated that a questionnaire-based method is both feasible and effective at gathering environmental exposure data. Future studies would benefit from more formal interviewer training to improve the quality of the data collection, more culturally relevant questions to assess stressful life events, and a prospective design to reduce recall bias and loss to follow-up.
Source of funding (if none, enter "None"): Pritzker Summer Research Program

FRI_170

Exposure to household air pollutants (HAP) and endothelial dysfunction in rural Bangladesh: A cross-sectional study

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Background: More than one-third of the world's population uses biomass fuel for cooking. Use of biomass fuel has been linked to an array of adverse health hazards including cardiovascular mortality and morbidity. As part of Bangladesh GEO Health project, we are assessing whether HAP is associated with preclinical markers of cardiovascular disease (CVD) including dysfunction in microvascular circulation [by Reactive Hyperemia Index (RHI)].

Methods: We are measuring exposure to HAP [(PM2.5, Carbon monoxide (CO) and Black carbon (BC)] for 24 hours (48 hours for a subset of 200) among 600 healthy nonsmoker adults who use biomass fuel for cooking. Exposure to PM 2.5 and BC has been measured using personal monitor, RTI MicroPEM^{TM} that use light scattering methods and also gravimetrically with an internal filter that has been both pre and post-weighed to have the deposited pollutants concentration. Laskar CO logger is being used to measure CO. Endothelial function has been measured by forearm blood flow dilatation response to brachial artery occlusion using Reactive Hyperemia-peripheral arterial tonometry (RH-PAT), a finger plethysmographic device (EndoPAT 2000, ITAMAR) which yield RHI index. A low RHI score (<1.67) indicates impaired endothelial function.

Findings: We have analyzed data from 200 participants recruited to date. Average 48 hours personal exposure to PM 2.5, and BC, is 141 μg/m^3(SD 53.8), 6.31 μg/m^3 (SD 2.07) respectively and for CO IQR is 1.03(.56-1.59) ppm (N=186). Mean RHI is 1.84 (SD 0.54) in our current data. RHI is significantly associated with BC (OR .78, P Value .006, 95% CI: .66, .83) after adjusting age, BMI, cooking time, education and household income. No association is found with PM and CO in the same adjusted model.

Interpretation: As per the preliminary analysis, BC has significant effect on CVD risk but the direction of association is inverse in the adjusted model. Mean PM 2.5 is relatively much higher than normal allowable limit. We didn't consider few other potential variables (Physical activity level, lipid profile, dietary pattern), which is the limitation of this study.

Source of funding (if none, enter "None"): Fogarty International Center, NIH

FRI_171

Adapting a rapid lateral flow Burkholderia pseudomallei immunoassay in Sarawak, Malaysia: A Validation Study

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Background: Melioidosis is a neglected tropical disease that is highly prevalent in Southeast Asia. Misdiagnoses are common as the presenting symptoms are similar to other diseases including upper respiratory infections. When not treated with antibiotics, the disease can lead to morbidity or death. Current diagnostics in low- and middle-income countries (LMICs) are often not sensitive nor rapid. Rapid diagnostic tests (RDTs) are a potential solution. Few studies have compared the accuracy of RDTs against blood culture or molecular assays. The goal of this study is to determine the accuracy of an RDT in detecting Burkholderia pseudomallei infections among patients in Kapit, Sarawak, Malaysia. An accurate RDT would improve infection management.

Methods: We used an informed consent process as approved by two institutional review boards. In this cross-sectional study, we engaged patients with melioidosis-like symptoms. We studied their routinely collected clinical specimens with an RDT (Active Melioidosis Detect™) and a molecular assay against B. pseudomallei. The study was powered to detect infections with a prevalence of 80%, power of 80% and the 95% CI at 71 to 87%.

Findings: During the study, three participants passed away due to causes unrelated to the study intervention. 25 patients aged 6 months - 79 years from Kapit Hospital were enrolled in the study from June 12 to July 31, 2018. Of the 25 sera, 24 urine, and 9 bodily fluid samples (total n= 58) tested for the RDTs, nine samples were tested positive, which were compared to the qPCR. With six molecular positive results, the preliminary data suggest a sensitivity of 17.0% (95% CI, 3.0% to 56.4%) and a specificity of 83.0% (95% CI, 70.3% to 90.6%).

Interpretation: Unfortunately, the RDTs showed a low sensitivity in this pilot study. The data demonstrate that the RDTs may not be accurate to detect melioidosis infections, and that the RDTs should not be incorporated to the routine clinical testing at this time. Further studies should investigate the reason for this observation to identify the optimal clinical specimens to accurately detect B. pseudomallei.

Source of funding (if none, enter "None"): This research was supported by the Duke Global Health Institute.

FRI_172

Annual Summer Institute: as an approach for scientific capacity building and strengthening networking, Ohio State-Global One Health (OSU-GOH) Model

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Background: With an overarching objective of Technology/Knowledge transfer and strengthening networking while building capability of health system among teaching and research institutions in Eastern Africa Region and The Ohio State University, the summer institute was launched in 2012. During the last 7 years, there has been major successes with greater impact and self-sustaining achievements. There has been growth in the number of modules from 5 to 25, involved professors from 5 to 40, involving institutions from the US from 1 to 5, the number of African Countries involved from 1 to 7 and the number of trainees per year from <200 to >500. The institute involves trainings with hands on and interactive lectures, workshops and projects. While the courses had a major focus on one health related modules, it also rages from leadership to communication skills and allied courses.
Methods: The Summer institute starts with an engagement of institutions from Eastern Africa in identifying needs and cost sharing scheme at least 6 months before summer starts. Following that successful, motivated and reputable Professors will be contacted from the US side. Logistic arrangements, and engaging local subject matter expert and facilitators, actual conduct of the institute and monitoring and evaluation will be carried out.
Findings: Within the last 7 years > 1400 trainees benefited from the institute, 15 memoranda of understanding between Ohio State University and different institutions were signed, >15 grants secured as a result of the networking. Moreover, the institute has led to establishment of an Eastern Africa Global One Health initiative LLC, an affiliate of OSU and with the regional office being in Addis Ababa, Ethiopia
Interpretation: Challenges:
At the initial stage identifying dedicated focal person from respective institutions, having institutional backing, security related issues and active engagement on some of some course facilitators was a challenge.

Way forward:
Through time the institute is growing bigger and wider with a clear, bold and achievable mission. Hence sustaining it with continued success needs further strengthening partnership, securing major grants and recognition of champions.
Source of funding (if none, enter "None"): None

FRI_173
Household Food Security in Haiti

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Background: Levels of Haitians food insecurity during the lean season and post-harvest are poorly documented despite their link to health and their role towards the purpose of zero hunger.
This study aims to measure the evolution of households food insecurity between the lean season and the harvest season. Another objective of the study is to determine the factors contributing to food security.
Methods: Two data collections were carried out in 2017: the first in the spring (lean season) and the second in the summer (harvest season). Data were collected using quantitative interviews with mothers of children under 5 years (n=555 households during spring and 550 during summer). The tool used to assess food insecurity was the Household Hunger Scale. The project had been approved by the National Bioethics Committee and the Université de Montréal Health Research Ethics Board. Participants gave their verbal consent.
Findings: The results indicate that hunger during the spring was high, as 47.2% were moderately food insecure and 37.7% were severely food insecure. In the summer, 52.9% were moderately food insecure and 31.1% were severely food insecure. Among Haitian households, the level of food security does not seem to differ between spring and summer. The difference between both seasons was not statistically significant ($p = 0.0756$).
Further analyses have identified associations between sociodemographic variables with levels of hunger. During the spring, the prevalence of severe hunger was significantly higher among households where the mother never attended school (OR 0.44, CI: 0.25-0.78), and was more prevalent in GAE (OR 3.05, IC: 2.00-4.66) and GAO (OR 7.96, IC: 4.76-13.33) than in southern Haiti. During the summer, severe household hunger was also associated with the study area. In addition, livestock ownership was found to be a statistically significant determinant. Indeed, the prevalence of severe hunger remained higher in GAE (OR 4.73, CI: 2.99-7.48) and in GAO (OR 6.84, CI: 4.29-10.90) than in the South of Haiti and was lower when the household owned livestock (OR 0.52, CI: 0.35-0.77).
Interpretation: These results deepen our understanding of the factors associated with food security.
Source of funding (if none, enter "None"): none

FRI_174

Implementing prospective cohort studies in rural Africa: Barriers to return after discharge among women undergoing cesarean section in Rwanda

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Background: Cesarean section if the leading surgical procedure performed globally. Due to lack of standardized post discharge follow up for c-section patients, most global surgery research is based on clinical outcomes while hospitalized and fails to study post-discharge outcomes. Little is known about determinants of return to care after discharge of surgical patients and this study intends to fill this knowledge gap. This study aimed to determine the barriers of return to care among women who underwent c-section at a rural hospital after discharge.
Methods: We prospectively followed up women aged 18 and above who underwent c-section over a 7-month study period (April-October 2017) at Kirehe District Hospital (KDH), in rural Rwanda. We excluded patients from Mahama Refugee Camp, from outside KDH catchment area, and who were still hospitalized at the time of study follow-up. At discharge, consenting women were given appointment to return to care on postoperative day 10 (POD 10) (±3days) and provided a voucher to cover transport and compensation for participation to be redeemed on their return. We used multivariable logistic regression, built using stepwise backward selection up to α=0.05 significance level, to identify factors associated with failure to return to care.
Findings: Of 746 women who underwent c-section during the study period, 597 (80.0%) were eligible for follow-up. The majority were aged between 22-30 years (56.6%, n=338), with primary education (69.9%, n=417), were farmers (86.8%, n=518), earned less than 37.5 USD/month (92.8%, n=554), and used public transport to reach the hospital (75.8%, n=300). 10.6% (n=63) did not return for follow up clinic. Barriers to return to care were lack of a reminder call (OR=14.59, 95%CI:7.3, 29.3; p<0.001) and post-operative length of stay > 3days (OR=2.21, 95%CI: 1.20,4.08; p=0.011). Female data collector was protective from failure to return to care as compared to other male data collectors (p=0.043).
Interpretation: Although loss to follow up rate in our setting was low, reminding patients of their appointment was important to facilitate return for study follow-up. Further, the fact that female data collector, counseling patients before discharge, was associated with return needs further exploration to standardize procedures across study staff.
Source of funding (if none, enter "None"): NIH grant No R21EB022368

FRI_175

Finding the factors influencing teenage pregnancy among indigenous girls in Paraguay

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Background: Adolescent pregnancy is a major issue throughout the world. Risk factors for adolescent pregnancy typically include low income, poor education, family members that experienced adolescent pregnancy, first sexual contact at a young age, multiple sexual partners, parental absence, and lack of reproductive and contraceptive education. Little evidence is available identifying specific contributors to adolescent pregnancy in Paraguay, a primarily rural country in South America. Lack of information regarding the actual incidence of adolescent pregnancy and women's health resources available to young people prevents the development of effective interventions and aid.
Adolescents living in poverty are much more liekly to experience unplanned pregnancy. In Paraguay, more than a third of the population lives below the poverty line, creating a large group of adolescents at risk simply because of their status. The aim of this study is to identify additional factors contribuitng to adolescent pregnancy in an indigenous community in rural Paraguay.
Methods: A qualitative descriptive study has been employed to identify risk factors contributing to adolescent pregnancy. The sample for the study is a convenience sample of community leaders and educators who work with youth, who are being interviewed using a semi-structured interview guide. Interviews are being recorded and transcribed prior to data analysis. Members of the research team will analyze data seperately to identify preliminary themes. Analysis will continue as a team to finalize themes arising from the narrative data.
Findings: Initial findings indicate that community leaders feel adolescent pregnnacy results from a lack of structured activities for youth, including school desertion and no available work, with pregnancy resulting. Other findings include lack of long-term goals outside of parenthood for indigenous youth. This includes a cultural acceptance of pregnancy as an adolescent norm, with an example given that 70% of indigenous adolescents become pregnant. Lack of available reproductive education is also thought to contribute. These initial findings will be corroborated through additional interviews and data analysis. The results of this study will identify possible interventions intended to reduce adolescent pregnancy in this community.
Interpretation: The results and interpretation of this data will be presented at the conference.
Source of funding (if none, enter "None"): Internal funding through BYU College of Nursing.

FRI_176

Attitudes of Peruvian medical students towards people with disabilities

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Background: Barriers to access healthcare include physical obstacles (e.g. inaccessible facilities or lack of public transportation) as well as attitudinal, social, and knowledge barriers of healthcare providers. The goal of this study was to describe attitudes toward people with disabilities by medical students at a School of Medicine of a university in Peru.
Methods: We conducted a cross sectional study using an instrument developed and validated by Symons et al (2014) specifically for medical students. The instrument approaches five factors: Conditional comfort, Positive impression of self-concepts of people with disabilities, Uneasy with interaction, Comfortable with interaction/ integration in general community and Comfort with interaction. Second to seventh year students who provided written consent forms, anonymously self-administered the questionnaire electronically at the university's main campus.
Findings: Of the 261 participants enrolled, 18 (7%) reported having a disability. Attitudes towards people with disabilities were similar throughout all 2nd to 7th years. Students replied positively to questions about interactions with people with intellectual disabilities [180(86.1%)] and to people with developmental disabilities [163(78.0%)]. While 108(51.7%) students responded positively when asked about "only [feeling] comfortable around people with intellectual disabilities if…well behaved": 61(56.5%) female students responded positively to this, compared to 47(47.0%) male students ($p<0.171$). Similarly, 93(86.1%) female students responded positively compared to 69(69.0%) male students to feeling comfortable interacting with a person with an intellectual disability who might have a bizarre behavior ($p<0.003$). Students who reported having a disability had less positive attitudes: 119(61.3%) students without disabilities responded positively to "people with disabilities being as happy as people without disabilities" compared to 6(40%) students with a disability ($p<0.104$) and 88(45.4%) students without disabilities responded positively to "people with disabilities are not ashamed of their disability" compared to 4(26.7%) students with a disability ($p<0.16$).
Interpretation: We found similar attitudes throughout the medical school years, and different attitudes between male and female as well as from students with disabilities. Findings highlight the need of a curriculum for medical students to improve attitudes towards people with disabilities.
Source of funding (if none, enter "None"): The National Institutes of Health Minority in Health Research Training Program at the University of Alabama at Birmingham

FRI_177

Implementation of a Subsidized Menstrual Hygiene Product Distribution System in Rural Northern India

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Background: The Northwestern chapter of Project RISHI (Rural India Social and Health Improvement) is partnered with Charnia, India, a rural village that houses two distinct populations: migrant laborers that work and live in brick factories and permanent residents. Students from Project RISHI conducted research on menstrual hygiene attitudes and practices in Charnia as well as the perceived need for more hygienic menstrual products and more open discourse on menstrual health. Students also sought to investigate the differences in menstrual hygiene attitudes and practices between Charnia's two populations.
Methods: Data was collected through structured individual interviews, focus group discussions, and comprehensive interviews with government-sponsored local health workers.
Findings: Women from both populations expressed that existing discourse on menstruation is minimal and inadequate. Project RISHI's research shows that approximately 60% of permanent village residents use old cloth as a menstrual product, while 40% use sanitary napkins. Sanitary napkins are more commonly used by younger women. In migrant brick laborer communities, however, nearly all women use cloth. Analysis of Project RISHI's data shows that most women from either population would buy better-quality menstrual hygiene products if they were made affordable. Interestingly, permanent residents of the village expressed openness to use of reusable, washable menstrual products, while women from the migrant laborer community were opposed to the idea of reusing a menstrual product. It was found that most women dispose of products by burying them in the ground, which can lead to environmental problems if non-biodegradable products are used.
Interpretation: Project RISHI's proposed solution involves giving women from both populations the opportunity to test a variety of menstrual products, including biodegradable pads, biodegradable tampons, and (for permanent residents) reusable, washable pads. If either community responds positively to a product, Project RISHI will seek to implement a subsidized distribution system through its existing Charnia clinic. Product distribution will be coupled with regular educational initiatives and focus group discussions administered by local health workers. As such, we will work to foster an environment in which women feel knowledgeable, empowered and comfortable accepting help. We hope to combat both the cultural stigma surrounding menstrual hygiene and the environmental consequences of product disposal.
Source of funding (if none, enter "None"): Office of the President - Northwestern University

FRI_178

Prevalence and risk factors for sexual assault among class 6 students in unplanned settlements of Nairobi, Kenya: Baseline analysis from the IMPower & Sources of Strength cluster randomized controlled trial

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Background: In the informal settlements of Nairobi, Kenya, incidence of sexual assault among adolescents is very high. This study aimed to describe incidence of sexual assault, as well as variables associated with experiencing assault, in young (10-14 year old) adolescents in these settings.
Methods: Data for this cluster randomized trial were collected in 94 schools in six informal settlements from January to October 2016. Class 6 students were randomly sampled and consented before completing structured surveys with a gender-matched, trained interviewer. Analysis was done using Fishers exact tests and multivariable logistic regression.
Findings: 4,119 girls completed baseline surveys. In the twelve months prior to the survey, 7.2% of participants reported being raped, 10.4% of whom were raped more than five times. Boyfriends were the most frequent perpetrator, at 65.7%. In this population, 39.2% of the 21.3% of adolescents who reported having boyfriends also reported sexual, physical, or emotional intimate partner violence (IPV). In multivariable analysis, factors associated with rape included previous experiences of physical (p=0·005) or emotional (p=0·005) IPV, and witnessing violence at home (p=0·001). Having higher emotional self-efficacy, however, was associated with being less likely to report experiencing rape (p<0·001).
Interpretation: Self-reported sexual assault rates in these communities are high among this population of young adolescents. Identifying risk factors associated with sexual assault can help target prevention, as well as care and treatment, services. Interventions for sexual assault prevention in these communities should address assaults by known perpetrators and possibly target young people who have experienced violence. They also should consider enhancing emotional self-efficacy to improve outcomes. Some limitations of this study include the cross-sectional nature of the data, only allowing association to be established, as well as the role of social desirability bias. This data serves as a baseline for a large cluster randomized trial that will focus on the effects of an empowerment self-defense approach in this age group.
Source of funding (if none, enter "None"): Funding was provided by the South African Medical Research Council through the What Works to Prevent Violence Innovation Grant (#52069).

FRI_179

Assessing child morbidity and mortality in a conflict-affected setting: findings from South Kivu, Democratic Republic of Congo (DRC)

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Background: The Democratic Republic of the Congo, a conflict affected nation, has an under-five mortality rate of 104 deaths per 1,000 live births, ranked 8th highest in the world. Particularly, South Kivu has the highest child mortality rate in the country with 139 deaths per 1000 live births. Asili, a novel social enterprise platform, aims to address child mortality in South Kivu through clean water kiosks and small format health clinics. Our research evaluates the impact of Asili on child health metrics.
Methods: Data were collected in two South Kivu sites, Mudaka and Panzi. After informed consent, 843 households with 1,328 children <5 were enrolled at baseline in Mudaka, and 890 households and 1,459 children <5 were enrolled in Panzi at baseline. Follow-up data collection occurred 18 months after Asili began in Mudaka and after five months in Panzi. The primary outcome was incidence of three common diseases, diarrhea, malaria, and pneumonia, in children <5 compared at baseline and follow-up by χ^2-test. All diseases were assessed by self-report of the primary caregiver of the child, and malaria and pneumonia were measured by proxy symptom reporting.
Findings: In Mudaka, 396 households and 325 children were present at follow up, and in Panzi, 437 households and 655 children were present at follow up. Both sites reported substantial incidence of disease. In Mudaka, disease incidences for children at baseline vs endline were: 24.7% vs 20.6% for diarrhea (p=0.12), 29.6% vs 27.7% for cough (p=0.50), and 26.9% vs 31.1% for fever (p=0.13). In Panzi, disease incidences at baseline vs endline were: 18.3% vs 22.4% for diarrhea (p=0.03), 27.1% vs 28.7% for cough (p=0.46), 19.7% vs 20.2% for fever (p=0.80).
Interpretation: Children in Mudaka showed a slight decrease in diarrhea and cough at endline, and a slight increase in fever. In Panzi, incidence of diarrhea and cough were slightly higher at endline, while fever was comparable to baseline. Increased access to Asili water in Mudaka may have decreased rates of diarrhea. The increased incidence of some diseases could be due to seasonality, as endline data collection occurred during the rainy season whereas baseline was at drier times of the year.
Source of funding (if none, enter "None"): American Refugee Committee funded by USAID

FRI_180

Combined Impact of Lifestyle-related Factors on Body Mass Index Among Children in 63 Countries: Results from the Global School-based Student Health Survey

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Background: Although lifestyle-related factors such as diet and physical activity have been linked to the risk of overweight and obesity, little is known about the combined impact, especially among children in the worldwide scale. The objective of this study was to quantify the overall impact of lifestyle-related factors on body mass index (BMI) among children globally.
Methods: The analysis included 155711 school children aged 13-17 years from 63 countries that participated in the Global School-based Student Health Survey and conducted data collection between 2003 and 2013. A healthy lifestyle score was created based on six lifestyle-related factors shown to be independently associated with BMI (carbonated soft drink, fast food intake, physical education class attendance, active transportation, sedentary behavior and smoking). The score ranged from zero (least healthy) to six (most healthy). BMI-for-age z-score was calculated to identify overweight (≥85th and <95th percentile) and obesity (≥95th percentile).
Findings: Adjusted odds ratios for overweight and obesity decreased progressively with an increasing number of healthy lifestyle factors. Compared to children with a score of zero, odds ratios (95% confidence intervals) for children with a score of 1, 2, 3, 4, 5 and 6 were 0.73 (0.72, 0.74), 0.76 (0.75, 0.77), 0.69 (0.67, 0.70), 0.63 (0.62, 0.64), 0.61 (0.60, 0.62), 0.42 (0.42, 0.44) for overweight and 0.74 (0.73, 0.75), 0.63 (0.62, 0.64), 0.56 (0.55, 0.57), 0.53 (0.52, 0.54), 0.43 (0.42, 0.44), 0.32 (0.31, 0.33) for obesity, respectively. When analyzed separately, the independent effects of individual lifestyle factor on overweight and obesity were all significant, though the magnitude varied.
Interpretation: To our acknowledge, this is the first study to quantify the combined effect of lifestyle-related factors on BMI among children in the worldwide scale. A healthier lifestyle, which means lower intake of carbonated soft drink and fast food, higher attendance of physical education class, more active transportation and less smoking, was associated with lower risk of overweight and obesity, supporting the importance of overall lifestyle modification in weight regulation.
Source of funding (if none, enter "None"): None

FRI_181

Spatial and Sociodemographic Correlates of Gambling Participation and Disorder Among Filipino Migrant Workers in Macao (SAR), People's Republic of China

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Background: Correlates and risk factors for gambling disorder among vulnerable or transient populations such as transnational migrant workers are largely unknown. The current study examined the prevalence and sociodemographic and spatial correlates of gambling disorder among Filipino domestic workers in Macao (SAR), People's Republic of China.
Methods: Design: A survey-based, respondent-driven sampling study administered from November 2016 to August 2017.
Setting: Macao (SAR), which encompassed 38 casinos within its 30.4 km^2 area at the time of this study.
Participants: A representative sample of N=1194 Filipino domestic workers in Macao. Eligibility was based on the following criteria: 1) female, 2) aged 18 or older, 3) current employment as a domestic worker in Macao, and 4) ability to provide informed consent.
Measurements: The primary outcome was symptomatic gambling disorder based on the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition.
Analysis: A zero-inflated Poisson model was used to assess correlates of gambling participation (i.e., ever gambling) and gambling disorder.
Ethics: Ethical approval was obtained by the University of Macao Ethics Review Committee.
Findings: Prevalence of gambling disorder was 5.1%. Multivariable regression analyses indicated that the likelihood of gambling participation was associated with indebtedness (RR=1.56, 95% CI=1.08-2.25, p=0.017) and worse self-reported health (RR=1.31, 95% CI=1.04-1.65, p=0.02). Increased symptoms of gambling disorder were independently associated with lower perceived social support (RR=0.92, 95% CI=0.87-0.97, p=0.004), increased dependents upon monthly remittances (RR=1.10, 95% CI=1.05-1.15, p=0.000), increased depression severity (RR=1.17, 95% CI=1.08-1.26, p=0.000), and proximity to the nearest Mocha Club gaming venues (RR=1.05, 95% CI=1.02-1.08, p=0.001). The association between proximity to casinos and increased symptoms of gambling disorder was significant only for domestic workers living apart from their employers (RR=1.08, 95% CI=1.02-1.14, p=0.008).
Interpretation: Increased spatial proximity to gambling venues and financial and psychosocial burdens were associated with gambling disorder among domestic workers in Macao. Findings will inform targeted domestic worker outreach and enable community programming and policy organizations to engage those particularly vulnerable to developing gambling disorder and associated mental health disorders. To our knowledge, this is the first known study of risk factors for gambling participation and disorder in an East Asian setting, particularly among vulnerable populations such as transnational migrant workers.
Source of funding (if none, enter "None"): MYRG-2015-111 Macau Government

FRI_183

Maternal Knowledge of Newborn Care and Maternity Waiting Home Use in Lundazi, Zambia

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Background: Decreasing newborn morbidity and mortality remains a global health challenge. Maternity waiting homes (MWHs) may offer an intervention to improve newborn outcomes in Zambia. The specific aim of the study was to assess maternal knowledge of newborn care for MWH and non-MWH users referred to a district hospital for delivery. The research hypothesis was: Maternal knowledge of newborn care will be greater for MWH users referred to a district hospital for delivery than non-MWH users.
Methods: Quasi-experimental, cohort design with simple convenience sampling techniques employed to determine whether MWH use (intervention group, five communities) had an impact on maternal knowledge of newborn care compared to non- MWH use (comparison group, five communities) in rural Zambia. Pregnant or postpartum women age 15 years and above with newborns at Lundazi District Hospital were included (n=250). A questionnaire was developed to assess maternal knowledge of newborn care. For comparisons of MWH use, performed linear and logistic mixed effects models along with t-tests, chi-squared tests, and Fisher's exact tests.
Findings: Regarding age, significant relationship between age and answering "Don't Know" about when to take your baby for first checkup ($p < 0.001$, Fisher's), exclusive breastfeeding ($p = 0.01$, Fisher's), and the following questions: "What health problems would make you take your newborn baby to the clinic?" (p-value = 0.01); "How will you care for the baby's umbilical cord?" (p-value < 0.001); and "How will you care for your baby's skin when you get home?" (p-value =0.03). Regarding diarrhea prevention, MWH users were less likely to answer "Don't Know" about good hygiene/sanitation ($p = 0.06$, Chi-squared). Concerning ANC visits, women with at least four were less likely to answer "Don't Know" when asked how they will care for the umbilical cord as well as what health problems in their newborns would make them want to take their baby to the clinic (5% significance, $p = 0.02$).
Interpretation: Younger age and attendance of fewer ANC visits show significant relationships with lower maternal knowledge of newborn care. Limitations include MWHs opened at different times and lack of randomization assigning communities to receive MWH. Health education should be targeted at younger mothers and those attending less than four ANC visits.
Source of funding (if none, enter "None"): None

FRI_184

Building the Nakuru region SIM-on-Wheels initiative: Saving lives with simulation based training

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Background: Maternal and neonatal mortality, key indicators of health, remain high in Kenya. Simulation Based Training (SBT) for emergency obstetrics emphasizing clinical skills and teamwork have demonstrated improved provider competence, confidence and patient outcomes in both resource savvy and resource poor environments. In 2016-17 we launched an effort to create a regional comprehensive simulation and education center in Nakuru to allow development and sustainability of clinical skills. Local nurses and doctors were trained in Israel, the US and locally, to become experts and trainers. Stakeholders were mobilized and the Sim on Wheels initiative to disseminate SBT was created. The collaboration between Egerton University Schools of Medicine and Nursing, Nakuru County Hospital, Friends of Naivasha NGO - Kenya and Omaha and the Technion School of Medicine partnership will be discussed.
Methods: Fifty health professionals from ten facilities (county, sub-county hospitals, health centers, dispensaries) participated in SBT focusing on emergency maternal and neonatal-pediatric care. Training took place in-situ to allow convenient and realistic learning settings. Trainees were prepared to further train their colleagues using the "Train The Trainer" (TTT) approach. Debriefing, teamwork and communication skills were included. Baseline and follow-up data for clinical indicators in selected sites was collected before the training and six-month after, in regards to perceived knowledge and skills. Quantitative and qualitative analysis provided insight into the effectiveness of SBT for further improvements.
Findings: Health professionals were enthusiastic to participate in the training, reporting high yield especially from experietial learning. Challenges included the time taken from busy clinical and educational responsibilities, funding for training activities (overcome for this project thanks to a grant from the Laerdal Foundation) and the assembly, maintenance and logistics regarding trainers for the Sim-on-Wheels. A solid business plan is needed (fee-for service) to assure long-term success of this initiative.
Interpretation: In-situ health-related SBT can be effective for keeping knowledge and skills of professionals in various levels working in rural and central facilities in Kenya. If adopted by government, civic and educational organizations as licensure requirements, SBT can assist in promoting evidence-based, high-level and safe quality care across the region.
Source of funding (if none, enter "None"): Laerdal

FRI_185

Modification of an Evidence-based Family Planning Intervention for a New Target Population: Postpartum Women and Their Male Partners in Nakaseke District, Uganda

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Background: Rapid repeat pregnancies (RRP) are associated with increased maternal and infant mortality. Although 95% of Ugandan women wish to avoid RRP, only 25% use family planning (FP) postpartum (USAID, 2015). An evidence-based intervention (EBI) exists to increase the use of effective FP methods in a high-risk population in the US using incentives (Heil 2016). Our aim is to modify this EBI for postpartum women in rural Uganda.

Methods: The ADAPT-ITT model provides a framework to adapt an intervention within a new cultural context while maintaining fidelity of the EBI (Wingood 2008). In the Assessment phase of modification, a quantitative survey targeting postpartum women (n=105) and men (n=97) was administered in the native language by trained research nurses. Participants' socio-demographics, indicators of unmet need, knowledge/use of FP services, and attitudes towards research and incentives were queried, using descriptive statistics for analysis. Participants receive a refund of UGX 10,000.

Findings: 105 women and 97 men participated. All reported some knowledge of FP. Most women (82.8%) obtained FP information from health workers while only 69% of men received their information from health workers. 91.4% of women and 80.2% of men reported ever using FP with 92% and 77% stating they plan to use FP in the next 24 months, respectively. 43.2% of women have been pregnant when they did not want to be or sooner than they wanted, compared to 23.9% of men. 94.3% of women and 89.5% of men disagreed or strongly disagreed that, after having a baby, they want another baby as soon as possible. 84.7% of women and 84.4% of men said they would be interested in participating in a research study with a majority agreeing that paying people to attend educational sessions on FP will increase FP use and do more good than harm.

Interpretation: Postpartum women and men in rural Uganda have baseline knowledge of FP and have a desire to use FP. Despite this, participants still reported a very high rate of unintended pregnancy. Although this population has little exposure to research, they are willing to participate and more often than not agree that incentive-based education is beneficial.

Source of funding (if none, enter "None"): UVM Global Health Scholars Program, Department of OBGYN, Department of Psychiatry

FRI_186

Use of a Simple Survey to Elicit Predictors of Maternal Complications in Rural Uganda

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Background: Maternal morbidity and mortality are major health problems in Uganda, and the high prevalence of malaria, TB and HIV/AIDS substantially compound these problems. The goal of this study was to examine the association between sociodemographic characteristics and prenatal care with maternal complications in the city of Mpigi in rural Uganda.
Methods: Our study took place at the Mpigi Health Center, a community based hospital serving a large catchment area and functions as a referral center for smaller health centers. We developed and administered a survey to 147 women who delivered at that Center over a one month period from June 12 to July 12 2017. The survey was administered in-person via interpreters and included 33 questions (maternal sociodemographic factors, prenatal conditions and care, mode of delivery and maternal complications). The outcome variable, maternal complications, was a composite variable including: miscarriage, fetal death, pre-eclampsia, prolonged labor, uterine rupture, post-partum hemorrhage and puerperal sepsis. Descriptive statistics were used to summarize the data, and multivariable logistic regression was used to examine the independent associations between the above-mentioned factors and maternal complications).
Findings: The average age of participants was 25 years, and ~11% of women reported having malaria and 5% of women reported having HIV/AIDS during pregnancy. The only factor that was significantly related to maternal complications in our study was the prenatal intake of fansidar (anti-malarial drug), iron and folic acid (prenatal trio). Specifically, pregnant women who did not take the prenatal trio were 5.5 times more likely to have maternal complications than those who took it (95% CI: 2.26, 13.25).
Interpretation: In this study, the intake of anti-malarial drugs, iron and folic acid significantly reduced the risk of maternal complications. In fact, the intake of this prenatal trio could be an indicator of compliance with prenatal care in general. Therefore, increasing awareness about the importance of prenatal care, including treating malaria and the intake of supplements, in addition to ensuring the availability of these compounds is critical to reduce the burden of maternal complications in Uganda and other malaria high-burden countries.
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FRI_187

Disparities in Resilience Against Natural Disasters in St. Kitts and Nevis

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Background: St. Kitts and Nevis is a small two-island nation in the Eastern Caribbean which is at high risk for natural disasters. In order to prevent and mitigate losses resulting from these events, it is important to understand the factors that support resilience within the islands. The purpose of this study was to determine if there were disparities in resilience amongst different demographic groups. This analysis will help future disaster risk reduction interventions focus on building resilience within these targeted populations.
Methods: A community disaster needs assessment for St. Kitts and Nevis was conducted using a survey assessing demographic factors, personal preparedness, household preparedness, and community resilience. 343 residents evenly distributed through each parish/district of St. Kitts and Nevis over the age of 18 were surveyed. Nine questions from the survey were identified as assessing resilience. If a respondent answered, “Yes” to 5 or more of the 9 questions, they were categorized as “resilient.” The data was then stratified based on key demographic information and analyzed on SAS University Edition.
Findings: 81% of the population of St. Kitts and Nevis was categorized as resilient based on their survey responses. Males and females in St. Kitts and Nevis are equally resilient against disasters. As education level increases, the percentage of people categorized as resilient also increases. Similarly, as monthly income increases, the percentage of resilience increases. One interesting finding is that vulnerable populations (defined in the survey as family members <5 or >75 years of age) and non-vulnerable populations within St. Kitts and Nevis have an equal distribution of resilience.
Interpretation: Identifying factors that increase resilience among community members is vital to designing effective disaster risk reduction interventions. By identifying demographic factors associated with resilience, such as income and education level, certain interventions can be created to address these disparities at a community level. Recommendations from this data include improving community resilience through increasing education related to disasters and improving access to resources for lower income communities.
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FRI_189

Exploring the link between prenatal distress, depressive symptoms, and daily life problems

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Background: Experiencing pregnancy can be a distressing experience leading to prenatal distress. This may be particularly likely for young women from low-and middle-income countries with mental health concerns. This study aimed to assess whether or not young pregnant womens' experiences with prenatal distress are linked to depressive symptoms and daily life problems.
Methods: Pregnant women living in Monrovia, Liberia were recruited from local community health clinics to complete questionnaires concerning life experiences and relationships. Women were recruited by community health workers and screened in person by research staff. Inclusion criteria for participants were: (a) receiving prenatal services from local community health clinics; (b) age 18 – 30 years old; (c) residing in Monrovia; (d) between 13 and 24 weeks of gestational age and (e) had no pregnancy-related medical problems. Written consent was obtained from the women and then the assessment battery was administered by trained local reseach assistants using a computer-assisted interview program. First, descriptive analyses were computed. Then, a logistic regression was used to predict whether or not young pregnant women's experiences of prenatal distress are based on depressive symptoms and the problems that are experienced in daily life.
Findings: Results indicated that the young pregnant women who experienced prenatal distress had greater odds of experiencing both depressive symptoms (adjusted odds ratio 1.12; 95% confidence interval [CI], 1.06 to 1.41; P=0.03) and problems in their daily lives (adjusted odds ratio 1.16; 95% confidence interval [CI], 1.10 to 1.22; P=0.01).
Interpretation: Screening for young pregnant women in clinics throughout Liberia should focus on identifying depressive symptoms and daily life problems. Further, it is critical for clinic staff to be on alert for prenatal distress when women report that they have experience depressive symptoms as well as daily life problems.
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FRI_190

Socioeconomic Vulnerabilities and Type 2 Diabetes Mellitus in México: A Structural Equation Modeling Approach.

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Background: Several studies have related low socioeconomic status (SES) and other social factors with diabetes in developed countries. However, there are few studies in Mexico that establish the role of SES inequities on the increased prevalence of diabetes. We evaluated the relation between diabetes and index of socioeconomic vulnerability, mediated by the contribution of body mass index (BMI), physical activity (PA) and diet.
Methods: A cross-sectional analysis using data of adults participating in the Diabetes Mellitus Survey of Mexico was conducted. Socioeconomic and demographic characteristics as well as measures of height and weight, dietary intake, leisure time activity and the presence of diabetes were determined. We fitted a structural equation model (SEM) with diabetes as the main outcome, and BMI, diet and PA as mediators between the index of socioeconomic vulnerability and diabetes.
Findings: A total of 1174 subjects (51.5% women) between 20-69 years were included in the present analysis. The overall prevalence of diabetes was 13.6%. From the fitted SEM, each standard deviation increase in the index of socioeconomic vulnerability score was associated with increased scores of diabetes (β= 0.194, $P<0.001$).
Interpretation: The results in the present study show how high scores in the index of socioeconomic vulnerability may influence the presence of diabetes. Also, evaluating the role of the index of socioeconomic vulnerability in dietary, physical activity behaviors and BMI should be positioned as a key research goal for better designed and targeted public health interventions.
Source of funding (if none, enter "None"): Novo Nordisk (number Project: 1295. Cities Changing Diabetes: Mexico City Representative Diabetes Survey) and a NIH-Fogarty grant (NIH-Fogarty RO3 TW009061) to the National Institute of Public Health.

FRI_191

Increased regularity of bus transportation access is associated with greater use of biomedical healthcare services in the western highlands of Guatemala

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Background: The Palajunoj Valley of Quetzaltenango, Guatemala is home to ten rural K'iche' Maya communities. Across these communities, there is wide variability in the use of biomedical healthcare services, in additional to heterogeneity in income, educational attainment, and geographic proximity to healthcare services. In order to understand what characteristics are associated with healthcare-seeking behaviors, we compared biomedical healthcare use for non-emergency services with income, education, transportation access, and geography.
Methods: This study is based on the results of the Palajunoj Valley Needs Assessment conducted by Primeros Pasos Clinic in 2016. The Assessment surveyed 426 households using a stratified random sample of households based on community population. Surveys were conducted door-to-door in an oral interview format. Inclusion criteria were based on Spanish-speaking ability and residency in a community of Palajunoj. Subjects less than 18 years of age or unable or unwilling to provide consent were excluded. We used responses from 403 households to questions about household size, income, education, and healthcare use on the Assessment for our analysis. Logistic regression models were used to assess the relationship between healthcare use with the presence of bus transportation, frequency of bus transportation, or geographic proximity. Explanatory variables included in our regression were levels of income and educational attainment.
Findings: Households with bus access were 2.31 times more likely to seek biomedical healthcare services. However, this finding was not statistically significant (95% CI [0.94,5.68]). Households with frequent bus access were 3.34 times more likely to seek biomedical healthcare than those with infrequent or no bus access, a significant finding (95% CI [1.29,8.63]). Centrally located communities were 3.42 times more likely than peripherally located communities to seek biomedical healthcare, a significant finding (95% CI [1.63,7.17]).
Interpretation: Our findings suggest that regular bus access and/or central geography, rather than simply presence of bus access, were more strongly associated with increased likelihood of biomedical healthcare use in Palajunoj. While our findings are limited to self-reported healthcare use and do not delve into the complexities of extraneous socioeconomic variables or alternative forms of non-biomedical healthcare used in Palajunoj, this study demonstrates the impact of geographical accessibility on healthcare-seeking behavior.
Source of funding (if none, enter "None"): None.

FRI_192
Informal Employment and Health Shocks

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Background: Informal employment represents more than one half of the non-agricultural employment in developing regions. Research indicates that higher levels of social protection correspond to better health outcomes. Yet, in many low and middle income countries (LMICs), provision of social protection is negligible in formal employment and absent in the informal economy. Macroeconomic studies suggest that in such contexts, informal employment offering flexible arrangements and low entry barriers may serve as an alternative to formal safety nets. However, the relationship between participation in informal employment and coping with health shocks remains understudied. This study explores if, how and to what extent informal employment influences ability to cope with health shocks among street vendors (SVs) and home-based garment workers (HBGWs) in Yangon, Myanmar.
Methods: A total of 47 in-depth interviews were conducted with SVs and HBGWs in Yangon, Myanmar. Eligibility included being 18 years of age or older and working in their respective occupations for at least 3 months. Thematic content analysis and a constant comparative method were used for qualitative data analysis.
Findings: Informal employment may partially cushion against poverty and health-related life events when formal jobs offer minimal protection or are inaccessible. HBGWs noted that informal work offers flexibility to make a living when life events such as pregnancy, illness or household emergencies limit their ability to retain formal jobs. SVs view informal work as an opportunity to overcome economic hardship in the face of barriers to formal employment. However, when health shocks occur, both groups adopt inefficient coping mechanisms resulting in loss of income and assets and indebtedness. Additionally, their health statuses are compromised when they seek low-quality treatment options to avoid high out-of-pocket expenditures.
Interpretation: While informal employment may serve as a low-barrier alternative which offers some protection against poverty and loss of income and/or employment due to structural barriers and health-related life events, it cannot offer full protection against catastrophic health shocks. Global efforts to promote rights to social protection should advocate for inclusion of informal workers.
Source of funding (if none, enter "None"): Open Society Foundations, New York, NY

FRI_193

Russian Perspective: Human Papilloma Virus (HPV), HPV-related Diseased, and HPV Vaccination in University Students

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Background: The HPV vaccine has been introduced to the public and the medical community since June 2006 for the vaccination of females and since June 2006 and since November 2009 for the vaccination of males ages 9-26 years old. The purpose of this research was to explore multiple factors and relationships among Health Belief Model (HBM) constructs (perseived suscebtibility, severity, barriers, and benefits) and mediating factors (self-efficacy and cues to action) related to HPV, HPV-associated diseases, and HPV vaccination among Russian univerisity students and to determine which factors were most important when considering who would/would not seek HPV vaccination.
Methods: A quantitative, cross-sectional, descriptive, and correlational survey design was used in this study. An existing self-report questionnaire HPV Study Survey was adapted. 1200 participants were contacted through e-mails and messaging using two social networks through simple random sampling method out of the total student population. The survey was distributed through SurveyMonkey™ software.
Findings: 117 participants fully completed survey. The initial response rate increased 4.4 times using social networks messaging compared to e-mailing invitations. Overall, average knowledge levels, perceptions (suseptibility, severity, barriers, and benefits) and mediating factores (cues to action and self-efficacy) were moderate as well as their behavioral interniton to get HPV vaccination. Participants' behaviors regarding their sexual activity showed that the majority of participants were sexually active. There were statistically significant differences between males and females in perceived susceptibility, perceived barriers, self-efficacy, behavioral intention, and three behavioral items (having had sexual contact and age of having had sexual contact and sex for the first time). 60% of the variance in behavioral intention getting HPV vaccination could be explained by two HBM constructs (perceived benefits and self-efficacy). Self-efficacy was the number one predictor of behavioral intention ($p<0.001$) and perceived benefits were the number two predictor of behavioral intention ($p<0.01$).
Interpretation: These research findings provided useful information for understanding what Russian university students at a typical average size public university know and perceive about HPV, HPV-associated diseases, and HPV vaccination. National and regional programs could be develped focusing on busting self-efficacy of youth and their percieved benefits of the HPV vaccination.
Source of funding (if none, enter "None"): None

FRI_194

Pediatric Nutrition Screening, Treatment and Management Program at Midland Doctors Medical Institute in Azad Jammu and Kashmir, Pakistan

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Background: Poor pediatric nutrition continues to be a major cause of neonatal and childhood mortality in Pakistan. According to the National Nutritional Survey, 15% of all children in Kashmir, Pakistan suffer from severe malnourishment. To address pediatric nutrition outcomes in Kashmir, a Canadian and UK based charity have developed a rigorous screening, treatment and management program for children 0-10 years of age at the Midland Doctors Medical Institute in Tandali, Kashmir. The program aims to screen all children presenting to the clinic for malnutrition from July 2018-December 2018 and provide treatment and management for the most severely affected as well as ongoing training and material resources to ground staff.

Methods: The goal of the program is to screen at least 1000 children for malnutrition over 6 months. During this period, approximately 5-10% of the most severely affected children will be enrolled into the treatment phase. Patients are screened based on anthropometric measures such as weight, height and mid-upper arm circumference. They are then categorized into risk groups based on percentiles and z-scores on WHO growth charts and a personalized treatment plan is developed for each severely malnourished child. Treatment includes supplementary feeding formulas (RUTF and RUSF), supplementation for mineral and vitamin deficiencies and counselling from a dietician. To help sustain the program, ongoing training sessions are provided via Skype to the local pediatricians and nurses on clinical and public health topics such as growth monitoring, physical exam skills and prevention of malnutrition in the community.

Findings: Out of the 307 children screened to date, 55 (17.9%) are severely malnourished. Furthermore, 103 (33.6%) and 84 (27.3%) children are categorized as moderate and mildly malnourished, respectively. Six (1.9%) children have been enrolled into the treatment arm of the program but more are expected to be enrolled in the coming months.

Interpretation: Ongoing challenges include lack of human resources and funding to treat an adequate number of patients, geographic isolation of the hospital and remoteness of the surrounding patient population. As we are currently short on our goal to treat 5-10% of the patients, we may have to adjust our target and treat only the most severe cases.

Source of funding (if none, enter "None"): Government of Alberta

FRI_195

Barriers to Cervical Cancer Care in New Delhi, India: A Multi-Stakeholder Perspective

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Background: Cervical cancer is the fourth leading cancer among women worldwide, but it is in low and middle-income countries (LMIC) where the burden is most felt. In India, cervical cancer is the second most prevalent cancer amongst women. Globally, India accounts for 23% of the world's newly diagnosed cases of and 25% of the world's deaths. Although it has been proven that through education, screening, and treatment, cervical cancer can be effectively prevented, current efforts in India are not being shown to be effective. This study seeks to assess present attitudes towards prevention, barriers to treatment, and stigma associated with cervical cancer as well as to assess general health literacy and women's health behaviors.
Methods: A mixed-methods formative study was conducted in Delhi NCR, India. Qualitative data interviews were guided by the Social-Ecological Model. In-depth interviews were conducted with individuals representing various stakeholders including private and public medical professionals, non-government and civil society organizations, and lay public. Quantitative data were collected from various community members currently living in Delhi NCR through an online platform to evaluate health literacy levels using the Health Literacy Questionnaire (HLQ) and common health behaviors of women.
Findings: In-depth interviews were conducted with 21 participants. Using Grounded Theory, the following themes came forward during analysis: fear and stigma, health systems, knowledge and awareness, and female gender roles. Surveys collected from 134 individuals found that the lowest HLQ subscales were actively managing health, having sufficient information, and healthcare provider support (2.75 ± .57; 2.79 ± .59; 2.91 ± .60). Female respondents (n=79) provided additional health behavior information reporting that 8.86% have received the HPV vaccine, 36.70% have had a Pap Smear, and 3.79% had been told that they had cervical cancer.
Interpretation: The results of the HLQ were supportive of the claims being made by interview participants further explaining the role of health literacy in overall health promotion. It was also found that education and income were not indicators of better health behaviors or health literacy. Limitations include the use of convenience sampling for study participants and language barriers limiting the interviews to only being conducted in English.
Source of funding (if none, enter "None"): This study was supported by the Fulbright-Nehru Student Research Fellowship.

FRI_196

Psychosocial Factors as Correlates of Quality of Life Among Women with Breast Cancer in the University College Hospital, Ibadan

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Background: Breast cancer has overcome cervical cancer as the most common cancer among Nigerian Women. Quality of life (QOL) is an important indicator of outcome and well-being in oncology care within the population of women with breast cancer. Diagnosis and treatment of breast cancer among Nigerian women is associated with low quality of life. Psychosocial factors such as pain, psychological distress (PD), and female sexual functioning(FSF) have been examined in Nigerian women with breast cancer but have not been investigated as a function of QOL or in relation to each other. This study aims to investigate potential associations of these psychosocial factors as correlates of QOL.
Methods: A descriptive cross-sectional study of patients receiving treatment for breast cancer was conducted in the University College Hospital, Ibadan. The following instruments Hospital Anxiety and Depression Scale(HADS), Functional Assessment of Cancer Therapy-breast cancer (FACT-B), Female Sexual Functioning index(FSFI), and Brief Pain Inventory-Short Form (BPI-sf) were used to collect data from total population of breast cancer patients who are willing to participate in the study. Anxiety and depression scores obtained from the HADS were evaluated as psychological distress indicators. The instruments were revalidated for cultural sensitivity. Ethical approval was obtained from the UI/ UCH Ethics Committee and written informed consent was obtained.
Findings: Preliminary data included 26 female breast cancer patients. The average age was 47; 59.3% had tertiary education, 33.3% had secondary, and 7.4% had primary education. Pearson product-moment correlation (PPMC) was used in these analyses. There was a significant inverse correlation for quality of life with Psychological Distress indicators and Pain: Anxiety[r =-.814** p<.01 (p = .000)] and Depression [r = -.752 ** p<.01(p = .000)]; Pain [r =- .447 * p<.05 (p=.022)]. FSF was significantly correlated with Anxiety [r=-.400* p<.05 (p=0.043)]. Pain was correlated with Depression[r=.431*, p<0.05(p=.028)]. Anxiety was the only independent predictor of QOL[β= -.568, t=-2.722, p<0.05 (p=.012)].
Interpretation: Psychological Distress and pain have an influence on the Quality of Life of breast cancer patients in Nigeria. This is a preliminary report of an ongoing study.
Source of funding (if none, enter "None"): University of Chicago Center for Global Health

FRI_197

Do Physically Active Students Perform Better in School?

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Background: Physical activity and fitness are increasingly perceived as an important factor for students' academic success. In this study, we hypothesize that students' achievement is higher in schools with more physically active students. We empirically tested the relationship between self-reported physical activity level of ninth graders and their academic achievement in Georgia public schools.
Methods: In this cross-sectional study, we used the number of distinguished learners in grade nine (data obtained from Governor's Office of Student Achievement, 2016) as a proxy measure for the academic achievement of the school. Similarly, we obtained self-reported data on physical activity of ninth graders from Georgia Student Health Survey 2.0 – Georgia Department of Education, 2016. Data from 200 public schools were analyzed.
Findings: The mean number of distinguished learners in ninth grade was 18 (SD=33) while the mean number of physically active students was 152 (SD=83). We found that for each one-unit increase in number of physically active students, the expected log count of the number of distinguished learners in grade nine increases by 0.0086 and this number is statistically significant ($p<0.0001$).
Interpretation: We observed a positive and significant relationship between self-reported physical activity levels and ninth graders' test scores in Georgia public schools. Promotion of physical activity among students might be necessary not just for their physical health but also their academic excellence. However, there might be possibility of endogeneity bias. Future studies should attempt to understand the relationship using the student level data.
Source of funding (if none, enter "None"): None

FRI_198

Patient-Perceived Barriers to Eye Care and Patient Knowledge of Eye Care in Rural Odisha, India

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Background: Understanding patient-perceived barriers to care (PPBTC) is essential to high-quality healthcare delivery. Little is known about PPBTC in rural Odisha, India. The development of new and existing healthcare programs in this region will not be maximally efficacious without knowledge of these barriers. The purpose of this study was to better understand PPBTC regarding eye care and health literacy in a rural population receiving eye care services, thereby allowing the service providers to tailor their delivery model accordingly.
Methods: Fifty-seven people in Odisha (70.1% male, 29.8% female; mean age of 66.1 (±8.86) years) were interviewed via convenience sampling at Kalinga Eye Hospital outreach camps (KEHOC). All participants provided written informed consent in this IRB-approved study following completion of care.
Findings: Thirty-seven participants affirmed there are people in their community who should come to KEHOC but have not (64.9%); the most common PPBTC was lack of knowledge of KEHOC (35.9% of responses), lack of time or need to work (20.5%), and lack of money (5.13%). Other responses included fear, old age, young age, and distance.

The mean knowledge aggregate score (KAS), the ratio of correct survey answers to total survey questions, was 1.80/5.00; sex and age neither relate to KAS (p=0.369, Wilcoxon signed-rank test; p=0.442, linear regression) nor KAS disaggregated by question. Of 56 respondents, 32 knew that eyeglasses are for refractive error (57.1%); 54.5% of respondents knew eyeglasses are not for cataracts. Only 33.9% of respondents knew that breast milk should not be used to alleviate an eye problem. Poverty score, measured using Simple Poverty Scorecard®, and new KEHOC patient status best predicted KAS (p=0.003, GLMM).
Interpretation: Despite availability of eye care services, barriers to care in Odisha remain and patient knowledge of basic eye care is low. Efforts to increase KEHOC awareness, to educate patients at KEHOC, and to harmonize outreach schedules to patient work schedules in rural Indian regions are encouraged. The primary limitation to this study was its low sample size and the primary strength is the open-ended nature of the survey questions.
Source of funding (if none, enter "None"): None.

FRI_199

Addressing the Barriers to Preventative Health Care for Underserved Hispanic Women in Hampton Roads

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Background: Hispanic women are more likely to develop cervical cancer than any other ethnic group in the U.S. They are screened at a rate of 77.1% compared to 82.8% of non-Hispanic white women. In the uninsured population, these rates are even lower. And while breast cancer rates are lower in Hispanic women, they shoulder a disproportionate amount of the mortality due to decreased screening and delayed detection. Clínica Comunitaria Esperanza (CCE) is a student-run bilingual clinic in Norfolk, VA that was started to improve access to care for the uninsured Hispanic community in Hampton Roads. This project aims to quantify gaps in care at CCE in primary preventative measures for women and to provide a platform by which to begin to address barriers to care.
Methods: Goals include: 1. Quantify difference between number of female patients at CCE who have been able to receive mammograms and Pap smears versus those that qualify for each screening. 2. Use this data to bridge health care access gaps within an international population in Hampton Roads. The sustainability of the clinic is made possible by mutually beneficial community partnerships and facilitation of the clinic by medical students and faculty from the Eastern Virginia Medical School Medical Spanish Initiative.
Findings: Since CCE opened in 2016, 63 uninsured, predominantly immigrant Hispanic women have been seen for both primary health care and women's health care and 16 Pap smears have been performed. According to standard of care guidelines set forth by the American College of Obstetricians and Gynecologists, 27 patients should've received a mammogram, but did not receive a referral due to immigration status.
Interpretation: The CCE currently faces a lack of referral options for female patients as the majority are undocumented. This is a global health issue within our borders, especially considering the rate of cervical and breast cancer in this population. Future advocacy, identification of community partners, and fundraising efforts may provide improved services, including assessing legal and structural barriers of local nonprofits who do not accept referrals for those without documentation.
Source of funding (if none, enter "None"): None

FRI_200

The Impact of HIV Stigmatization and Social Support on Child Health: Perceptions Among HIV-positive Mothers and Frontline Health Workers in South India

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Background: Research has found that HIV exposed uninfected (HEU) children born to HIV-positive mothers are at a 70% greater risk of all-cause mortality than HIV unexposed uninfected (HUU) children. Authors Brennan et al suggest that investigating social factors is needed. Our expectation is that stigmatization and social support can hinder or facilitate health seeking behaviors and ultimately impact child health outcomes.

This study examined the perceptions that HIV-positive mothers and frontline health workers in Mysore, India have about the impact that stigma and social support have on mothers seeking health services for themselves and for their HIV-negative children.

Methods: This was a mixed-methods study, approved by the UC Berkeley and Public Health Research Institute of India (PHRII) IRBs, that conducted eight focus groups and used questionnaires with HIV-positive mothers, Accredited Social Health Activists (ASHAs), and Auxiliary Nurse Midwives (ANMs) (n=62) in 2017. Inclusion criteria for mothers was age 18 to 40, HIV-positive, having an HIV-negative child under age ten, not pregnant, and resident of Mysore. Mothers were recruited through the primary agency in the area funded to serve HIV-positive individuals. Eligible ASHAs and ANMs worked in Mysore and were at least 18 years old. Health workers were recruited through the region's health department. Consent was done in Kannada, the predominant language in the area. Groups were conducted in Kannada by trained workers from PHRII. Group recordings were transcribed and translated into English by PHRII staff for analysis.

Findings: Mothers experience stigmatization across structural, community, interpersonal, and even intrapersonal dimensions, including by family members, healthcare providers and community members. Having social support facilitates health seeking behaviors.

The majority of mothers have a primary education. 59% reported internalized stigma. 16% reported anticipated stigma. Mothers reported fearing maltreatment of their children due to their status. Mothers requested help for child educational and nutritional needs, child care especially when mothers are sick, economic development opportunities, and estate legal assistance.

Interpretation: Efforts to increase soical support for HIV-positive mothers are necessary. Frontline health workers have varying perceptions about HIV and knowledge about available HIV services, calling for further training and support in the field.

Source of funding (if none, enter "None"): NIH National Center on Minority Health & Health Disparities

FRI_201

Feasibility of implementing the WHO Surgical Safety Checklist in rural Nicaragua

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Background: As part of their strategy to bring safe surgical care to rural Nicaragua, 2 district hospitals in rural Nicaragua were the first hospitals in Nicaragua to implement the WHO Surgical Safety Checklist. Previous studies have shown that implementing the WHO surgical safety checklist reduces surgical complication rates from 11% to 7% and surgical mortality rates from 1.5% to 0.8%. Our aim was to determine the feasibility of implementing the WHO Surgical Safety Checklist at 2 district hospitals in rural Nicaragua.

Methods: Following implementation of the WHO surgical safety checklist, we performed a retrospective analysis of surgical volume, postoperative complication and mortality rates, and use of the WHO surgical safety checklist at 2 district hospitals in rural Nicaragua. We determined proportions for categorical data and determined significance using 95% confidence intervals.

Findings: Over a period of 10 months, a total of 2030 surgical procedures were performed at 2 district hospitals in rural Nicaragua. At baseline, there was 0% use of the WHO surgical safety checklist at the 2 district hospitals in rural Nicaragua. Following implementation, the WHO surgical safety checklist was completed in 95% of all surgical procedures performed at the 2 district hospitals. During the same time period, the surgical complication and mortality rates were: 2.8%(CI 0.02-0.04) and 0.5% (CI 0.00-0.01) respectively.

Interpretation: Implementation of the WHO surgical safety checklist was feasible in rural Nicaragua and surgical care provision was safe as evidenced by the significantly low mortality and complication rates. Efforts should be made to expand use of the WHO surgical safety checklist to other parts of Nicaragua.

Source of funding (if none, enter "None"): UBS Optimus Foundation

FRI_202

Implementing Key Population-friendly services within Public Sector Clinics in Myanmar to Improve HIV Uptake and Outcomes

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Background: In Myanmar, 11.6% of men who have sex with men, 14.6% of female sex workers, and 28.5% of people who inject drugs are living with HIV. Fear of stigma and discrimination within public clinics limits HIV service uptake among key populations (KP). By 2020, transition of antiretroviral therapy (ART), previously provided by non-governmental organizations to the government, will be completed. This transition makes acceptability of public clinic services among KP critical.
Methods: The Myanmar National AIDS Programme (NAP), US Centers for Disease Control and Prevention, and ICAP at Columbia University collaborated to improve HIV services for KP at five governmental AIDS/STD clinics in Yangon. In July 2017, several interventions were implemented: KP sensitization training of healthcare workers (HCW), with a pre-post knowledge assessment; KP-friendly structural changes, including private counseling spaces, suggestion boxes, community meetings between HCW and KP; and employment of peer counselors and outreach workers. In April 2018, ICAP surveyed HCW and KP users accessing HIV testing (HTS) or ART services to better understand their experiences.
Findings: The 61 HCW who received KP sensitization training showed a moderate increase in knowledge, with mean scores increasing from 45% to 57% correct. Among 30 HCW surveyed, 97% felt sensitization training improved their ability to provide services to KP. However, only 67% felt adequately trained to provide high quality KP services and 77% recommended additional training. Among 33 KP surveyed seeking HTS, 91% reported being happy with services and 73% reported comfort asking staff questions. Among 29 KP surveyed on ART, 93% felt happy with clinical services, 88% reported being treated with respect and 62% felt safe from stigma.
Interpretation: HCW pre-post sensitization scores demonstrated persistent gaps in knowledge around KP and the need for continual, comprehensive training of clinic staff. Findings from surveys of HCW and KP showed encouraging progress towards establishing KP-friendly clinical environments, but also highlighted the ongoing need to address stigma and HCW preparedness. This was the first KP initiative for NAP public facilities and findings from this project will inform national HIV policies to help increase uptake of services, and engagement in care among KP in Myanmar.
Source of funding (if none, enter "None"): CDC

FRI_203

Implementation of an Electronic Medical Record in a Low Resource Area in Jamaica

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Background: There are many benefits as well as challenges to implementing an electronic medical record in a low resource setting. Prior to implementation, clinic visits were documented on paper records, which were submitted to the Ministry of Health for storage. These were not routinely available for review at subsequent visits by patients. The purpose of this study was to examine the benefits and challenges of implementing an EMR in a rural part of Jamaica with limited internet availability and inconsistent electrical supply.
Methods: We chose to implement a version of OpenEMR adapted to mimic the paper record which we continued to use. OpenEMR was installed on a single laptop computer with a router connected to create a wireless system (without connection to the internet). The database was backed up to an external hard drive at regular intervals. Data components included demographic information, past medical history, vital signs, diagnoses, and prescriptions. There was also an area for entering free text. A “Quick Start” training guide and videos were created for the various teams (from around the United States) who would be using the system. Duplicate patients were identified through manual review of the patient log. Data was collected using SQL search queries of patients seen July 1, 2016 through July 14, 2018. Duplicate visits were identified through manual review of de-identified data.
Findings: There were a total of 2615 visits, representing 1994 unique patients. There were 493 patients who were seen more than once during this time period. Medical/Dental clinics were held at 10 different locations on 48 different dates. Charting errors were common: there were 20 visits that were erroneously entered a second time and 92 patients who had duplicate entries in the database (identical birthdate with name spelled the same or slightly differently or same name with birthdate slightly different). Vital signs were missing from a total of 790 visits. Age was missing from 108 patients.
Interpretation: This project demonstrates the potential to implement a free and open source EMR in a low resource setting with limited Information Technology support. Adequate training of team members presents a challenge, as evidenced by the frequent errors and omissions in the database.
Source of funding (if none, enter "None"): None

FRI_204

Outcome of Patient Tracking in a Large HIV Facility Treatment Cohort in North Central Nigeria

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Background: Attrition of patient in the HIV care and treatment program remains a barrier in achieving treatment success in the HIV program in Nigeria. Despite tremendous progress towards achieving UNAID's 90-90-90 target for testing, treatment and viral suppression, cascade loss makes it prohibitive to accurately evaluate treatment success. We reviewed the outcome of an intervention to track missed appointments in a large HIV facility treatment cohort for the purpose of improving retention in care.
Methods: A four week's tracking exercise was implemented in July 2018 at a high burden urban facility in a high HIV prevalence state in North central Nigeria. HIV care and treatment patients who have not received Antiretroviral therapy (ARV) in the last 90days following their last missed appointment as at June 2018 were identified and tracked by trained peer volunteers through phone calls. Clients who could not be reached were repeatedly called. All clients who were reached via phone were counselled on the need to return back to care and treatment. Appointments were scheduled for clients successfully reached. Outcome of tracking was documented in a contact tracking and termination form.
Findings: In total 848 clients were identified for tracking. Of these 329 (39%) were successfully reached via mobile phones. As at the time of evaluation we had outcome ascertained for 253 (76.9%) patients. 55.3% (140/253) of patients reported silent-transfer (undocumented movement to other clinics), 17.8% (45/253) patients were dead and 27.9% (68/253) patients were returned to care by tracking within the 4 weeks intervention period.
Interpretation: Tracking was effective at returning 27.9% of patients back to care and treatment within 4weeks. Although 60% of clients could not be reached as at the time of evaluation, continued tracking combined with home visit will yield results. As HIV programs expands access to treatment, there is need to evolve more rapidly patient centered differentiated models of care that adapt HIV services to client needs to reduce patient attrition. A robust registry is needed to capture relevant patient information to enable tracking.
Source of funding (if none, enter "None"): US Centers for Disease Control and Prevention,Nigeria

FRI_205

Global Kidney Exchange: Mutually Overcoming Barriers to Transplant Through International Partnerships

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Background: Global Kidney Exchange (GKE) is a newly emerging and novel mechanism to expand living renal transplantation by overcoming barriers through transnational cooperation. Worldwide patients are prevented from undergoing transplantation; in high-income countries (HIC) barriers are often immunological whereas in low-/middle-income countries (LMIC) barriers are usually financial. In the United States (US) renal replacement therapy is provided to patients with End Stage Renal Disease (ESRD) through Medicare, with dialysis, over three-five years, costing twice as much as transplantation. GKE is built on the premise that incorporating LMIC individuals into the door pool, HIC can provide patients earlier access to transplantation and use the cost savings to provide transplantation and follow-up care for ESRD patients in LMIC while reducing their overall spending.
Methods: The first GKE chain included a nondirected donor, donor-recipient pair from The Philippines, ten US donor-recipient pairs, and one recipient from the deceased donor waiting list, producing eleven transplants. Pairs were enrolled in the Alliance for Paired Donation (APD), a US-based 501c3 not-for-profit organization, database and were selected based on their ability to facilitate additional transplantations. Filipino ESRD patients can receive kidney transplantation financed by PhilHealth (government-funded national insurance) if the individual can afford immunosuppression; those that cannot are deemed financially ineligible. APD financed the Filipino donor and recipient's evaluation, additional dialysis, travel, surgeries, as well as provided $50K for follow-up care in The Philippines. Sustainability of GKE depends on the willingness of HIC private/public insurers to undergo probable short term financial loss and participation of international transplant centers.
Findings: Three years later the Filipino donor and recipient are doing well with serum creatinine of 0.98 and 1.3 respectively. A total of seven GKE transplants have successfully occurred to date with international pairs from The Philippines, Mexico, and Denmark.
Interpretation: Multiple international organizations have met GKE with skepticism and criticism. Many believe that GKE is equivalent to organ trafficking, involves exploitation and commodification of the international pair, undermines LMIC efforts to develop transplant programs, disproportionately benefits HIC, and goes against international standards. Additionally, challenges in regional law differences have been encountered requiring further evaluation and modification.
Source of funding (if none, enter : Agency for Healthcare Research and Quality grant R18 HS-020610; National Science Foundation grant 10601932

FRI_206

Neural Network Models for Automatic Severity Assessment and Post-Operative Outcome Prediction of Unilateral Cleft Lip in Low-Resource Settings

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Background: Objective measures of cleft lip severity provide a common language for communicating between providers, setting patient/family expectations, evaluating trainees, and guiding surgical technique selection. Existing scales, which require precise, time-intensive measurements, are difficult to implement in low-resource settings. Techniques that leverage common, low-cost technology, such as smartphones, could facilitate more effective communication. This study tested neural networks, trained through machine learning, that automatically detect and measure facial landmarks from a 2D preoperative photo, assign a severity grade, and generate a predicted postoperative outcome image.
Methods: 2D preoperative photographs were collected from 800 patients on Operation Smile missions in Vietnam, India, Bolivia, Madagascar, and Dominican Republic and annotated for cleft- and nostril-width landmarks. Models were trained with 640 photos, validated with 80, and tested with the remaining 80. Five convolutional neural network models were tested for landmark detection by comparing predictions with expert annotations, calculating mean squared error (MSE) loss (distance between predicted and annotated points) and Pearson correlation coefficient for cleft-width- (CWR) and nostril-width-ratios (NWR). Models were also trained and tested against severity ratings by 8 experts using a scale previously validated by Campbell et al., and Pearson correlation assessments were calculated. Finally, two image-to-image translation models were trained to generate postoperative outcome predictions using pre- and postoperative image pairs and tested via Amazon Mechanical Turk perception experiment, where lay subjects were asked to select the real image from pairs of real and model-generated images.
Findings: The convolutional neural network models performed well in landmark detection and severity assessment tasks, with ResNet performing best (MSE = 24.41 pixels, CWR correlation = 0.943, NWR correlation = 0.879, severity correlation = 0.892). Of the translation models, Pix2Pix performed excellently in the perception experiment, with subjects labeling its images “real” 46.25% of the time.
Interpretation: In low-resource settings, 2D preoperative photos of cleft lip are easy to procure, and our study shows they can be processed through neural networks to accurately measure facial features, assess severity according to validated scales, and generate realistic outcome predictions. These models show potential for incorporation into a simple, unified approach that enables providers, trainees, patients, and families to communicate more effectively.
Source of funding (if none, enter "None"): None

FRI_207

The Promise of Mobile Technology: A Pilot Study of Digital Monitoring to Improve TB Treatment Adherence in a Low-income Setting

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Background: Non-adherence to treatment is a major obstacle to tuberculosis (TB) control: it reduces cure rates, prolongs infectiousness, and contributes to the emergence of multi-drug resistant strains of TB. Directly observed therapy (DOT) as the recommended standard has practical challenges to implementation in developing countries. The rapid proliferation of mobile technologies offers a novel and potentially feasible alternative but its use has not been fully explored. We aimed to assess the feasibility of using video directly observed therapy (VDOT) to improve treatment adherence monitoring in TB patients in Uganda.

Methods: In an ongoing pilot cohort study of consenting TB patients18 years+ old and receiving treatment between one to three months at a public health clinic were enrolled in Kampala, Uganda since April to August 2018. A VDOT App was installed on a personal or study smartphones, patients are trained to use the App to record videos of their daily medication intake and send encrypted videos to a secured system where trained public health workers watch them from the clinics, instead of traveling long distances every day to visit patients at their homes or workplaces.

Findings: To-date 40 patients have been enrolled in the VDOT cohort study with 2,114 videos submitted to the monitoring system. The average age is 30.7 years [SD 5.7], 17(48.6%) are female, 19 (47.5%) use personal smartphones, and 30 (75%) having at least 8 years of education. The level of adherence based on submission of videos via the VDOT App is 82% [95% CI 78%, 85%]. There are sex-specific differences in adherence to VDOT [male 85% vs female 79%]. No differences have been observed between patients with personal vs. study smartphones. Of the 2,583 expected videos, 18% have been missed over the follow up period. The top reasons for missed videos are: dead batteries (53.6%), phone malfunction (21%) and lack of internet connection (9.3%).

Interpretation: This pilot study highlights the promise of using VDOT as a feasible option for improving adherence monitoring among TB patients in low-resource settings. Sex-specific barriers to adherence should be explored further in order to design tailored interventions

Source of funding (if none, enter "None"): University of Georgia Research Foundation

FRI_208

Targeted Testing to Improve Pediatric and Adolescent HIV Case Identification in Rural North-Central Nigeria

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Background: Delayed HIV diagnosis and treatment are associated with poor outcomes, especially among children and adolescents. Targeted intensified case-finding is needed to accelerate identification and subsequently, increase treatment coverage for better outcomes. This is especially important in high HIV-burden countries with relatively low prevalence such as in Nigeria, at 2.9%. We established targeted testing for children and adolescents in order to increase testing rates for the most high-risk clients.
Methods: A pediatric/adolescent-specific HIV testing point was established in the out-patient unit of a secondary healthcare facility in a high HIV-prevalence (>5%) district in rural North-Central Nigeria. We targeted 0-19 year old clients with unknown HIV status presenting at the facility for any reason. The clients were screened using the Bandason screening tool, developed in Zimbabwe. A “Yes” to any one of these four questions indicated eligibility (1) Has the child been admitted to hospital before? (2) Does the child have recurring skin problems? (3) Are one or both parents of the child deceased? (4) Has the child had poor health in the last 3 months?
Findings: Results are reported for the period between October 1, 2017 and June 30, 2018. During the intervention, 591 pediatric/adolescent clients were seen at the out-patient department, 531 (89.8%) of whom had an unknown HIV status. All 531 were screened with the Bandason tool; 252 (47.4%) were found eligible and tested, of which 12 (4.8%, eight <10 yrs and four 10-19 yrs) tested positive. All identified positives were initiated on treatment within 24 hours. HIV testing rates for our patient population increased from 5.0 % to 47.4% during the intervention.
Interpretation: Targeted HIV testing services significantly improved HIV testing uptake among children and adolescents at the pilot facility. The use of Bandason’s screening tool reduced the number of clients requiring testing (and thus wastage of testing kits) by >50%. In resource-constrained settings where human resources and testing supplies are major implementation challenges, risk-based screening can optimize utilization of HIV test kits while significantly increasing HIV-testing yield among children and adolescents.
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FRI_209

Optimization of Viral Load Testing Uptake among HIV-Positive Nigerian Adolescents Using a Continuous Quality Improvement Flowchart Analysis

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Background: Poor viral suppression remains a major contributing factor to high mortality rates among adolescents living with HIV (ALHIV). Viral Load (VL) testing is an important monitoring tool for clients living with HIV. In Nigeria, VL testing is recommended at 6 months post-treatment initiation and at least once annually thereafter. However, VL testing coverage is poor at many healthcare facilities in Nigeria: programmatic data indicates less than 30% of those eligible access testing as and when recommended. We sought to optimize VL uptake among ALHIV 10-19 years old using a Continuous Quality Improvement (CQI) problem identification tool at a large tertiary healthcare facility in North-Central Nigeria.
Methods: This was a pre-post intervention exercise. In the pre-existing clinic flow, clients were seen by clinicians and receive drug refills before receiving VL testing, if eligible. As the last activity in the clinic flow, VL sample collection was identified as a choke point with resultant high default rates as clients often left clinic without sample collection. During the intervention, VL-eligible adolescents were identified from electronic medical records; their treatment folders were marked to indicate their being due for sample collection. Clinic flow was remapped to have VL sample collection done prior to clinic consultation and drug pick-up. Additionally, a simple note with the inscription ‘’VL sample collected” and signed by the phlebotomist had to be presented by clients to the pharmacy before drug pick-up.
Findings: In the 4-week intervention period; 88 (79.3%) kept their appointments, of which 25 (28.4%) were eligible for VL testing. Twenty-three (92.0%) of eligible ALHIV successfully had their VL samples collected prior to consultation and drug pick-up.
Interpretation: Clinic flow re-mapping proved to be an effective CQI strategy for reducing defaults for ALHIV VL sample collection. Systematic clinic flow analyses and subsequent planning and remapping to suit both clinics and clients can enhance efficiency and improve quality of care, especially for the most vulnerable clients.
Source of funding (if none, enter "None"): CDC-PEPFAR

FRI_210

Are contextual factors being taken into consideration for non-communicable disease interventions in low- and middle-income countries? A realist review

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Background: Since the global call to action on the threat of non-communicable diseases in 2000 by the World Health Assembly, there has been a pervasiveness of best-buy intervention strategies being effectively implemented and sustained in high income countries. While the burden of NCDs has proliferated in low-and middle-income countries (LMICs), there remains limited evidence on the effective implementation of NCD interventions within these low-resource settings. As the field of implementation science is gradually making strides in curtailing the burden of NCDs, an obvious challenge within low-resource settings is the consideration and application of 'contextual factors' in developing, implementing, and sustaining the uptake and scale-up of evidence-based NCD interventions. This realist review will address a gap in the existing literature by examining whether factors related to the local context are clearly integrated in NCD interventions in LMICs.
Methods: Using the 'inner setting' (i.e. related to structural, political, and cultural factors that influence the implementation process for the intervention) and 'outer setting' (i.e. regarding the economic, political, and social factors related to the organization) domains of Damschroder et al.'s Consolidated Framework for Implementation Research, this review will explore whether factors related to the local 'context' are applied to NCD interventions in LMICs. Similar to other reviews, this realist review will follow an iterative process: 1) clarify the scope, (2) search evidence in available literature using predefined inclusion and exclusion criteria, (3) conduct an examination of empirical studies and extract relevant data, (4) synthesize available evidence and draw conclusions, and (5) disseminate the findings. We will search data bases including but not limited to PubMed/Medline and Global Health and conduct a grey literature search for articles published from 2000 to 2018.
Findings: To be determined.
Interpretation: As the field of global health aims to leverage implementation science strategies within LMICs, this review will offer timely evidence on the consideration of contextual factors in developing and sustaining NCD interventions within low-resource settings. More importantly, and in response to recent calls to action by agencies such as the National Institutes of Health, the review will provide a better understanding of the role that context plays in delivering sustainable NCD strategies in resource limited settings.
Source of funding (if none, enter "None"): None

FRI_211

Insights into the pathogenesis of leishmaniasis through the study of circulating exosomes

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Background: Visceral Leishmaniasis (VL) is a potentially fatal parasitic disease that is endemic in >90 countries worldwide including Brazil. The parasite causing South American VL, Leishmania infantum, primarily uses dogs as a reservoir and sand flies as an insect vector in order to cause disease in humans. Symptoms include fever, weight loss, night sweats, malaise, anemia, and hepatosplenomegaly. The current diagnostic standard is to visualize the parasite within a bone marrow aspirate, a painful procedure with associated risks. There is a lot to be learned about the pathogenesis of VL, including how the intracellular parasites residing in macrophages cause systemic symptoms. Leishmania secrete vesicles called exosomes, and it is not known whether these contribute to disease outcome.
The purpose of this study is to understand both the pathogenesis of VL and the role of exosomes in disease. We hypothesize that circulating exosomes from subjects with VL may contain parasite proteins that affect the pathogenesis of disease. Furthermore, we hypothesize studies of exosome contents may set the stage for generating a new diagnostic tool.
Methods: We traveled to Natal, Brazil for 10 weeks where we collected serum from subjects (humans and dogs) with acute VL, after which we extracted and analyzed the exosomes. A chart review was also conducted to gather data on subjects who donated blood for our exosome studied. Proteins were quantified using BCA assay, and RNA/DNA was quantified using nanodrop. Protein analysis was done using ELISA and Western blots.
Findings: Exosomes were extracted from more than 200 subjects and analyzed. The largest proportion of exosome content seemed to be protein. BCA analyses showed that VL+ dogs had the highest amount of proteins in circulating exosomes. Preliminary western blots showed that evidence of a parasite protein uniquely in serum exosomes subjects with symptomatic VL. There was a trend toward higher serum exosomal protein content in samples from symptomatic patients compared to asymptomatic or control subjects from endemic regions.
Interpretation: These data are consistent with the hypothesis that exosomes may be an important in the pathogenesis of VL. This project will continue in Iowa with studies of specific protein content in exosomes, using mass spectrometry, and RNA-sequence analysis of exosomal RNAs.
Source of funding (if none, enter "None"): NIH, GPSG

FRI_212

A Unique Use of Biofeedback to Optimize Fetal Development and Maternal Health Across Cultural and Language Barriers

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Background: We tested Heart Rate Variability Biofeedback (HRVB) as an intervention aimed at modulating maternal physiological systems and subsequently optimizing fetal development. Increased HRV has been associated with more adaptive psychological (improved emotion regulation) and physiological (improved autonomic flexibility, decreased inflammatory response) states. Fetal movement is a key indicator of fetal nervous system development. Inhibition of fetal movement is an indication of an increased level of neural control.
Methods: Maternal-fetal dyads (N=45) from 20-38 GA were administered a 10-minute HRVB intervention preceded by a 10-minute baseline and followed by a 10-minute post-biofeedback period. Maternal psychological measures were assessed at baseline. Maternal physiological indicators (HRV and HR) were continually assessed from baseline to the end of post-biofeedback, while cortisol was assessed before and after biofeedback. Fetal monitoring (fetal general movements and fetal heart rate) was assessed continually from baseline to the end of post-biofeedback.
Findings: Maternal HRV increased significantly during biofeedback and this increase was maintained in the post-biofeedback phase, compared to baseline ($F(1.64, 54.01)=29.55$, $p<.01$, $\eta_p^2=.47$). Maternal psychological state (increased levels of coping self-efficacy) was associated with change in maternal HRV ($r(33)= -.428$, $p= .013$). Maternal cortisol decreased significantly post-biofeedback ($F(1,11)=13.17$, $p<.01$). Fetal general movement amplitude decreased ($F(2,70)=5.50$, $p=.01$, $\eta_p^2=.13$) and fetal general movement inhibition increased ($F(2,70)=3.60$, $p=.03$, $\eta_p^2=.09$) significantly during biofeedback with the decrease in movement amplitude persisting into the post-biofeedback phase.
Interpretation: The findings provide evidence for the use of HRVB in modulating maternal physiological systems as well as effects on fetal movement. Overall, the HRVB intervention provides evidence for the use of a non-invasive, cross-cultural, low-cost tool to improve maternal allostasis and facilitate optimal fetal development. The theoretical and practical applications of this intervention will be discussed in conjunction with empirical findings. In addition, we will briefly mention application of this intervention in neurodevelopmental disorders as an adjunct to traditional psychotherapy.
Source of funding (if none, enter "None"): None

FRI_213

Translational Research Capacity Buiding Initiative to Address Cardiovascular Diseases in Nepal: Early experience and findings

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Background: Though Cardiovascular diseases (CVD) account the highest morbidity and mortality in Nepal, the country lacks information on epidemiology and national need and capacity of CVD and skilled human resources capable of desigining, implementing and evaluating action plan. Thus, there is an urgent need to build a group of skilled members who could assess the existing needs, infrastructure, capacity and challenges and develop and implement novel and applicable interventions as well as catalyze existing activitie for CVD prevention and management.
Methods: The project aims to create a trained multi-sectorial team to lead translational research to mitigate the know-do gap in Nepal which will assess national level capacity and infrastructure, identify and prioritize health issues for CVD and prepare a comprehensible actionable research plan for prevention and management of CVD. We have enssembled national and international experts of CVD as our team mebers. We announced national call and recruited sixteen fellows. Every year, we will condut comprehensive online and onsite trainings which will be facilitated by mentors and institutionalized under Kathmandu University.
Findings: We have consolidated a model consortium by engaging vital national stakeholders and establishing international parterships including regional partners from SunYatSen University, China and Public Health Foundation of India. We have also established MoU with an apex research body of government, Nepal Health Research Council (NHRC). Despite administrative challenges, within oneyear we have achieved stipulated goals by enrolling 16 fellows with formal orientation and have completed online courses and organised onsite trainings directly supervised by national and international experts, corganised by NHRC. Foundation for needs assessment of the country has been laid. NHLBI itself will visit our site and we will have conducted international symposium in the first year.
Interpretation: Although challenging it is possible to establish a human taskforce leading translational research in Nepal. Early enagagement of national and international stakeholders, clarity of roles in functioning, leadership and commitment of research team members and participation of young and enthusiastic researchers are crucial keys for establishment of novel partnership program to successfully advance operation research in low resource setting like ours. We ae confident that this project would be a model of success to advance translational research in other low-income setting countries.
Source of funding (if none, enter "None"): NHLBI

FRI_214

The Way to Go: Implement Global Health Initiatives as Research Projects

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Background: Implementing Global Health Initiatives (GHI) as research project is a proposed concept to be tested. We applied epidemiological research principles to implement a Community Pharmacy Antiretroviral Therapy project (CPAT) in two states in the North-Central, Nigeria from 2016 to 2018. The aim was to scale up community treatment of HIV/AIDS, with the following primary outcomes: retention-in-care, adherence to medications and virologic suppression. The secondary outcome is facility decongestion

Methods: The basic epidemiological research principles implemented includes: a) defining the problem (b) review of literature (c) protocol development (d) observation (e) research ethics (f) data collection, validation and analysis and (g) results publication. Participants who accepted to be referred with viral suppression ≤1000 copies/ml were included. Also, registered community pharmacies with a superintendent pharmacist and public hospitals with at least 500 patients on ART were recruited and trained. To ensure sustainability, we collaborated with the Pharmacists Council of Nigeria and Association of Community Pharmacy of Nigeria.

Findings: Twenty five public hospitals and 36 community pharmacies provided data for the analysis. In two years, 3,103 patients enrolled (women = 69.4% (2,152) ; men = 30.6% (948); singles = 20.4% (594) ; married = 75.1%(182); divorced/widow = 4.5% (130); median age =37 [IQR = 32 – 43]; median body mass index =24.6 (IQR=5.3); median baseline viral load (VL) = 2.9 log copies/mL [IQR = 2.9 – 7.1] ; median systolic blood pressure =118.9(IQR= 39.8) and median diastolic blood pressure =76.8 (IQR=12.8). The specific outcomes were: 98.1% (1,999) of participants were retained in care; 85% (1,748) had more than 95% adherence to their medications and remained virologically stable: [median baseline VL = 2.9 log copies/mL [IQR-2.9 – 7.1] vs Post referral VL = 2.9 log copies/mL [IQR=2.9 – 10]. Over-crowded public hospitals were decongested: 40% (10/25) decongested > 150 patients, 24% (6/25) decongested > 200 patients and 12% (3/25) decongested > 300 patients

Interpretation: Our findings demonstrate the feasibility of implementing GHI as research initiatives. The major challenge encountered was accessing the VL test results and sustaining resourcing the community pharmacies. However, we have recommended the integration of CPAT into the Nigerian National Health Insurance Scheme.

Source of funding (if none, enter "None"): None

FRI_215

Impact of a Mental Health Promotion Intervention on the Management and Secondary Prevention of NCDs among Jordanians and Displaced Syrians in Jordan.

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Background: The Syrian crisis has been declared the worst refugee crisis since World War II, displacing over 6 million Syrians. In recent years, NCDs have emerged as a critical focus in humanitarian responses due to their high prevalence in low- and middle-income countries (LMICs) and displaced populations. An estimated 80% of deaths globally are connected to NCDs and are of particular concern for those from middle income countries that have been affected by conflict. Physical and mental health difficulties are not mutually exclusive, often co-occurring. Prevalence of depression among the global population impacts an average 3-10%, while individuals with chronic disease experience significantly higher prevalence rates of 22-33%. This co-morbidity accounts for 37% of healthy life years lost. Considering the high prevalence of NCDs and mental health disorders in conflict affected regions, the following study examined the impact of a health and mental health awareness intervention with Jordanians and displaced Syrians.
Methods: A three group longitudinal study was conducted with 600 Jordanians and Syrians in three health clinics in a Jordan community on the border of Syria. The study conditions included: (clinic 1) an existing NCD preventive intervention; (clinic 2) the existing NCD preventive intervention with 4 added mental health awareness sessions; and (clinic 3)Treatment as usual. Measures included: post-traumatic stress symptoms using the Primary Care PTSD screener, depression and anxiety using the Duke Health Profile. Demographic items included nationality, gender, age, income, education, and number of years living in Jordan.
Findings: Descriptive statistics illustrated the sample was primarily female, n= 419 and Jordanian, n=371. Ages ranged from 18-65. Repeated measures ANOVA examined change over time between treatment and control groups. Results yeilded significant improvements in the condition that received the health and mental health awareness intervention on: PTSD symtpoms $F(2,452)= 15.25$, $p < .001$, social support $F(2,433)= 7.13$, $p < .01$, and depression $F(2,456)= 4.20$, $p < .001$ between baseline and six month testing.
Interpretation: Results support the importance of health and mental health awareness interventions in displaced populations and border communities. This study indicates, a combination of psychosocial support and physical health promotion may improve individuals mental health in these settings.
Source of funding (if none, enter "None"): Americares and GSK

FRI_216

Proyecto RioSueña - Analysis of Interventional Development in Ecuador

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Background: The purpose of this report is to evaluate the work done surrounding Proyecto RioSueña (a systematic Big Decisions adolescent sexual and reproductive health (ASRH) curriculum implementation and research intervention) during developmental phases of the project, a one-year intervention in Riobamba, Ecuador. With the World Health Organization's (WHO) focus on ASRH and Ecuador's particular struggle with a stagnantly high adolescent fertility rate, Proyecto RioSueña has been developed to systematically and sustainably begin addressing this public health concern. Primary outcomes of the project development include Stakeholder Team Formation, Interventional Model Finalization, Preliminary Research Exploration, and Best Practices Identification.
Methods: This project aims to develop and solidify a systematic and sustainable ASRH intervention in conjunction with the Ecuadorian Government and an Ecuadorian University partner. Participants were recruited via the assistance and direction of the Ecuadorian Ministry of Education. Stakeholders were recruited through strategic monitoring and asset mapping of the Ecuadorian governmental-educational infrastructure and Riobamban university assets. The project functions under a primarily integrative model involving a majority-Ecuadorian team with the major exception being the Project Director/Facilitator. This model functions off of a train the trainers model to create a sustainable training/continuation/expansion intermediate, being the University partner. Sustainability is to be directed by the governmental partners made with the Ecuadorian Ministries of Public Health and Education.
Findings: The first 3 objectives of RioSueña were successfully completed via the aforementioned recruitment and planning model. This integrative approach within the Ecuadorian governmental and educational communities proved to be effective in meeting project deadlines for the completion of these objectives. Furthermore, several best practices surrounding cultural specificities in this community were identified in effectively planning, promoting, and finalizing a systematic and sustainable ASRH intervention.
Interpretation: The developmental stage of the RioSueña intervention as it pertains to the work done here in-country was successful. By modeling the developmental processes of RioSueña as they pertain to systematically involving a community, its government, and key working stakeholders, one is capable of developing large-scale public health interventions in a foreign environment from an international standpoint. Best practices noted in this report should be accounted for when attempting similar projects in public health within South American communities.
Source of funding (if none, enter "None"): None

FRI_218

Learning with Cuba: An Assets-Based Bilateral Partnership to Decrease Infant Mortality in Chicago

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Background: Infant mortality is nearly triple the rate of Cuba for African American babies in US, Illinois and Chicago (4.1 versus 11.3, 12.9, and 13.2 per 1000 live births respectively). Cuba partly attributes this success to the health situation analysis (HSA) tool, which collects comprehensive information about the health of individuals and their families, during home visits conducted by family practitioners. We test the feasibility of training a cohort of UIC graduate students and staff to conduct an adaptation of the HSA as used in Cuba to collect richer information from women of reproductive age in Englewood, Chicago.
Methods: A convenience sample of Englewood, Chicago resident women ages 18 to 49, were recruited to participate in a one-hour, in-home, semi-structured interview. Interviews were conducted by MINSAP-trained staff. Data was descriptively analyzed, and stratified using the Cuban methodology of “dispensarización” and the Hanlon technique. We also developed a computerized program (macro) to mimic the “dispensarización” process and estimated the sensitivity, specificity and kappa coefficient of this automated process, compared to manual (expert stratified) process as the gold standard.
Findings: The Englewood population pyramid resembled that of countries devastated by war. Recruitmen was 91%. Most women were high school educated, without a partner, reported a service job, did not own property and reported numerous obstetric risk factors (teenage pregnancies, no pregnancy prevention or planning and late pregnancy detection). Despite their young age (mean age = 32.5), 75% of women reported one or more chronic diseases and thus assigned to risk group 3 (out of 4 in increasing severity). A developed computer macro was able to stratify women with a 80% sensitivity and 20% specificity.
Interpretation: This project demonstrates the feasibility and community desirability to conduct a health situation analysis an underserved community. It also demonstrates an opportunity for collecting crucial information useful to guide provider's healthcare for this population. The high proportion of women allocated to group 3, coupled with the expansive population pyramid and high socioeconomic disadvantage of this neighborhood calls for immediate action to develop responsive health promotion and outreach programs for women of childbearing age in this community.
Source of funding (if none, enter "None"): W.K. Kellogg Foundation

FRI_219

Trust in Global Health Partnerships: Lessons from Project Last Mile

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Background: Although achievement of the Sustainable Development Goals will likely require meaningful public sector engagement with the private sector, little is known about how trust evolves in such partnerships. In 2014, Project Last Mile (PLM) was established as a private-public partnership that leverages The Coca-Cola system's supply chain expertise to improve availability of essential medicines throughout Africa. This qualitative study was conducted to understand whether and how trust manifested in PLM.

Methods: Fifty-eight (58) interviews with a purposeful sample of key informants were conducted in Mozambique and South Africa after discrete project phases in 2016 and 2017 using a semi-structured discussion guide. Interview transcripts were coded for thematic analysis in AtlasTIv.7 to identify emergent constructs that limited or promoted trust among partners.

Findings: During partnership development, coordination and communication by PLM managers to align role expectations and appropriate timing of inputs among public and private sector partners facilitated initial trust and participation in the partnership. Public brand association with Coca-Cola was described as an asset in Mozambique and a potential liability in South Africa. In both settings, trust developed over time, and consolidated as PLM delivered on workstreams. During partnership implementation, transparent data sharing, open communication and inclusive governance appeared to facilitate trust across stakeholders. PLM Country Leads became embedded in the system as 'go-to' people, trusted across sectors. PLM was perceived to bring an objective, performance-based lens that catalyzed project momentum, and participants on the ground did not describe perceived conflicts of interests or perverse motivations for Coca-Cola engagement.

Interpretation: Trust can be fostered by directly engaging with stakeholders regarding brand association, sensitivities and motivations up front, and revisiting over time. Dynamic team leaders and investment in governance and management practices can ease tensions and realign stakeholders when sector priorities conflict or pace wanes. While such partnerships can pose potential for conflicts of interest, this did not manifest on the ground – with both private and public sector agents aligned for community benefit. Lessons learned from PLM signal potential for future investment in multi-sectoral partnerships, when issues of trust and motivation are addressed openly and proactively.

Source of funding (if none, enter "None"): Yale's Global Health Leadership Initiative (GHLI) is funded by USAID and the Coca-Cola Company.

FRI_220
RUFC Youth Empowerment Program

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Background: The Oyam district of northern Uganda is recovering from decades of armed conflict that destroyed local infrastructure and caused massive displacement. While the community demonstrates resilience, health outcomes remain poor. The under-5 child mortality rate in Oyam is 3 times higher than all of Uganda. Less than 1 percent of children enrolled in primary school complete secondary school. After visiting Uganda in 2014, Ray Wipfli recognized the need for fun, youth-centered programming and initiated an innovative project to promote healthy lifestyles.
Methods: In partnership with Global Health Network Uganda, Makerere University, Youth Rising, and Football for Good, Ray United FC (RUFC) hosts an annual week-long sport and public health camp reaching over 1,000 youth in Oyam. The camp offers public health education to local school children provided by health professional students from the U.S. and Uganda, and soccer training provided by professional Ugandan coaches. Topics covered include infectious disease prevention, sexual and reproductive health, violence prevention, avoiding risky behaviors, and mental health and resilience. The sessions are developed by health professional students in collaboration with local community members to ensure cultural competence. The activities are interactive, engaging, and prioritize youth empowerment. Survey research is conducted with camp participants to understand gaps in knowledge, which informs evidence-based health programs in the area. One of the main objectives of the programming is capacity building and sustainability, which is accomplished by establishing school clubs and providing teachers with evidence-based health education curricula and activities to facilitate throughout the year.
Findings: RUFC camps have delivered culturally-adapted, evidence-based health programming to over 4,000 Ugandan youth and engaged over 100 national and international volunteers in practical community-based public health outreach. Participant satisfaction is extraordinarily high, with every single 2018 youth camper and volunteer indicating that they would recommend the program to others. Ongoing challenges include adapting the curricula to meet the pressing health needs of the target population and prioritizing issues within the short intervention period. These challenges are addressed through continued community-based research and sustained collaboration with local partners.
Interpretation: RUFC programming provides a model of fun, youth-led, community-based public health education. The multi-stakeholder model stresses shared decision-making and local empowerment.
Source of funding (if none, enter "None"): Individual donations

FRI_221

Changes in Child Undernutrition Prevalence in India: Have High-Priority States Fared Better Over The Last Decade?

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Background: In 2005, India launched programs to improve child nutrition with specific focus on a select group of states called Empowered Action Group (EAG) states, which were identified based on historically poor performance among key socio-economic and health indicators. The programs provided supplemental nutrition and healthcare services for mother and children during the perinatal period and early childhood.
Methods: Pooled analyses was performed using data on children under the age of five years from 1998 (n= 24,821), 2005 (n = 41,306), and 2015-16 (225,002) National Family Health Surveys. Stunting, wasting, and underweight status of the child was determined using WHO growth standards. The period of 1998 to 2005 was considered as pre-intervention and 2005 to 2015 was considered as intervention. Differences between years and differences of differences between groups was measured using lincom command in stata after running separate logistic regression models to account for complex survey design and sampling weights. To account for secular trends, estimates were adjusted for mother's education levels, household wealth quintile, toilet availability, and rural residence.
Findings: The prevalence of wasting increased among non-EAG states by 4.0% (95% CI: 3.2 – 4.7) during the intervention period while decreased among EAG states by 3.8% (2.6 – 5.1). After adjusting for secular trends, non-EAG states had a better improvement in stunting prevalence during the intervention period in comparison to pre-intervention period by 6.6% (3.0 – 10.3) while EAG states had better differential improvement in wasting prevalence in comparison to non-EAG states by 12.2% (9.2 – 15.2).
Interpretation: Our results suggests differential improvements for stunting and wasting between EAG and non-EAG states over the past decade. Wasting, which is an indicator for acute undernutrition, improved by a greater extent during the intervention period among the EAG states in comparison to non-EAG states while stunting prevalence improved among EAG states but to a lesser extent in comparison to EAG states, suggesting that the national programs had a higher impact on acute undernutrition.
Source of funding (if none, enter "None"): AS: NIH-NCATS (TL1-TR001454) and NIH-NICHD (1F30HD091975-01A1). JJA: NIH-NIMH (P60-MD006912-05).

FRI_222

A Promising Cervical Cancer Screening Program Implemented in a Rural Clinic Near Santa Cruz, Bolivia.

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Background: Centro Medico Humberto Parra (CMHP) is a non-profit clinic in rural Bolivia. It serves 15 surrounding communities and has 3,000 clinic visits annually. Most patients are women ages 30-65. Women within this age range are at high risk for cervical cancer. Cervical cancer remains a leading cause of death for women in Bolivia, with a mortality rate of 22.2/100,000. While the Bolivian government offers free Pap smears, many of the patients at CMHP self-report that they have never had, or are over-due for, the test. In 2015, CMHP began to offer Pap smears to patients, but a system of identifying candidates and providing appropriate follow-up care needed to be established.
Methods: To address this need, we established a women's health initiative. Women from ages 21-65 underwent a separate gynecologic-based consult apart from their general medicine visit, focusing on the need for Pap smears, vaginal infection screening, menopause management, and contraceptive care. Pap smear results were tracked meticulously to ensure follow-up. The Bolivian clinic staff were trained in this program to ensure sustainability. In addition, a survey was completed to assess patients' Pap smear knowledge, history, and barriers to care. Overall, 103 women from 19 communities were surveyed.
Findings: The number of Pap smears completed during program implementation rapidly increased, from three per month to 20. Survey results indicated that while 87% of participants had been offered a Pap smear in the past, only 52% had received a pelvic exam. As for Pap smear history, 20% had never had a Pap smear, with the average age of 48. For those who have had Pap smears, only 26% fulfill the Bolivian cervical cancer screening guidelines. When asked about the importance of a Pap smear, 44% mentioned cancer, 30% mentioned illness, and 26% did not know. When surveyed about barriers to care, 46% stated that they have difficulty obtaining Pap smears; when asked why, 83% indicated fear as a contributing factor.
Interpretation: This screening process has improved the gynecologic health of patients at CMHP. The information provided by the survey helped tailor women's health care at the clinic, including increasing attention to patient education and reducing barriers to adequate gynecologic care.
Source of funding (if none, enter "None"): None

FRI_223

Developing a national registry and awareness campaign to improve patient identification and reduce barriers to surgical care for cleft patients in the Dominican Republic

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Background: In the last decade, Operation Smile treated over 850 patients in the Dominican Republic (DR). However, the country of 10 million still has approximately 650-700 individuals with unrepaired clefts despite having 120 registered surgeons. To address this discrepancy, Operation Smile DR (OSRD) developed a National Registry Project (NRP) and cleft awareness campaign to identify patients and reduce the number needing surgical care.
Methods: After a three-day project planning conference between Operation Smile, Inc. (OSI), OSRD and Latter-day Saints Charities (LDS) stakeholders, a project manager and logistics coordinator were assigned to manage NRP administration. Purchasing a toll free hotline provided 24-hour communication for patients. A secure database was compiled containing patient names, sex, birth date, location, parent/guardian, and multiple forms of contact information. Six multimedia sources - radio, electronic, newspapers, print materials, TV and social media - secured national coverage and promoted partnerships with health and community figures and organizations. A door-to-door campaign distributed education materials, photographs and hotline instructions.
Findings: Within 18 months, the DR NRP program identified 400 of the estimated 700 untreated individuals. Regularly scheduled calls ensured consistent patient communication. Partnerships with hospitals, organizations and sponsors were selected based on volunteer hour commitments and corporate social responsibility programs to increase reliability of staff support. Over 20 medical facilities and 25 community centers received promotional materials, and over 100 volunteers delivered 20,000 fliers. The NRP increased resource utilization efficiency, enhanced geospatial understanding of medical need and barriers to care, and improved effectiveness of outreach strategies.
Interpretation: The DR NRP success was attributable to simple materials, cost-effective methods, geographic feasibility, reliable communication infrastructure, and OSI’s regional experience. Seven strategic elements including initial planning, human resources, hotline, patient database, materials, awareness promotion and door-to-door campaign effectively identified new patients. Challenges of patient communication and volunteer turnout were addressed by obtaining multiple forms of contact and holding campaign events on weekends. With key partnerships and communication resources, continued NRP implementation may identify the remaining 300 untreated cleft patients in the DR, and could be extrapolated to other lower income countries to reduce barriers and unmet need.
Source of funding (if none, enter "None"): Latter-day Saints Charities, $50,000

FRI_224

Participation in and Contribution to a Pay-It-Forward Gonorrhea/Chlamydia Testing Program among Men Who Have Sex with Men in China: a Mixed-Methods Analysis

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Background: Neisseria gonorrhea and chlamydia trachomatis are epidemic among Chinese men who have sex with men (MSM), but testing rates are low and there is little research on gonorrhea/chlamydia testing behavior. From December 2017 to May 2018, we implemented a pay-it-forward program for gonorrhea/chlamydia testing among MSM. Pay-it-forward is an arrangement where participants each give a gift to the next person, thus generating a cascade of kindness. Previous work showed that a Pay-it-forward testing program significantly increased testing rates compared to the standard of care.
Methods: We conducted a mixed-methods study to understand participation in and donation to the Pay-it-forward program. MSM at two sites in Guangzhou, China were offered free gonorrhea/chlamydia testing and given the option of donating money ("paying it forward") toward testing for future participants. We collected survey data on sociodemographics, sexual behavior, and testing behavior for all men offered the program. Correlates of testing uptake and of Pay-it-forward contributions were analyzed using multivariable logistic regression. We then conducted one-on-one interviews with men who received testing on their perceptions of the program and attitudes toward testing and analyzed these data using thematic analysis. Ethical approval were obtained from the University of North Carolina at Chapel Hill and the Dermatology Hospital of Southern Medical University in Guangzhou.
Findings: 110 out of 204 men received gonorrhea/chlamydia testing through the Pay-it-forward program. Logistic regression showed that getting tested was significantly associated with being married (aOR = 5.63, 95% CI 1.25-25.30) and having symptoms suggestive of an STI (aOR = 4.04, 95% CI = 1.37-11.98). There was borderline significance associated with number of sex partners (aOR = 1.21, 95% CI = 0.98-1.50). 98 out of 110 men chose to Pay-it-forward any amount, and multinomial logistic regression showed that higher Pay-it-forward amounts were associated with income (aOR = 6.34, 95% CI = 1.46-27.52) and receptive position during anal sex (aOR = 3.58, 95% CI = 1.33-9.92). Analysis of qualitative interview data are ongoing.
Interpretation: A Pay-it-forward gonorrhea/chlamydia testing program may be particularly feasible among MSM who perceive themselves at high risk of infection.
Source of funding (if none, enter "None"): Doris Duke Charitable Foundation, Southern Medical University Dermatology Hospital

FRI_225

Creation of Tailored Prehospital Care Guidelines and their Dissemination via a Custom Mobile Decision Aid Application to Promote Quality Prehospital Emergency Care in Nepal

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Background: Timely and consistent prehospital care interventions are essential elements in the chain of survival for emergency care. In Nepal and other low-resource settings, multiple barriers result in intermittent treatment. The Nepal Ambulance Service (NAS), Nepal's first centrally coordinated ambulance service, has achieved rapid response times using high tech GPS mapping and is expanding their service area.

To promote consistent, quality ambulance care as the system expands, NAS and Stanford University utilized an iterative design process to identify barriers in care, create solutions to meet the EMT's needs, and implement Nepal specific care guidelines hosted on a customized mobile application.

Methods: The design process aligned with the IDEAS[1] framework:

1) Challenges were sought by empathizing with NAS EMTs during qualitative interviews.
2) A goal of increasing the frequency of key prehospital care interventions was specified.
3) Stakeholders ideated solutions and determined that guidelines with enhanced applicability and accessibility carried potential impact.
4) EMTs tested a prototype using practice scenarios.
5) Feedback was gathered, using evidence based tools[2], driving further revisions.
6) A full version application was built.
7) 21 NAS EMTs began piloting in December 2017 after a case-based educational session.
8) NAS began collecting care data to facilitate impact evaluation.

Findings: EMT's provided key insights during the concept creation phase, highlighting inadequate live medical guidance and poorly applicable care guidelines. During the prototype phase, stakeholders clarified care metrics and described challenges preventing standardized prehospital treatment of emergency patients. A customized mobile app was created with the resulting product rated as easy to use during our initial pilot.

Initial data indicates that EMTs are assessing vital signs in the majority of patients, but other interventions (provision of oxygen, intravenous fluids or medications) occur at low rates.

Interpretation: Using an iterative development process, partners created a highly tailored tool to address significant issues faced by Nepali EMTs. Initial data provides detail for tailoring quality improvement strategies. Ongoing challenges may include inadequate access to cell phone bandwidth in some rural areas, as well as limited oversight as NAS juggles a number of competing priorities. SEMI and NAS are now focused on identifying the root of ongoing barriers and crafting system-level interventions to address them.

Source of funding (if none, enter "None"): Stanford CIGH

FRI_226

Addressing Demand-side Barriers to Cervical Cancer Screening in Rural Senegal with the Care Group Model

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Background: Cervical cancer is the number one cause of cancer death among women in Senegal. Since 2010, a partnership between the Kedougou, Senegal Regional Medical Direction, Cheikh Anta Diop University, Peace Corps Senegal, and the University of Illinois at Chicago has implemented and strengthened a cervical cancer screening program. The partnership conducted studies in 2015 and 2016 to identify demand-side barriers to screening service uptake. Responding to these findings, the partnership is implementing a peer-to-peer educational intervention through Care Groups. Established in 1995 and utilized in 20+ countries, the Care Group model is an evidence-based train-the-trainer approach in which each trained volunteer transfers health information each month to ten peer households within a 'Neighborhood Group.' This model has been used extensively for maternal and child care as well as communicable disease education but there are no existing curricula demonstrating use for cervical cancer prevention and control.

Methods: Nine demonstration sites (six rural posts and three health centers) in the Kedougou Region were chosen to host Care Groups. Peace Corps volunteers collaborated with local female healthcare workers, the 'Care Group Leaders,' to identify 10-15 volunteers evenly distributed throughout the site. Over the next eighteen months, a three-part cervical cancer curriculum is being introduced that addresses: causes, risk factors, and signs and symptoms of cervical cancer; screening and treatment; and psychosocial concerns following diagnosis. Process and reach data to be collected include number of Care Group trainings, number of volunteers, number of households educated, and feedback on the content and delivery of the modules.

Findings: Seven of the nine demonstration sites are now holding monthly meetings. Preliminary data from three sites over six months has shown that on average, 8.5 sessions have been held and 236 women have been reached through the Neighborhood Groups. Thirteen Peace Corps volunteers have participated in implementing the Care Groups.

Interpretation: Via this volunteer network, a single Care Group can reach up to 225 women each month, amplifying the effect of each educational topic and making it a high-impact, low-cost solution to addressing information gaps. Care groups are a promising approach for community-Peace Corps-academic partnerships for implementation science.

Source of funding (if none, enter "None"): NIH K01 UIC2016-0947

SAT_001

Adherence to best practices for short-term medical missions (STMMs) abroad: a preliminary validation of the Service Trip Audit Tool (STAT)

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Background: The role of private non-government organizations (NGOs) in providing medical care abroad raises issues of ethics and accountability which have so far not been addressed by rigorous assessments of program structure. Despite the prevalence of private sector short-term medical missions (STMMs), little information exists on their quality. We aimed to assess the adherence of STMMs operating in Latin America and the Caribbean (LAC) to key best practices using the Service Trip Audit Tool (STAT). This tool was based on a previous literature-based and stakeholder validated inventory of 18 best practices for STMMs.

Methods: Program administrators from 333 North American organizations offering STMMs in LAC were invited to complete an anonymous SurveyMonkey tool evaluating adherence to 18 best practice elements. The tool was also publicly available to recent volunteers from each organization. Adherence to each practice was reported as Yes, No, or Not Sure, and conflicting data was resolved by investigator consensus. Adherence was calculated as the percentage of organizations with a Yes response. Krippendorff's alpha (k) was used to assess interrater agreement.

Findings: 178 individuals responded from 93/333 organizations (response rate 28%). The cumulative reported adherence was over 80% for 12 of the 18 best practices, including formal partnership (89.3%) and local leadership (82.8%). There was lower reported adherence for the remaining six best practices, which ranged from 55.1% to 75.3%.

For the 32 organizations with multiple raters, interrater agreement was moderate to substantial (0.5> k >0.7) for 12/18 best practices, fair for two items (>0.4 k >0.6), slight for four items (0> k <0.2).

Interpretation: This is the largest existing study of STMM best practices, and the first to attempt a bottom-up assessment of adherence to practice standards. Representatives from the sample of NGOs claimed adherence to the majority of the key best practices assessed by the STAT, and responses were moderately reliable between raters. STMM evaluation using the STAT may be useful to professionals and trainees in selecting a high-quality project. Furthermore, such evaluation allows a mechanism for assessment and monitoring of STMMs.

Source of funding (if none, enter "None"): None

SAT_002

First, Do No Harm: A Novel Curriculum Incorporating Skills, Scope of Practice, and Ethical Frameworks for Graduate Medical Trainee Global Health Education

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Background: In response to growing interest in global health among clinician trainees, Northwestern University has established clinical rotations in resource limited settings. As part of the McGaw Global Health Clinical Scholars program at Northwestern University, graduate medical trainees are taught clinical skills and ethics. In the first iteration of the curriculum, trainees reported increased confidence in performing advanced clinical skills beyond their scope of practice despite a lack of mastery training. To address this unintended consequence, the curriculum was revised to emphasize skills applicable to all trainees and ethical frameworks were incorporated throughout training.
Methods: Survey data was collected from trainees at the Ethics (21 participants), Surgery and Anesthesia (Surg/Anes)(24 participants), and Obstetric, Gynecologic, and Pediatric (OBG/Peds)(11 participants) skill training days 2016 to 2017 to assess trainees comfort with each procedure. In the new curriculum in 2017 and 2018 there were 7, 9, and 14 participants respectively. The skills taught in the revised curriulum were: IV placement, incision and drainage, suturing, fracture splinting, bag mask ventilation, sedation, vaginal delivery, post-partum hemorrhage, basic gynecologic exam, and obstetric ultrasound. During each session, a dedicated ethics debriefer reviewed applicable frameworks. Pre and Post-test evaluation was done and Chi-squared analyses were performed with SPSS v.25.
Findings: In the first round of Surg/Anes simulations all trainees reported increased belief the benefits outweighed the harms of performing each skill and they would be more likely to perform them as the only provider. Responses were similar for the first round of OBG/Peds skills. In the modified skill stations, all trainees reported increased belief that the benefits outweighed the harms of each skill, they would be more likely to perform them if they were the only provider, and they felt the skill was part of their scope of practice, but with more modest effect.
Interpretation: Training in universally applicable skills and integrating scope of practice and ethics frameworks is important. Ethical issues frequently arise in a GH setting and with this curriculum, trainees are given the opportunity to discuss performing each skill. This framework allows trainees to practice useful clinical skills and explore their ethical implications in a safe and controlled environment.
Source of funding (if none, enter "None"): Northwestern University Center for Global Health

SAT_003

The International Federation of Nurse Anesthetists (IFNA) Anesthesia Program Approval Process (APAP)

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Background: Introduction

Nurse anesthesia is among the oldest nurse specialty. Documentation goes back to the 1870s in the US and Alice Magaw became the first nurse anaesthetist who published her article “Observations in Anaesthesia” in the Northwestern Lancet (www.aana.com). In Europe little documentation about the work of early nurse anesthetists exists. Still, old surgical literature shows that specially trained nurses were employed to provide anesthesia since the late 19th century using open drop ether technique (Janssen 1919). Despite the long history of nurse anesthesia IFNA was only chartered in 1989. Like many professional bodies IFNA first developed professional standards and, than began monitoring professional educational programs in 2010 applying the Anesthesia Program Approval Process (APAP).

Methods: Philosophy of APAP

According to the Task Force for Scaling up Education and Training for Health Workers (2008) there is limited anesthesia training and high rates of anesthesia related complications and anesthesia related deaths. It is urgent that national governments, with support from international organizations, agree on quality assurance systems for education and training, including accreditation, and other indicators of progress. APAP’s underlying philosophy is to improve the health and welfare of humanity by promoting international educational standards and to encourage programs to comply with IFNA’s Educational Standards for Preparing Nurse Anesthetists.

Findings: Results

The IFNA APAP Program was introduced in 2010 with three levels of Accreditation: 1) Registration, 2) Recognition, and 3) Accreditation. To date, there are 22 programs with active accreditation status. A recent grant was approved for an onsite level 3 accreditation visit to a nurse anesthesia educational program in Liberia which will occur in November 2018.

Interpretation: Conclusion:

Although IFNA strongly supports a nursing background for admission, it also believes in an approval process that recognizes the differences that currently exist. Admission criteria to nurse anesthesia education and scopes of practice vary worldwide (Meussen et.al.2010). For these reasons IFNA believes that an inclusive process provides the greatest opportunity to improve anesthesia care to patients now and in the future. APAP is designed to work with anesthesia programs as they currently exist if they pledge to meet IFNA’s Education Standards to the best of their ability.
(http://ifna.site/app/uploads/2017/06/Operational-Policies-APAP-June-2017.pdf)

Source of funding (if none, enter "None"): None

SAT_004

Developing culturally appropriate education to increase cervical cancer screening among Maasai women in rural Tanzania

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Background: In Tanzania, women are diagnosed with cervical cancer nearly ten times as frequently than in the US. The Maasai tribe is a community rooted in patriarchal culture, where women are often educationally and financially marginalized. Most medical providers speak Swahili and not the native language, Maa. In 2016-2017, a cervical cancer screening clinic was pioneered in Ngonogoro District. While the clinic was well attended, only 40% of patients were Maasai while Maasai make up greater than 85% of the local population. In order to increase participation among Maasai women at a preventative health clinic, we developed a culturally appropriate education program to increase Maasai women's knowledge of cervical cancer and screening.

Methods: The patient education program design included culturally appropriate 3D models with same skin tone and dress of their population, which aided in a discussion of cervical cancer, importance of screening, pelvic exam, and cryotherapy. The program was spoken in English then translated into Swahili and Maa. We tested the effectiveness of the educational intervention by administering pre- and post-surveys. Women were categorized as Maasai or non-Maasai. Healthcare workers from two district hospitals served as an educated group. A focus group discussion of Maasai women was conducted to further understand their barriers.

Findings: Maasai participants demonstrated a significant (21.4%) improvement in knowledge following the educational session. Healthcare workers had the highest pre-test score with moderate improvement after the intervention. Non-Maasai women also showed moderate improvement. Themes from the FGD included the helpfulness of the pelvic model and speculum, fear of the pelvic exam as the biigest barrier to screening, and the belief that they do not need to be screened because they do not feel 'sick.'

Interpretation: Our targeted, culturally sensitive patient education program was acceptable to Maasai women and effective in increasing their knowledge of cervical cancer and available screening. We hope that instead of feeling confused and misunderstood, Maasai women, may feel empowered that they can seek care early and have a positive experience. We believe our education program is scalable to other global health initiatives in empowering marginalized communities and patients in making informed healthcare decisions.

Source of funding (if none, enter "None"): Eleanor B. Daniels Fund at the University of Vermont Cancer Center

SAT_005

A New Hope: Introducing Comprehensive Sexual Education to Hope Comprehensive High School in Masaka, Uganda

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Background: According to Uganda's 2016 Demographic and Health Survey, 25% of girls aged 15-19 have become pregnant. Adolescent pregnancies pose health challenges because teenage mothers are constrained in their future pursuit of education and have an increased likelihood of adverse pregnancy outcomes.

During summer 2017, the Kisoboka team from Long School of Medicine identified a need for sexual education at Hope Comprehensive High School, in Masaka, Uganda. In response, Kisoboka introduced a comprehensive sexual education curriculum to the school in summer 2018.

Methods: Kisoboka implemented Big Decisions, an abstinence plus reproductive health education program authored by Dr. Janet Realini, Founder and Former President of Healthy Futures of Texas (HFT). Kisoboka trained 15 teachers at Hope School and co-facilitated the entirety of Big Decisions to a pilot group of 30 students.

A survey was administered before and after the curriculum implementation. The survey measured student demographics and knowledge and attitudes toward sex, relationships, and contraception.

Findings: Thirty surveys were collected. Students' knowledge and attitudes toward sex and contraceptives improved. On average, the percent of correct responses on knowledge-based questions rose from 57% to 79%. The percent of positive attitude responses toward condoms rose from 52% to 66%. An increased number of students listed abstinence as the most suitable form of contraception for young people, from 40% to 73%.

Interpretation: Upon the pilot group's conclusion, Kisoboka met with Hope School administrators and created a timeline for the rest of the schools' 300 students to complete the program. Due to the successful reception of Big Decisions, the director of Hope School plans to take the curriculum to secondary school conferences across Uganda. This is very significant, as Uganda only recently lifted a parliamentary ban on sexual education beyond abstinence only. The biggest challenge for the project will be monitoring its sustainability now that Kisoboka has left Uganda.

Source of funding (if none, enter "None"): Center for Medical Humanities and Ethics (CMHE) of University of Texas Health San Antonio (UTHSA)

SAT_006

Lessons Learned From a Novel Transdisciplinary Global Health Education Initiative for Adolescent Students in the San Francisco Bay Area

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Background: Summer Researchers in Global Health (SRGH) is a six-week internship program for rising high school seniors at the Institute for Global Health Sciences (IGHS) of the University of California, San Francisco (UCSF). SRGH addresses the need to grow local capacity, particularly as existing opportunities for adolescents lack interdisciplinary content and research training. Opportunities often involve short-term volunteering, which can be unethical. Additionally, career choices are defined in adolescence, yet few opportunities exist in global health for this age group. To address these key issues, SRGH integrates a transdisciplinary model of global health through didactic and experiential components, and exposes students to several global health careers through early-stage professional development opportunities.
Methods: SRGH exposed students to the first global citizen level of CUGH global health competencies. From June to July 2018, seven interns developed a transdisciplinary perspective by completing independent projects, from reviewing literature on maternal care to studying tuberculosis; exploring health issues in case studies and roundtable sessions with health professionals; and establishing foundational knowledge by attending online lectures modified from existing graduate-level resources at UCSF. To encourage professional development, interns received mentorship from UCSF staff and faculty, skill-building workshops, and personalized advising from SRGH staff. Programmatic elements were adapted to this age group and emphasized research training, an experience often reserved for postgraduate students.
Findings: Interns achieved a broader understanding of global health and working in a professional environment, interacting with over sixty professionals from twelve IGHS groups. Seventy percent of interns expressed that this internship clarified their future career direction. They expressed a desire for fieldwork, struggles with adapting to an office job, and difficulty in understanding technical concepts in the online course. Limitations to the program included the six-week time frame, tailoring curriculum to a high school audience, and coordinating human resources.
Interpretation: This program represents an innovative approach to global health education because of its emphasis on transdisciplinary research and early-career professional development. It provides compelling evidence to combine didactic and experiential components in training opportunities for adolescents. SRGH demonstrates that translating global health concepts ethically for a high school audience is not only possible but also crucial in developing a skilled generation of global health professionals.
Source of funding (if none, enter "None"): Private donors.

SAT_007

In-Situ Multidisciplinary Simulation in Rural Nepal: the Point of Care Approach with Portable Simulation Unit in Low Resource Setting

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Background: In situ Simulation (ISS) in the actual clinical setting is an excellent modality in rural centers to help refine and refresh various lifesaving skills of the healthcare providers and to widen multidisciplinary team participation. Besides the central tertiary level hospital, Dhulikhel Hospital also runs 21 community outreach centers (ORC); however, ORCs have fewer opportunities to practice emergency skills leading to skill decay, therefore low-cost portable simulation unit at the point of care was developed. Moreover, ISS may detect latent safety threats and bring organizational changes in the centers leading to patient's safety. The goals were to examine the effect of ISS on perception and teamwork among health care providers, and to identify and remediate the latent safety threats in the ORCs.
Methods: Portable ISSs are conducted with interdisciplinary involvement in ORCs during periodic visits. ISSs are performed using ordinary manikins and scenarios of different emergency situations in the native working environment with locally available equipment and medication. Structured checklist is designed for the emergency lifesaving skills for the scenarios and recorded after each ISS. Upon completion of the scenario, participants are debriefed constructively, the latent safety threats are recorded and the feedback from the participants is collected voluntarily. The teamwork of the interdisciplinary staff is recorded using "clinical teamwork scale".
Findings: The ISS is underway in different ORCs among their usual working health care teams within their own working clinical environment and the preliminary results are encouraging. Based on feedback findings, participants are mostly optimistic and the confidence of the participants to manage the emergency cases has amplified. The teamwork scale of the staff has improved significantly. Various latent safety threats have been detected and were communicated with the team and feasible amendments made for patients safety in future clinical practice.
Interpretation: This novel approach of portable ISS in any global resource limited area has the potential to both reduce the costs of simulation and expand medical simulation experiences to providers thus improving their lifesaving emergency skills and teamwork performance. Moreover, it gives the opportunity to uncover any deficiencies in the individual, the team and the environment in the ORCs without causing any harm to patients.
Source of funding (if none, enter "None"): Dhulikhel Hospital

SAT_008

A Novel Emergency Medicine Training Program to Improve Outcomes in Emergency Care in Karachi, Pakistan

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Background: Despite having a significant burden of acute illness and injury, Pakistan has a rudimentary emergency care system. Most Emergency Departments are staffed by health providers with minimal or no training in the care of acute, critical, and traumatic conditions, resulting in avoidable outcomes and patient suffering. Ideally, emergency care should be provided by specialty-trained physicians; however, at present, there is a lack of such physicians in Pakistan. It will require a generation, at least, to train a cohort to meet the nation's needs. As an intermediate solution, a novel one-year training program - the Certification Program in Emergency Medicine (CPEM), has been developed at The Indus Hospital (TIH) in Karachi, Pakistan in order to facilitate the development of Emergency Medicine (EM) as a specialty in Pakistan.

Methods: The one-year training program consists of two arms, administered by both local faculty and international visiting faculty: CPEM-Clinical (CPEM-C), currently with eleven physicians from TIH, and CPEM-Didactic (CPEM-D), currently with 21 physicians from hospitals across Karachi (Jinnah Postgraduate Medical Centre, Civil Hospital Karachi, Aga Khan Hospital, Abassi Shaheed Hospital, Patel Hospital, and Imam Clinic). Bedside instruction, clinical mentorship, and online discussion of hypothetical cases occurs between the international visiting faculty, local EM faculty and the CPEM-C participants. Five hours of conferences using educational methods such as traditional didactics, flipped classroom exercises, small group discussions, and simulations occur at least once a week with both CPEM-C and CPEM-D participants, and additional workshops and training sessions occur at regular intervals to supplement learning throughout the year. CPEM-C participants report clinical progress electronically and all participants engage in regularly scheduled bi-directional feedback.

Findings: The thirty-three participants engaged in the program thus far have overall expressed satisfaction with the program and improvement in their confidence and personal knowledge as well as their clinical care.

Interpretation: Dedicated EM training is essential to providing quality emergency care. Novel programs that engage learners in concentrated and efficient educational methods are an effective means to bridging the current gap in specialty EM training in Pakistan and throughout the world.

Source of funding (if none, enter "None"): Habib Bank Ltd. Harvard Medical School Center for Global Health Delivery - Dubai

SAT_009

Google Glass for Remote Surgical Tele-proctoring in Low and Middle-Income Countries: A Feasibility Study from Mozambique

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Background: Untreated surgical conditions account for one third of the total global burden of disease, and a lack of trained providers is a significant contributor to the paucity of surgical care in low and middle income countries (LMICs). Wearable technology with real time teleproctoring has been demonstrated in high resource settings to be an innovative method of advancing surgical education and connecting providers, but application to LMICs has not been well described. We share our six-month experience with Google Glass in Mozambique and demonstrate the feasibility of using wearable technology with tele-proctoring to expand access to training opportunities in reconstructive surgery in this low resource setting.
Methods: Google Glass with livestream capability was utilized to facilitate teleproctoring between a surgeon in Matola, Mozambique and a reconstructive surgeon in Los Angeles, United States over a 6 month period. At the completion of the pilot period a survey was administered regarding the acceptability of the image quality, limitations experienced, as well as the overall educational benefit of the technology in different surgical contexts.
Findings: Twelve surgical procedures were remotely proctored using the technology. No complications were experienced in any patients. Both participants reported moderate visual impairment due to image distortion and light overexposure. Video stream latency and connection disruption were also cited as limitations. Overall, both participants reported that the technology was highly useful as a training tool in both the intraoperative and perioperative setting.
Interpretation: Our experience in Mozambique demonstrates the feasibility of wearable technology to enhance the reach and availability of specialty surgical training in LMICs. Despite shortcomings in the technology and logistical challenges inherent to international collaborations, this educational model holds promise for overcoming health and educational disparities, building surgical capacity and encouraging provider retention through the continued engagement, mentorship and instruction of local surgical providers in areas with limited opportunities for surgical trainees.
Source of funding (if none, enter "None"): The authors have no financial interest to declare in relation to the content of this article or products mentioned within it. The study was funded through a philanthropic donation from Joseph and Susan Roach through Mending Kids, International.

SAT_010

The Current Status of Global Health Education in Medical Schools Worldwide: A Questionnaire Survey of 49 Schools in 23 Countries

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Background: The Bellagio Global Health Education Initiative (BGHEI) is a diverse group of educators, administrators, and clinicians from low-, middle-, and high-income settings representing six continents. In order to plan and prioritize curricular interventions, BGHEI conducted a survey to better understand global health education (GHE) for students enrolled in medical schools worldwide.
Methods: BHGEI members identified a convenience sample of schools, with emphasis on obtaining representation from low- and middle-income countries. We administered a survey requesting information on (1) how each school defined GHE, (2) the presence of GHE didactics, elective GHE experiences, and pre-departure programs; (3) assessment methods for GHE experiences; and (4) institutional affiliations supporting GHE.
Fifty-eight of 150 schools (38.7%) responded, and 49 (32.7%) provided data for analysis, which was performed using descriptive statistics and chi-square tests.
Findings: Of 49 responding schools, 29 (59.2%) represented sixteen low- and middle-income countries and 20 (41.8%) were located in seven high-income countries. Thirty-two of 48 schools (66.7%) included global health curricula in their medical education programs (40%, 54.2%, 89.5% in low-, middle-, and high-income countries, respectively [c2= 9.85, p=0.04]). The top three topics included in GH curricula were communication skills, social determinants of health, and cultural humility/awareness. The three most commonly used GHE pedagogies were clinical electives at “away” sites (33/41, 80.5%), didactic coursework (27/41, 66.9%), and “local” GHE opportunities (23/41, 56.1%). Twenty-five of 35 schools (71.4%) indicated that they provided pre-departure training. Written reflection and preceptor evaluations were the most common GHE assessment methods. Thirty-two of 41 schools (78.1%) expressed interest in integrating or enhancing global health in the formal curriculum.
Interpretation: To our knowledge, this is the first attempt to comprehensively describe the status of GHE in medical schools around the world. Preliminary results document that GHE is being taught in countries of all income levels, and it will be important to clarify the similarities and differences in how these institutions understand GHE. We document significant interest in expanding GHE worldwide. Further analysis will determine what areas are priorities for GHE content in medical student curricula, as well perceived implementation barriers and solutions for how they may be overcome.
Source of funding (if none, enter "None"): None

SAT_011

A Pilot Project to Evaluate an International Public Health Emergency Management Curriculum for Francophone Countries

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Background: Having trained staff is essential for managing a public health emergency management (PHEM) program. The Centers for Disease Control and Prevention (CDC) worked with instructional designers to develop an international PHEM curriculum that utilizes three styles of learning for adult learners: visual, audial, and kinesthetic.
In May 2018, the French-language versions of four PHEM courses were piloted in Dakar, Senegal. The trainings were delivered to an audience of 47 Ministry of Health participants from 12 Francophone African countries. The pilot sessions of these courses are the first time public health emergency management principles have been outlined in a formalized curriculum with attention to adult learning principles.
Methods: CDC provided training via videoconference to three Senegal Ministry of Health and Social Action (MSAS) staff to prepare them to facilitate the courses. While the facilitators were familiar with the material, this was their first experience utilizing the newly developed curriculum. Data on the efficacy of the training was captured through pre- and post- examination results and qualitative feedback from training participants.
Findings: Examination data showed marked improvement between pre- and post- test scores with an average improvement of 39.5% across all courses. The most notable improvement was exhibited in the Logistics course (70%) and the least exhibited in the Risk Communication course (27%).
Participants rated the courses very favorably overall. Feedback from participants cited the desire for ongoing technical assistance from Senegalese MSAS staff and experts from US agencies and international partners.
Utilizing videoconferencing technology to mentor and prepare facilitators was novel and highlighted the possibilities afforded by technology for mentorship and dialogue. Training facilitators provided positive feedback on the use of videoconferencing for curriculum review and facilitation training. Training facilitators were able to provide valuable insight on the pilot curriculum, including translation issues, and aspects of the training that could be improved.
Interpretation: There is promise in utilizing local subject matter experts to deliver PHEM curriculum regionally. The use of videoconferencing for technical assistance allows for in-person assistance despite geographical and temporal barriers. The success of Senegalese facilitators in the regional PHEM training can be replicated elsewhere by leveraging investments made in training and mentorship to magnify impact and empower public health professionals.
Source of funding (if none, enter "None"): CDC

SAT_013

Effectiveness of a blended and in-person course of wheelchair service provision knowledge: A controlled quasi-experimental study in India and Mexico.

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Background: Evidence highlights a global shortage of wheelchair service provision education and training that result in inappropriate wheelchair provision with associated health and economic consequences. Two learning methodologies, a hybrid and in-person course, based on the World Health Organization Wheelchair Service Training Package Basic Level, are currently available to train wheelchair service providers worldwide. The purpose of this study was to compare the effectiveness of both learning methodologies based on knowledge and satisfaction among a group of wheelchair service providers in India and Mexico.

Methods: A controlled quasi-experimental study evaluated changes in basic wheelchair knowledge and levels of satisfaction between Hybrid and In-person course learners in India and Mexico using a convenience sampling method. Outcomes were assessed using self-administered online surveys, the International Society of Wheelchair Professionals Wheelchair Service Provision Basic Test (primary outcome) completed pre- and post- the learning intervention and a Satisfaction Survey (secondary outcome) completed post-intervention. Primary analysis was intention-to-treat using linear mixed models. Missing values and lost to follow-up were addressed using multiple chained imputations. Secondary outcome was analyzed using a two-tailed two independent samples t-test.

Findings: A total of 81 participants, 43 (53.1%) in the In-person group and 38 (46.9%) in the Hybrid group, participated in the study. Mean baseline knowledge scores were below the passing cutoff of the test (53 points) in all groups. Both study groups experienced statistically significant improvements in the primary outcome when comparing pre- and post-test scores ($p<0.0001$). The in-person group experienced larger effects on the primary outcome. The difference in mean change from post-test to pre-tests between in-person groups and blended was 3.6 (95% Confidence Interval: 1.7;5.4), Cohen's d= 0.36, with a small effect size favoring the in-person training. With regards to satisfaction, the difference between the two interventions was 0.23±0.07 in favor of the in-person group ($p=0.0021$).

Interpretation: Both learning methodologies had a statistically significant effect in increasing wheelchair service knowledge with overall high levels of satisfaction. However, the In-person group reported larger effects when compared with the blended methodology. Blended learning interventions in low and middle-income countries need to consider potential barriers and limitations students may have and design strategies to address them.

Source of funding (if none, enter "None"): ISWP, University of Pittsburgh, APC-GM-0068, CONACYT Mexico

SAT_014

Building an Integrative Undergraduate Program in Global Health Studies: Insights from Northwestern University's Experience

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Background: This presentation provides an overview of the development of Northwestern's Global Health Studies (GHS) curriculum and its associated study abroad programs as a prospective model for other institutions. GHS was established as a minor in 2004, and quickly grew to be one of largest undergraduate programs in the College of Arts & Sciences, attracting students from all disciplines and backgrounds. Additionally, it was the first undergraduate program at Northwestern requiring an international/study abroad experience. In 2017, the program expanded to include a major in GHS and a 5-year dual BA/MPH degree in collaboration with Northwestern's Program in Public Health.
Methods: As one of the oldest undergraduate global health programs of its kind, we provide longitudinal data on the growth and diversification of the Northwestern GHS curriculum, the major career paths of the program's 700+ graduates, and proposed directions for future innovation.
Findings: Since its inception, the GHS program has emphasized an integrative approach to its curriculum and course design, linking perspectives from the social sciences, biomedical sciences, and public health on (a) the origin and nature of health disparities, and (b) challenges associated with health promotion in under-resourced settings. Requirements for the GHS major include core courses in global bioethics, qualitative &/or quantitative methods, social disparities in health, and the history of global health, and elective courses on range of topics (e.g., indigenous medicine, global mental health, infant feeding, gender and health). In addition to formal coursework and study abroad training, GHS students pursue collaborative research opportunities in both local and international settings.
Interpretation: Our experience indicates that rigorous undergraduate programs in global health can play a critical role in promoting collaborative, interdisciplinary approaches for addressing health disparities and strengthening health systems among the next generation of leaders in the field.
Source of funding (if none, enter "None"): Northwestern University

SAT_015

Barangay Health Worker (BHW) Academy: An Innovative Competency-based Capacity-building Program for Community Health Workers in Philippine Rural Areas

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Background: Community health workers in the Philippines are more commonly known as Barangay Health Workers (BHWs), a program institutionalized by the country's Department of Health in 1981. Lack of education and training, poor incentives and remuneration, and job security are some of the issues encountered in the program[1]. This project aimed to:1) determine the different factors affecting the BHW program at the municipal level; 2) identify the essential knowledge, skills, and attitude needed by BHWs in order to fulfill their roles; and 3) propose and implement strategies to improve BHW education and training.

[1]Global Health Workforce Alliance and the World Health Organization. Global Experience of Community Health Workers for Delivery of Health Related Millennium Development Goals: A Systematic Review, Country Case Studies, and Recommendations for Integration into National Health Systems. 2010.

Methods: Key informant interviews and focus group discussions were done among the BHWs in San Isidro, Surigao del Norte, Philippines and various health professionals working in rural areas. Professional educators and training specialists were also consulted. Results of the study were utilized in the formulation of the key competency domains of a BHW. These competency domains and the identified learning strategies for a BHW training program guided the development of a community-based training curriculum and accompanying manual for the BHWs. A 7-day pilot training was then implemented for the BHWs in the area of study.

Findings: Results of the pretest and posttest written examinations as well as the Objective Structured Clinical Examination (OSCE) showed improvement in the knowledge and skills of the BHWs. In order to professionalize the work of the BHWs, local legislation for the implementation of a BHW certification program with corresponding management and supervisory mechanisms was proposed and passed.

Interpretation: The BHW Academy initiative in San Isidro, Surigao del Norte can serve as a benchmark for the country's Deparment of Health for the development of a national curriculum and certification program as well as a national legislation to further professionalize community health workers in the Philippines.

Source of funding (if none, enter "None"): Unilab Foundation, Department of Health, and the Province of Surigao del Norte

SAT_016

Realistic Preparation for Going Global: Pre-departure Training Driven by Role-Playing Case Study Simulations

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Background: Associated with the increasing interest in student global health placements is the recognition that these placements impose unique ethical demands for involved stakeholders (Pinto & Upshur, 2009). These ethical demands are situations that can be anticipated using simulation cases (e.g. Mills et al., 2014). Pre-departure training is the opportune time to engage students with these ethical demands through simulations with role-playing peers to bring a sense of realism to probable observership scenarios that often occur.
Methods: This mixed methods research investigates the perspectives of participants in active role-playing simulations that occurred during a pre-departure training curriculum. Participants completed a mixed-survey immediately afterwards.
Findings: The participant reaction to the simulated cases was overwhelmingly positive (83.3% approval) and with 75% of participants reporting the scenarios increased their preparedness to confront ethical issues on their observership. Participants reported that the simulations allowed them to experience and confront uncomfortable, but realistic situations safely with peers and mentors supporting them with immediate feedback. Participants also credited the role-playing with fostering greater sense of teamwork and facilitating an impromptu post reflection where they would have to reconsider their efforts for sustainable advocacy.
Interpretation: Participants were immensely positive and despite some initial discomfort with acting in front of their peers they participated enthusiastically. We aim to show that case study role play simulation is an effective way to give students exposure to the kinds of ethical dilemmas that they might encounter in their global health observerships and beyond.
Source of funding (if none, enter "None"): This authors wish to acknowledge the funding support of the Faculty of Health Sciences at Queen's University

SAT_017

Taking Stock of Ten Years of Global Health Education and Research: Methods and Lessons Learned

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Background: In 2018, the Center for Global Health (CGH) at Northwestern University began an overall strategic planning process to inform the development of a 5-year Strategic Plan for release in 2019, in conjunction with its 10-year anniversary. The Office of Administration and Planning (OAP) at Northwestern served as the external lead on this process, developing timelines, milestones, and surveys and summarizing and analyzing constituent input from surveys and focus groups. CGH led the thematic direction of the process by establishing a Strategic Planning Committee, comprised of seven members of the CGH affiliated faculty, the director and staff.
Methods: The strategic planning process comprised four phases: Assess, Develop, Execute, and Measure. During the “assess” phase, the group developed and launched surveys for university leadership, affiliated faculty, current trainees/students, and alumni. The “assess” phase also included focus groups of select individuals from the surveyed groups and an external consultation visit by a prominent head of a peer institution global health department. The “develop” phase included synthesizing the assessments, focus groups, and external consultation feedback to identify goals, a plan framework, and ultimately a draft strategic plan. The “execute” phase involved identifying milestones, deliverables, timelines, and metrics/performance indicators, as well as assigning roles/responsibilities. Finally, the “measure” phase involved monitoring of progress via key performance indicators.
Findings: The surveys, conducted via Qualtrics, were launched and remained open for approximately 2 weeks, averaging a response rate of 39%. Surveys consisted of open-ended and multiple-choice questions and were developed structurally around how the center achieved its core mission. For the faculty survey in particular, the majority of respondents were non-tenure track, with most respondents having been affiliated 1-3 years or 4-7 years.
Interpretation: From the “assess” phase, the Center learned about the activities and services that its constituents valued or did not value, what that the Center did well or did not do well, and what that the constituents wanted to see in the Center’s future. This presentation will focus on the results of the four surveys (leaders, faculty, trainees/students, and alumni) as well as on the lessons learned from the strategic planning process as a whole and recommended best practices for other centers wishing to undertake this activity.
Source of funding (if none, enter "None"): none

SAT_018

Strengthening Academic Mentoring through an Innovative, Train-the-trainer Faculty Development Program in Zambia

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Background: Effective mentorship increases mentee research productivity, improves decision-making, and strengthens self-efficacy. The University of Zambia (UNZA) Mentorship Program was developed and piloted to equip faculty with mentoring competencies and training tools for professional development, research mentorship, and academic leadership in Zambia. The curriculum was developed through a collaborative process with senior leaders at the four UNZA health sciences schools and education experts at the Vanderbilt Institute for Global Health (VIGH) and the University of North Carolina (UNC).
Methods: This program was developed as a two-tiered capacity building program, engaging ten senior UNZA faculty members to (1) hone their mentorship skills while (2) designing and piloting a curriculum to train junior UNZA faculty mentors. Senior Zambian faculty led the curriculum development process to guide context-appropriateness and ensure sustainability. US partners supported the curriculum design and implementation by leveraging cutting edge educational approaches and resources. The curriculum was implemented June to October 2018 at UNZA through a series of five full-day workshops, spread over three months, exploring 10 selected topics in mentoring. Between workshops, participants worked on deliverables with UNZA facilitators utilizing interactive instructional strategies and digitally accessible materials for those assignments.
Findings: We collected quantitative and qualitative data at multiple time points through process and impact evaluations to assess program development and implementation and to measure change in UNZA's mentoring culture. Initial process evaluations revealed that the curriculum development process contributed to increased interest, knowledge, and self-efficacy in new educational strategies among facilitators. Impact evaluations, including pre- and post-program mentorship assessment, workshop and program evaluation, and workshop pre- and post-tests, are currently underway.
Interpretation: This program builds on twenty years of collaboration among UNZA, VIGH, and UNC on grant-funded capacity-building initiatives in research and training. The growth of UNZA PhD program prompted UNZA senior leaders to build this mentorship program as a requirement for all graduate-level supervisors, thus ensuring its impact and sustainability. After program evaluation is completed, the curriculum will be enhanced and led again with selected recent graduates serving as trainers. The innovative curriculum can be modified and contextualized to meet the needs of other institutions globally to enhance the quality and impacts of mentoring in academic settings.
Source of funding (if none, enter "None"): NIH D43TW009744-03S1

SAT_019

A Model to Improve Anesthesia Care in a Low Resource Setting Using Established International Competency Standards to Design Accredited Nurse Anesthesia Education. This Takes a Team.

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Background: An international team, led by Phebe Nurse Anesthesia Program (Phebe) joined with Seed Global Health/GHSP (Seed), Northeastern University (NEU) and Beth Israel Deaconness Medical Center (BIDMC) in a partnership commitment to sustainably advance the quality and quantity of anesthesia service for the citizens of Liberia. Inadequate anesthesia capability hinders access to essential and emergency surgery in developing systems. Liberia is severely deficient with less than 100 trained anesthesia providers for a population of 4.5 million, and only one training program. Competency based International Federation of Nurse Anesthetists (IFNA) Standards are accepted as a global scaffold for nurse anesthesia education and practice. The team adapted IFNA competencies to the Liberian education and practice context.
Methods: International education and practice competencies have been published and tested by IFNA in various settings. During consistent in-country engagement over two years, a revised anesthesia curriculum, based upon the IFNA standards adapted to Liberian context, was developed and submitted for formal approval. Representatives of Phebe, Seed, NEU and BIDMC participated in competency crossmatch to curriculum and faculty development. Community of interest expert review of the curriculum was solicited. The team conducted regular meetings, both in person and electronically, to integrate competencies with content and reviewers' comments. Evaluation of curriculum is on-going.
Findings: A diverse team with expertise in the Liberian health system and nurse anesthesia practice and education developed a comprehensive, two year, competency based curriculum for training built on established professional standards. It has been accepted as a national template curriculum by the Liberian Board of Nursing and Midwifery. Added students have matriculated. IFNA review determined that the Phebe program meets criteria for Level 3 Accreditation application.
Interpretation: Five billion people lack access to essential surgery. Skilled anesthesia care is central to safe surgery. Established international standards for anesthesia education and practice can be adapted to low resource contexts. Training anesthetists to meet international benchmarks demands longterm partnership comittments. Results of anesthesia education improvements will have a gradual impact. The first Liberian nurses to train under the competency based curriculum graduate in 2019. We may never know the names of the patients who benefit, because safe anesthesia is quiet, while unsafe anesthesia can be tragic.
Source of funding (if none, enter "None"): Seed, PEPFAR

SAT_020

It’s Not Just Another Rotation: A Comprehensive Global Health Training Program For All Graduate Medical Trainees

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Background: Due to the globalization of health and widespread interest, clinical global health rotations have significantly increased in graduate medical education (GME). Typically, these experiences are undertaken without directed training or preparation. Despite the many benefits these experiences can include like cultural sensitivity and future commitment to health equity, many ethical challenges exist. Well-intentioned partnerships and participants in international clinical rotations often encounter dilemmas with safety, social responsibility and accountability. This program provides trainees of all specialties with a comprehensive curriculum for delivering culturally and ethically responsible care in low resource settings.
Methods: The Global Health Clinical Scholars Program at Northwestern University is a 2 year certificate program for trainees of all specialties interested in global health. A group of core faculty provide teaching in basic global health topics and ethical principles. Additionally, each specialty has an individualized curriculum and mentor. Each trainee must complete the following components: core lectures, peer lectures, specialty-specific mentorship, ethics and skill-based simulations, global health field experience, and mentored scholarly project to receive a certificate. Upon graduation, trainees complete an optional survey about their experience
Findings: Since 2014, 75 trainees have participated in the program with 50 current residents from 13 specialties. Thus far, 16 residents have received certificates of completion and those who completed all components other than the field experience receive area of focus certificates. Upon graduation, 17 residents completed exit surveys. When asked if the program provided value, 94% agreed or strongly agreed. 94% would recommend this program to other trainees who are interested in global health and 88% felt more prepared to deliver global health care. In addition, 82% report going on to deliver care in global health and/or underserved settings after residency. Residents specifically cited “acceptance of differences and respect for those differences” and “sustainability” as learning points from the program.
Interpretation: Providing a comprehensive global health education program across specialties can be feasible and effective through a framework of expert faculty teaching and experiential learning supplemented with specialty-specific mentorship and field experiences. GME trainees who participated in this focused educational program report feeling both more prepared for clinical experiences and more likely to serve the underserved anywhere.
Source of funding (if none, enter "None"): Northwestern University Center for Global Health

SAT_021

Integrating Climate Impacts on Global Child Health in Pediatric Residency Education

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Background: The impacts of climate change will disproportionately affect children, with some climate-driven environmental exposures wielding life-long negative consequences on child development, health, and well-being. While pediatricians must be prepared to adapt clinical practice to future climate scenarios, training programs have not yet incorporated the mounting evidence on climate-related health risks into their curricula. This curriculum teaches pediatric residents to integrate the projected impacts of climate change on global child health in clinical practice and clinical decision-making both locally and on international rotations.
Methods: The Emory University Pediatric Global Health Track was founded in 2011 to train pediatric residents in Global Health. This curriculum was developed starting in December 2017 to incorporate fundamental impacts of climate change on global child health into the global health track education. Initial faculty evaluation informed modifications to this curriculum which is now in implementation. Quarterly, small group, half-day sessions take place over 3 years of 10 participants' residency, with some curricular elements interspersed during required month-long rotations. Collaborative exercises train residents to work with all stakeholders in advocating for the health interests of children in climate and health discussions.
Findings: Existing curricula to integrate climate change and global child health for pediatric residents could not be found. This curriculum links four climate and health domains to their expected impacts on pediatric clinical care: Changing patterns of infections, increasing natural disasters and disaster preparedness, air pollution and respiratory illness, and scarcity of natural resources such as food and water. Experiential learning exercises are incorporated into each session and residents are asked to apply knowledge of climate change health risks to their clinical practice. The sessions build upon existing global health curricular topics including refugee health, emerging infections, malnutrition, advocacy, community pediatrics and others.
Interpretation: Residents prepared to practice medicine in future climate scenarios will better serve patients and may also leverage their climate-informed clinical experience to better advocate for patients' needs in climate mitigation and adaptation efforts. While created for pediatric residents, this curriculum could be modified for other medical specialties and health professions.
Source of funding (if none, enter "None"): This curriculum was funded by a stipend from Emory University's Piedmont Project Initiative.

SAT_022

Instructing Zambian Healthcare Providers in Basic Emergency Care

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Background: Zambia, like many low- and middle-income countries, has a high burden of acute illness and injury but is lacking an emergency care system capable of meeting this need. The Zambian Ministry of Health has prioritized developing and strengthening their emergency care system, and a recent assessment by the World Health Organization recognized several action priorities including developing context-relevant emergency care courses and widespread training of frontline providers. The WHO's Basic Emergency Care (BEC) course is clinical training aimed at frontline providers (doctors, nurses, clinical officers) who by necessity provide emergency care at their facilities, but have received little or no formal training in the field. The goal of the course is to to teach the basics of emergency care, resuscitation and stabilization to these frontline providers.
Methods: In September 2017, 31 healthcare providers were trained in the BEC course in Kafue, and 27 providers were trained in Choma. In January 2018, 32 providers were trained in Kasama, and 36 were trained in Mpika. The course was taught over four and a half days, with a final assessment given on the remaining half day. The course covered five major modules: The ABCDE approach, trauma, Difficulty in Breathing, Shock, and Altered Mental Status. Prior to the courses, data on emergency care knowledge and comfort level were collected from participants using multiple choice exams and Likert scale survey questions. This was repeated post- course, and pre-course data on emergency care knowledge and comfort level was compared to post-course data.
Findings: In Kafue, pre-test mean was 62.9, post-test mean was 80.6 ($p<.0001$). In Choma, pre-test mean was 67.7, post-test mean was 88.0 ($p<.0001$). In Kasama, pre-test mean was 70.1, post-test mean was 82.4 ($p<.0001$). In Mpika, pre-test mean was 68.4, post-test mean was 83.5 ($p<.0001$). At all sites, participant-rated comfort level with emergency care increased after the BEC training.
Interpretation: The WHO BEC training produces statistically significant improvements in emergency care knowledge in participants, and improves self-rated confidence in providing emergency care. The BEC course is a good option for training healthcare providers in the fundamentals of emergency care, and is easily scalable both nationally and internationally.
Source of funding (if none, enter "None"): Massachusetts Medical Society Charitable Foundation

SAT_023

Calling all Educators: Introducing a Comprehensive Guide to Global Health Education

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Background: The American Board of Pediatrics (ABP) Global Health Task Force (GHTF) Trainee Workgroup recently published a Program Director's Guide to Global Health (GH) Education—a comprehensive, practical, free resource for incorporating GH education into pediatric training programs. While the guide was created for pediatrics, it was intentionally designed to be easily adapted for other specialties and trainee levels.
Methods: In 2013, the ABP convened a GHTF to advise its Board of Directors (BOD) and staff in developing a GH agenda around its core values. The ABP and American Academy of Pediatrics (AAP) co-sponsored a conference with leadership from 12 stakeholder organizations in 2015, after which the ABP GHTF convened workgroups. The Trainee Workgroup's goal was to create "Global Health in Pediatric Education: An Implementation Guide for Program Directors." The author group was comprised of 15 GH educators from 10 institutions, with administrative support from the ABP Foundation. Writing commenced in September 2016. It underwent a total of eight comprehensive reviews and modifications by leadership from the Association of Pediatric Program Directors (APPD) Global Health Learning Community, AAP Section on International Child Health, ABP GHTF, ABP Education and Training Committee, ABP BOD, ABP Foundation, and 18 educators from low-resource settings. The guide is housed on the ABP website.
Findings: The guide covers: (1) core considerations for GH training; (2) implementation strategies for GH education; (3) competency-based GH objectives; (4) local/global health; (5) program considerations for GH electives; (6) trainee preparation for GH electives; (7) evaluation, assessment, and certification; (8) GH fellowships; (9) post-graduate GH opportunities; and (10) partnerships and bidirectional exchanges. It is comprised of 145 pages, including 25 resource-packed appendices. Dissemination plans include communication with educators, conference presentations, and publication of a descriptive manuscript.
Interpretation: The Program Director's Guide to GH Education is the first comprehensive set of resources for integrating GH into residency education, and was created through a three-year collaborative effort with several national stakeholder organizations and educators from low-resource settings. It can be easily modified for other target audiences, across trainee levels and specialties, and is a useful, free tool for all CUGH educators.
Source of funding (if none, enter "None"): This project was supported in part by the American Board of Pediatrics Foundation.

SAT_024

Effectiveness of Flipped Classroom Model for Delivering Postgraduate Core Curriculum in Internal Medicine/Rwanda

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Background: Passive learning is associated with dissatisfaction and increased failure rates of trainees. However, educators have yet to study the impact of an active learning model on medical education at the University of Rwanda. Using Flipped Classroom (FC), we sought to assess if changing from a traditional to a FC model for delivering core curriculum lecture improves knowledge and satisfaction among Internal Medicine post-graduates.

Methods: Our study used both quantitative and qualitative methods. We calculated mean exam scores and failure rates for post-graduates who studied under the traditional method (2013-2016; N=196) and under FC (2016-2017; N=51). We compared relative and absolute differences for the mean exam scores, and Odds Ratio (OR) for exam failure rates between the 2 groups. Next, we collected post-graduates (N=38) and faculty (N=27) survey forms to assess their satisfaction rates for both methods. Lastly, we conducted post-graduates (N=3) focused group discussions and instructor interviews (N= 3) for those who were exposed to both traditional and FC models. Quantitative data entries were entered and cleaned in Epidata manager version 4.2.0., then exported to STATA version 12 software for statistical analysis. Qualitative data were transcribed and analyzed using En vivo.

Findings: Results yielded knowledge and satisfaction rate differences between the traditional and FC core lecture models. Post-graduates who were exposed to FC model scored higher than those exposed to the traditional model (78.5% vs. 68.0%, relative improvement 15.5%, $p<0.0001$). In addition, overall failure rates fell by more than 90% under the flipped classroom model (OR for failure 0.07). 95% of post-graduates strongly agreed or agreed with the statement I enjoy and am satisfied with the FC model. They also stated that FC enhances interaction with the lecturer, increases knowledge retention, and improves clinical practice.

Interpretation: Active learning in the form of FC improves post-graduates' medical knowledge and satisfaction when compared to the traditional method. It does, however, require students' engagement, increased preparation time for instructors, and improved support from institutions to facilitate FC delivery.

Source of funding (if none, enter "None"): None

SAT_025

Global Public Health Emergency Management Curriculum Design

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Background: Increased global public health threats have resulted in the need for improved emergency preparedness and response capabilities within public health organizations at the country level. In response, the United States Centers for Disease Control and Prevention (CDC) is developing the first global public health emergency management (PHEM) curriculum. This innovative project supports the Global Health Security Agenda (GHSA) goal of assisting countries to respond rapidly and effectively to public health emergencies.

Methods: The PHEM curriculum is based on a CDC core competency model that defines the competencies and key behaviors recommended to strengthen global PHEM capacity. The model encompasses public health and emergency management principles. Courses are developed collaboratively between CDC emergency response experts and instructional designers by using the instructional systems development process of Robert Gagne's Nine Events of Instruction (Gagne 1985). The collaboration ensures that course content is accurate in theory and practice, and is culturally appropriate for international audiences.

The PHEM curriculum is designed for Emergency Operations Center professionals performing critical roles during emergency responses on behalf of a country's Ministry of Health. The training is delivered by CDC specialists in-country and through a four-month PHEM Fellowship program at CDC headquarters in Atlanta, Georgia, USA. Courses are assessed based on a four level mixed-methods evaluation model (Kirkpatrick 1994).

Findings: Our presentation includes test score data and participant feedback on a basic PHEM course entitled "Introduction to Public Health Emergency Operations and Management Fundamentals." This course has been taught in Nigeria (Nov. 2017), Malaysia (April 2018) and at CDC (Jan. and Aug. 2018 for two PHEM Fellowship cohorts). Ninety-eight out of 112 participants were assessed. Average test scores rose from 50% (pre-test) to 89% (post-test), an increase of 78%.

Participant feedback on the training (facilitation, materials, etc.) was positive, with comments on participant understanding of the subject, benefits of group activities and applicability to their job.

Interpretation: The CDC's PHEM curriculum provides global public health professionals with knowledge and skills to quickly and efficiently respond to emergencies in order to save lives. This initiative assists countries in meeting international standards for PHEM related capacities, such as the WHO International Health Regulations core capacities and Joint External Evaluation standards.

Source of funding (if none, enter "None"): CDC

SAT_026
Introducing Emergency Medicine in Lao PDR

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Background: Lao PDR, one of the poorest countries in the Southeast Asia, is still battling the diseases of poverty while rapid economic development is concurrently leading to increased trauma and chronic diseases. This highlighted the need to develop emergency medicine and led to collaboration between the Lao University of Health Sciences, Lao Ministry of Health, and Health Frontiers to develop the first Emergency Medicine (EM) residency program. The objective is to train Lao physicians to be specialists in EM at international standards while still defining the specialty in the unique Lao context.
Methods: The residency curriculum is based on EM curricula from IFEM, similar Asian programs, North American, and European models and adapted to the Lao context. The result is a three year, 12-month modular system that is competency and milestone based. It is designed to help evolve medical education from didactic based training to a more integrated curriculum with self-learning, simulation and cased-based learning. Residents are evaluated by monthly quizzes, faculty evaluation, and a logbook of procedures, objectives and confidence matrices.
Findings: As the inaugural class approaches the end of their first year, the curriculum is continuously being evaluated and modified. The residents are actively involved in adjusting the curriculum to help them learn more effectively. Residents struggled with multiple choice exams, which led to more case-based sessions and increased focus on physiology and pharmacology. English language skills were found to be essential in order to access medical information, so English classes were mandated twice weekly. The flipped classroom method was introduced to develop self-learning skills. Finally, clearly defined competencies assist Lao physicians in teaching EM topics and decreased the need for foreign faculty.
Interpretation: As the program welcomes its second class, we will continue to evaluate and adapt. The residents indicate that they feel much more confident managing a wide range of patients after just one year of training. They are also helping to make changes to the policies and procedures within the central hospitals. These current residents will become the leaders of Emergency Medicine and have the opportunity to drastically impact the healthcare system in Lao PDR.
Source of funding (if none, enter "None"): None

SAT_028

“Public Health and You” short-courses to strengthen public health workforce in India

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Background: A strong public health (PH) workforce is essential in every country for mitigating critical global health challenges; however, lack of formal public health training opportunities for public health workers coupled with lack of resources poses a significant threat to the development of PH workforce across the globe. India is one of the developing countries that desperately need a large number of skilled public health workers to properly implement PH projects for 1.3 billion people. To address the critical need of formal public health training, researchers from Indiana University School of Public Health-Bloomington have developed a set of online, interactive, computer-based short courses for PH workers who have never received formal training. These courses are known as “Public Health and You (PHY)” could be a promising low-cost training approach for a large PH workforce in India.
Methods: Using the US version of PHY, five short courses on core PH areas have been developed for Indian PH workers: epidemiology and biostatistics, environmental health, health administration, and community, social and behavioral health. All these courses were modified to make them culturally appropriate for India. Subsequently, these courses have been pilot tested in July 2018 at IU India gateway in New Delhi, India. Participants included NGO workers, community health workers and students with non-PH background who are seeking jobs in the field of PH. Pre and post PHY training scores were collected for 36 participants on each short-course to evaluate increase of knowledge. Additionally, participants evaluated the courses via a post-training survey.
Findings: The results showed that the participants had significant increases in knowledge on all PH core disciplines ($p < 0.001$). In addition, the participants felt more confident in their abilities to tackle PH challenges after completing the short courses.
Interpretation: Computer-based PH training via short-courses could be an effective and low-cost method of capacity building for Indian PH workers. PHY can potentially be used in other developing countries to mobilize stronger and more capable PH workforce.
Source of funding (if none, enter "None"): This project was funded by a Global Gateway Seed Grant from the Office of Vice President for International Affairs (OVPIA) at Indiana University Bloomington.

SAT_029

A Closer Look at Women in D43 Training Programs

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Background: Northwestern has been a grantee of Fogarty International Center (FIC) training grants for the past ten years. Partnerships have included University of Ibadan, University of Lagos, University of Jos, and University of Bamako.
This study will examine trainee and program outcomes focusing on trainee characteristics, graduate degree training programs and the non-graduate degree training programs specially by duration (medium versus long term). The aims of the study are to examine trainee characteristics and outcomes.
Methods: We reviewed progress reports from 5 FIC training grants between 2008-2018 where NU was the prime institution to identify past and current trainees. ResearchGate and university websites were used to find missing data on trainee characteristics. PubMed searches were performed for trainee manuscript publication data.
Findings: Overall there were 79 training experiences identified. 23 degree-earning training experiences were included in the evaluation and 56 medium term training experiences. Of the 103, there were 85% male (68:12). Among the graduate degree trainees 91.6% were male (22:2); the medium term trainees had 82.1% male (46:10). The graduate degree trainees had 51 publications in total and the medium term trainees had 238 since their training experiences began. 93% of trainees remained in country and continued to pursue research activities.
Interpretation: The publications and degrees earned from the trainees presented here are able to show that training grants result in highly productive investigators who continue to conduct research. This study shows that more female faculty pursue shorter duration programs. Further investigation into this challenge and development of opportunities to recruit more female faculty is necessary to close the gender equity gap in LMIC scholarly research.
Source of funding (if none, enter "None"): The grants that funded the trainings included in this report were: NU and Jos University Research Training Program in HIV and Malignancies (D43TW009575), HIV and Mycobacterial Disease in Mali (D43TW010350), Multidisciplinary NeuroAIDS Research Training to Improve HIV Outcomes in Nigeria (D43TW009608), "Developing Innovative Interdisciplinary Biomedical Engineering Programs in Africa" (1D43TW009374), and NU AITRP (D43TW007995).

SAT_030

Integrating Peer-Partnership Programming to Enhance Global Health Education

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Background: The ability to work effectively cross-culturally and build robust international partnerships is a critical skill in global health that requires practice. Through its Peer-Partnership Program (PPP), the University of Southern California (USC) provides Ugandan and international university and graduate students and young global health professionals the opportunity to contribute to community-based health programming and gain experience in partnership building and community engagement.
Methods: The PPP takes place over a six-month period. First, participants are selected by the program directors at USC and Makerere University based on demonstrated leadership skills and commitment to health equity. Selected international and Ugandan participants are then put in contact with each other and tasked with developing interactive health education sessions for a five-day youth camp. The mixed teams are provided with public health research from the intervention area, past program evaluations, and assistance in how best to work together by distance. The participants' proposals are reviewed by community-based partners for feasibility and cultural competence. The PPP participants then come together in person for an annual Youth Sport and Health Camp that offers public health education and soccer training to over 1,000 primary and secondary students in rural Ugandan communities. The week prior to camp, the participants partake in teambuilding and facilitation exercises, practice their educational sessions, and participate in local homestays where they gain further familiarity with the community they are serving. During camp, the mixed student teams engage the campers through the interactive, educational activities they developed. Following camp, students continue to work together to evaluate the program and provide feedback.
Findings: A primary outcome of the PPP is increased capacity of young health professionals to work in international teams to successfully implement research and programs in vulnerable communities. Other deliverables of the program include locally-relevant public health currlium for youth. In 2018, all PPP participants reported they would recommend the program to others.
Interpretation: The program provides value to all involved; international students become increasingly aware of the talent, education, and dedication of their Ugandan peers, while Ugandan students gain valuable field experience and develop their professional networks. The program is scalable and has the potential to improve collaboration with community-based partners in program delivery.
Source of funding (if none, enter "None"): None

SAT_031

Use of a Work Plan to Guide Collaboration of U.S. and India Schools of Pharmacy

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Background: International collaborations are growing. In 2014, St. Louis College of Pharmacy (STLCOP) – based in Missouri, United States – came together with Goa College of Pharmacy (GCP) – based in Panaji, Goa in India – to begin building a mutually beneficial educational partnership. To manage the administration of the partnership and to keep partners on the same page, long-term planning and communication became vital.
Purpose: To create a shared vision for the future and direct future educational partnership visits, the schools came together to develop a work plan to serve as a roadmap for future activities.
Methods: Initial site visits were conducted with STLCOP faculty traveling to India and GCP faculty traveling to the US. After assessing the strengths and needs of each location, key personnel came together to determine the scope and priorities of the partnership.
Findings: Using the agreed upon priorities, the first work plan was formalized and subsequently updated. Four objectives were created and prioritized. Each objective included between one and seven desired outcomes with related activities and resource needs. The work plan is consulted prior to the planning for each partnership visit and is updated at the end of the visit with activities completed and next steps.
Interpretation: This work plan guided the direction of the partnership. It has served as an important tool for keeping both partners focused and up to date. It has also been important for programmatic consistency as staff and leadership changes occurred within each partnership.
Source of funding (if none, enter "None"): None

SAT_032

Implementation and Evaluation of the first Global Blood & Marrow Transplantation (GlobalBMT) Training Program

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Background: Blood & marrow transplant (BMT) is the only cure for many blood cancers or severe hematologic disorders. Access to BMT in low-middle-income countries (LMICs) is still limited because of lack of infrastructures and trained professionals, and high cost of drugs. We developed the first GlobalBMT Training course for LMIC physicians with the goal to build capacity in BMT and foster a global network.

Methods: Five participants from Uganda, Nigeria, Nepal, Bolivia and Ukraine were selected from UIC-affiliated LMIC institutions to attend an 8-week BMT training in the summer of 2018. A curriculum was developed to include inpatient/outpatient observership, training in blood bank, HLA and stem cell clinical laboratories, 12 didactic lectures and one-on-one sessions. Specific topics addressed in the course included immunological basis of BMT, clinical aspects in autologous and allogeneic BMT, organization and quality management, low cost protocols and basis for clinical research. Participants filled an initial 14-question survey to obtain demographic information. Towards the end they completed a 15-question evaluation form where they could indicate a 1-5 level of agreement on meeting specific training objectives, engagement and skills of trainers, adequate curriculum, utility of training and facilities. They were also asked to describe personal positive or negative experiences.

Findings: Participants were 4 males and 1 female with more than 6 years from medical degree, and with 0 to 13 years of experience in hematology practice. All came from urban setting academic hospitals. Three of 5 had some previous experience in BMT in their country. Four had previous training in clinical research and 2 have a clinical trial infrastructure in their hospital. In the evaluation form, all the participants agreed that the training course met its objectives, had adequate facilities, and received useful training for future programs in their countries. Participants' more frequent answers to 'what was liked during the training' included: interaction with multiple trainers, shared experiences with other trainees, quality improvement teaching, one-on-one sessions.

Interpretation: The GlobalBMT initiative at UIC is actively collaborating with LMIC institutions to implement BMT. The first training course provided a comprehensive educational curriculum and the basis for a GlobalBMT network that will allow future building capacity initiatives with UIC and among international partners.

Source of funding (if none, enter "None"): UIC-Center-for-Global-Health

SAT_033

Challenges to Application of Helping Babies Breathe/Essential Care for Every Baby Training in the Dominican Republic

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Background: The Dominican Republic (DR) has one of the highest infant mortality rates in Latin America at 22 per 1,000 live births. Evidence-based newborn training programs, Helping Babies Breath (HBB) and Essential Care for Every Baby (ECEB), were implemented at 5 pilot hospitals in 2015. HBB/ECEB has been shown to effectively address neonatal mortality when skills practice is sustained, however specific barriers to clinical application of training may be site-specific.
Methods: An observational study evaluated HBB practice implementation at Hospital Estrella Ureña in Santiago, DR from Jun-Jul 2018. 17 medical students participated in HBB training, knowledge/skill-based assessments, and were surveyed to identify barriers to adopting HBB practices. Quality Improvement (QI) checklists from Jan 2016-Jun 2018 at Juan XXIII Community Hospital were reviewed for documentation of ECEB-based practices.
Findings: Observations of 21 births identified inconsistent implementation of 3 core HBB practices: skin-to-skin contact (SSC), performed in 30% of observed births, towel-drying to warm neonates, performed in 10% of observed births, and delayed umbilical cord cutting time (UCT), which averaged 44.15 seconds. HBB knowledge pretest scores averaged 71%; post-test scores and 3-week post-test scores averaged 87% and 89%, respectively. 175 QI checklists demonstrated that 99% of documented neonates received eye care, umbilical cord care and vitamin K at birth; 83% of documented infants received SSC within the first hour of life.
Interpretation: Teaching HBB/ECEB courses did not correlate with consistent application of HBB-based practices in the DR, despite pre/post-tests demonstrating knowledge acquisition and QI checklists demonstrating robust ECEB clinical practice implementation. Findings are limited to observed births and QI checklists, neither of which represents total number of births. Identified challenges to adoption of HBB-based practices include persistence of previously established workflow, including the use of heat lamp alone to warm newborn instead of towel-drying and prompt SSC. Sustained clinical reinforcement of HBB education/skills and training all clinicians participating in newborn care (pediatrics, OB/GYN) may address this challenge. This study additionally highlights the importance of QI monitoring and in-situ observation/educational reinforcement following HBB/ECEB training.
Source of funding (if none, enter "None"): EVMS Summer Scholars Program and Division of Global Health

SAT_034

Developing a Large-Scale, Multi-Dimensional Interprofessional Education Experience

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Background: This proposal describes the evolving effort by the University of Illinois at Chicago (UIC) to develop a large-scale foundational interprofessional education (IPE) course. This effort impacts roughly 4,500 health science students, pursuing over 13 distinct programs housed in seven health science colleges, and spread over six campuses. This effort is anchored in UIC's IPE mission to "create transformational change in health professions education and health care service delivery" with a distinctive focus on "the pressing needs of underserved individuals and populations."
Methods: UIC's first IPE Immersion Day washeld in 2009 with22 students from eight programs participating. By 2013 IPE Immersion Day hadsome 1,200 students and 100 facilitators participating from 13 programs across three campuses. At the same time the Immersion Daycurriculum has evolved and improved significantly. AY 2018-2019 sees a new stage in this evolution as UIC launches a large-scale pilot of a longitudinal IPE foundations course. This new effort takes place against a global resurgence interest in IPE and widespread curricular reforms across the health sciences.
Findings: Since its inception UIC has sought to evaluate all aspects of its IPE Immersion Day based on the latest evidence in health professions education and has anchored evaluation at the lower levels of the Kirkpatrick model. The overall reaction of learners has consistently and increasingly been positive across the broad spectrum of learners impacted. Students have also consistently expressed strong support for the opportunity to engage in an interprofessional educational experience and consistently request expanded IPE opportunities.
Interpretation: As students continue to request expanded IPE opportunities US health sciences accreditation bodies have increasingly embedded IPE competencies within their standards. These dual forces led UIC to launch its effort to replace IPE Immersion Day with a longitudinal IPE foundations course. Given the scale and complexity of UIC's IPE efforts and its anchoring within a public health mission it is believed that the UIC experience will have relevance to teaching and practice far beyond UIC and contains valuable lessons for health science education across borders.
Source of funding (if none, enter "None"): Office of the Vice Chancellor of Health Affairs, UIC.

SAT_035

A Mixed-Method Approach to Understanding Barriers to Exclusive Breastfeeding in a Resource-Poor Caribbean Island

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Background: Promoting exclusive breastfeeding (EBF) in developing countries is the most cost-effective method to improve infant survival. Innovative and far-reaching strategies are needed to improve uptake and duration of breastfeeding. Roatán, Honduras is an island with high infant mortality, unknown EBF prevalence, and high mobile phone subscription. We performed formative multi-phase research to design an innovative SMS-based intervention to promote EBF in Roatán.
Methods: Phase 1 entailed 12 focus groups discussion (FGDs) with local mothers to understand infant feeding practices and EBF barriers. Phase 2 was a cross-sectional survey to establish EBF prevalence at 2 months of life. These findings informed our intervention, which includes culturally appropriate SMS messages and animations addressing common EBF barriers over 6 months. Mothers are polled at 2, 4, 6 months postpartum on infant feeding.
Findings: Phase 1 and 2 findings were utilized to tailor our intervention., e.g. by concentration messages on ways to avoid breast pain and mastitis, as these were common breastfeeding barriers. Additional messages addressed potential harm of the cultural norm of early use of anise, water, and fruits. In phase 2 we found low EBF prevalence of 10.9% (42/386) at 2 months. The intervention is currently underway. We initially polled mothers by bi-directional SMS messaging but had high loss to follow-up despite phone credit incentives: 10 months after phase 3 began, response rates at 2, 4 and 6-months were 20.1%, 8.0% and 0% respectively. We accordingly adapted our protocol to decrease loss to follow-up by calling mothers who do not respond to SMS messages within 14 days. 3 months after making this change, we found significant increase in response rate for 4 and 6 months (27.3% and 18.4% respectively), but not for 2 months.
Interpretation: Our formative research provided better understanding of cultural context of breastfeeding practices, and allowed design of a tailored intervention. Implementing a protocol to call subjects improved our response rates at later ages. The ongoing intervention will evaluate if SMS could be a useful tool to increase EBF in Roatán, Honduras.
Source of funding (if none, enter "None"): Global Healing Nonprofit University of California, Davis

SAT_036

Nutrition Education to Address Chronic Malnutrition in the Guatemalan Highlands

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Background: Chronic malnutrition in the Guatemalan Highlands is estimated to be over 70% (USAID, 2018), making it urgent that time and resources are invested in nutrition prevention and awareness education. The Nutrition and Education Outreach Programs at Primeros Pasos community clinic in Quetzaltenango, Guatemala provide primary school students and their families with monthly discussions, covering topics such as nutrition, hygiene, and the dangers of parasitic infections.
Methods: Programming included presentations and activities for students in kindergarten through sixth grade and open discussions for parents. Hands-on activities encouraged active learning, increasing the likelihood that knowledge will be transferred to behavior.
Findings: This program gathers evaluation data in three ways. For the primary school lessons, students are administered a pre-test and a post-test for each thematic unit. At the adult open discussions, monthly surveys measure knowledge attained and healthy habits implemented. Finally, children and adult have their height and weight measurements taken at six month intervals to screen for chronic malnutrition, malnutrition, and obesity. Findings are used to plan future lesson plans and discussions.
Interpretation: Presentations, activities, and discussions are delivered in a format that would be easily scalable in low-resourced settings worldwide. In other countries and contexts, special attention would need to be paid to the specific burden of disease and root causes of chronic malnutrition in order for the program to be effective and appropriate for implementation.
Source of funding (if none, enter "None"): My two months on-site with the Primeros Pasos Nutrition were made possible through funding from the Overall Family Fellowship for International Research and Hope Through Healing Hands.

SAT_038

Cross-Sector Collaboration: A Tool for Democratic Health Policy Transformation in an Urban Slum Environment

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Background: Cross-sector collaboration is a tool to create shared governance around complex challenges. In 2015-2017, researchers worked with 300 stakeholders in Accra, Ghana in a participatory action research (PAR) process to develop a cross-sector collaboration around the social determinants of health in the Old Fadama urban slum. The processutilizes evidence from psychology of democracy and conflict resolution to support citizens and community leaders to become not just beneficiaries, but co-strategists that take part in resolving the challenges that affect them.
Methods: Researchers utilized PAR tointroduce cross-sector collaboration and educate the stakeholders about the available evidence. The conflict between the municipal government and the slum community necessitated also employing evidence from conflict resolution. The project facilitator used mediation techniques and involved Catholic Sisters as neutrals to build relationships between the city Department of Public Health and slum community. Qualitative analysis was conducted in an iterative process to build the collaboration and identify areas of conflict and themes about how conflict could be resolved. The stakeholders used the results from the analysis to make evidence-informed decisions about how to resolve conflicts, work productively together, and change city policy.
Findings: The collaboration facilitator and Director of Public Health worked with multiple city government offices around the first strategy, to change sanitation policy and install latrines. The Catholic Sisters engaged with the community to manage latrine installation and maintenance, insulating them from destruction by warring community factions and protecting the municipal government from political repercussions of slum improvement. The latrine strategy was adopted by local businesses that perceived an opportunity and wanted to participate in policy change. On their own initiative, they began installing latrines, creating local sustainability and freeing the stakeholders to develop new strategies using the theory-of-change model. As the evidence grew about the effectiveness of the stakeholder platform, a new government adopted the model which was scaled and tested, engaging 400 new stakeholders that resourced their own participation in the process.
Interpretation: This ongoing research project suggests that a small investment in cross-sector collaboration, facilitated through PAR, is a viable path to shared governance around urban slum improvement.
Source of funding (if none, enter "None"): This work was supported by the Conrad N. Hilton Foundation.

SAT_039

Advance Care Planning and Quality of Death: An Exploratory Study on Perceptions and Attitudes in Northern Tanzania.

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Background: Since the 1990s, advance care planning (ACP) has been promoted in high-income countries and has been associated with increased quality of life (QoL) for patients and families. However, in sub-Saharan Africa, where the disease burden is increasingly augmented by non-communicable diseases, ACP protocols are not common. At the Kilimanjaro Christian Medical Center (KCMC), there are no advance directive (AD) tools being used to document patient preferences for end of life (EoL) care. There is a general avoidance of the topic and the issue of introducing ADs in resource-limited regions is ethically complex. Nonetheless, evidence from similar settings indicate that an appropriate QoL is valued, even as one is dying. What differs across cultures is their definition of a ‘Good death’ and the impact of advance EoL planning.

Aim: To evaluate perceptions of quality of death (QoD) and preparedness amongst those who have been confronted with the concept of EoL in Tanzania.

Methods: In total, 122 participants - patients, relatives/friends, and healthcare workers - were recruited for 13 focus group discussions (FGDs). Using a semi-structured guide, FGDs were conducted by trained research nurses in Swahili. These discussions were recorded for subsequent transcription, translation, inductive coding, and thematic content analysis.

Findings: Nearly all participants believed that death could be categorized as ‘Good’ and/or ‘Bad'. Even though many participants expressed belief that death and its timing were ultimately in God’s hands, a second-order theme in the characterization of Good death was ‘Being prepared’. Sound religious/spiritual wellness, interpersonal/family relationships, and grief coping define the multidimensionality of preparedness. Conversely, participants viewed ‘Not being prepared’ as an attribute of Bad death. Other prominent QoD themes are seemingly ‘Beyond one’s direct ability to control or plan for’ and they include 'Minimal suffering & burden’ (Good death) and ‘Negative interactions with modern medicine’ (Bad death).

Interpretation: The concept of Good death is saient amongst people in northern Tanzania, and an important attribute is one's level of readiness. Participant responses further indicated a trend towards accepting and favoring advance EoL planning. Based on the results, we can reasonably conclude that an AD that emphasizes religious well-being, interpersonal relationships, and desires for QoL may be culturally appropriate at KCMC.

Source of funding (if none, enter "None"): Doris Duke Charitable Foundation

SAT_040

Intimate Partner Violence in Rwanda, Africa: Translation, Adaptation, and Validation of a Screening Instrument

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Background: In the East African country of Rwanda, 1 in 3 women experience intimate partner violence (IPV) throughout their life span. The Assessment Screen to Identify Survivors Toolkit for Gender Based Violence (ASIST-GBV), developed specifically for use among low-resource areas and refugees, has potential for use as part of an IPV screening program in Rwanda. Specific aims are to: 1) translate the ASIST-GBV from English to Kinyarwandan; 2) adapt the ASIST-GBV to the Rwandan context; and 3) provide evidence for reliability and validity of the Rwandan ASIST-GBV.
Methods: Using a modified committee translation approach with two individual translators, the ASIST-GBV will be translated into the native language of the Rwandan population. After obtaining institutional review board approval and informed consent, cognitive interviews will be conducted with 20 Rwandan women to evaluate the comprehensibility and modify the content of the Kinyarwandan version of the ASIST-GBV so that it is contextually appropriate for IPV screening in Rwandan women. Reliability and validity will be reported using Item Response Theory (IRT) modeling of data collected from 100 Rwandan women ages 16 and older, recruited from a large public hospital in central Rwanda.
Findings: Results pending. Findings will be reported using descriptive statistics and IRT models. A two-parameter IRT model will be fit to the ASIST-GBV data to estimate reliability and validity.
Interpretation: A validated screening tool will fill a current gap in implementing a standardized screening process for IPV within the Rwandan healthcare system and address unmet health needs of IPV survivors.
Source of funding (if none, enter "None"): None

SAT_043

Epidemiology of 32 Infectious Diseases in Post-conflict Iraq 2004-2016: an Observational Trend Study

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Background: The 2003 invasion of Iraq significantly undermined the health of the population. Hundreds of thousands of civilians died directly due to violence. More died or fell ill when the conflict disrupted the health system, destroying service infrastructure, moving human resources, and restricting the population's access to services. Although epidemiologists have estimated mortality from the war, there is a lack of understanding of how it may have undermined disease control. This study aims to assess specific incidence trend of 32 infectious diseases in post-conflict Iraq.
Methods: Incidence data for infectious disease were obtained from hospitals, primary health centers and tertiary hospitals, harvested from routine reports to the Center for Disease Control, Ministry of Health in Iraq. Reports include monthly estimates of treatment for 32 infectious diseases over 2004 to 2016. We defined incidence (per 100,000) as the number of annual incident cases divided by the population size. Joinpoint regression was used to examine the incidence trends and annual percentage change (APC) for each disease, and the overall incidence rate from 2004 to 2016.
Findings: Between 2004 and 2016, a total of 2,679,481 cases of 32 infectious diseases were reported (average yearly incidence rate 634.73 per 100,000). The overall annual incidence had an inverse U-shape where it started 639.79 per 100,000 in 2004, reached its peak in 2009 at 822.10 per 100,000 and decreased to 523.00 per 100,000 in 2016. The APC in incidence of infectious disease in 2009-2016 (-7.2%) was significantly lower than in 2004-2009 (5.9%).

Out of 32 diseases, 14 significantly decreased over the 13 years, including diphtheria (APC -18.5%), rubella (APC -42.6%), typhoid (APC -27.8%), anthrax (APC -47.5%), rabies (APC -11.8%), malaria (APC -38.7%), meningococcal meningitis (APC -13.7%), etc. Another 5 diseases significantly increased, including hepatitis A (APC 15.3%) and cutaneous leishmaniasis (APC 13.8%), etc. Pneumonia, typhoid fever, brucellosis and varicella showed significant seasonal pattern.
Interpretation: The overall incidence of infectious disease increased in Iraq between 2004 and 2009, during when the sectarian war occurred and the US troops was present. Despite that the overall incidence decreased after 2009, effective prevention and control intervention is urgently needed for emerging diseases, and target population that has been influenced by ongoing conflicts.
Source of funding (if none, enter "None"): None

SAT_044

Comparative Policy Responses to Managing International Nurse Migration to the United States and the United Kingdom from 2004-2014

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Background: The United States (US) and the United Kingdom (UK) are major English-speaking destination countries for internationally educated nurses (IENs) and have seen heightened levels of nurse migration during the 21st century. The migration flows have resulted in the development of new policy initiatives to better manage nurse migration. However, the effects of these policies remain largely untested. The purpose of this study was to analyze policy initiatives of the US and the UK and their association in influencing IENs intent to migrate to those countries.
Methods: Both qualitative and quantitative data from the US and UK from 2004-2014 was used for the comparative case study. Directed content analysis was used for the qualitative analysis using immigration policies, bilateral agreements, licensing and registration body policies and codes of practice of the US and UK. For the quantitative analysis, descriptive statistics summarized source countries and IENs longitudinal trends and a panel data analysis identified significant predictors of IENs with intentions to migrate. The study's conceptual framework, the implementation model, provided the codes used to examine the polices influence on IENs intent to migrate.
Findings: Qualitative
For both the US and the UK the policy initiatives appeared to minimally influence IENs with intentions to migrate to the US and UK.
Quantitative
The UK had 42 countries sending IENs annually compared to 89 for the US. On average IENs comprised 54.8% of new registered nurses (RNs) admitted to the UK nursing and midwifery registry annually compared to 7.5% of newly licensed RNs in the United States from 2004-2014. For the UK the increased English language requirement score ($p=0.028$) was significantly associated with intent to migrate. For the US, WHO Region ($p=0.004$), income status ($p<0.001$) and log-transformed gross national income purchasing power parity ($p<0.001$) were significant predictors of intent to migrate.
Interpretation: Although the policy initiatives proved to minimally influence migration trends at this time, the US and UK are model cases because they are highly sought after destination countries whose policy decisions often set a precedent in shaping the policy agendas for fellow English speaking destination countries.
Source of funding (if none, enter "None"): Grant Number, T42OH008422, funded by the Centers for Disease Control and Prevention

SAT_045

Findings from a Collaborative Needs Assessment of Domestic Violence Services in Armenia

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Background: Violence against women has been recognized by the World Health Organization as a public health priority and a violation of women's human rights. An NIH-funded collaboration between the University of Iowa Injury Prevention Research Center, the Yerevan State Medical University (YSMU) in Yerevan, Armenia, and the Cluj School of Public Health aims to build YSMU's capacity to perform prevention and surveillance research around domestic violence (DV). In 2018, a needs assessment to explore Armenian institutions' existing capacity for preventing, responding to, and tracking DV was conducted.

Methods: The needs assessment included a scan for existing studies and policies related to DV in Armenia and semi-structured interviews with key informants (n=22). Documents were compiled using internet searches and through suggestions of interview participants. Transcripts from the key informant interviews were then analyzed by two coders using thematic analysis. Themes were discussed and revised with disagreements resolved via discussion.

Findings: The scan for existing studies revealed that there have been several recent efforts attempting to quantify and describe DV. In the search for relevant policies, several national policies were found with no local policies identified.

The key informant interviews verified that the issue of DV in Armenia has just recently come into public view. Informants described substantial barriers to preventing, responding to, and measuring DV. Overall awareness and implementation of strategies for prevention, response, and measurement was limited. Informants providing or funding services in the community indicated greater awareness and implementation of DV specific strategies than health care professionals. Service providers and funders also reported a greater feeling of responsibility to reduce stigma around DV victimization in the general population.

Interpretation: Overall it is clear that the issue of DV in Armenian society is rising in prominence; however different sectors view their mandates for preventing, responding to, and measuring DV differently. Future progress will benefit from cross-sector collaborations that recognize sector differences in the prioritization of DV and the resources available to respond.

Source of funding (if none, enter "None"): This project was supported by the Fogarty International Center of the National Institutes of Health under award number 2D43TW007261, and by the University of Iowa College of Public Health Global Student Travel Grant, supported by Dale and Linda Baker.

SAT_046

Determinants of Teen Pregnancy in Colombia: Understanding the Causes of the Causes

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Background: Teen pregnancy has been considered a public health issue, with important social, economic and development effects. Therefore, policy implementation required multidimensional factors to act upon the social determinants of early pregnancies. The purpose of this analysis was disentangling the contribution of social determinants with the major contributions in the occurrence of teen pregnancy and early parenthood in Colombia.
Methods: We used Colombian Demographic Health Survey 2015 data on the number of men and women under 18 years old, data on socio-economic conditions and data on stereotypes and ideas about gender relations. Finally, we performered regression analysis model to explore contributions of social determinants explaining teen pregnancies, and early motherhood and fatherhood.
Findings: The permanence in the educational system and the postponement of sex are the main protective factors. On the other hand, gender stereotypes and cultural patterns related with gender-based violence, explain an important segment of the risk of teen parenthood and pregnancy.
Interpretation: Findings indentified those determinants with the most incidence in the occurrence of early pregnancies, and directly related with the lack of opportunities and life expectations, school dropout, the limited and untimely information about sexuality and gender stereotypes. It is urgent the implementation of actions and effective measures in order to prevent teen pregnancy (mainly among 10-14 years old adolescents); that is why there is a need for design and launch social politics and programs which allow acting on those determinants from an intersectoral agenda.
Source of funding (if none, enter "None"): This study was funded by Fundación PLAN and The Association for the Well-Being of the Colombian Family (Profamilia)

SAT_047

A Ketamine Package to Accelerate the Human Rights Imperative of Universal Access to Emergency Cesarean Section

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Background: Cesarean section is the most common emergency surgery worldwide. Universal access to emergency cesarean section is considered a basic human right and is a priority of the global movement toward 'universal health coverage'. Although target cesarean section rates for optimal maternal and neonatal outcomes vary between countries, WHO has found that maternal and newborn death rates are lowest in countries where at least 10% of women undergo cesarean section. Unfortunately, in some regions of Africa and elsewhere, cesarean section rates range between 0 and 2%. Lack of access to anesthesia services is a primary barrier to universal access to cesarean section. In December 2013, we deployed the ESM-Ketamine package in support of emergency and essential surgeries when no anesthetist is available, and in this study, we examine how this innovation may support acceleration toward achieving the human rights imperative of universal access to emergency cesarean section.
Methods: Select non-anesthetist medical officers, nurses, and clinical officers underwent competency-based ESM-Ketamine training and received checklists, wall charts, and ESM-Ketamine kits. Patient demographics, pre-operative diagnoses, procedure(s) performed, medications administered, and ketamine-related adverse events were recorded each time the ESM-Ketamine pathway was invoked. Descriptive analyses, and central tendency and dispersion of all non-training cesarean section cases were conducted.
Findings: Between December 2013 and July 2018, 50 ESM-Ketamine providers across seven facilities supported 202 cesarean sections. The median ketamine dose was 6 mg/kg (IQR: 4-7.1) per emergency operation. Hallucinations or agitation treated with diazepam and brief oxygen desaturation occurred in 24 (11.9%) and 6 (3.0%) cases respectively. 192 (95%) of the 202 cesarean sections resulted in healthy discharge of operatively delivered newborns. Ten (5.0%) cesarean sections resulted in delivery of stillborn babies. There were no maternal or infant deaths or injuries associated with ketamine use.
Interpretation: The ESM-Ketamine package appears safe for use by trained ESM-Ketamine providers in support of emergency cesarean sections. Scaling the ESM-Ketamine package may support acceleration toward the human rights imperative of universal access to cesarean section.
Source of funding (if none, enter "None"): Elrha's Research for Health in Humanitarian Crises (R2HC) Programme, funded by Wellcome Trust and DFID. Saving Lives at Birth Partners: USAID, Norad, Bill and Melinda Gates Foundation, Grand Challenges Canada, DFID, and KOICA. IZUMI Foundation Ujenzi Charitable Trust

SAT_048

Do health facilities have capacity to provide quality childbirth services in Nepal?

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Background: Childbirth at health facilities with the support of skilled health personnel is in increasing trends in Nepal over the last two decades. However, service availability and facility readiness for the quality childbirth service is little known. This study aims to assess the facility capacity and its associated factors for quality childbirth services in Nepal.
Methods: Data for this study were derived from the nationally representative Nepal Health Facility Survey 2015. Using the World Health Organization's Service Availability and Facility Readiness Assessment Framework, the capacity of 554 health facilities for quality delivery care was assessed. The facility capacity has comprised of: 1) service availability (two subdomains: routine delivery (8 indicators), and newborn care (5 indicators)), and 2) readiness (four subdomains: general readiness (8 indicators), equipment (28 indicators), medicine (8 indicators), and human resource (13 indicators). Based on those indicators; the subdomain scores, domain scores and overall facility capacity scores of each health facility was computed. Considering the mean of facility capacity scores as the cut-off point, they were dichotomized into poor or good capacity. The multivariate logistic regression was used to identify associated factors. P values < 0.05 with 95% confidence level (CI) were used to declare statistical significance.
Findings: The mean scores of facility capacity were 0.66 with services availability (0.72) and facility readiness (0.62). The mean score of newborn care was higher (0.82) than routine delivery care (0.61). Facility readiness subdomain scores were equipment (0.82), medicine (0.68), general readiness (0.67), and staffs and guidelines (0.31). The odds of good facility capacity were lower in peripheral level health facilities (adjusted odds ratio (AOR) =0.16; 95% CI: 0.10; 0.27), private (aOR=0.48; 95% CI: 0.24; 0.96), and Karnali Province (aOR= 0.29; 95% CI: 0.09; 0.96) compared to health facilities of higher level, public, and from accessible province respectively.
Interpretation: Health facilities of periphery level are more accessible in remote areas, and private health facilities are growing in urban areas in Nepal. But quality of care of those health facilities are found to be lower. So, the capacity building efforts of health workforce should be focussed on health facilities of periphery level, private, and Karnali province.
Source of funding (if none, enter "None"): School of Public Health, The University of Queensland, Australia.

SAT_049

A 10-year evaluation of faculty teaching effectiveness as evaluated by their students in a global health masters program

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Background: Recent studies have highlighted the discrepancies in student evaluations based on the sex of the teaching faculty, which can significantly affect academic promotions. However little on the subject has been done in graduate-level settings, and none specifically within global health (GH) programs. Given the focus often placed by GH programs on the roles and impact of sex and gender inequity, it is likely that evaluation trends may differ from more traditional academic settings.
Methods: We drew upon ten years of faculty teaching evaluations by students with the UCSF IGHS MS program, the first masters degree in GH in the US. Bivariate tests explored the relationship between student-rated overall teaching effectiveness and potential factors including included faculty sex, degree, type of class taught, co-instruction, and student cohort-specific characteristics. Multivariate modeling addressed the potential for confounding between variables as well as the role of sex-associated effect modification.
Findings: The study included reviews by 236 students for 167 unique instructor/course pairings spanning 2008-2018, with 80 evaluations of female faculty and 89 male faculty. The distribution of teaching effectiveness scores was skewed toward higher scores with an overall median of 87%. Overall rated teaching effectiveness increased significantly over time by 2.01% a year (95%confidence interval (95%CI):1.17%-2.85%), a relationship that interacted with faculty sex, with males initial higher scores surpassed by their female colleagues in latter years. Faculty members who taught courses alone also scored 6.15% higher on evaluations than those who taught with others (95%CI: 0.17%-12.12%). There were no significant association with cohort-level demographics and faculty evaluations.
Interpretation: Despite findings from other academic settings, students in a graduate level GH program do not appear to negatively evaluate female faculty based on their sex. Trends from multivariable models even suggest that overtime female faculty are infact being scored higher than their male counterparts. The active acknowledgment of and inquiry into sex-associated discrepancies in global health may help prevent contious or uncontious biases in student evaluations of faculty teaching.
Source of funding (if none, enter "None"): None

SAT_050

Evaluation of the Philippine Health Insurance Z-benefit Program, an Alternative Insurance Scheme for Selected High Cost Conditions

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Background: The Philippines' national health insurance agency initiated the Z-benefit program in 2012. It was intended to address the inadequacy of the main insurance scheme for conditions or surgeries with high treatment costs such as breast cancer and cardiac surgery. We aimed to assess whether the program was able to reduce financial burden among recipients and improve quality of life to guide program strategy and expansion.
Methods: A case-control design was used. Cases included individuals covered by the Z-benefit program from January 2013 to June 2016. Controls were matched by age, sex, condition, and hospital and included individuals who were not covered by the program. Data on demographics, income, disease history, treatment status, direct and indirect condition-related expenses, and heath-related quality of life were collected. We compared reported expenses, quality of life, and occurrence of financial catastrophe between the two groups using appropriate statistical tests. Both unpaired and paired tests were performed. Non-parametric tests were used for cost data.
Findings: The final sample included 385 Z-benefit respondents and 251 controls. Median health-related expenses were significantly lower in the Z-benefit group (median (IQR): $1,579 (4,638) vs $2,075 (7,306), p-value: 0.0077) during the first year of treatment but not after that period (median (IQR): $216 (1,098) vs $202 (1,089), p-value: 0.3595). Similarly, odds of financial catastrophe were significantly lower during the first year of treatment (OR: 0.61, 95% CI : 0.41-0.90) but not after that period (OR: 0.27, 95%CI: 0.68-1.93). Considering total expenses, fewer Z-benefit patients experienced financial catastrophe compared to controls (42.9% vs 58.6%, p-value: 0.002). No difference in health-related quality of life differences were detected between the two groups. Findings were robust after paired analysis (n = 198 pairs).
Interpretation: The Z-benefit program was successful in reducing patient expenses and lowering the odds of financial catastrophe only during the first year of treatment. This may be sufficient for conditions with short treatment but not for diseases warranting longer periods such as breast cancer. Findings support the continuation and expansion of the program with consideration for increasing coverage periods for selected conditions.
Source of funding (if none, enter "None"): Philippine Health Insurance Corporation

SAT_051

Scale-up of health financing and health insurance policy in Ethiopia: A Policy Analysis

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Background: Health insurance is attracting increasing attention in low-and middle-income countries as a means for improving use of health care and protecting households against impoverishment from out-of-pocket payments. With annual per capita expenditure on healthcare of only about $23 (WHO, 2012), Ethiopia is one of the countries that spends the least on healthcare services in Africa, below the recommended WHO level of $60 per capita. Ethiopia has shown tremendous improvements in health outcomes and economic growth in the last decade and is aspiring to become a lower middle-income country (as defined by the World Bank) by 2025. Ethiopia launched its Community Based Health Insurance (CBHI) scheme in 2011 with a vision of reaching 80% of the districts and 80% of its population by 2020.
As the government plans a nation-wide roll-out of CBHI with subsequent integration into the National Health Insurance (NHI), this study aims to identify areas that need improvement for better integration and scale up of the CBHI into the NHI.
Methods: A qualitative study of health financing and health insurance policymakers in Ethiopia was combined with a literature review (using PubMed, Google Scholar and Web of Science). A total of 20 key policy makers were interviewed. The study uses a retrospective policy analysis framework, taking political context into account. NVivo software was used to analyze the qualitative data.
Findings: The drive for aid independence is pushing Ethiopia to increase domestic resource mobilization, providing financial protection to citizens through health insurance with the aim of ensuring both sustainability and equity. An emerging global call to action around universal health coverage (UHC) has driven health insurance to become the first choice as a policy tool to achieve UHC in Ethiopia. The CBHI implementation has resulted in increased enrollment and use of services, community participation, gender empowerment and poverty reduction. However, poor service quality is still a major gap.
Interpretation: Implemented effectively, Ethiopia’s health financing policy could transform the health system and domestic financing by increasing access, service use and equity. Improved implementation will require broader liberalization reforms, and clearer institutional arrangements with active legal frameworks.
Source of funding (if none, enter "None"): "None"

SAT_053

InciSioN: Developing the Next Generations of Global Surgeons

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Background: Five billion people worldwide lack access to surgical care when needed, causing 17 million preventable deaths each year. Surgery is increasingly recognized as an integral part of healthcare, yet surgical care for all is still far off. Formally established in 2016, InciSioN - International Student Surgical Network is the world's leading global surgery trainee network, with over 3,100 members in over 70 countries, and 31 National Working Groups across all world regions, acting upon the WHO Resolution WHA68.15 and the Lancet Commission on Global Surgery. Accordingly, InciSioN provides a platform to contribute to the development of future generations of global surgeons, anaesthesiologists, and obstetricians around the world.
Methods: InciSioN is an open network providing global members with opportunities to get involved with research through peer-support mechanisms, virtual internships to learn from and work with global surgery experts, distance expert and peer mentorship, capacity-building and soft skills, and societal partnerships.
Findings: InciSioN initiated and annually leads Global Surgery Day on May, 25th as global awareness day on Global Surgery, supported by leading organizations in Global Surgery. In 2016, selected and expert-trained InciSioN members conducted the World Development Indicators surgical data collection for the World Bank. In 2017, InciSioN co-organized a side-event at the 70th World Health Assembly and co-organized the first Global Neurosurgery Conference in Rabat, Morocco (neurosurgery training hub for Africa). In 2018, it set up its independent international conference, the InciSioN Global Surgery Symposium (IGSS), with the first edition in Belgium attracting 228 participants from 50 countries, including 12 fully funded Travel Scholars from low- and middle-income countries. Recently, InciSioN established and piloted its standardized 3-day capacity-building workshop (Training Global Surgery Advocates, TGSA) to equip participants with the needed knowledge, advocacy, and diplomacy skills to advocate for global surgery.
Interpretation: Building on the rapidly growing network, InciSioN aims to establish branches in more countries around the world to fully connect the future of the OR and bridge the gap between trainees and specialists. Through IGSS2019 in Rwanda, the global implementation of the TGSA, and sustained efforts to unify Global Surgery stakeholders, InciSioN hopes to showcase the power of and need for the workforce of 2030 as a driving force.
Source of funding (if none, enter "None"): None

SAT_054

Out-of-Pocket Healthcare Payment in the Era of National Health Insurance: A Five-Year Study of Primary Health Facilities in Seven Districts of Northern Ghana

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Background: Ghana implemented a national health insurance program in 2004 with the goal of removing the impoverishing effects of out-of-pocket healthcare payments and ensure access to equitable healthcare. However, over a decade of implementation, the impact of this program on out-of-pocket payments is inconsistent. This paper contributes to understanding the impact of Ghana's insurance program on out-of-pocket healthcare payments using a five-year health facility-based panel data.
Methods: Using a five-year panel data of revenues accruing to public primary health facilities collected by the Ghana Essential Health Intervention Project (GEHIP), descriptive statistics and trend analysis are employed to examine revenues accruing from out-of-pocket payment vis-à-vis health insurance claims for health services, medication and obstetric care.
Findings: Out-of-pocket payment for health services and medications were found to reduce by 63% and 62% respectively between 2010 and 2014. Insurance claims for services and medication however increased by 37% and 34% respectively in 2013 and by 13% and 9% respectively in 2014. Obstetric care was entirely covered by insurance claims which increased by 92% and 75% for 2013 and 2014. Thus, the revenue base of primary health outlets is progressively shifting from out-of-pocket payment to insurance claims.
Interpretation: The evidence from this study shows that Ghana's national health insurance program is significantly contributing to reducing out-of-pocket payment for primary health care, thereby reducing financial barriers to accessing healthcare. Efforts to ensure the sustainability of this policy is in the right direction.
Source of funding (if none, enter "None"): Doris Duke Charitable Foundation

SAT_055

Assessment of a competency-based training to support emergency and essential surgery in Kenya when no anesthetist is available

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Background: Five billion people worldwide do not have access to emergency and essential surgery in a timely fashion. Lack of anesthesia services is a primary barrier. To address this gap, the 'Every Second Matters for Emergency and Essential Surgery–Ketamine' (ESM-Ketamine) package was designed to train non-anesthetist clinicians to support emergency and essential operations when no anaesthetist was available. The objective of this study was to assess competency of trained ESM-Ketamine providers in support of emergency and essential surgery when no anesthetist was available in Kenya.
Methods: A theory-based evaluation was conducted to assess the competency of ESM-Ketamine providers, based on Miller's Pyramid of learning and competence. From December 2013 to July 2018, 139 ESM-Ketamine providers were trained at Sagam Community Hospital. They supported 1,571 emergency or life-improving surgeries in 16 facilities across Kenya. Multiple-choice questions before and after training were used to evaluate changes in provider knowledge, with a paired t-test. To evaluate performance, prevalence of ketamine-related adverse events during training was compared to prevalence during follow up when providers independently supported surgeries. A multinomial logistic regression was conducted to account for confounding variables. Ethical approval was obtained from Partners Healthcare and Maseno University.
Findings: 22 ESM-Ketamine trainees completed the multiple-choice examinations before and after training. On average, participants' score increased by 33% ($p<0.001$). Of the 1571 operative cases, 256 (16%) were performed during training and under direct supervision of an anesthetist and 1315 (84%) when no anesthetist was available. There were no differences in hallucinations treated with diazepam (16% vs. 11%, $p=0.10$) or prolonged (>30 secs) desaturations (0.4% vs. 0.5%, $p=0.66$) between training and non-training cases. Hypersalivation treated with atropine was more frequent in training cases (13.7% vs. 8.5%, $p=0.03$) and brief (<30 secs) desaturations were more frequent in non-training cases (2.8% vs. 1.6%, $p=0.04$).
Interpretation: Competency-based assessments identified increased knowledge on ketamine use after completion of the 5-day ESM-Ketamine training program. Differences between training cases supervised by an anesthetist versus non-training cases when no anesthetist was available were possibly associated with noncompliance of the ESM-Ketamine pathway during the first two years after the program's inception.
Source of funding (if none, enter "None"): Ujenzi Charitable Trust, R2HC Programme (Elrha), and SLAB partners.

SAT_056

Evaluation of the World Health Organization Emergency Care Toolkit in Uganda and Tanzania

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Background: Over half of deaths in low-and middle-income countries could be potentially addressed by emergency care. As part of efforts to support strengthening of emergency care delivery in resource limited settings, the World Health Organization (WHO) developed a toolkit that includes clinical training (Basic Emergency Care (BEC) Course) and process guidance (triage training, resuscitation area guidance, medical and trauma care checklists). In March-April 2017, 59 healthcare providers were trained and process guidance introduced at four sites in Uganda and Tanzania. This is a report of the structured monitoring and evaluation of the implementation.
Methods: The four sites were visited at 6, 10 and 13 months post-implementation. Semi-structured qualitative interviews of participants, trainers and hospital leadership were carried out, and the toolkit's use evaluated by direct observation.
Findings: 22, 24 and 21 subjects were interviewed at each visit. Participants at every visit felt better able to care for critically ill patients following the BEC course. All participants and hospital administrators felt the toolkit improved their hospital's emergency care. At visit 1, one site implemented the WHO Triage Tool. At visit 2 all sites were using some form of triage, which was maintained at visit 3. Staff felt this improved patient care and flow. Three sites used designated resuscitation areas at all time points. Checklists were observed in use at three sites during visit 1, decreasing to one site in visit 3 due to checklist loss, however they were described as useful at each site. Institutional loss of BEC trained staff was a risk to sustaining improvements. To mitigate this, some staff had introduced BEC materials into hospital education programs.
Interpretation: All interviewees felt the WHO toolkit improved staff's ability to care for acutely ill patients. Sustained implementation was observed throughout. Involving clinical nursing and administrative leadership in the initial training and strong leadership from BEC trained staff and administrators was key to implementation. Staff attrition was a risk to sustained change. This represents a limited assessment. Future research should evaluate the impact of WHO emergency care toolkit on patient outcomes.
Source of funding (if none, enter "None"): Brigham and Women's Hospital. University of Southern California, Department of Emergency Medicine. Harvard Chan School of Public Health. University of Colorado, Department of Emergency Medicine.

SAT_057

Evaluation of Triage Implementation in the Pediatric and Adult Emergency Rooms of a Rural Public Hospital in Haiti

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Background: St. Therese Hospital (“STH”) is a 204-bed public hospital located in the Central Plateau of rural Haiti. Prior to this intervention, there was no formal triage system in place in either the pediatric or adult emergency room. Local Haitian STH physicians identified the development of a triage system as one of the most important priorities for STH. Our team conducted a triage training and implementation with the STH emergency room nursing staff and physicians.
Methods: The training was completed by a local Haitian emergency room physician and consisted of didactics and practical cases. The evaluation of the training and implementation consisted of pre-/post-training chart reviews, pre-/post- tests and feedback sessions with staff. For the chart review, 20 charts from each department were randomly selected for review before and after the training, 80 charts in total. Lastly, feedback sessions with staff were completed before and after the triage system.
Findings: 10 emergency room nurses and 20 physicians who staff the emergency rooms underwent the training. For the pre-/post- training tests, 92% (12/13) of participants improved their scores from prior to the training. Discussion with senior nursing and physician leadership two months after implementation revealed that both groups reported more efficiency and a lower volume due to the large number of patients now being sent to outpatient clinic. For the chart review, the adult emergency room had no charts triaged prior to the training (0/20) and 20% (4/20) triaged after the training. In the pediatric emergency department, no triage was documented prior to the training (0/20) and 15% (3/20) of charts had triage after the training.
Interpretation: Overall, staff from both emergency departments felt satisfied about the training and process change to the patient flow. Additionally, the quantity of charts triaged increased from prior to the training. Although initially less than expected, on further evaluation, it was noted that charts which were triaged green were being sent directly to clinic without being recorded. This likely decreased the triaged charts significantly. This intervention demonstrates the successes and challenges of implementing an adult and pediatric emergency room triage program in a rural public hospital. It also provides a framework for program evaluation.
Source of funding (if none, enter "None"): Zanmi Lasante

SAT_058

Impact of Clinical Practice Guidelines for the Acute Management Of Traumatic Brain Injury in the Emergency Department of a Regional Referral Hospital in Moshi, Tanzania

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Background: Traumatic brain injury (TBI), a leading cause of death and disability worldwide, disproportionately affects low- and middle-income countries where increasing injury rates are compounded by limited access to high quality care. Implementating TBI clinical practice guidelines (CPGs) have been shown to improve mortality rates and functional outcomes in high-income countries but research regarding the implementation of TBI CPGs in hospitals of low-income countries is scarce. Our study aimed to evaluate the impact of implementing TBI CPGs on patient outcomes and healthcare provider knowledge in the emergency department of a large referral hospital in Moshi, Tanzania.
Methods: A pre-post quasi-experimental design was used to assess the impact of TBI CPGs implementation. An interrupted time series was used to compare pre/post-implementation TBI outcome trends. Our primary outcome of interest was poor recovery (death or severe disability). Pre and post periods included 24 and 9 months respectively. Data was analyzed using segmented regression and autoregressive integrated moving average (ARIMA) models. Healthcare providers were recruited to participate in pre/post surveys assessing knowledge of acute TBI management. Changes in pre/post scores were assessed using Wilcoxon signed-rank and McNemar's test.
Findings: Pre-and post-implementation periods included 1438 and 448 patients respectively. Age, gender, and average GCS were not significantly different pre/post implementation. TBI poor recovery rate (PRR) decreased from 15.4% to 12.1% after implementation. The segmented regression model found an increasing PRR prior to implementing CPGs (p-value=0.038) and significant decrease in PRR post-implementation (p-value=0.005). The ARIMA model estimated a 1.7% decrease in PRR per month post-implementation. There was a significant improvement in provider knowledge scores post-intervention (Wilcoxon signed-rank test, $p<0.001$).
Interpretation: In addition to improved patient outcomes, this study observed significant improvement of healthcare provider knowledge regarding acute management of TBI patients following implementation of TBI CPGs. Findings provide encouraging results regarding the potential applicability and implementation capacity of TBI CPGs in resource-limited settings however more research is necessary to better understand the effects of implementing CPGs on healthcare delivery and patient outcomes.
Source of funding (if none, enter "None"): Mentored Research Training Program in collaboration with the HRSA-funded KCMC MEPI grant #T84HA21123-02; Downs International Health Student Travel Fellowship; NSF Graduate Research Fellowship Program; Fogarty International Center (Staton, K01 TW010000-01A1)

SAT_059

Comparing HPV Screening Knowledge and Preferences of Women in Monrovia, Liberia

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Background: Cervical cancer is the second most common cause of cancer-related death in women worldwide. Persistent infection with high-risk HPV has been implicated in >99% of cervical cancer cases. High-risk HPV DNA obtained from vaginal swabs has high screening sensitivity for cervical intraepithelial neoplasia. Critical to areas with few healthcare workers, these swabs can be provider- or self-collected, helping to increase screening coverage. However, studies have shown that majority of women prefer provider-collected samples citing effectiveness concerns and distrust in results. Our objective was to study existing cervical cancer knowledge and identify collection preferences to inform future screening programs in Monrovia, Liberia.

Methods: A cross-sectional study examining collection acceptability was conducted in Liberia in 2017. At local clinics, 170 participants (ages 18-78, mean 40 years) were surveyed following either a provider- or self-collected cervicovaginal sample for HPV DNA; 116 participants underwent physician-collection at clinic A and 54 participants completed self-collection at clinic B. Both methods were analyzed with the highly sensitive and specific careHPV, which detects high-risk HPV using signal amplification. Surveys, completed through interviews, examined four categories: demographics, cervical cancer knowledge, sexual and medical history, and acceptability. Data were analyzed using SPSS.

Findings: Clinic A participants scored significantly higher in cervical cancer knowledge (M=4.40, SD=1.98) compared to participants at Clinic B (M=1.52, SD=1.02), (t (168)=10.05, p=0.00). Chi-square tests of independence examined the relationship between self versus provider collection preference and self-collection exposure. Women who completed self-collection were significantly more likely, compared with those who had clinician-administered screening, to opt for performing the test at home, when given the option to perform at home or not at all (x^2 (2)=69.210, p=0.000). Furthermore, when asked for self versus provider preference, those who completed self-collection were more likely to choose to do the test themselves (x^2 (2)=39.741, p=0.00).

Interpretation: Exposure to self-collection methodology was associated with a dramatic increase in its acceptability, despite significant differences in cervical cancer knowledge. These results suggest that exposure to self-collection alleviates women’s efficacy and validity concerns. Future programs should account for these results as self-collection increases women’s access to HPV screening possibly reducing cervical cancer burden in developing countries.

Source of funding (if none, enter "None"): Mount Sinai Global Health Summer Research Stipend

SAT_062

Community members' views on Addis Ababa University's rural community health training program: A qualitative study

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Background: Community-Based Education (CBE) is an educational process aiming to ensure educational relevance to community needs, thereby contributing to improved community health needs. Addis Ababa University runs a six-week long Rural Community Health Training Program at Adami Tulu District, East Shoa Zone. In the program, the final year medical students are attached to the community to apply their theoretical training and address the community's health problems. This study explored views of the local community about the program.

Methods: A descriptive qualitative study was carried out in Adami Tulu District of East Shoa Zone (the site of the training program). Data were collected from community members, local administrators, health extension workers, school principals and opinion leaders selected from three kebeles within the attachment area. A total of five FGDs and six key informant interviews were conducted using a semi-structured interview guide.

Findings: The finding of the study revealed that the local community, beyond recognizing the participants as some kind of medical professionals from Addis Ababa University, knew very little about the program and its objectives. For example, the only benefit all the participants rightly mentioned in common, as evidence of their knowledge the program is free treatment for sick children by the students. Lack of communication between the university and local administration; absence of community involvement in the planning, execution and evaluation of the program; and problems related to language were identified as key areas for improvement.

Interpretation: The Rural Community Health Training Program (RCHTP) is an important resource for both the university and the local community. It is therefore important that the university take proactive measures and optimize the involvement of local leaders and community members to enhance their sense of ownership of the program

Source of funding (if none, enter "None"): Medical Education Partnership Initiative (MEPI), AAU.

SAT_064

A Community-Based Participatory Knowledge-Exchange on Water, Sanitation and Hygiene (WASH) in Sub-Saharan Africa.

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Background: It is estimated that 2.4 billion people worldwide do not have access to improved sanitation facilities. Often the barriers to good hygiene and sanitation practices reflect a complex mix of ingrained cultural beliefs and socioeconomic constraints. Here we explore the findings of a three-day community-based participatory workshop hosted in Mukono, Uganda designed to promote improved Water, Sanitation and Hygiene (WASH) practices in rural sub-Saharan African communities. Our study had three main aims. First, to engage partners from academia, non-governmental organizations (NGOs), policy and civil society to address improved sanitation facilities. Second, to assess the feasibility and acceptability of using participatory methods to understand sanitation challenges and inform the design of improved facilities from the perspectives of local stakeholders. Third, to engage with a rural local community to share findings from the workshop.
Methods: A workshop was designed according to the principles of community based participatory research (CBPR). Attendees included academic researchers from the Ghana, Uganda and the UK, government officials from Uganda, community health workers from Ghana and Uganda, and personnel from a USA-based NGO. Using participatory methods, region specific approaches to improved WASH practices were shared and discussed. The product of the workshop was a participant-led short video that was shared with the local community. An open-ended questionnaire was used to evaluate participant's perceptions of the workshop and a 10-point transformative framework was used to report findings.
Findings: By taking a CBPR approach towards workshop design and implementation, we were able to identify challenges relevant to local stakeholders. Solutions to these were identified during the cross-cultural knowledge-exchange and informed the design of the video. Of the 22 workshop participants, 19 completed the post-workshop evaluation questionnaire. All of these indicated that they felt involved, were given opportunities to participate, and valued the use of participatory methods. Other positive aspects of the workshop included the multi-cultural exchange and community outreach. A post-hoc analysis revealed that all 10-criteria of the transformative framework were addressed.
Interpretation: CBPR approaches helped in engaging key stakeholders to identify contextually and culturally appropriate solutions to pressing WASH issues affecting rural communities in this resource poor setting.
Source of funding (if none, enter "None"): Economic and Social Research Council UK - Grant RG76702.

SAT_065

A Roadmap of Surgical Quality in Africa: a scoping review

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Background: As the population increases and ages in the world's poorest countries, 16% of whom are in Africa, the need for surgical services will increase.[1,2] Many initiatives have focused on access and capacity.[3-6] A recent study estimated that compared to patients in high- income countries, patients undergoing surgery in Africa were twice as likely to die postoperatively[7]. Although these patients had lower risk profiles, the many adverse perioperative events were preventable. Access and quality must be aligned to strengthen a healthcare system. The Lancet Global Health Commission on High Quality Health Systems supports this notion. To date, little is known about surgical quality in Africa. In this review, we evaluated surgical quality in Africa by applying the structure, process, and outcome framework to provide a roadmap of the current state of surgical quality.
Methods: We queried PubMed for articles published from August 1963 to July 2018 that presented surgical quality in Africa. Two reviewers screened the titles and abstracts independently.
Findings: We screened 10,268 abstracts. The majority of studies reported on short-term outcomes of surgical procedures in Africa. Structural challenges included electricity, water and generator availability.[8,9] These structural challenges were often cited as barriers to improving quality of surgical care.[10] According to surgical capacity assessments, 0% of hospitals in Sierra Leone and Malawi had continuous electricity and 14% of hospitals in Somalia had generator availability.[8] The highest perioperative mortality rates were in children and neonates, who are the most vulnerable population. Perioperative mortality rates were 25-100% in neonates and 2.4-46.7% in children. An analysis showed that age less than 1 is an independent risk factor for perioperative mortality in South Africa.[11] Twenty six percent of countries in Africa have implemented surgical quality improvement programs, primarily centering on infection prevention.
Interpretation: Despite increased interest in safe surgery, African nations have not applied this ideal into surgical quality improvement. Structural measures are easily measurable but are often, not actionable. The focus should be on interventions driven by quality improvement through process measures, which are actionable by adhering to internationally accepted quality checklists. Minimal investment is needed to take advantage of available resources to implement continuous audit of perioperative outcomes.
Source of funding (if none, enter "None"): Global-REACH

SAT_066

Estimating Obstetric and Gynecologic Surgical Rate: A Benchmark of Surgical Capacity in Ghana

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Background: Annual surgical output in Ghana falls far below the Lancet Commission recommendation of 5,000 operations per 100,000 people. A specific benchmark for obstetric and gynecologic (ObGyn) operations was not defined by the Commission. Therefore, we aimed to enumerate the annual surgical rate of ObGyn procedures in Ghana and establish a baseline for tracking expansion of surgical capacity.
Methods: Data were obtained for ObGyn operations performed between June 2014 and May 2015 from representative samples of 48/124 district (first-level) hospitals, 9/11 regional (referral) hospitals and 3/5 tertiary hospitals. An "operation" was a procedure performed in an operating theater regardless of anesthesia type or provider performing the procedure. Probability weights based on hospital level were applied in scaling data to provide national estimates of ObGyn operations. Operations were categorized as “essential”, the most cost effective and highest population impact, or “other” in accordance with the third edition of The World Bank’s Disease Control Priorities Project. The data were used to calculate cesarean-section (C-section) to total operation ratio and estimate C-section rate based on the population and number of live births in 2014.The study was approved by Kwame Nkrumah University of Science and Technology’s Committee for Human Publication and Ethics.
Findings: 90,044 (95% UI 69,461–110,628) ObGyn operations were performed nationally over the 1-year period. The annual national rate of ObGyn procedures was 881 per 100,000 females aged ≥12 years (95% UI 679- 1,082). Eighty-seven percent were essential procedures; 79% of these were C-sections. 71% of ObGyn procedures were performed at district hospitals. The national C-section rate was estimated at 7.2% of live births and C-section to total operation ratio was 0.27.
Interpretation: While there is no established benchmark with which to compare Ghana’s annual ObGyn surgical rate, our estimate likely represents a capacity shortfall considering the overall surgical rate was less than 20% of the Lancet Commission benchmark. The country demonstrated critical deficiencies in surgical capacity, indicated by its high C-section to total operation ratio. Our study provides baseline data that will support needed surgical capacity building efforts in Ghana and other LMICs.
Source of funding (if none, enter "None"): This study was funded by grants R25-TW009345 and D43-TW007267 from the Fogarty International Center, US National Institutes of Health.

SAT_067

Reliability of a Medical Record to Measure the Quality of Obstetric Services in Rural Clinics in Greater Masaka District, Uganda.

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Background: Despite improvements in health system infrastructure in Sub Saharan Africa, the neonatal mortality rate remains nine times higher than that in high-income countries. To reduce this gap, an accurate measurement of quality of care (QoC) to improve health outcomes is needed. Medical charts are a common method of measuring clinical quality, yet its reliability is uncertain. Direct observation (DO) by research assistants (RAs) is considered the gold standard. The aim of this study was to estimate the reliability of QoC data from medical records by comparing it with DO data of the same childbirth deliveries. Findings can help to strengthen health information systems for the measurement of obstetric services.

Methods: We performed a survey of clinical practice at six rural health facilities in greater Masaka district, Uganda from May to August 2018. 325 childbirth deliveries were directly observed by trained RAs using an instrument informed by USAID's Maternal and Child Health Integrated Program (MCHIP) Maternal and Newborn Quality of Care Survey. All mothers 16 years of age or older who presented to deliver were recruited. The DO checklist collected data on initial patient assessment, the first three stages of labor, immediate newborn and postpartum care, newborn resuscitation, and postpartum hemorrhage. Later, RAs abstracted the corresponding medical chart completed by the health providers. Adherence to 14 QoC indicators was measured, and Kappa statistics were used to measure the level of agreement between the chart and the DO.

Findings: 9 (64%) out of 14 quality indicators showed no to a slight agreement ($k < 0.20$) between the DO and the medical chart. Meanwhile, partograph action line reached and newborn resuscitation performed showed excellent agreement ($k>0.81$). Oxytocin given after delivery, administering vitamin K to a newborn, and initiating breastfeeding within the first hour showed fair agreement ($k = 0.21$-0.40).

Interpretation: Use of the medical chart demonstrated poor reliability compared with DO, especially for routine quality indicators like documented APGAR score at 1 minute. However, the reliability was high for two indicators because these represent circumstances where clear actions are followed. We recommend using the DO as an instrument to measure the QoC for obstetric services, especially for routine indicators.

Source of funding (if none, enter "None"): This work was funded by LifeNet International.

SAT_068

Assessing Workplace Wellness Programs at Universities in the Asia-Pacific

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Background: Workplace wellness (WW) programs have been proven to be cost-effective and can promote employee health and well-being.
Methods: The Association of Pacific Rim Universities (APRU), a non-profit network of 50 universities in the region, conducted an online survey of 29 universities. The survey consisted of 96 questions in 8 categories to: 1. Assess the range and scope of WW programs of member institutions; 2. explore motivations, priorities, barriers and gaps in WW programming; and 3. Identify best practices and recommendations.
Findings: The universities that completed the survey collectively represented more than 300,000 staff and 500,000 students. The most common WW programs related to nutrition, physical fitness, emergency preparedness, and HR benefits mandated by law (vacation and sick pay, maternity leave, etc). Programs on mental health and violence prevention were woefully inadequate. For example, only about one-half of universities had mandatory sexual harassment training. Asia-Pacific countries have some of the highest tobacco use in the world; however, about one-third of universities were smoke-free campuses and less than one-half offered smoking cessation programs. Only about one-third of participating universities offered protected work time for WW program participation. While participants perceived that the main motivations for WW centered around increasing employee morale, most programs were related to safety and risk management. In addition, it is unclear whether these programs meet employee needs and priorities because very little data is being collected to track participation or user satisfaction. The main challenges in WW programming were lack of employee participation, financial constraints, and lack of leadership.
Interpretation: Many universities offered a few “token” WW programs but fvery few had comprehensive, coordinated programming designed to improve employee health and well-being, employee morale, or work-life balance. Our five key recommendations are: 1. collect data to design and evaluate WW programs; 2. disseminate more information on WW through social media, text and other avenues; 3. increase leadership and budgetary support for WW programs; 4. offer employees protected time or other incentives to increase participation; and 5. legislate national laws and policies mandating programs, such as mandatory sexual harassment training.
Source of funding (if none, enter "None"): none

SAT_069

Physician Preparedness for Management of Emergencies in Primary Care Offices: A Qualitative Study in South India

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Background: Despite the prevalence of in-office emergencies, preparedness of primary care offices in the United States and other High-Income Countries (HIC) is often found to be inadequate. However, there is very little data surrounding this topic for low and middle-income countries (LMIC), and to our knowledge, no data from India to date.
Methods: This qualitative study aimed to investigate the frequency of emergencies in primary care offices of allopathic (MBBS), traditional/AYUSH (ayurvedic, homeopathic) practitioners, dentists, and the preparedness of these practitioners for emergencies in terms of training (BLS/PALS), equipment, medications, and attitudes. Qualitative data via in-depth interviews (n=23) and focus group discussion FGDs (n=2, each session with 8 participants) were collected from a convenience sample of office-based practitioners in and around Mangaluru city, South India. Discussions were recorded, transcribed, translated, and analyzed via thematic analysis. Any physician or dentist who had their own clinics were included, and physicians who only practiced in-patient care at tertiary centers were excluded.
Findings: Qualitative data showed most AYUSH physicians did not treat emergency cases for fear of legal consequences, instead referring cases to nearby hospitals. Dentists felt unprepared due to a lack of training on emergencies and did not possess most equipment because they did not know how to use them. MBBS in urban areas preferred referring emergency patients due to the abundance of hospitals. Participants noted the disparity between urban and rural access to healthcare but disagreed on whether the AYUSH that predominate rural areas should be allowed to practice emergency care. Almost all participants acknowledged a lack of awareness on emergency preparedness in India, in the medical as well as the public sphere.
Interpretation: This data shows that primary care physicians in Karnataka State do not agree on their responsibility to manage in-office emergencies and that there is a significant lack in training and awareness of the topic. Efforts should be made at the national level to increase the education of physicians in the assessment and management of office emergencies in primary care and dental offices.
Source of funding (if none, enter "None"): Medical Student Research Project (MSRP) Stipend

SAT_070

Utilizing Open-Source Electronic Medical Records as a Tool for Streamlined Healthcare Cost Disaggregation Analysis in Low- and Middle-Income Countries

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Background: For global health organizations, accurately estimating the costs of individual clinical programs is essential for both internal strategy planning and fundraising purposes. However, traditional accounting methods aggregate the costs of clinical programs while separating them from administrative support costs, making it difficult to estimate individual clinical program costs inclusive of the full costs of administering them. Our aim was to solve this problem by providing a method of deriving accurate disaggregated clinical program cost estimates using data from electronic medical records and financial statements at Bayalpata Hospital, a high-quality donor-funded hospital in rural Nepal.
Methods: Following Ozaltin and Cashin 2014, we performed our analysis using a “top-down” cost disaggregation method, which was chosen due to its relative simplicity and ease of use. This method involved three steps: first, we analyzed hospital financial records to allocate all costs to relevant cost centers, both clinical and non-clinical. Second, all non-clinical costs were re-allocated to clinical programs based on each program’s relative use of administrative resources as estimated via proxies such as bed-days, floor space, and other markers gathered from the electronic medical record and other hospital data. Third, these inclusive clinical costs were divided by each program’s units of service to determine unit costs. Our analysis also includes a comprehensive qualitative assessment of barriers to performing our analysis using existing hospital records (including missing data and the absence of necessary linkages between different records databases), and recommendations for improving record-keeping to streamline future analyses.
Findings: Our findings indicate that it is possible to perform a useful costing analysis in low-income settings using limited additional personnel, utilizing existing data sources including an open-source electronic medical record. Preliminary findings show orthopedic surgery to be a significant cost driver.
Interpretation: Our results demonstrate the utility of a costing method that can be applied throughout low- and middle-income settings in a standardized, replicable manner without excessive cost. Utilizing this methodology will enable hospitals in similar settings to generate intercomparable cost estimates that can be used for project planning and fundraising purposes. If combined with existing data on intervention effectiveness, these estimates can also be used to create cost-effectiveness data for use as an advocacy tool.
Source of funding (if none, enter "None"): Wharton School of Business

SAT_071

Working with Nurses and Physicians to Integrate Oral Health in Existing Care Systems: Bwindi, Uganda

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Background: Bwindi Community Hospital and the affiliated Uganda Nursing School, Bwindi, serve an underserved rural catchment area of 100,000 individuals. Dental services are provided by a dental public health officer and dental assistant, who do not have the capacity to provide dental care and/or outreach to the entire population. This mixed methods work assessed the feasibility of developing and implementing relevant oral health training for two groups of non-dental professionals: practicing physicians and nurses, and nursing students.

Methods: The training and evaluation instruments were informed by unpublished qualitative data previously collected by the hospital in collaboration with local stakeholders. Train-the-trainer methodology (local dental professional and nurse trainer) was used to deliver the training which was assessed using pre/post survey methodology. Key-informant interviews and focus groups were used to assess training relevance, utility, and appropriateness; the information collected was used to modify the training and evaluation materials, which were delivered to trained local educators who will continue to iteratively modify the materials.

Findings: Education sessions and surveys were provided to 108 first-year students, 36 second- and third-year students, and 13 clinicians. There were significant increases in oral health-related knowledge among first-year nursing students ($p<.001$), and practicing physicians and nurses ($p=.030$). Self-reported behaviors (risk assessment and patient education) also increased among all groups ($p<.01$), but clinicians were significantly more likely to ask patients about oral signs and symptoms post-training ($p<.001$). Additionally, second- and third- year nursing students reported a significant increase in self-efficacy regarding oral examination ($p<.001$). Key informant interviews (n=1) and focus groups (n=29) with nursing students and clinicians suggested that trainings were well received, but first-year students requested patient education resources, and second- and third- year students requested additional clinical information.

Interpretation: Preliminary data suggest that it is feasible to increase oral health knowledge and self-reported behaviors among non-dental trainees and clinicians in rural Uganda. However, differences in formal training and experience may require a more nuanced approach to oral health training to promote utility for each group. Additionally, a complementary patient education/provider toolkit should be considered.

Source of funding (if none, enter "None"): Columbia University: Mailman School of Public Health and Program for Global and Population Health, Vagelos College of Physicians and Surgeons

SAT_072

Strengthening Medical Education in Liberia, Post-Conflict and Post-Ebola

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Background: Liberia, a West African country recovering from 14 years of civil war and a devastating Ebola outbreak, has approximately 1 physician for every 15,000 people. The country's only medical school, A. M. Dogliotti College of Medicine (AMD), has 4 full-time permanent faculty and approximately 200 medical students. Fewest faculty teach in the preclinical years, and student attrition is high. Approximately one-third of students who matriculate at AMD do not graduate.
AMD and Yale School of Medicine faculty and staff are collaborating to reduce Liberian medical student attrition, support and expand preclinical faculty, and ensure that medical students develop competencies necessary to graduate and become high-performing medical doctors.
Setting and Participants: AMD is located in Monrovia, Liberia's capital. Participants include AMD leadership, faculty, and medical students, and Yale School of Medicine faculty and staff.
Description: In collaboration with the Dean of AMD and the Liberian Minister of Health, a team from Yale identified areas for strengthening medical education in Liberia, including: curriculum review and revision, providing direct preclinical instruction to medical students, training future Liberian medical faculty through a teaching apprenticeship program, and supporting innovative pedagogical techniques in the classroom.
Methods: Evaluation: Progress evaluation includes both qualitative and quantitative metrics, such as anonymous student evaluations and regular classroom assessments.
Findings: Reflection: Designed to strengthen medical education in Liberia, this collaboration involves a multi-pronged approach for supporting existing faculty, developing new Liberian faculty, developing a robust, locally-appropriate medical curriculum, and strengthening the knowledge and competencies of Liberian medical students. The collaboration between Yale and AMD has also expanded to address factors outside the classroom, such as improving financial sustainability for the medical school.
Interpretation: Impact: The ongoing collaboration between Yale and AMD has yielded several systemic changes to undergraduate medical education in Liberia, including a plan to restructure and shorten training, and decentralized financial management to improve revenue generation. These approaches, arising from a close, locally-led partnership, can provide insight into managing comparable challenges in undergraduate medical education in other resource-constrained and post-conflict settings.
Source of funding (if none, enter "None"): Funding is provided by the World Bank and the U.S. Health Resources and Services Administration (HRSA).

SAT_073

Training of Ghanaian pathology residents through remote participation in educational resident sessions in Chicago

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Background: There are less than one pathologist per 1 million Ghanaians, which impedes diagnosis of cancer and other diseases. Training of additional pathologists is therefore important and best done in-country to reduce brain drain. The only active accredited pathology residency program in Ghana is located in Pathology Department of the University of Ghana and Korle Bu Teaching Hospital in Accra. Fifteen residents are presently trained by few fellowship-trained pathologists, which are not subspecialty trained and have substantial clinical and teaching duties, posing challenges for effective resident training. Our goal is to provide the Ghanaian residents with educational opportunities available to pathology residents at the University of Illinois at Chicago (UIC).
Methods: UIC pathology residents have 3-4 interactive educational lectures/week early in the morning that are transmitted via the internet using Go-To-Meeting or WebEx to a local hospital where residents rotate. Pathology residents in Accra log in to these sessions in their early afternoon and participate in real time and can ask questions using a microphone hook-up. Ghanaian residents have taken part since February 2018 and were administered a survey after 3 months to determine effectiveness of this activity and identify possible improvements.
Findings: Topics covered thus far include CNS, endocrine, soft tissue/bone, dermato-pathology, and some clinical pathology aspects. Survey response rate was 93% (9 males, 4 females), 10 of whom were Ghanaian. They had been resident for an average of 3 years. Important topics were learned (n=11), and most (n=12) respondents wanted continue participation (one did not respond). Quality control, pathology informatics, and lab management were topics needing more attention. Speed and quality of image transfer and voice have been motsly excellent.
Interpretation: All Ghanaian residents are extremely enthusiastic as are pathology faculty in Accra. This approach to provide real-time educational experiences for pathology residents in Ghana is inexpensive and only requires a computer with internet access, speakers, and a microphone. The sessions are beneficial to the pathology residents and can be easily applied to training of residents in other medical specialties in LMICs. Providing practical information (sample handling, QC, etc.) is very important to the residents, as is ability to ask questions in real-time and providing microphone equipment to do this.
Source of funding (if none, enter "None"): None

SAT_075

Mobile Health Solution to Improve Timely Management and Referral of Critical Maternal and Newborn Health Services: Learnings from Mirab Azernet District of Southern Ethiopia

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Background: Tthe skilled birth attendance rates in Ethiopia has been increasing; mainly by improved access to basic emergency obstetric and newborn care (BEmONC). However, the coverage for postnatal care (PNC) within 48 hours, which is critical to prevent maternal and newborn morbidities and mortalities, remains low. To address this the Last Ten Kilometers Project, JSI, in partnership with Ministry of Health, and Dimagi, a technology firm, introduced mobile health (mHealth) solutions designed for frontline health workers of primary health care units (PHCUs). PHCUs consist of one health center, which provide BEmONC and other curative care services, and five satellite health posts. Each health post, staffed with two female Health Extension Workers (HEWs), provide preventive and basic curative services to a community of about 5,000 peopleThe first of the three mHealth solution releases aimed to improve timeliness, coverage and quality of postnatal care, and timely referral and management of critical maternal and newborn health services.

Methods: The mHealth solution, was designed through an iterative process with the end users. It consists of three applications: one for the HEW, one for the midwives at the health center, and one for the HEW focal person at the health center. The HEWs' application is designed for improving the timeliness and quality of maternal and newborn services. It is equipped with job aids, appointment and case management tools, and management tools for two-way referral between the health post/community and the health center. The midwives' application confirms referrals from the HEWs; and sends notifications to the HEWs to ensure timely PNC for the mothers returning home after delivering at the health center. The HEW focal person's application is designed to provide technical and programmatic support to the HEWs through a supervisory checklist.

Findings: Since July 2017, four PHCUs in Mirab Azernet district are utilizing the mHealth solution. The presentation will describe the design and implementation process of the mHealth solution; demonstrate its effects on timeliness, coverage and quality of services provided through trend analysis of service statistics and usage data from the application database and from routine HMIS

Interpretation: Lessons for national scale up and global learning for community health programs will be described

Source of funding (if none, enter "None"): Bill and Melinda Gates Foundation

SAT_076

Comprehensive Trainee International Travel Resources: a long-term interprofessional collaboration to create campus tools that support Trainees Working Abroad and their Host Institutions

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Background: Over the last decade, a proliferation of guidelines for short-term experiences in global health (STEGHs) have aimed to reduce ethical risk and improve experiences for host communities. The University of California, San Francisco has several long-standing global health programs that have worked to adequately prepare learners. However, we have not had a comprehensive effort to compare our resources to published guidelines and have not standardized across the institution.
Methods: In order to standardize processes and implement best practice guidelines for pre-departure, in-country, and post-return training and preparation, a group of 15 faculty educators and staff across the schools of dentistry, medicine, nursing, and pharmacy and the graduate division worked for 3 years to produce a comprehensive set of tools to support trainees to learn overseas. The committee was charged with (1) sharing effective strategies for trainee work abroad at each school; 2) enhancing and standardizing resources to address all critical issues 3) considering partnerships and host needs in planning. Each group did a comprehensive review of published literature, resources at other universities and organizations, and existing tools at UCSF.
Findings: All the collected and created resources were compiled to build two campus websites: Trainee International Travel Resources (for academic work abroad) and Trainee Resources for Vacation and Conference travel. Tools fit within six priority areas: documents and policies; pre-departure advising and training; international site identification and support; affiliation processes; post-return strategies; and onboarding international visitors to UCSF.
Interpretation: Our approach was to re-evaluate and re-create a process and system to improve short-term experiences in global health. The expertise of a variety of faculty professionals, combined with the wide range of available references, guidelines, and internet resources, enabled the creation of streamlined and standardized tools for trainees going abroad. We had less success developing tools to support international sites and to simplify the onboarding of international visitors as we need to engage higher levels of leadership, which remains a goal of our team. This initiative would be easy to replicate and customize at other academic centers. It is an important step toward changing the culture within our institution and allowing our partnerships to become more just.
Source of funding (if none, enter "None"): None

SAT_077

Rwanda Health Management Information System (HMIS) Data Verification: A Case of Sixty-nine Health Facilities in Four Districts of Rwanda

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Background: Reliable HMIS data can be used with minimal cost to identify areas for improvement and to measure impact of healthcare delivery. However, variable HMIS data quality in low- and middle-income countries limits its value in monitoring, evaluation and research. We assessed quality of Rwandan HMIS data, measured as agreement between HMIS and facility source documents data for maternal and newborn health data.
Methods: A cross-sectional study was conducted in 69 public health centers (HCs) located in four Rwandan districts. For eight maternal and newborn health data elements, we compared the Rwanda HMIS data to facility register data collected by study staff. Data were aggregated for a three-month period (April-June 2017: 44 HCs in Gakenke and Rulindo districts and July-September 2017: 25 HCs in Gisagara and Rusizi). For each data element, we excluded any HC with either incomplete HMIS or register data. World Health Organization data quality guidelines on data verification were used: a verification factor (VF) was defined as the ratio of register data over HMIS data. The acceptable margin of error for discrepancies between HMIS and source documents was ($0.90 \leq VF \leq 1.10$). A $VF < 0.90$ or $VF > 1.10$ indicated over- and under-reporting in HMIS, respectively.
Findings: A high proportion of HCs achieved acceptable VFs for the number of deliveries (99%;68/69), antenatal care (ANC1) new registrants (96%;66/69), live births (94%;65/69), and newborns who received first postnatal care (PNC1) visit within 24 hours (82%;51/62). This proportion was slightly lower for the number of women who received iron/folic acid (78%;47/60) and were tested for syphilis on ANC1 (66%;45/68) and was the lowest for the number of women with ANC1 standard (before 16 weeks of pregnancy) (25%;17/68) and four standard visits (ANC4) (17%;12/69). The majority of HCs over-reported on HMIS data for ANC4 (77%;53/69) and ANC1 (65%;44/68) standard visits.
Interpretation: Findings of this study demonstrate the variation of HMIS data quality by data element. Reporting was less accurate for ANC-related data requiring more complex calculations – i.e., knowledge of gestational age and scheduling to determine ANC standard visits. Ongoing data quality assessments and training to address gaps could help improve HMIS data to be used in program evaluations.
Source of funding (if none, enter "None"): None

SAT_078

Health financing-related inequalities in maternal mortality in Colombia

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Background: Health financing is influenced by many factors at both global and country level and is a critical component of health systems performance. Inadequate health financing contributes to poor quality and inequities, which in turn, leads to poor health outcomes. In 1993 Colombia launched an ambitious national health insurance initiative designed to move towards universal health coverage. However, maternal mortality is still high (MMR=64 deaths per 100 000 live births) and the country shows an unequal progress at subnational level and by health insurance scheme (Subsidised/contributory).
Methods: This study assessed how health financing influences inequalities in maternal mortality. This was as ecological study at subnational level with mixed methods: Measuring inequalities (Quantitative approach): Data sources: using a multiyear disaggregated data at subnational (33) and by health insurance level provided by Ministry of Health. Statistical methods: Slope Index of Inequality (SII), Concentration Index (CIX) and health financing by quintiles. 21 in-depth interviews (Qualitative approach): were conducted using a semi-structured guide on Who are covered?; What services are covered? What proportion of the cost are covered? among 9 key health financing decision makers and managers, and 12 responsible of maternal policy development and program implementation. Data were collected during July-August 2016.

Findings: The 20% of territories with the lowest health spending per capita cumulate the 36% maternal deaths. Largest absolute and relative inequalities were observed in overall health financing and subsidized health scheme. Inequalities have increased from 2012 to 2014 among worst-off territories. Conversely, the inequalities in the contributory scheme decreased over the same period. Qualitative analysis showed that health financing do not seem to be the main challenge in improving maternal health. The main reason is related to the implementation gap of health financing reforms, given the existing inefficient relationship between purchasers and health care providers.
Interpretation: This affects the timeliness of the flow of resources, which impacts the contracting of health workers and the quality of maternal health services in most health facilities. While moving towards universal health coverage, understanding the implementation of health financing reforms presents an opportunity to inform equitable improvement of health outcomes.
Source of funding (if none, enter "None"): This research was funded by Maternal and Child Health Program, Inclusive Economies at International Development Research Centre, IDRC.

SAT_079

Improving Immunization Systems for Children by Engaging Pediatric Societies: Using Non-Traditional Partnerships to Build Local Capacity

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Background: Vaccines are one of the most successful health interventions in history, yet one in five children worldwide still lack access. Since 2015, the American Academy of Pediatrics (AAP) and national pediatric societies (NPS) in eight countries across Sub-Saharan Africa and Southeast Asia have identified and shared best practices to support national immunization system improvements through advocacy, education, and targeted action. Pediatric societies are uniquely qualified to promote immunization programs in their communities and countries as they reach children through engagement as clinicians, health system managers, academicians, and advocates. Four years of implementing capacity-building initiatives for immunization advocacy by and low-middle income country (LMIC) pediatric societies with AAP support have led to improving immunization systems. This country-led process yields step-wise action plans which allow for each society to act upon self-identified priorities effectively.
Methods: Implementation phases included: 1) identification of immunization priorities and gaps; 2) advocacy skills training for members; 3) process improvements for developing member engagement and systems; and 4) adapting a sustainability framework to guide further immunization-focused activities of pediatric societies. Peer-to-peer learning and technical assistance was utilized throughout the engagement.
Findings: Societies in eight LMICs have increased their support to public and private immunization systems including: advocating to 84 government agencies and policymakers; training approximately 500 health workers and educational outreach for >2000 care providers. Examples of country-specific results include development of an immunization pre-service training curriculum that will reach 86% of health workers in Kenya; creation of a vaccine monitoring system linking public and private data already used by 20% of pediatricians after one year of implementation in Indonesia; and new written commitments for sub-national financing by six permanent secretaries in Nigeria.
Interpretation: Pediatric societies can affect immunization programming at both national and sub-national levels. NPS, like many local civil society organizations (CSOs), have varying levels of institutional capacity. To sustain efforts, capacity-building focused on organizational systems is critical. Additionally, the role of NPS is not well-understood by global, regional, or local partners. Dissemination of project outcomes and tools are needed to engage partners and fully leverage NPS strengths. This model of professional society collaboration could be utilized for other health system strengthening initiatives.
Source of funding (if none, enter "None"): Centers for Disease Control

SAT_080

Results of a Surgical Key Performance Indicator Data Intervention in Rural Ethiopian Hospitals

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Background: In Africa, surgery is an oft-neglected field of medicine, exacerbated by a lack in quality of surgical data. There is a need for standardized metrics in global surgery, with practical indicators and mechanisms for data collection.
In 2016-2017, the Safe Surgery 2020 (SS2020) initiative, with the Ethiopian Federal Ministry of Health, developed fifteen surgical key performance indicators (KPIs) to measure capacity and quality of surgical care. New clinical registries and training materials were created to capture these indicators. To pilot these tools, an on-site data intervention was developed and implemented by SS2020 in 10 rural Ethiopian hospitals in 2018.
Methods: The data intervention commenced with training of local surgical mentors and providers from hospitals in the Amhara and Tigray regions. On-site visits were conducted by mentors and SS2020 staff to provide supervision and routine data quality checks. A final reporting workshop provided opportunity for discussion and to review each hospital's first month of high-quality data, focusing on 6 major KPIs: surgical volume, surgical site infection (SSI) rate, Safe Surgery Checklist (SSC) utilization rate, peri-operative mortality rate (POMR), anesthetic adverse event (AAE), and surgical referrals out. Results compiled from new registries were verified by trained mentors.
Findings: The new data collection system was piloted successfully in all 10 hospitals. The first month of quality data from each region was March for Amhara, and June for Tigray. The aggregate data collected in hospitals in Amhara and Tigray, respectively, were as follows: surgical volume was 180 and 220, SSI rate was 0% and 0.90%, SSC utilization rate was 91.3% and 82.6%, POMR was 0.56% and 0.45%, AAE was 1.1% and 0.45%, and surgical referrals out was 279 and 175.
Interpretation: This intervention exhibits how a new system for surgical KPI collection and reporting can be effectively taught and integrated into rural Ethiopian hospitals. The results indicate that the new data collection tools adequately captured high-quality data for surgical KPIs. Further qualitative analysis from intervention hospitals and data quality assessments will lead to better iterations of the data intervention and surgical registries for potential national scale-up.
Source of funding (if none, enter "None"): GE Foundation

SAT_081

Community Health Workers as Systems Change Curators across African Public Health Service Delivery: Leveraging mHealth interventions through Health Systems Entrepreneurship with Social Innovation Organisations and Government.

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Background: Mobile health (mHealth) innovations are often advanced as a way to improve public health service delivery amongst African countries. At first glance, it appears that technology-driven approaches to many health systems challenges in Africa may be a fit for purpose solution, but on closer inspection mHealth interventions without community participation limits the ability to deliver quality services to improve Maternal and Child Health (MCH). The prevailing point of view in the field is that Community Health (CH) is often neglected at the expense of other pressing needs. For instance, the WHO has no CH experts, and only recently decided to release guidelines for the field. Consequently, governments and funders do not prioritise CH as a key systems intervention. Although governments widely accept mHealth approaches as best practice with MCH, recent social innovations have called into question the minimised role community health is perceived to play in network strengthening. In contrast, African Social Innovations Organisations (SIO) have started leveraging Community Health Workers (CHWs) as key systems change actors who support mHealth interventions in collaboration with government.
Methods: From an initial thirteen SIO's who applied to take part in the study, six were selected to receive grants to implement their interventions. The SIO's were from Kenya, Liberia, Malawi, Mali, Rwanda and South Africa. Following open-ended non-structured interviews, the study explored the way in which all the stakeholders in the SIO's, government and Bertha Centre for Social Innovation and Entrepreneurship (BCSIE) collaboration enhanced their learnings about systems change and integration implementation to improve healthcare service delivery.
Findings: The findings challenge the WHO, funders, NGO's and governments to re-imagine the role of CH in public healthcare and highlight the catalytic role of CHWs as systems change curators in Health Systems Entrepreneurship (HSE) in key areas like capacity building, integration implementation, network strengthening and partnering with government.
Interpretation: The study confirmed the important role of CHWs as HSEs because they offer a cross-cutting health system strengthening intervention that cultivates systems change by combining social and mHealth innovations in MCH service delivery. In addition, the SIO's in partnership with BCSIE were able to leverage mHealth and CHW interventions through peer-to-peer learnings and government support.
Source of funding (if none, enter "None"): Johnson & Johnson Bertha Foundation

SAT_082

Use of Mobile Application for Routine Data Collection at Primary Healthcare Center in Nasarawa State, Nigeria: Healthcare Workers Experience and Challenges.

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Background: Paper-based data collection (PBDC) and reporting have predominantly been used in Nigeria over the years particularly at the level of primary health care facilities (PHCFs). Technological advancements have made electronic data collection possible in most healthcare settings in developed countries with Smartphone availability and portability providing an alternative option for PBDC especially in hard to reach areas. Despite these gains in the use of technology in patient management, most healthcare workers (HCWs) at the PHCFs are yet to embrace the use of mobile technologies for data collection and reporting. This study assessed the feasibility and challenges of mobile application (MA) deployment for data collection at PHCFs in Nigeria.

Methods: 14 HCWs from 14 PHCFs were recruited and given Smartphones with a customized prevention of mother to child transmission application installed with electronic data collection tools for maternal patient health monitoring. Participants were trained to capture various health information of pregnant women starting with basic demographic, ANC, HIV testing, ART treatment, viral load, delivery details, child follow up, and maternal follow up information. They were also trained to transmit the data which later synchronized with the central server at the central office. HCWs experience with the use of the MA was documented using in-depth interviews and field notes.

Findings: Out of 14 facilities, 11 (79%) submitted their routine report using the MA. 9 (82%) HCWs reported they found it easy to use the MA while 55% (n=6) reported the MA made their work easy. Over 5 months, all HCWs completed a total of 586 patient records from 11 facilities using the MA. 3 (21%) facilities were unable to submit their report due to technical challenges, the most prominent being poor network coverage and power supply. Other challenges were workload and technical challenges with the application user's interface.

Interpretation: The use of smartphones using MAs was perceived to be feasible and acceptable among the HCWs for routine data collection and reporting at PHCFs suggesting that mobile smartphones can be used at primary healthcare settings to improve routine data collection. However, addressing the challenges of poor network coverage and power supply would be a prerequisite for scale-up of mobile application usage.

Source of funding (if none, enter "None"): PEPFAR

SAT_083

Increasing Isoniazide Preventive Therapy Uptake Among HIV Infected Patients; Effectiveness of A Quality Improvement Intervention in HIV centres in South East Nigeria

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Background: Tuberculosis (TB) is the number one killer of HIV infected patients. The risk of death in HIV/TB co-infected individuals is twice that of HIV infected individuals without TB. Thus, WHO recommended three strategies for TB prevention in HIV/TB endemic areas like Nigeria, in which isoniazid preventive therapy (IPT) is one. Challenges to scale-up of implementation of IPT still remains in Nigeria which includes; service delivery-related, supplies and product-related, Health workforce-related, Health information system-related and Health system financing-related. Quality improvement (QI) interventions have been proven to improve outcomes. This study evaluates the effectiveness of QI intervention- towards challenges related to supply/product, health workforce and health information system- on the proportion of HIV newly enrolled patient receiving IPT

Methods: We provided QI intervention to 13 HIV centres in Imo state- south-east Nigeria- to address IPT implementation challenges related to the product through INH supply; health workforce through training/mentorship; and health information system through documentation strengthening. Using National summary reports for the centres, 6 months (Oct 15-Mar' 16) baseline assessment on the proportion of HIV newly enrolled patient receiving IPT was done. QI Intervention was done for 1 month (Apr' 16). 6 months (May-Sept'16) post-intervention evaluation was done. Data were analysed by proportion/percentages and test of significance done using ANOVA

Findings: Pre-intervention/baseline data on the proportion of HIV newly enrolled patients receiving IPT was 28% and 30% at 6 and 3 months respectively. At 3 months and 6 months post-intervention, the proportion increased to 56% and 59% respectively. Evaluation of the significance of intervention 6 months before the intervention, at 3 months and then 6 months after intervention showed significance at $p<0.001$(25.144± 24.4)

Interpretation: Quality improvement intervention on challenges of IPT implementation in Nigeria could result to improvement in the proportion of HIV newly enrolled patient receiving the IPT. We recommend further study on long-term sustainability of this QI intervention and measure to further increase IPT uptake in Nigeria

Source of funding (if none, enter "None"): PEPFAR

SAT_084

Understanding and Countering the Impact of Forced Displacement on the Health System of Jordan from an NGO Perspective

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Background: This study aims to examine the acute and chronic impacts on health systems from forced displacement and go further by analyzing the relationship of NGOs in assisting local communities and health systems and providing recommendations for collaboration of their work to ease these burdens. The Syrian crisis has led to over 600,000 UNHCR registered refugees being displaced to Jordan, with research suggesting unregistered refugees number in the hundreds of thousands. This forced displacement has caused stress and burden upon the local health system, however little has been understood regarding the ability of health systems to cope with these burdens. Furthermore, international humanitarian organizations looking to assist these communities have often lacked the capacity to engage with the health system to address shortcomings and shortfalls in the system.
Methods: Ten semi-structured, key informant interviews were conducted with participants representing NGOs/IOs that are working in Jordan and providing healthcare related interventions to refugee populations. Data was coded inductively and thematically analyzed around the research aims and objectives.
Findings: The introduction of Syrian refugees into the Jordanian health system has placed stress and strain on the health system in particular impacting service provision and infrastructure, medical products and vaccinations, health workforce and healthcare financing. NGOs/IOs have worked to cover gaps in service provision however further work is required for health system strengthening, increasing advocacy and improving channels of communication between various stakeholders.
Interpretation: This study analyses the impacts of forced displacement on the local health system and addresses increased tensions between host and refugee populations owing to these burdens. This highlights the need to move away from the traditional vertical focus of NGOs/IOs and for further integration and co-operation between NGOs and local health systems, especially in protracted crises, to assist both refugee and local populations.
Source of funding (if none, enter "None"): None

SAT_085

Advancing Women Leaders in Global Health: Getting to Solutions

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Background: Women comprise 75% of the health workforce in many countries and the majority of students in academic global health tracks, but are underrepresented in global health leadership. This study aimed to elucidate prevailing attitudes, perceptions, and beliefs of women and men regarding opportunities and barriers for women's career advancement, as well as what can be done to address barriers going forward.
Methods: This was a convergent mixed-methods, cross-sectional, anonymous, online study of participants, applicants, and those who expressed an interest in the Women Leaders in Global Health Conference at Stanford University October 11-12, 2017. Respondents completed a 26-question survey regarding beliefs about barriers and solutions to addressing advancement for women in global health. Quantitative data were analyzed using Stata 15.1; Qualitative data were analyzed using NVivo 10.1.
Findings: 405 participants responded: 96.7% were female, 61.6% were aged 40 or under, 64.0% were originally from high-income countries. Regardless of age or country of origin, leading barriers were: lack of mentorship, challenges of balancing work and home, gender bias, and lack of assertiveness/confidence. Barriers that were especially prominent for women in low-resource settings included lack of opportunities, financial constraints, and safety concerns. Proposed solutions were categorized as individual or meta-level solutions, and included senior women seeking junior women for mentorship and sponsorship, junior women pro-actively making their desire for leadership known, institutions incentivizing mentorship and implementing targeted recruitment to improve diversity of leadership.
Interpretation: This study is the first of its kind to attempt to quantify both the barriers to advancement for women leaders in global health, but also the potential solutions. While there are no shortage of barriers, we believe there is room for optimism. A new leadership paradigm that values diversity of thought and diversity of experience will benefit not only the marginalized groups that need to gain representation at the table, but ultimately the broader population who may benefit from new ways of approaching long-standing, intractable problems.
Source of funding (if none, enter "None"): None

SAT_086

Barriers and Facilitators to Comprehensive Craniofacial Care in Ghana: Findings From a Focus Group of Medical Providers on a Multidisciplinary Craniofacial Team in Kumasi, Ghana.

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Background: Cleft lip and/or palate (CL/P) occurs in approximately 1 in 700 births worldwide (World Health Organization, 2018). Little is known about the prevalence of CL/P in Ghana, however one study found a higher prevalence in the Wudoaba villages in Ghana with CL/P occurring in every 6.3 per 1,000 people (Agbenorku et al., 2011). Children with CL/P require comprehensive care with surgical interventions occurring in a specific time frame for optimal results. However, children with CL/P in low-income countries receive their surgeries much later than the ideal surgical timing (Sell & Grunwell, 1990). This increases therisk of velopharyngeal dysfunction (Pet et al., 2017). The purpose of this study was to identify barriers and facilitators to comprehensive craniofacial care from the perspective of a multidisciplinary cleft team in Ghana.

Methods: A one-hour focus group was held for members of a comprehensive cleft team in Kumasi, Ghana. Thirteen medical providers attended (social worker x2, plastic and reconstructive surgeon, plastic and craniofacial surgeon, cranio-maxillofacial surgeon, oral and maxillofacial surgeon x2, nutritionist x3, dentist, speech therapist, and nurse), and were questioned about cultural beliefs and barriers regarding cleft care. Questions were also asked about how team members address these barriers and facilitate care.

Findings: Themes related to barriers for CL/P care were evident in the transcriptions. Medical providers revealed barriers such as cultural and spiritual beliefs regarding CL/P, lack of knowledge of CL/P, stigma, finances, transportation issues, nutrition and feeding, and lack of comprehensive cleft care teams in Ghana. Themes surrounding facilitators to care included Ghana's National Health Insurance Scheme, organizations which provide financial support, creation of family connections through social events, and homecare for patients who are unable to come to the hospital.

Interpretation: While there are two comprehensive cleft teams in Ghana, there are still barriers to receiving care and surgery on time. Future clinical outreach should focus on rural areas in Ghana, providing them with more knowledge and education on CL/P. Future focus groups should also consider discussion of building another sustainable comprehensive craniofacial team in Ghana.

Source of funding (if none, enter "None"): None

SAT_087

Tailoring Health System Support to Local Contexts and People's Desires; An Experience ff Applying Human Centered Design in Ethiopia

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Background: Suitability of interventions to local contexts and people's desires has been critical factor for effective and sustainable implementations of programs and equitable service delivery across regions in Ethiopia. Human Centered Design (HCD) has become increasingly adopted globally as a collaborative approach to problem solving by designing solutions befitting people's contexts and desires. The Last Ten Kilometers project (L10K) of JSI applied HCD to design its system support approach to federal ministry, four regional health bureaus (RHBs) and low performing zones in Ethiopia. The project intends to build capacity of RHBs and zones to oversee and support districts to improve demand for, quality and equity of reproductive, maternal, neonatal and child health (RMNCH) services. This abstract outlines the experiences of L10K in applying HCD approach to contextualize its health system support.
Methods: The designing process consisted of interpretation, inspiration, immersion and innovation steps. Literature reviews and consultations with federal ministry and RHBs staff were used to identify the areas for system support. Then, in-context immersions—immersing oneself in the lives and communities of others—were conducted through individual conversations with range of RHBs staff to identify systemic bottlenecks to deliver RMNCH services. The findings of the immersions were used to inform development of design challenges for co-creation workshop which was organized for RHBs staff. During co-creation workshop, RHBs staff further explored their systemic bottlenecks through barrier analysis exercise and have designed porotype solutions to their design challenges.
Findings: The application in-context immersions was instrumental in identifying key bottlenecks that were not identified with previous consultations. Based on the findings of immersions, brainstorming sessions and barrier analysis, L10K and RHBs in collaboration developed a project detailed implementation plan tailored to address the identified systemic bottlenecks. The plan has been used to guide the system support L10K provides to regions and zones. In addition, it has been possible to develop skills of RHBs staff to apply HCD techniques.
Interpretation: We have learnt HCD approach can be used elsewhere for any development endeavor to continually collaborate with relevant actors to critically hearing the voices, understanding the working contexts and desires of people and tailor sustainable interventions to their contexts and desires.
Source of funding (if none, enter "None"): Bill and Melinda Gates Foundation

SAT_088

Global Action in Nursing (GAIN): A Nurse/Midwife Training & Mentoring Program to Improve Maternal/Neonatal Outcomes in Sub-Saharan Africa

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Background: Global Action in Nursing (GAIN), addresses one of the most urgent problems in sub-Saharan Africa: maternal/neonatal mortality and morbidity. GAIN was initiated in September 2017 in Neno District, Malawi where death rates for mothers and babies are twice the global average. Nurses deliver 80% of all babies in this region, therefore we focus on updating safe childbirth clinical skills using the WHO's Safe Childbirth Checklist (SCC), long-term mentoring, and quality improvement training. The primary goal is improved mother and baby outcomes; secondary outcomes include improved nurse performance of essential safe childbirth practices and implementation of quality improvement projects.
Methods: All nurses in a district who are working in maternity are recruited to participate. Key program partners are Partners In Health and the Global AIDS Interfaith Alliance. Participants undergo intensive 10 day training, including simulation and hands-on practice in the clinical setting with expert nurse midwives. Following the training, all participants receive 12-month mentoring in their clinical site to embed practices. To promote long-term sustainability and integration of the program into the district health system, participants lead quality improvement projects at their work sites, with partners enabling response to critical health system barriers. In addition, participants have the opportunity to be promoted to mentors-in-training upon completion of the program.
Findings: To date, three training courses have been offered in Neno district and completed by 45 nurses. Two expert nurse midwives have delivered 344 mentoring sessions at 9 facilities from 16 April to 20 August. When comparing HMIS data between 1st quarter of 2017 and 2018, improvements were seen in areas from reporting of complications to neonatal outcomes. Six quality improvement projects implemented at one community hospital and five health centers address issues from removing supply chain barriers to increasing antenatal visits.
Interpretation: Health system problems that influence supplies, staffing, salaries, and continuity of personnel are issues as are harmonization of program and HMIS data. Adaptation of the SCC is an ongoing process to ensure relevance to the sites. The project is expanding to Blantyre District, Malawi (September 2018) and Sierra Leone (2019) where local adaptation of the SCC will need to be considered.
Source of funding (if none, enter "None"): UCSF School of Nursing Center for Global Health, Partners In Health

SAT_089

Data Quality Assessment of Surgical Registries & Electronic Data Entry in Rural Ethiopian Hospitals

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Background: A Data Quality Intervention (DQI) was implemented in mid-2018 in 5 rural hospitals in Tigray, Ethiopia to develop local capacity around collection and analysis of surgical key performance indicators (KPIs). DQI activities included piloting of surgical registries that capture patient data for calculation of KPIs, and entering these data into an online platform, REDCap. Surgical teams were trained on both activities, and quality controls were programmed into REDCap. This study evaluates the quality of data captured in the registries and accuracy of electronic data entry.
Methods: Registry data quality was retrospectively assessed using a dual approach: 1a) Overall Completion: totaling missingness of key variables in registries, and 1b) Cross-Registry Consistency: reviewing a random sample of 10% of patients to assess consistency in data fields across registries. Electronic data entry was also audited by: 2a) Data Entry Verification: reviewing a random sample of 10% of patients to tally errors in data entry of registries, and 2b) Calculation Accuracy: determining percent error between 5 KPI values calculated from REDCap data (measured value) and values calculated directly from registries (accepted value from source data).
Findings: The results of the data quality assessments are as follows: 1a) Overall Completion: A review of 16,000 data fields showed minimal missing data (1%); 1b) Cross-Registry Consistency: A review of 462 data fields across 46 randomly selected patients found minimal inconsistencies across registries (<1%); 2a) Data Entry Verification: An assessment of 46 patients in REDCap identified data entry errors in 18.1% of all data fields reviewed; 2b) Calculation Accuracy: The percent error between KPI calculations of source data and electronic data was greater than 5% for 10 of 25 compared values.
Interpretation: The DQI intended to equip rural Ethiopian hospitals with tools necessary to capture quality surgical data. A preliminary quality assessment of registries showed few inconsistencies and missing fields, indicating high-quality data input, whereas verification of data entered electronically shows several discrepancies from the source data. Potential limitations to data entry include insufficient human resources and limited technological capacity. These results suggest that capture of high-quality surgical data in rural Ethiopian hospitals is feasible on paper, but barriers exist in patient-level electronic data capture that require further exploration.
Source of funding (if none, enter "None"): GE Foundation

SAT_090

Partnership for Quality Medical Donations (PQMD)- Health Systems Strengthening/Medical Missions Project

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Background: Short-term medical missions (STMM) have become increasingly popular among healthcare professionals of all disciplines and experience levels. It is estimated that volunteer teams travelling from the U.S. to low and middle-income countries (LMICs) spend upwards of $3.7 billion in annual expenses (Caldron, 2016). While these missions can provide significant benefits to patients and invaluable experiences to practitioners, the relatively uncoordinated and unregulated nature of such practices has raised questions about their overall effectiveness, longer-term impact, and potential consequences.
Methods: The Partnership for Quality Medical Donations (PQMD) launched the Healthcare System Strengthening/Medical Missions Initiative (PQMD/HSS-MM), a 3 -year project, which aims to improve the practice of STMMs to better support and strengthen local healthcare systems. With well-researched and an improved framework for best practice medical missions can better help address longer-term needs and contribute to improved health outcomes in host communities, in LMICs. High quality, inclusive and reciprocal partnerships with local healthcare providers and ministry of health officials are critical for open dialogue, trust and improved coordination.
Findings: Developing an in-country framework required the involvement of many different stakeholder participants including: the Ministry of Health; local and International Health Care Providers; Professional Associations; International and National Non- Governmental Organizations (NGOs); Medical and Nursing Schools; and Community leaders. To date, over 100 assessments have been conducted in Honduras, Malawi and the Philippines. Full REB approval (#25339) from Trent University along with organizational letters of support from PQMD and Americares.
There was an overall acceptance and positive response to the best practice guidelines. Naturally, licensing and country based tools will be required for implementation. Examples of benefits, challenges and lessons learned will be shared. Guideline development for Medical Missions representative of both sending and host organizations from Honduras, Malawi and Philippines are now available.
Interpretation: Enhanced awareness by professional affiliations, colleges and universities from High Income Countries (HIC), thought leadership forums and networking are key to future change activities. There is a need for a more robustly developed community of practice (COP) platform for the sharing of documents, knowledge and promoting dialogue between sending and host STMM communities. A newly developed COP infrastructure will include both domestic and international mission stakeholders.
Source of funding (if none, enter "None"): Medtronic and Americares

SAT_092

Registration timelines of anti-retroviral medicines: USFDA tentative approval, WHO prequalification and local approval in Kenya

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Background: The United States Food and Drugs Administration Tentative Approval (TA) process and the World Health Organization (WHO) Prequalification Program (PQP) were established to ensure quality generic anti-retroviral medicines (ARVs) in low- and middle-income countries. TA is an expedited regulatory review process to enable timely access to ARVs. However, medicines approved through PQP or TA also need to be approved by National Medicines Regulatory Authorities (NMRAs) of user countries prior to clinical use. Regulatory requirements can become barriers to medicines access. This study aims to determine how much these duplicative reviews result in delayed market entry of ARVs, focusing on Kenya.

Methods: Approval dates for TA and PQP approved ARVs were collected from online databases. The list of ARVs approved in Kenya and their marketing authorization application and approval dates were collected from the country's NMRA records. The ARVs from the three databases were matched based on international non-proprietary name, strength, dosage form and manufacturer. Data was analyzed using R, version 3.2.3. Timelines between TA and PQP approvals, and NMRA approval were estimated in months. The timelines from application for marketing authorization at the Kenyan NMRA to approval were also estimated.

Findings: 22 ARVs were approved by PQP before approval by the Kenyan NMRA. The median time difference between the two approval dates was 29 months (range=2 to 82 months). 22 ARVs were approved by TA before the local NMRA approval. The median time difference between the two approval dates was 13 months (range=3 to 33 months). The timeline between application for marketing authorization and approval by the local NMRA in Kenya ranged from 8.5 to 72.5 months with the median being 25 months (N=24). The median NMRA approval timeline for fixed-dose combinations was shorter than approval timeline for single formulations – 13.8 vs. 30.8 months respectively, but his was not significant using the Wilcoxon rank sum test (p=0.1301). Neither was there a significant difference in median NMRA approval timelines between child friendly and adult formulations - 24.3 and 25.7 months respectively (p=1.000).

Interpretation: Stringent regulatory authority approved ARVs still take several months to obtain NMRA approval. Duplicative reviews can substantially delay market entry which may affect timely access to ARVs.

Source of funding (if none, enter "None"): None

SAT_093

Nursing Education Partnerships between Western and Local Organizations in Low Resource Settings: A Scoping Review of the Literature

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Background: Introduction: There is a growing involvement by Western non-governmental organizations and universities in low resource countries to address workforce production, specifically in nursing. There is wide variety in the nature of the involvement and the types of educational programs offered, ranging from workshops, certifications or credential bearing programs. In order to determine the range of nursing education programs offered in low resource settings by Western partners we conducted a systematic scoping review, and summarized general characteristics of the programs, including degrees or certificates conferred.
Methods: Methods: We undertook a systematic scoping review of peer-reviewed and grey literature, program websites and news sources, to locate information on nursing education collaborations or partnerships between Western organizations and low resource countries. Scoping reviews entail a systematic approach to assessing literature on broad questions of interest.

References and websites were excluded if they detailed study abroad or US-based nursing education programs with global nursing opportunities, non-nursing programs (e.g., other medical professional training besides nursing or midwifery), programs for international nurses in the US, or programs not involving partnership between a US-based organization and low resource setting partners. Using this search methodology, we identified 41 peer reviewed articles and 19 websites or program announcements. We detailed the components of each program.
Findings: Results: Twenty-one peer reviewed articles and 8 websites or program announcements were retained. Most partnerships were in Africa, with others in the Caribbean, Central and South America. Eleven of the programs offered nursing or related academic degrees, 7 programs offered certificates or diplomas, and 11 were workshops with no affiliated degree or certification. Programs varied in focus, ranging from general nursing to specialty practice (e.g., education, oncology, midwifery, HIV/AIDS). The peer-reviewed literature presented various methods of program evaluation, assessing acceptance or satisfaction of content and instruction, knowledge or skills gained, and implementation process. Program websites offered details of the partnership.
Interpretation: Conclusion: Based on this scoping review, there is a wide range of programming and outcomes among nursing education partnerships. Further, formal evaluation of programs and the information available publically regarding the programs ranges from peer-reviewed scholarly publications to limited summaries and web-based news articles
Source of funding (if none, enter "None"): None

SAT_094

Improving Health System Readiness to Access and Manage Donor Funds in Ghana

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Background: The USAID Systems for Health Project (2014-2019) works with Ghana Health Service (GHS) to scale up evidence-based, high-impact health interventions to improve health outcomes, particularly for women and children. The project works to strengthen vital health systems building blocks, including health financing by enhancing the readiness of GHS to directly access and manage USAID and other donor funds.

Systems for Health works with all 118 Regional and District Health Management Teams (RHMTs and DHMTs) in five of Ghana's ten regions. Upon initial assessment in 2015, only 18% of R/DHMTs demonstrated the capacity to directly manage donor funds, based on criteria including financial and cash management, procurement processes, and asset and inventory management and reporting.

Methods: One of the project objectives is that 60% of the R/DHMTs will have the capacity to directly manage donor funds by 2019.

The project employs several implementation strategies:

1) Financial Management Training: A three-day residential training addressed gaps identified in the initial assessment. Topics included donor funds management, cost principles, budgeting and proposal preparation, internal controls, procurement and inventory management, and donor compliance requirements. Participants included technical managers, Regional/District Directors, and accountants.

2) On-Site Coaching: Systems for Health reassessed the R/DHMTs annually, providing targeted coaching to address gaps and challenges identified.

3) Performance-Based Grants: Over four years, Systems for Health completed four rounds of performance-based grants to the RHMTs to implement district-based activities related to improving quality of and access to care. The project provided technical assistance to the RHMTs in data-driven program design, proposal writing, grants management, and reporting.

Findings: As of September 2018, 81% of R/DHMTs covered by the project demonstrated adequate capacity to manage US Government funds, exceeding the project's target of 60%.

Interpretation: Staff attrition remains an ongoing challenge to sustainability. To mitigate this issue, the project engaged entire GHS management teams in its interventions. This equipped a broader range of staff within R/DHMTs with the skills to access and manage diversified sources of funding.

Source of funding (if none, enter "None"): USAID Systems for Health, implemented by University Research Co., LLC, is funded through a cooperative agreement with USAID/Ghana.

SAT_095

An economic case for global health security: Effects of the 2014 West Africa Ebola outbreak on U.S. exports and employment

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Background: The 2014 West Africa Ebola outbreak generated health, social, and economic setbacks for affected countries in Africa, but less is known about the effects of the epidemic on the United States. In the absence of direct pathogen transmission within the United States, global trade is one mechanism through which geographically-distant epidemics can reverberate to the U.S. economy. A better understanding of the link between infectious outbreaks and U.S. economic indicators is important for informing U.S. investments in global health security strengthening.
Methods: This study evaluates the effects of the 2014 West Africa Ebola outbreak on U.S. exports and exports-supported U.S. jobs using a difference-in-differences framework. Sub-Saharan Africa (SSA) countries were assigned to treatment and comparison groups based on their 2014 Ebola transmission status, including a primary treatment group of three countries with epidemic transmission (Guinea, Liberia, Sierra Leone), a secondary treatment group of three countries that experienced limited Ebola cases (Mali, Nigeria, Senegal), and a comparison group of 40 remaining SSA countries with no known cases. Adjusted differences in U.S. outcomes trends before, during, and after the 2014 Ebola period across treatment and comparison groups were used to assess Ebola-attributable effects. Multiple model specification checks were performed to ensure analytic robustness.
Findings: The year of peak transmission, 2014, was associated with a $1.1 billion total reduction in U.S. merchandise exports to Ebola-affected countries relative to unaffected countries in the region, and with an estimated loss of over 1,200 U.S. jobs supported by these exports.
Interpretation: The findings indicate that disruptions in global health security might play a role in U.S. economic indicators, even if the U.S. population health is not directly affected.
Source of funding (if none, enter "None"): None

SAT_096

Walking the Talk: A Review of Implementation of the End-TB Strategy in Nigeria.

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Background: The WHO shapes global strategies for TB control and Nigeria has made efforts to adapt and implement them. The DOTS Strategy (1993) and Stop TB Strategy (2006) guided TB control up till 2015. Post 2015, the End TB Strategy for the global epidemic was launched in line with the SDGs and implementation commenced early in 2016. The objectives of the strategy are to reduce the incidence of TB and related deaths, bring to zero the number of families facing catastrophic costs from TB and eliminate global TB by 2035.
Methods: We carried out a review of the End TB strategy implementation in Nigeria till date with emphasis on government funding, early diagnosis and treatment of TB, engagement of private care providers and rapid uptake of new interventions.
Findings: The Federal Ministry of Health has adapted an Operational Framework to guide implementation of the End TB Strategy and the Nigerian Stop TB Partnership which was established in 2007 continues to advocate and mobilize resources for TB control. A Public private mix Action Plan has been developed and is being rolled out for private sector TB management. Capacity of TB health care providers has been built with roll-out of the shorter regimen for DRTB nationwide and anti-TB drugs are available. Despite Nigeria's high burden and low case finding, domestic funding for TB control remains low at about 9%. Private funds mainly from Global Fund and the USAID is about 27% while 64% of TB control funding needs are unmet. Since the 2016 adoption of GeneXpert MTB/RIF test as first point of TB diagnosis, the target of 1 machine/LGA (total of 774) is yet to be met. Only 390 (about 50%) machines are in-country and all were purchased with donor funds. On average, 33% of diagnosed Rif-resistant TB patients are not yet on treatment two weeks after diagnosis.
Interpretation: Nigeria scores high in terms of policy uptake with the ongoing activities of the Stop TB Partnership and adaptation of the End TB Strategy. The sub-optimal progress to end TB will benefit from rapidly increased government funding and improved infrastructural capacity or the goals of the End TB Strategy will remain a mirage for Nigeria.
Source of funding (if none, enter "None"): None

SAT_097

The evaluation of Cyprus' research impact in five non-communicable diseases from 2002 to 2013: implications for public health provision and health policy-making

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Background: Over 85% of the Cypriot disease burden as measured in disability-adjusted life-years (DALYs) by the World Health Organisation (WHO) is attributed to five non-communicable diseases (5-NCDs): oncology, cardiovascular diseases, diabetes, mental health and respiratory conditions in Cyprus. This study concerned the mapping of the research activities of Cypriot institutions in the 5-NCDs.
Methods: The Cypriot research output in the 5-NCDs, defined as the research papers published by Greek Cypriot researchers and institutions for 2002-2013, were identified in the Web of Science and downloaded for processing. For each of the 5-NCDs: firstly, the output was compared to their respective burden (WHO DALYs). Secondly, the research levels of the papers and their journals were analysed, together with the cross-country collaboration of Cyprus. Thirdly, we seek to gather data on European clinical guidelines, health policy committee members and newspaper stories reporting research. Fourthly, all the Cypriot research organisations and funding bodies were identified and their contributions to research were assessed. Finally, we contacted the Minister of Health on information regarding government plans.
Findings: Overall, there were 468 papers published on the 5-NCDs from 56 different Cypriot research organisations funded by 15 Cypriot bodies. The Cypriot research output on breast cancer is higher than any other cancer site but still does not match the disease burden. In diabetes, although the Cypriot population suffers more than any other European country, research is neglected. There is government support for public treatment of mental disorders, yet trivial research is performed on them, as well as on respiratory diseases. There is a lack of clinical guidelines development on the island and existing advisory committee members do not conduct much research on the 5-NCDs. The means whereby research can be used to improve healthcare in Cyprus are also unsatisfactory, and the translation of these findings towards strategic plans are currently under consideration by the Ministry of Health.
Interpretation: An assessment of the Cypriot research on 5-NCDs showed a mismatch with the disease pattern affecting the island. The implementation of policies and government support for research on the 5NCDs can assist the development of evidence-based policies and practices for the local population.
Source of funding (if none, enter "None"): None

SAT_098

Prevalence of Depression within the Bulandshahr District

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Background: Depression is a major contributor to global disability and disease burden. In India, 1 in 20 people are depressed, but the qualitative and quantitative availability of primary care services for mental health is far less than the defined norms by the World Health Organization.
There is a need for further exploration of the variables that affect the mental health of India's varying regions. This study aims to determine the prevalence of depression and the association between depressive symptoms and patient demographics in subjects that visited a health camp within the rural village.
Methods: This was an observational-cross sectional study. Inclusion criteria were any male or female 18 years of age or older. Exclusion criteria were comprised of any previous psychiatric condition, inability to consent, or those currently undergoing bereavement.
The depression screen used was the PHQ-9 questionnaire, which has been validated as a depression screening tool in multiple studies. Subjects were then asked questions regarding their demographic and socioeconomic information. After being interviewed, physicians provided participants with a free health checkup. Wilcoxin T-test on SAS software was used for data analysis.
Findings: There were 217 consented subjects. Of them, 140 were female and 74 were male. There was a mean reported age of 41.8 years, and no significant difference between ages of men and women in the sample ($p=0.2$). While most of the women were housewives (80%), almost all of the men reported having an occupation outside the home.
The mean PHQ-9 score for women was 8.8, while that amongst men was 4.4. There was a statistical difference between the PHQ-9 score of women and men: 42% of women had a score greater than 9, which indicates a provisional diagnosis of a depressive disorder, compared to 17% of men ($p<0.001$).
Interpretation: From the data collected, we concluded that a higher proportion of women are suffering from depression symptoms than men in this population. Further research is needed to study the relationship between gender and depression in India. Our results show that future interventions should focus on providing screening, education, and prevention for women in rural India in order to effectively address and treat the population.
Source of funding (if none, enter "None"): WSU Emergency Department Global Health Research

SAT_099

Integrated Hypertension and HIV Care Cascades in a HIV Treatment Program in Eastern Uganda: a retrospective cohort study

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Background: Persons living with HIV (PLHIV) are at increased risk of non-communicable diseases such as cardiovascular disease (CVD). Since both non-communicable diseases and HIV require chronic care, models of integrated care delivery that leverage successful HIV programs are needed in resource-limited settings. Since 2014, the Uganda Ministry of Health has recommended integration of services for hypertension (HTN), a major CVD risk factor, into HIV care programs. However, there has been limited uptake of this recommendation. With the goal of identifying opportunities for developing contextually appropriate integrated care models, we mapped the care cascades for both HTN and HIV within a HIV program in Uganda.

Methods: We conducted a retrospective cohort study in which we enrolled all PLHIV who enlisted in any one of three high-volume HIV clinics in Tororo District of Eastern Uganda between 2014 and 2017. We followed participants for 12 months. For both HIV and HTN, we determined the proportion of patients in the following cascade steps: Screened, Diagnosed, Initiated on treatment, Retained in care, Monitored, and Controlled. Cascades were analyzed using descriptive statistics and compared using chi-square tests.

Findings: We enrolled 1649 patients whose mean age was 37.6 years. For HIV, 1625(98.5%) were initiated on treatment, of whom 1148(70.7%) were retained in care, 1148(100%) had viral load monitoring, and 1037(90.3%) were controlled (viral suppression). Only 456(27.7%) of all 1649 participants were screened for hypertension at least once during follow-up, of whom 218(46.9%) were diagnosed with hypertension, 192(88.1%) were initiated on treatment, 110(57.3%) were retained in care, 91(82.7%) were monitored for HTN, and 53(24.3%) achieved blood pressure control. There were no statistically significant differences in any HIV cascade step between participants with HIV alone and those with both conditions.

Interpretation: In this retrospective cohort study, the HIV care cascade demonstrated excellent performance, approaching global targets. However, the HTN care cascade demonstrated major quality gaps, specifically at the points of screening and retention. Importantly, attention to HTN within this cohort did not negatively impact HIV care. As models of integrated HIV/CVD care are developed and implemented, specific attention should be paid to screening and retention in order to yield the greatest clinical benefit.

Source of funding (if none, enter "None"): Fogarty International Center and NHLBI of the NIH (D43TW010540).

SAT_100

Hypertension Management Barriers in Rural Community Health Centers, Nepal

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Background: Noncommunicable disease (NCD) awareness and management in rural areas are often neglected despite alarming rise in NCD caused death. In 2008, low middle income country suffered more than 80% of all NCD caused death in the world with 48% of it in premature death. In Nepal, 26% of Nepal's population has elevated blood pressure, and 30% of deaths were attributed to cardiovascular disease in 2015.
Methods: This is a mixed method study including 7 in-depth semi-structured interviews (IDSSIs) with medical officers and health assistants, 3 focus group discussions (FDGs), hypertension knowledge questionnaire, and clinic assessment surveys in 3 rural community health centers in Nepal. IDSSIs and FDGs were audio-taped, transcribed, inductively coded and thematically analyzed. We also conducted a clinic assessment survey in all 3 clinics to assess hypertension medication availability and hypertension related services in according to WHO recommendations for primary care clinics. A hypertension knolwedge questionnaire was answered by study each participant.
Findings: Major common barriers in hypertension care were patients' misconceptions about hypertension, poor compliance with diet counseling due to change in desired taste, lack of training for medical staff in cardiovascular disease, and lack of a hypertension management protocol and referral guidelines. Other common themes included lack of resources in clinics for counseling, poverty to afford medication or travel for referred cardiac care, high alcohol use culturally, fear of life-long medication, and lack of community screening. From clinic assessment survey, only limited hypertension medications were available, such as amlodipine and furosemide. No health education materials were noted for patients to take home or displayed in any of the 3 clinics. Both clinic staff and hypertensive patients scored similarly on the questionnaires.
Interpretation: Hypertension management in rural communities of Nepal faces many barriers including misconception in both staff and community, lack of training and resources for medical staff, and lack of standardization in clinic services. We hypothesize that by empowering local clinic staff through providing training and resources, quality of care for hypertension will improve. Given the vast difference in landscape and social determinants of health unique to these rural communities, additional resources tailored to the local community are needed to tackle this growing cardiovascular disease epidemic.
Source of funding (if none, enter "None"): University of Washington

SAT_101

An Examination of Controlling Behavior and Lifetime Physical, Sexual, and Emotional Violence in 8 Sub-Saharan African Countries

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Background: Violence against women, commonly accompanied by controlling behavior, is a serious public health concern in Sub-Saharan Africa. Among all World Health Organization (WHO) global disease burden (GBD) regions, the highest prevalence of lifetime intimate partner violence (IPV) is found in central sub-Saharan Africa. Women in Sub-Saharan Africa may be more likely to experience IPV than anywhere else in the world. This is the first known study to explore controlling behavior in relation to sub-types and exposure to multiple types of IPV among women within multiple countries in Sub-Saharan Africa.

Methods: Data from women (n=37,115) who completed the Demographic Health Survey's (DHS) domestic violence module in 8 countries in Sub-Saharan Africa (Cameroon, Democratic Republic of the Congo, Côte d'Ivoire, Namibia, Rwanda, Sierra Leone, Togo, and Zambia) between 2011-2015 was obtained. DHS questions assessed lifetime physical, emotional and sexual violence for each type of violence (ever versus never). Controlling behavior was measured by a revised Conflict Tactics Scale. Multivariate logistic regression examined the association between controlling behavior and IPV adjusting for all covariates, including age, education, marital status, wealth, urban/rural setting, occupation as well as partner's education and occupation. An interaction term was included to evaluate the consistency of effect estimates across countries. Data were weighted and analyzed using STATA Software version 14.0.

Findings: In all, 45.6% of women reported experiencing one or more forms of IPV (physical, sexual, or emotional violence) in their lifetime, ranging from 31.16% in Côte d'Ivoire to 57.37% in Cameroon. Women who reported controlling behavior by a spouse/partner were more likely to have experienced lifetime physical (adjusted odds ratio (AOR)=3.46, 95% Confidence Interval (CI)=3.19, 3.76), sexual (AOR=4.02, CI=3.51, 4.61) or emotional (AOR=3.56, CI=3.26, 3.89) violence than women who did not report controlling behavior. Women who reported controlling behavior were also more likely to have experienced one (AOR=3.79, CI=3.52, 4.08) or two or more types (AOR=5.70, CI=5.14, 6.32) of violence. AORs did not significantly differ across countries.

Interpretation: Exposure to controlling behavior significantly increased the likelihood of having experienced physical, sexual, and emotional violence as well as multiples types of violence. Future research is needed to explore whether policies and programs incorporating the modification of controlling behavior may reduce IPV.

Source of funding (if none, enter "None"): None

SAT_102

Youth Against NCDs-The PEDON Project in Ugandan Secondary Schools

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Background: NCDs are rapidly becoming a major cause of preventable and premature death and morbidity in Uganda. It is estimated that about 3 million people live with NCDs in Uganda, but 80% of these are not aware that they have the disease.
Many people develop their lifestyle while they are young. Therefore it is inevitable that young people are targeted, so that they develop healthy lifestyles before it is too late and thereby prevent NCDs
Federation of Uganda Medical students' association (FUMSA), an umbrella body that unites all medical students in Uganda is implementing this program from August 2016 - April 2019 in three regions of Uganda; Central, Western and Northern.
The programs interventions are: health education in secondary schools, Capacity building and Advocacy about NCDs by medical students
The primary outcome is to reduce the incidence of Non-Communicable Diseases by giving the Ugandan youth an opportunity to make an informed lifestyle decision.
Methods: The goals of this project are:
1.Secondary school students understand the consequences of lifestyle choices and NCDs and the relationship between the two
2. medical students are in a position where they can educate the public on NCDs and influence decision makers 3. Policies on education about NCDs, lifestyle and physical education are implemented better in the secondary schools
To ensure sustainability, we have involved other NGO's, such as UNCDA, and decision makers, such as teachers unions and politicians
Findings: 1.Trained 210 medical students in 3 universities on aspects of NCDs, risk factors and project implementation
2. Conducted health education sessions on NCDs and risk factors and trained members of student health clubs in 21 schools
3.Advocated through engaging with Local council leaders, parliamentarians and Committee on health, relevant ministries and NGOs encouraging them to join the fight against NCDs
Interpretation: The main challenges are: lack of sufficient funds, follow up of secondary schools and little political will by leaders on NCDs
The project was developed as a sustainable model in 7 schools in each of the three regions, we hope it to be scaled up to a national level by
other schools through our advocacy campaign targeting policy makers.
Source of funding (if none, enter "None"): Danish Youth council through International medical Cooperations committee-Denmark(IMCC)

SAT_103

Introducing Microscopy to Study Prevalence of Vaginitis in Women from Jerusalem, Haiti

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Background: Vaginal discharge is a common presenting complaint among women living in Jerusalem, Haiti. Our current practice is to empirically treat based on presenting symptoms. However, none of the findings from our general evaluation allow for a definitive diagnosis since there is significant overlap in symptoms among the etiologies of vaginitis. Our study aims to introduce microscopy into our diagnostic toolbox, to determine the prevalence of bacterial vaginosis (BV), trichomoniasis, and vulvovaginal candidiasis, and to practice improved antibiotic stewardship.
Methods: The sample group consists of female patients over the age of 18 who complain of vaginal discharge. They are evaluated by providers from Rush University Medical Center during a week-long trip in April 2018 at a standalone clinic in Jerusalem, Haiti. Consented participants first receive a questionnaire to collect demographic data followed by a pelvic exam using a speculum. The collected vaginal specimen is sent to a local laboratory to be evaluated for BV, trichomonas, and yeast by using the Nugent criteria. Chi-squared tests were used to find any associations between reported symptoms and physical exam findings with particular diagnoses. A value of $p < 0.05$ was considered statistically significant.
Findings: 55 women participated in our study with a mean age of 35.4 + 12.3 (range 19-77). A total of 74 diagnoses were made. 6 (8.1%) women received a diagnosis of BV, 12 (16.2%) trichomonas, 11 (14.9%) yeast, 41 (55.4%) indeterminate for BV, and 4 (5.4%) physiologic. The only reported symptom that was significantly associated with a diagnosis was dysuria with trichomonas ($P<0.05$). 11 of 12 women who were diagnosed with trichomonas reported dysuria.
Interpretation: The majority were indeterminate for BV, followed by trichomonas, yeast, BV and physiologic vaginal discharge. Since we were unable to test for gonorrhea or chlamydia, it is unclear whether these infections, if present, can interfere with the microscopic evaluation. Moreover, the typical risk factors, such as douching or having an increased number of sex partners, did not significantly associate with BV, although this could relate to sample size. Future studies should include a larger sample size and test for gonorrhea and chlamydia to further elucidate these patterns of prevalence.
Source of funding (if none, enter "None"): None

SAT_104

Universal Health Coverage Mapping of HIV-Diabetes Comorbidity in Rural Rwanda

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Background: This project sought to examine HIV-Type 2 Diabetes Mellitus (T2DM) comorbidity as a case study to provide a lens into the increasing dual burden of chronic infectious diseases and NCDs in Rwanda and advance a modified 90-90-90 strategic goal for both.
Methods: This case study was conducted using a mixed method research design. A mapping exercise using a universal health coverage (UHC) mapping tool in South Kayonza and Kirehe Districts was conducted, along with qualitative in-depth interviews with staff and clinicians utilizing the World Health Organization (WHO) health system building blocks. Additionally, Electronic Medical Record (EMR) system charts of co-morbid patients treated in the catchment area were reviewed. The study was conducted under an approved protocol in Rwanda and US.
Findings: According to the UHC Mapping, among the 1,191 patients expected to be HIV-T2DM comorbid in the catchment area, only 1-2% are currently in care, diagnosed, treated and managed well. Moreover, 655 more patients are expected to become comorbid by 2035. The qualitative responses were largely forward-looking with recommendations to continue nationally increasing NCD screening in rural areas, decentralizing and integrating HIV-NCD services at the health center level, and implementing a unified EMR system. The EMR chart reviews revealed a detailed history of laboratory tests, diagnostics and good access to 1st and 2nd line antiretroviral therapy, cotrimoxazole prophylaxis, and 1st line T2DM medications. Treatment change rationale included compliance, side effect management and adherence to updated national guidelines. Only coded past medical history data was accessible in the EMR.
Interpretation: We estimated a 98-99% gap in case detection, treatment and management coverage. The patient cases revealed the complexities of interactions in the development and management of NCDs in HIV positive patients. While this study has scratched the surface of a tremendous and emerging public health need to locally address the burden of chronic diseases, there were several limitations, including limited generalizability of the findings, a lack of MOH-reported prevalence data for diabetes, and a lack of detailed case notes in the EMR system. Still, this study serves as a call to action to increase research efforts and equip the Rwandan healthcare system to manage the emerging burden of chronic infectious diseases and NCDs.
Source of funding (if none, enter "None"): None

SAT_106

Efficacy of Helicobacter pylori eradication regimens in Rwanda: A randomized controlled trial

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Background: Successful H. pylori treatment requires the knowledge of local antimicrobial resistance. Data on the efficacy of H. pylori eradication regimens available in sub-Saharan Africa are scant, hence the optimal treatment is unknown.
Our goals were to determine the efficacy of available regimens in Rwanda as well as evaluate the effect of treatment on health-related quality of life (HRQoL) in patients undergoing esophagogastroduodenoscopy.
Methods: This is a randomized controlled trial conducted from November 2015 to October 2016 at a tertiary hospital in Rwanda. Enrollees were 299 patients (35% male, age 42±16 years (mean±SD)) who had a positive modified rapid urease test on endoscopic biopsies. After a fecal antigen test (FAT) and HRQoL assessment by the Short Form Nepean Dyspepsia Index (SF-NDI) questionnaire, patients were randomized 1:1:1:1 to either a triple therapy combining omeprazole, amoxicillin and one of clarithromycin/ciprofloxacin/metronidazole or a quadruple therapy combining omeprazole, amoxicillin, ciprofloxacin and doxycycline. All therapies were given for a duration of 10 days. The outcome measures were the persistence of positive FAT (treatment failure) 4 to 6 weeks after treatment and change in HRQoL scores.
Findings: This is a randomized controlled trial conducted from November 2015 to October 2016 at a tertiary hospital in Rwanda. Enrollees were 299 patients (35% male, age 42±16 years (mean±SD)) who had a positive modified rapid urease test on endoscopic biopsies. After a fecal antigen test (FAT) and HRQoL assessment by the Short Form Nepean Dyspepsia Index (SF-NDI) questionnaire, patients were randomized 1:1:1:1 to either a triple therapy combining omeprazole, amoxicillin and one of clarithromycin/ciprofloxacin/metronidazole or a quadruple therapy combining omeprazole, amoxicillin, ciprofloxacin and doxycycline. All therapies were given for a duration of 10 days. The outcome measures were the persistence of positive FAT (treatment failure) 4 to 6 weeks after treatment and change in HRQoL scores.
Interpretation: Clarithromycin and ciprofloxacin based combination therapies are effective and safe to use alternatively for H. pylori eradication and improve HRQoL. Among the regimens studied, metronidazole based triple therapy is likely to be clinically inferior.
Source of funding (if none, enter "None"): None

SAT_107

Identifying Knowledge and Beliefs about Cervical Cancer among Rural Women in Mysore district, Karnataka, India

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Background: Cervical cancer is the second most common cancer among Indian women. The critical fact about the disease is that it can be effectively treated if diagnosed early. Screening for precancerous lesions offers protective benefits and is associated with reducing the incidence of cervical cancer and associated mortality. However, there is very low participation rate in screening for cervical cancer in India. Between September and December 2015, Public Health Research Institute of India carried out survey and screening program for rural women in Mysore district to understanding the knowledge and beliefs about cervical cancer.

Methods: A total of 257 women aged 30-60 years completed a survey and were offered screening after group counselling and discussion about the benefit of screening. Data was collected on socio-demographic characteristics, knowledge about cervical cancer, and screening practices as well as respondents' perceptions based on the Health Belief Model.

Findings: Out of 257, 233(90.66%) accepted screening, 14(5.45%) refused to undergo screening because of shyness and 10(3.89%) didn't screen because of bleeding or having undergone hysterectomy. The median age of the women was 40 years and 46% reported below 8th grade education, 34.6% reported below 11th grade education, and 19.4% reported a college education.

Although 91% of the women reported wanting to discover health problems early, 62% reported feeling shy to undergo a pelvic exam. Majority of the respondents had poor knowledge about cervical cancer. Approximately 1/3rd of the respondents noted that they didn't know if having a VIA exam regularly would help find abnormalities in cervix before they turn into cancer. While 86% preferred female health workers to conduct the pelvic exams, 50% said they would not have the exam if they had to pay for it.

Interpretation: Good knowledge and perception about cervical cancer is necessary for a successful screening program. Our study identified the common perception among the asymptomatic women which can be incorporated into education and awareness program to promote screening.

Source of funding (if none, enter "None"): None

SAT_108

Long-Term Follow-Up and Transition Needs Among Pediatric Patients with Repaired Congenital Heart Disease in Ghana, West Africa

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Background: Congenital Heart Disease (CHD), the most common congenital disease, is often fatal without surgical correction. Since 2007 a team from Boston Children's Hospital has conducted annual surgical missions at Komfo Anokye Teaching Hospital (KATH) in Kumasi, Ghana through Hearts and Minds of Ghana (HMG). We performed a prospective cohort study assessing functional outcomes of patients in this program who underwent CHD repair.
Methods: Patients were contacted by SMS prior to two follow-up clinics in April and October 2016 where a survey was piloted and administered by HMG staff in the local language. Questions targeted overall health and functional status. An addendum to the survey was administered during April clinic to female adolescent patients (>12 years) identifying family planning needs in anticipation of pediatric to adult transition.
Findings: A total of 95 and 110 patients had undergone surgery at the time of the April and October 2016 clinics, respectively. In April, contact information was available for 58 (61%) patients of whom 27 (46%) were successfully contacted. In October, contact information was available for 69 (63%) patients of whom 43 (62%) were successfully contacted. The combined follow-up rate in clinic for successfully contacted patients was 97%. Follow-up data were collected on a total of 42 patients (39 patients attended at least one clinic appointment; 3 patients were confirmed deceased). In terms of postoperative functional status, 39 patients (100% of those evaluated) were attending school or had graduated high school following surgery. Of the 9 female patients at the April visit who qualified for the family planning survey, 7 understood pregnancy risks associated with their repaired CHD and would consider family planning services if available.
Interpretation: Patients who undergo corrective cardiac repair have unique follow-up needs, often with complex social determinants in the setting of limited resources. These patients reported high functional capacity, supporting the utility of corrective CHD surgery in this setting, also exposing the responsibility for ongoing care and appropriate follow-up. Despite high levels of loss to follow-up, once successfully contacted, patients were very likely to attend clinic. This study highlights the importance of appropriate resources to support ongoing health needs of this population with repaired CHD, particularly in their transition to adulthood.
Source of funding (if none, enter "None"): None

SAT_109

Directly Observed Care: An innovative oncology care delivery model in Belize

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Background: Cancer patients in low- and middle-income countries face complex socioeconomic barriers within health systems that can lead to poor oncologic outcomes. Patient navigation has been shown to reduce disparities in oncologic outcomes in the United States. Belize, a middle-income country in Central America, has recently launched its first-ever public medical oncology program. Here, we report the development of “Directly Observed Care (DOC),” a pilot patient navigation care model for cancer patients in Belize, inspired from “Directly Observed Treatment” for tuberculosis.
Methods: DOC will be a patient-centered program, where a nurse trained in patient navigation will assume responsibility for proactively identifying barriers that Belizean cancer patients face in access to care and working to remove them. This process will include patient education on cancer and its treatment, identification of financial barriers to care and potential funding sources, assistance with care logistics such as transportation and childcare, and referral to psychosocial support services for patients who need them. DOC will rely on an electronic patient-tracking platform, which will allow real-time tracking of all oncology patients and identify patients who miss or delay treatments. This will allow timely intervention and continuous quality monitoring of the program. In addition to patient navigation, DOC will seek to reduce delays in patient care by liaising with pathology and radiology services.
Findings: The program is in its development and pilot phase. So far, approximately 100 patients have been seen for consultation. We intend to capture epidemiological data about cancer in Belize, as well as real-time data about the progression of patients through their treatment course. We aim to identify critical delays to patients’ care and design interventions to address them.
Interpretation: We believe that the DOC program will be particularly beneficial for the oncology patient population in Belize, as it has a high burden of socioeconomic barriers to care and is largely unfamiliar with the complexity of oncologic care. We hypothesize that DOC can improve treatment appropriateness and timeliness and, thereby, patient outcomes in Belize.
Source of funding (if none, enter "None"): None

SAT_110

Utilizing Telemedicine to Improve HIV Care Among Minority Persons Living with HIV in Urban Areas

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Background: Telemedicine is an emerging area in medicine providing care through the convenience of technology from any location on Earth with internet access. This project hopes to demonstrate the value of telemedicine in chronic disease management, and improving care coordination with specialty care. This three year project is conducted by the University of Florida, Jacksonville. Many patients in the global setting have barriers preventing adequate access to health care. People living with HIV (PLWH) have additional barriers due to the stigma associated with HIV care, disease progression, and cost of care. Virtual visits are one way in which these barriers may be eliminated. Primary outcomes of this program are to improve no-show rates, disease outcomes, and adherence to recommended treatment plans for (PLWH).

METHODS

• Program/Project Goals, Desired Outcomes
• Participants and Stakeholders: How were they selected, recruited?
• Capacity Building / Sustainability: What is the plan, structure in place to encourage viability?

Methods: The goal is to demonstrate that telemedicine visits can be used to increase access to, and retention in HIV care. Physicians, both primary care and specialists, as well as community organizations and PLWH are the key stakeholders. For sustainability, the plan is to show success in outcomes, leading to lower cost of care for these patients, and thus getting better reimbursements from insurance companies that are currently hesitant to pay due to concerns about an increase in fraudulent claims.
Findings: A successful infrastructure has been placed within our large academic institution to ensure HIPAA privacy laws are not violated, credentialing is appropriately done by staff, providers and call center personnel, and software/hardware has been optimized and installed. In addtion, compliance has been ensured regarding billing practices. We are continuously monitoring outcomes, and evaluation data.
Interpretation: Ongoing challenges remain payment from many insurers, as well as physician and patient buy-in to use technology for access and treatment. There are no unmet goals at this time, but as the project continues, these will be shared if they exist. Future programs would be best served if insurer or other payment mechanisms for care provided via telemedicine are secured ahead of time.
Source of funding (if none, enter "None"): Centers for Disease Control (CDC) has funded this project support grant for 3 years.

SAT_111

Effect of Routine TB Education and Counseling on TB Knowledge Among Patients with Active TB in Kampala, Uganda

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Background: Failure to complete tuberculosis (TB) treatment contributes to treatment failure, relapse, drug resistance, and death. TB education and counseling (TEC) is universally recommended to promote medication adherence and well-being, but it is unknown if it increases knowledge. We sought to determine how routine TEC affects acquisition and retention of knowledge about TB.
Methods: We carried out a prospective, observational cohort study of consecutive adults (age ≥18) initiating treatment for active TB at Kisenyi Health Centre, a government clinic in Kampala, Uganda. After obtaining written consent, a trained, Luganda-speaking research assistant administered a structured, 30-question knowledge survey before and after counseling at treatment initiation and once at the 2-week refill visit. We designed the survey to assess content in Uganda Ministry of Health TEC guidelines and treatment literacy elements used to counsel persons living with HIV(PLWH) on antiretroviral-therapy adherence, equally weighting knowledge of TB disease (etiology, presentation, transmission, prevention, HIV-TB) and of TB treatment (regimen, adherence, adverse effects, follow-up, outcomes). Co-primary outcomes were change in knowledge score after initial counseling and between post-counseling and 2 weeks. We assessed significance using paired t-tests. IRBs at Yale and Makerere approved the study protocol.
Findings: We enrolled 66 patients (June-July 2018), including 19 (29%) women and 22 (33%) persons living with HIV. The weighted proportion of correct answers increased from 55% (SD=13%) to 79% (SD=11%) after initial counseling (Difference +24%, 95%CI 20-27%, p<0.0001). At 2 weeks (n=66), mean score (78%, SD=12%) was similar to the initial post-counseling score (Difference -1%, 95%CI -4.7% to +2.7%, p=0.61).
Interpretation: Initial TEC delivered by community health workers effectively increased and maintained patient knowledge of TB disease and treatment among patients initiating treatment for active pulmonary TB in Uganda, a high HIV-TB burden country. Future studies should refine and validate the survey instrument; evaluate the association of post-counseling knowledge with adherence to and completion of TB treatment; and test strategies to improve TB knowledge among those initiating treatment.
Source of funding (if none, enter "None"): The Downs International Travel Fellowship and the Lindsay Fellowship for Research in Africa, both at Yale University.

SAT_112

Impact of Educational Interventions on Outcome of Patients with Type 2 Diabetes and Low Literacy in Latin America: A Systematic Review and Meta-Analysis

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Background: Diabetes in Latin America is increasingly prevalent with approximately 8.4% of the population suffering from it. Many adults with the disease do not benefit fully from medical and lifestyle management because of low literacy skills. Therefore, this study aims to review and synthesize the effectiveness of educational interventions for diabetes targeted at patients with low levels of literacy in Latin American countries.
Methods: A systematic review of observational studies and RCTs was conducted. Main data sources included PubMed, EMBASE, CENTRAL, LILACS, SciELO, and LATINDEX from January 1, 1990, to date of search. Languages included Spanish, English, and Portuguese. participants were adults with type 2 diabetes and low levels of literacy; all types of educational interventions were searched. Primary outcomes were HbA_{1c}, BMI, and serum glucose levels; observational studies and RCTs were included. Two reviewers independently screened the studies and assessed study quality using the GRADE risk of bias tool. Data extraction was also done by two independent reviewers following Cochrane guidelines. A meta-analysis was performed using the randomized controlled trials for HbA_{1c} and BMI. A subgroup analysis and a sensitivity analysis were also don
Findings: We included 14 studies, six RCTs, and eight observational studies. Of the five observational studies that included HbA_{1c}, all showed a reduction after the intervention. Diabetes knowledge increased in three of four observational studies and in 25% of the RCTs. The meta-analysis for the RCTs showed that compared to standard care, educational interventions were more likely to reduce HbA_{1c}; the pooled mean difference was -0.97% ($CI_{95\%}$-1.57 to -0.36) favoring educational intervention. Compared to usual care, educational interventions were not more likely to impact BMI in participants. A subgroup analysis of regions showed that the studies done in Mexico had a larger mean HbA_{1c} difference, -1.36% ($CI_{95\%}$ -2.3 to -0.42), compared to a -0.54% ($CI_{95\%}$ -0.91 to -0.16) mean difference in the Brazilian studies.
Interpretation: This review shows that educational interventions that facilitate patient understanding of their disease and management are effective in reducing HbA_{1c} levels and increasing diabetes knowledge. Further high-quality RCTs are required to understand the effectiveness of individual interventions in this setting.
Source of funding (if none, enter "None"): None

SAT_113

A New Model for Diabetes Focused Capacity Building - Lessons from Sri Lanka

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Background: Sri Lanka is experiencing a rapid increase in the number of people with diabetes mellitus (DM), the 6thdeadliest disease worldwide. Physician shortages, outdated technology, and insufficient health education have contributed to the difficulties associated with managing the burden of disease. The University of Michigan partnered with the Grace Girls' Home, Trincomalee General Hospital, and the Selvanayakapuram Central Hospital to implement a new model of chronic care management that leverages medical assistants, technology, and patient education to address the increasing burden of DM.
Methods: Four MAs were trained to gather and enter diabetes focused health metrics into a lightweight EHR, the Michigan Diabetes Evaluation Tool (MiDiET). A delayed-intervention study comparing MA and technology driven care to existing care is currently underway to determine if model implementation produces measurable Hemoglobin A1C (HbA1C) reductions. Concurrent capillary blood glucose (CBG) has been collected to determine if oral intake-adjusted CBG is a viable surrogate for evaluating disease control in low resource settings.
Findings: Implementation in 2016 yielded descriptive data on a cohort of patients (n=93), documenting fasting blood sugar, blood pressure and medications being prescribed and taken. Every patient the MAs encountered received educational material on diabetes as well as nutritional guidelines specifically for people with diabetes. Subsequent cross-sectional analysis in a separate cohort (n=100) revealed a strong association between oral intake-adjusted CBG and HbA1C (c-squared = 22.35, p-value = 2.271×10^{-6}). Delayed-intervention study results will be available in 12 months.
Interpretation: Implementation and maintenance of a medical assistant program in Sri Lanka demonstrates that trained MAs can perform tasks that have medical utility in under-resourced settings. While the MAs are currently compensated through our initiative, their competency produces a valid value proposition for government hospitals and/or private practices to buy in to a MA-driven service. Demonstrating a measurable HbA1C reduction when comparing usual care to MA-driven care will help us affirm the value MAs bring to DM management. Furthermore, oral intake-adjusted CPG can serve as a viable and economically favorable alternative to HbA1C testing in low-resource settings.
Source of funding (if none, enter "None"): National Institute of Diabetes and Digestive and Kidney Diseases – NIH William Davidson Institute – University of Michigan VeAhavta – Ann Arbor, MI 501(C)(3)

SAT_114

Quality of Life and Functional Measures following Intramedullary Nailing versus Skeletal Traction for Treatment of Femoral Shaft Fractures in Malawi at 6 Weeks and 3 Months Post-operatively: a Prospective Analysis

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Background: Femoral shaft fractures are common and cause significant morbidity and mortality in low- and middle-income countries (LMICs). Intramedullary (IM) nailing, the gold standard for treatment of femoral shaft fractures in the developed world, is underutilized in LMICs given limited resources, expertise, and availability of fluoroscopy. In LMICs, skeletal traction remains the standard of care. Technology permitting image-unassisted IM nailing has been introduced to LMICs. This study compares early post-operative quality-of-life and functional measures in patients treated with either IM nailing (IMN) or skeletal traction (ST).

Methods: Adults with femoral shaft fractures were enrolled from March 2016 to July 2018 at 2 central and 3 district hospitals in Malawi. Patients were managed by image-unassisted IM nailing (SIGN; Richland, WA) or skeletal traction as determined by their treatment team. Baseline demographic, injury, and treatment characteristics were recorded on enrollment. Patient Quality of Life was assessed via EQ5D questionnaire, Functional Status via SMFA questionnaire, and weight-bearing status by clinical exam, at 6 weeks and 3 months post-operatively.

Findings: Of 169 enrolled patients (IMN 79; ST 90), there were no differences in age ($p>0.05$) or gender distribution (IMN 83% male; ST 81% male, $p>0.05$).

EQ5D (Minimum Clinically Important Difference 0.10) was worse in patients treated with skeletal traction versus IM nailing at 6 weeks (0.29 vs. 0.50, $p=0.0001$) and 3 months (0.63 vs. 0.72, $p=0.016$) post-operatively. SMFA Function and Bothersome indices (MCID 4) were likewise worse for patients treated with traction versus IM nail at 6 weeks (Function 51.2 vs 41.8, $p=0.0001$; Bothersome 49.6 vs 40.3, $p=0.001$) and 3 months (Function 35.5 vs 27.5, $p=0.001$; Bothersome 33.1 vs 26.0, $p=0.011$). Additionally, achieving full- or partial-weight bearing was less common in traction patients than IM nail patients at 6 weeks (ST: 6% and 30%, IMN: 11% and 53%, $p=0.004$) and 3 months (ST: 16% and 64%, IMN: 39% and 56%, $p=0.002$).

Interpretation: Quality of life, functional status and weight-bearing status were significantly improved in the early post-operative period in femoral shaft fracture patients treated with image-unassisted IM nailing as compared to skeletal traction. Patients with femoral shaft fractures in LMICs may benefit from utilization of image-unassisted IM nailing systems over skeletal traction.

Source of funding (if none, enter "None"): IGOT and University of Bergen Grants

SAT_115

Systematic observation of physical activity to treat obesity in racially, ethnically, and socioeconomically diverse children

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Background: Community-based intervention models are promising in treating childhood obesity and increasing physical activity (PA). Bull City Fit (BCF) is a community-based wellness program in Durham, NC borne out of a collaboration between the Duke Healthy Lifestyles Clinic and Durham Parks and Recreation. The intervention model has been previously described and is the central intervention for a large randomized clinical trial (Hoffman et al., Pediatrics, 2018; Andrews et al., Clinical Pediatrics, 2017). Little is known about the actual amounts or quality of PA delivered at the program.
Methods: Program participants were assessed via momentary time-sampling with the System for Observing Fitness Instruction Time (SOFIT). Active and non-active participants were identified with The System for Observing Play and Leisure Activity in Youth (SOPLAY). Participants were children aged 5-18 with obesity and their siblings aged 5-18. Participants were referred to the study by their primary care physician (PCP) if BMI ≥ 95th percentile. The community engagement component of the intervention is embedded into the clinical care model, increasing the program's viability and sustainability.
Findings: Participants spent an average of 69% of total session time in moderate-to-vigorous PA (MVPA), with high-intensity interval activities promoting more MVPA (76% of session time) than sports and games (64%). Participants spent 58% of session time in fitness-based activity, game play, or skill practice. Instructors promoted fitness, demonstrated fitness, or participated in activity for a combined 61% of session time. SOPLAY results suggest participants are similarly active during free play (71.9% of participants engaging in MVPA) and game play (73.6%).
Interpretation: The clinic-community model of child obesity treatment is effective in engaging participants in MVPA. This model increases PA time as compared with treatment in clinic alone. As compared with community-only programs, this model delivers more MVPA (69% of session time vs. 42%) (Behrens et al., Journal of School Health, 2015). Programming changes based on results could increase percent of session time spent in MVPA. The clinic-community partnership is more effective in delivering PA to treat childhood obesity than either model alone and should be considered in settings where current obesity treatment models have had limited success.
Source of funding (if none, enter "None"): American Heart Association

SAT_116

Analysis of development assistance for tuberculosis by global and country-specific functions

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Background: The Lancet Commission on Investing in Health called for increasing investment in neglected "global functions" of health, which address transnational issues including research and development and cross-border disease spread. Global functions are essential to achieving the Sustainable Development Goals, including the target to end the epidemic of tuberculosis (TB) by 2030.
Methods: We analyzed the 115 largest TB projects in the Development Assistance Committee of the Organisation for Economic Co-operation and Development Creditor Reporting System (CRS) database, representing 76% of TB DAH in 2015. We applied a classification framework and methodology used in earlier studies to conduct a project-by-project analysis. Projects were coded to country-specific and global functions through review of the CRS project description, project reports, grant agreements, and budgets.
Findings: In 2015, only 22% of TB DAH was allocated to global functions. The majority of this (72%) was spent on basic science research and product development for TB drugs, diagnostics, and vaccines. Other global functions investments included operational research, global policy and guidelines, and leadership and stewardship activities. The large majority, 78%, of TB DAH was allocated to country-specific functions, which includes program implementation, clinical service provision, and health system strengthening activities to support TB programs. Investments varied across donors; the Global Fund invested predominantly in country-specific functions, while the WHO, Gates Foundation and UK government invested predominantly in global functions.
Interpretation: This study provides the first analysis of DAH for TB by function. The study finds that DAH for TB follows a similar pattern as DAH overall. Current support for global functions of TB falls short of what is needed, particularly given the urgent need for new TB drugs, diagnostics, and vaccines. Country-specific investments may be underinvesting in health systems, which is important for achieving universal health coverage and long-term program sustainability.
Source of funding (if none, enter "None"): None

SAT_117

Prevalence, Severty and Risk factors for Depression Among Inpatients Receiving Care at KCMC hospital.

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Background: Depression is the leading cause of disability worldwide in both the developed and developing nations. It places a significant socio-economic burden on individuals, families and communities, in terms of increased service needs, lost employment, reduced productivity, poor parental care with the risk of trans-generational effects and an increased burden on care givers. Failure to detect depression is due to presence of other existing comorbidity which often complicates patients' recognition, treatment and prognosis. This study aimed to determine the prevalence, severity and risk factors of depression among patients receiving care at KCMC hospital, Moshi Tanzania.
Methods: This was a cross sectional study that included patients above 18years of age admitted in the hospital. A questionnaire was used which included PHQ 2 and PHQ 9 depression scales. Data was analysed using SPSS version 20. Numerical variables were summarized using measures of central tendency with their respective measures of dispersion. Categorical variables were summarized using frequency and percentages. Odds ratio was used to determine strength of association. Logistic regression to control for confounders was used and a p- value less than 0.05 was statistically significant.
Findings: The mean age of 383 participants was 42.44 (SD 6.64) years and 184 (48%) were males, 366 (95.6%) acquired formal education, and 256 (66.8%) were married. The prevalence of depression was 157(41%). Of those with depression, 60 (38.2%) of the participants were mildly depressed, 58 (36.9%) moderately depressed, 32 (20.4%) moderately severely depressed, and 7 (4.5%) severely depressed. Factors that were found to be significantly associated with depression were female sex, subsistence peasantry and positive familial history of mental illness.
Interpretation: The prevalence of depression was 157(41%). Of those with depression, 60 (38.2%) were mildly depressed, 58 (36.9%) moderately depressed, 32 (20.4%) moderately severely depressed, and 7 (4.5%) severely depressed. Factors associated with depression were female sex, subsistence peasantry farming and positive family history of mental illness. As its strengths, this was the first study in the Northern zone to focus on depression among inpatients at large irrespective of diagnosis. The study was limited by the information obtained from participants in this study being prone to recall bias.
Source of funding (if none, enter "None"): None

SAT_118

Gendered Psychosocial Burden on Mothers of Children with Sickle Cell Disease in Gwagwalada, Nigeria: a Qualitative study

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Background: Globally, Nigeria has the most absolute number of people with sickle cell disease (SCD), and because of the lack of social welfare provisions, families bear most of the caregiving burden. However, there is limited knowledge on how SCD affects caregivers. This study aims to understand gendered psychosocial burden of SCD on mothers of children with SCD.
Methods: A qualitative study was conducted in the semi-rural area of Gwagwalada, Nigeria through semi-structured interviews with 10 mothers of children with SCD. Randomly chosen mothers, whose children receive care at the University of Abuja Teaching Hospital, were interviewed after verbal informed consent was obtained. Questions revolved around perception of causes, practices, stigma and subjective burden. Interviews were recorded, transcribed and analyzed using a thematic framework approach.
Findings: Knowledge of the causes of SCD was limited, with some mothers being able to describe the genetic inheritance pattern but none able to describe the pathophysiology of the disease. Mothers described emotional distress related to their children's diagnosis, their children's pain crisis and their perception of their children's future. Emotional distress was mitigated through religious beliefs regarding fate. Perceived stigma was reported, and it encouraged mothers to keep their child's illness a secret. All mothers shared willingness and initiative to share their knowledge and practices with others in similar situations.
Interpretation: Given mothers' willingness to share their experience as well as their limited knowledge and emotional distress, a support network of mothers would be valuable. The inclusion of various religious bodies in outreach and educational efforts might also be useful.
Source of funding (if none, enter "None"): University of Chicago Center for Global Health Summer Research Fellowship

SAT_119

Outcome of Gastrointestinal Neoplasms Diagnosed at Kigali University Teaching Hospital- An Observational Study

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Background: Non-communicable diseases are becoming a global public health concern and especially in limited-resources world. In most of developed countries extensive researches were conducted to determine the prevalence and mortality rate of different gastrointestinal malignancies. In most of African countries and especially in Rwanda, little research was done to know risks, clinical presentation and outcomes of these neoplasms. Based on local reports and experience, gastrointestinal malignancies might be deadly and posing a hurdle to manage in most of Rwandan health facilities.
The aim of this study was to determine the outcome of gastrointestinal malignancies at Kigali University Teaching Hospital (KUTH).
Methods: This was a prospective observational and longitudinal study on patients diagnosed to have a tumor in their alimentary tract at the endoscopy unity of KUTH. During 18 months of the study period, 1703 patients presented for endoscopy and 102 of them were found to have gastrointestinal tumors and consented to participate into the study. Patients' characteristics were recorded and they were followed during a period of 6 months to know which investigation was requested to them, if any surgical intervention was done and treatment provided. The overall outcome was measured by the survival rate after a six-month period of follow up.
Findings: Among study participants female were 52% and the prevalence of gastrointestinal neoplasms was more remarkable among patients above 60 years old (47.1%) and rare below age of 30 (2.0%). Stomach cancer represented a higher number with 62.7% of all patients diagnosed to have cancers. Colo-rectal and esophageal cancers represented 22.6% and 13.7%, respectively. After a six-month period of follow up, only 15.4% of patients with esophageal cancer were still alive. The survival rate for gastric and colo-rectal cancer after that period was 16.4 and 78.3%, respectively.
Interpretation: Gastrointestinal malignancies are diagnosed at late stages among our study population. Even with short periods of follow up, these neoplasms exhibit poor outcomes and treatment options are scarce. Colo-rectal cancer patients have a better outcome compared to esophageal and stomach cancers.
With lack of fundings and system organisation we couldn't do longer patients' follow up and tumor staging.
Source of funding (if none, enter "None"): None

SAT_120

Cold Agglutinin Disease Prevalence and IgM levels in Patients with Hypereactive Malarial Splenomegaly in Malaria Endemic Areas of Rwanda

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Background: Hyperactive malaria splenomegaly (HMS) is described as enlargement of the spleen due to exaggerated immune response to repeated attacks of malaria. HMS is seen more commonly among residents in endemic areas of malaria and is associated with elevated levels of IgM. The study was conducted in response to the observed high frequency of transfusion dependent and sometimes fatal anemia in splenomegaly patients from malaria endemic zones.
Methods: The study was descriptive and cross-sectional conducted over a period of 6 months from June 2016 to December 2016. The objective was to determine the prevalence of cold agglutinin disease (CAD) and IgM antibodies in patients with splenomegaly from malaria endemic areas in the Southern Province of Rwanda. The study subjects were adults with unexplained splenomegaly, who consulted in an ambulatory or inpatient setting from GISAGARA and HUYE Districts. Blood samples were drawn at peripheral health settings, then sent to the laboratory of Butare University Teaching Hospital for IgM levels, cold agglutinin tests and further hemolysis work up
Findings: Of the 188 participants with unexplained splenomegaly enrolled in the study, 4.8% had significant positive (≥1:64) cold agglutinin tests (CAT). Eighty-four percent (84%) of participants had elevated serum IgM levels and there was a correlation between the splenomegaly stage and level of IgM. The mean hemoglobin level was lower (9gm/dL) in positive CAT enrollees compared to the negative CAT group where the mean hemoglobin was 12gm/dL. All patients with positive CAT were anemic. This was not statistically significant.
Pancytopenia correlated with the the stage of splenomegaly and anemia was common (55%)
Interpretation: Unexplained Splenomegaly is common in these two districts of Rwanda where Malaria is endemic and was characterized by elevated IgM levels and anemia.
IgM levels correlated with the stage of splenomegaly and could be used to evaluate the response to medications being used for treatment of HMS.
In malaria endemic areas, evaluation of patients with splenomegaly and anemia should include IGM levels and cold agglutinin testing as part of a hemolysis work up.
This study suggests that HMS is the leading cause of massive splenomegaly in malaria endemic areas of Rwanda.
Source of funding (if none, enter "None"): CUGH (Travel Bursaries) Utah Fund for Rwanda

SAT_121

“An Evaluation of Health Habits Associated with Coronary Artery Disease in Central Ecuador”.

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Background: Coronary artery disease (CAD) is a leading cause of mortality in Ecuador; poor diet and sedentary lifestyle have been linked to an increased incidence of CAD. This study looks to explore health habits such as physical activity level and diet in the Ecuadorian city of Riobamba.
Methods: Between May 25 – July 21, 2018, patients and their family members over the age of eighteen who presented to Hospital Provincial de Riobamba voluntarily participated in a 34-question survey consisting of the following: 1) demographic information, 2) International Physical Activity Questionnaire(IPAQ), which assesses physical activity level, and 3) Rate Your Plate(RYP) survey, which collects information on dietary habits.
Findings: 107 surveys were collected (66% female, 34% male, average age 40.88 years). Data showed an average BMI of 26.39 (overweight). Of those who responded, 23% indicated that they have smoked regularly at some point in their life. The average RYP score was 55 (some dietary change recommended).At a screening level of <P.15 statistically significant correlations were found between those who reported financial difficulty and increased tendencies to consume fried foods(.036), cheeses(.127), and meat based meals(.146). The survey population averaged 80 minutes of moderate intensity exercise daily. Statistically significant correlations were found between those with a safe place to exercise and vigorous activity levels(.001) 51% of the survey reported walking or biking as their primary means of transport and the sample reported an average of 520.65 minutes walked in a week.
Interpretation: Data shows a population with several risk factors for CAD including: elevated BMI; a smoking percentage above the Latin American average; average RYP score associated with higher BMI levels. However, the physical activity level in these patients may be a protective factor against CAD, as exercise levels exceed those recommended by the American Heart Association for overall cardiovascular health.
Results will be reported to Cacha Medical Spanish Institute, a local community health partner in Riobamba. Who will aid in qualitative analysis of the data and allow its use in future health initiatives to improve cardiovascular health in this community.
Source of funding (if none, enter "None"): None

SAT_122

Unmet Burden of Femoral Shaft Fractures in Tanzania

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Background: Road traffic injuries (RTIs) are a public health epidemic disproportionately affecting low- and middle-income countries (LMICs). RTIs are commonly associated with femur fractures that may lead to long-term disability. More information about these injuries and their treatment is crucial for informed policy-making and proper allocation of healthcare resources. The purpose of this study is to estimate the incidence of femoral shaft fractures in Tanzania and describe the unmet surgical burden.
Methods: Study sites included six government hospitals across Tanzania. At each site, data from the hospital admission and procedural logbooks were collected to estimate the number of femoral shaft fractures and their treatment method. Additionally, semi-quantitative interviews were conducted with relevant hospital personnel to validate the estimates obtained from hospital records. Statistics on road traffic accidents was gathered from publicly available national police reports and used to extrapolate incidence for the entire country.
Findings: Femoral shaft fracture estimated annual incidence ranged from 3 – 32 per 100,000 people depending on the hospital size. Extrapolation yielded a national incidence rate of 14.9 – 38.9 per 100,000. The majority of these injuries were fixated surgically at larger hospitals. At smaller hospitals, many patients were treated with traction, and a majority are referred to other centers. Numerous barriers to surgery were identified at each hospital.
Interpretation: The incidence rate identified in this study agrees with previous estimations for LMICs, and it is consistent with an increased incidence rate of femoral shaft fractures in Tanzania when compared to higher income settings such as the United States. This is likely due to the growing number of RTIs in Tanzania. Additionally, there is an unmet surgical burden for the treatment of these injuries, particularly at more rural hospitals. Numerous identified barriers to surgical treatment could be targeted for future intervention.
Source of funding (if none, enter "None"): Wyss Medical Foundation

SAT_123

A Simple, Rapid and Cost effective method to Diagnosis Bacterial Meningitis using Urine Dipstick in Low Resource Settings

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Background: Bacterial meningitis, untreated or inadequately treated is a serious disease. Delay in diagnosis in limited resource setting can lead to poor management of patients either by partial treatment or by exposure of unnecessary antibiotics. The use of urine dipstick to rule out meningitis can be rapid, cost effective method to circumvent the logistics challenges
Methods: A cross sectional analytical study was conducted. 46 patients from internal medicine and pediatrics aged from 2 to 70 years over a period of 6 months were enrolled. The cerebral spinal fluid (CSF) was collected after obtaining consent. CSF was analyzed at bedside by the dipstick and the same sample was sent to laboratory for cell count, chemical and bacteriological analysis. The findings were compared and analyzed using chi square statistical test.
Findings: For glucorachia, 66.7% were true negative (Negative Dipstick test = no color change = low glucorachia) and 33.3% - false negative when matched to due equivalent laboratory values. Amongst the positive tested samples with urine Dipsticks (color change) 78.4% and 21.8% were true positive and false positive respectively (p-Value=0,008).sensitivity 90% and specificity 42%
For proteinorachia, 42.5% were true negative on urine Dipstick testing, while the prevalence of true positive results increased with the density of color: 1+ = 66.7% ; 2+ = 100% true positive respectively (p-Value=0.016). The sensitivity = 32% and specificity = 77%.
For leucocytes, having high cells is more specific at 91% with 80.5% true negative, and only 19.5 false negative on dipstick test .on the other hand, having low cells is not sensitive as there is a lot of false positive at 75% with only 25% true positive, sensitivity being 10%.but still the p value is significant (0.005)
Interpretation: These findings suggest that urine dipstick can be useful in rapidly diagnosing bacterial meningitis in setting lacking the necessary laboratory equipment particularly if the sensitivity of glucose and specificity of leucocytes were combined
Source of funding (if none, enter "None"): University of Utah

SAT_124

Comparative analysis of public policies of control of current tobacco to 2018 in Mexico and Spain

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Background: A descriptive, comparative and cross-sectional analysis was made of the public policies for tobacco control in force in 2018 in Spain and Mexico. A bibliographic review of the degree of implementation of these policies was carried out in both countries with the recommendations of the Framework Convention on Tobacco Control (WHO FCTC) of the World Health Organization, until the most recent date (Spain 2012, Mexico 2016). The laws, norms, guidelines, reports, or results of the national health surveys, articles and studies related to the exposure and to tobacco of both countries were reviewed.
Methods: The main goal was describe and analyze the national public tobacco control policies in force in Mexico and Spain. It is a descriptive, comparative and transversal analysis of the policies of tobacco control, we used official secondary sources available. From the information obtained from public policies for tobacco control, we did a systematic review of the degree of implementation of these policies in the countries carried out to the recommendations of the MARCO agreement of the WHO. It was related to the prevalences of tobacco and exposure to tobacco smoke. Using the "MPOWER" measurement plan as an Instrument.
Findings: Observing great advances in the implementation of public policies, including their effect on trends in tobacco, however, it was also possible to see the persistence of the gaps and the weaknesses that need worked on, it is important to mention that still, studies that are missing that relate the impact of policies on burden of attributable diseases to tobacco and if this diseases decreased since the implementation of tobacco control policies in Mexico and Spain. Policies affect groups differently according to social determinants.
Interpretation: The conclusions of this study can be an important precedent for both the development of more strategies for tobacco control, a public policy, or being a possible exchange of ideas or strategies between Mexico and Spain.
I believe that the health and economic impact of smoking can also be a useful tool for governments and health systems to define more effective and efficient measures in the fight against smoking, so the need to carry out more studies are still needed.
Source of funding (if none, enter "None"): None

SAT_125

Knowledge and Attitudes Regarding LTBI Treatment Among the Tibetan Monastic Population Living in India: Recommendations for the Zero TB Campaign

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Background: In an effort to eradicate tuberculosis (TB) in the Tibetan refugee population living in India, the Zero TB program conducts institutional screening and treatment of Latent TB infection (LTBI) in high incidence settings such as boarding schools, Buddhist monasteries and nunneries. Attaining widespread acceptance of Rifampin Preventative Therapy (RPT) in the monastic population has proven challenging. This project assessed knowledge and perceptions of LTBI in latently infected monks and nuns, exploring factors affecting their decisions to accept or refuse RPT.
Methods: Study Design: Cross-sectional survey and semi-structured, in-depth group interviews of LTBI+ residents from seven Tibetan monastic institutions near Dharamsala, India.
Participants: Monks, nuns, and staff previously diagnosed with LTBI during institutional screening. Surveys were administered to all LTBI residents (n=238) in five sites. Representative members from six sites were recruited for group interviews.
Analysis: Knowledge of LTBI was assessed with a six-question tool and attitudes towards RPT using belief statements. Survey responses were analyzed in SAS. Qualitative data from interviews was compiled and analyzed to generate codes, themes, and quotations.
Ethics Approvals and Consent: This project was exempt from IRB review by designation as program evaluation. A project description and aims were explained during participant recruitment and verbal consent was obtained before each interview. As a voluntary survey, consent was implied on completion.
Findings: 161 surveys were completed, and 18 monks/nuns participated in 6 group interviews. Knowledge regarding LTBI was low (mean knowledge score: 2.59 out of 6, SD: 1.81). Factors associated with RPT acceptance included perceived individual and community benefit. Factors associated with refusal included side effects, low perceived likelihood of developing active disease, and co-morbid conditions. Interestingly, higher knowledge scores were associated with RPT refusal. Recurrent themes influencing individual decision-making included peer discussion and institutional leadership.
Interpretation: Gaps in LTBI knowledge in the monastic population may be addressed through education, but utilizing peer-to-peer education and institutional opinion leaders may be more effective strategies for encouraging RPT acceptance within these settings. This program assessment highlights possible limitations of educational interventions, suggesting that the source of guidance is important in such communities. The scope and generalizability of this survey is limited as a pilot project.
Source of funding (if none, enter "None"): UW-Madison Shapiro Summer Research Program

SAT_126

Long-Term Neurocognitive Development of Children Born to Zika Infected Mothers in the Dominican Republic, 2016-2017

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Background: Infection with Zika virus (ZIKV) during pregnancy is neuroteratogenic and is linked to fetal microcephaly, intrauterine growth retardation and ophthalmologic abnormalities. The purpose of this study is to characterize the long-term effects of ZIKV infection on the neurologic development of children infected in utero.
Methods: This was a retrospective review of medical records of children born to ZIKV + women in the Dominican Republic. These children were confirmed to be ZIKV+ at birth by serology and were followed up until 18 months of age. Basic growth parameters were gathered at each visit, and a pediatric neurologist evaluated the infants using the Denver Developmental Screening Test.
Findings: Among 42 infants diagnosed with ZIKV, neurologists indicated abnormal developmental status of 28 (67%) during at least one visit and of 16 (38%) at multiple visits. Over half of infants (n=22; 52%) had motor developmental delay (MDD) at least once, and half (n=11) had MDD indicated at multiple visits. Of the 22 MDD cases, 54% (n=12) occurred in first three months and 27% (n=6) at 6 months. Fine motor delays occurred in 13 (31%) of infants, language in 6 (14%), and social in 8 (19%). Male infants were more likely to have multiple visits with MDD and were less likely to have resolution of delay by 12-18 months ($p<0.05$, each). Some maternal symptoms during pregnancy (e.g., abdominal pain, vomiting) were more likely for infants with MDD, multiple visits with MDD, and less likely to have resolution of MDD. Most common neurological exam findings among 16 (38%) infants included: hypotonia (26%), hypertonia (12%), visual abnormalities (2%), auditory abnormalities (7%), craniosynostosis (7%). The majority (n=11; 69%) of neurological findings were detected by 3 months.
Interpretation: A high proportion of infants infected with ZIKV in utero exhibited developmental abnormalities, often with persistence to at least 18 months. Our findings suggest ZIKV infection during pregnancy could have far reaching impact on development, and indicate need for long term and careful developmental monitoring, even among infants without abnormalities at birth. The association between maternal findings and infant developmental delays needs further study.
Source of funding (if none, enter "None"): Gwyneth Sullivan received a scholarship grant from Infectious Disease Society of America Medical Scholars Program

SAT_127

Adherence To High Blood Pressure Medication: A Patient's Perspective

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Background: Hypertension is a significant Cardiovascular disease in sub Saharan Africa. Hypertension is a significant driver to cardiovascular disorders in sub Saharan Africa. It is a major independent risk factor for heart failure, stroke and kidney failure. While managing hypertension, a lot is required of the patient including high blood pressure medication adherence. This aims to control blood pressure. Poor adherence and thus uncontrolled hypertension has been reportedly the common cause of hypertensive related comorbidities and mortality.
Methods: Qualitative methods were used. One on one in-depth interviews were conducted with purposefully selected hypertensive patients. These patients were already on high blood pressure medication. They were attending the outpatient review clinic at Mbarara regional referral hospital in western Uganda. The interviews were conducted in the local language, transcribed and translated to English. Transcripts were analyzed using thematic analysis.
Findings: The following themes were identified as compelling factors to adherence to high blood pressure medication; hypertensive patients' understanding of prescribed medication, availability of medication for hypertension, family support for hypertensive patients and, review appointments at the hypertensive clinics. On the other hand, use of unprescribed pain medication was identified as one of the obstacles to high blood pressure medication adherence.
Interpretation: These findings emphasize the need to improve availability of high blood pressure medication, patients' understanding of prescribed medication, family support and importance of sticking to doctors' review appointments. Interventions steered towards these strategies may improve adherence to high blood pressure medication.
Source of funding (if none, enter "None"): Supported by the Fogarty International Center of the National Institute of Health under the Award Number D43TWO1010128. The content is solely the responsibility of the author and does not necessarily represent the official view of National Institutes of Health.

SAT_128

Telemedicine in Pediatric Tuberculosis Management

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Background: Tuberculosis (TB) remains a major global public health challenge. In the United States, Georgia has the 5th highest incidence of pediatric tuberculosis of the 50 states. Regular evaluations by an expert in TB management are required for children with active TB and latent tuberculosis infection (LTBI), and monthly evaluation is required for children less than 5 years old with LTBI. Almost half of pediatric TB patients in Georgia are foreign-born refugees or immigrants who may have limited English proficiency and face transportation and communication barriers. The 6-9 month duration of therapy required to treat and contain TB necessitates innovative programmatic approaches. Telemedicine--using telecommunication technology to allow patients to communicate with providers at a distant site--has been previously used in directly observed therapy (DOT) for monitoring compliance with medication regimens. We applied telemedicine to optimize delivery of pediatric expertise to children with active TB and LTBI from a three-county health department in Georgia.

Methods: The TB Telemedicine partnership utilized the combined resources of a children's hospital system community Telemedicine program and the Georgia Department of Health. The main objective of the program is to improve appointment adherence and the provision of care. A survey tool was developed to assess family acceptance of the TB telemedicine program. The survey includes 9 questions regarding perceived ease of communication with video technology, time burden of and overall satisfaction with the telemedicine encounter.

Findings: The program was initiated on 1/29/18. Eight of ten pediatric patients with active TB or LTBI in Gwinnett County agreed to be seen via telemedicine. Preliminary survey data from 10 visits suggest that most parents are satisfied with telemedicine and prefer telemedicine encounters to in-person visits. Ongoing challenges include technical difficulties; coordination of county nursing staff and telemedicine physicians; and use of phone interpretation during telemedicine visits.

Interpretation: While preliminary, results support that telemedicine is feasible and acceptable for the management of pediatric tuberculosis patients. The TB Telemedicine program will be expanded in partnership with neighboring counties to improve access for pediatric tuberculosis patients in Georgia, and this innovative programmatic approach may be applicable to pediatric TB management in other settings.

Source of funding (if none, enter "None"): Children's Healthcare of Atlanta

SAT_129

Hepatitis B And C: Prevalence and Risk Factors Associated with Seropositivity in a Large Cohort of People Living with HIV/AIDS in Nigeria

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Background: Hepatitis B virus (HBV), Hepatitis C virus (HCV) and the Human Immunodeficiency Virus (HIV) infections are major public health concerns in sub-Saharan Africa (SSA). There is rising concern about the evolving burden of morbidity and mortality caused by co-infection with HIV and HBV/HCV in SSA, as individuals who are co-infected with HIV and HBV/HCV reportedly have worse treatment outcomes than the mono-infected. However, the epidemiology and impact of this problem in Nigeria has not been well characterized. This cross-sectional study aimed to estimate the prevalence and identified risk factors associated with HBV and HCV seropositivity in a cohort of people living with HIV/AIDS in Nigeria.

Methods: A retrospective observational study was conducted using the database of the Institute of Human Virology Nigeria. The database containing information on people living with HIV was reviewed over a 10-year period 2004-2014. Information on sociodemographic variables, clinical parameters and HBV and HCV seropositivity in this population was obtained. Descriptive and multivariate analyses were performed using SAS statistical software package release version 9.3 (SAS Institute Inc, Cary, North Carolina).

Findings: A total of 12,633 PLHIV were screened for HBsAg and 1597 screened for HCV over the time-period under review. Mean age (SD) of individuals with HBV/HIV coinfection was 32 (9.7) years and HCV/HIV co-infection was 33 (9.3) years respectively. 1821/12633 (14.4%) were positive for HBV and 187/1597(11.7%) were positive for HCV. Male sex (p-value <0.001), older age (p-value = 0.026), single status (p-value = 0.001), higher WHO Stage (III/IV) of HIV infection (p-value = 0.02) were associated with HBV and HCV seropositivity. There were no statistically significant associations with employment status, education level, service entry point, BMI and CD4 count with HBV/HCV positivity.

Interpretation: Our results indicate that the prevalence of HBV and HCV infection in people living with HIV in Nigeria is high. Overall, our findings provide an insight into the problem of HIV and HBV/HCV co-infection in Nigeria and highlight the urgent need to develop public health strategies targeting the groups identified at higher risk to improve knowledge about risk factors for co-infection and improve surveillance, clinical care and treatment outcomes in people who are co-infected.

Source of funding (if none, enter "None"): None

SAT_130

Building a Foundation for Antimicrobial Stewardship at University Teaching Hospital in Lusaka, Zambia

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Background: Antimicrobial resistance is a rapidly growing threat to public health worldwide. The University Teaching Hospital (UTH) is the largest, referral hospital in Zambia. Previous studies found that <25% of antibiotics prescribed at UTH follow the Zambian Standard Treatment Guidelines and only 31% of patients had appropriate cultures ordered. The aim of this point prevalence project was to assess antibiotics administered and total antibiotic consumption at UTH. Results from this project will be used to develop antibiotic guidelines as part of UTH antimicrobial stewardship efforts.
Methods: Project approval was granted by the Biomedical Research Ethics Committee. This project aimed to characterize antibiotic use in UTH medicine wards. Patients were excluded if documentation of antibiotic administration was unclear/unavailable or if patient was <18 years old, discharged the day prior, transferred to/from another ward overnight, or was located in a tuberculosis ward. Antibiotic, dose, route, indication, culture data, and unit censuss was collected.
Findings: The pilot project included five medical wards including two male, two female, and one high cost ward. Antibiotic prescription rates were high at 60.3% of the 146 patients evaluated. Ceftriaxone and cefotaxime were the most commonly prescribed antibiotics representing 57% of antibiotics utilized. Broad spectrum antibiotics, such as imipenem and vancomycin, were not used in any study patient due to lack of availability during study assessment. Antibiotic indication was not frequently documented and <25% of patients had cultures obtained.
Interpretation: Successful antibiotic stewardship programs have antibiotic use guidelines available to prescribers that provide best practice recommendations for optimal antibiotic selection based on diagnosis and local susceptibilities. This pilot project identified that antibiotic selection depends heavily on antibiotic availability which varies, and that most empiric therapy included third generation cephalosporins. Documentation challenges limited information on indication and lack of culture data prohibited a full review of appropriateness. Results and challenges identified in this study has led to next steps in better identification of data to inform guideline development.
Source of funding (if none, enter "None"): This project was funded by the Center for Global Education Initiatives (CGEI) at the University of Maryland, Baltimore funded this project.

SAT_132

Assessing the Primary Healthcare Capacity for Cardiometabolic Diseases Prevention and Management at the Facility Level and from Patient Perspectives: Evidence from China, Kenya, Nepal, and Vietnam

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Background: Primary healthcare (PHC) plays a vital role in the prevention and management of cardiometabolic diseases (CMD). We chose four countries — China (upper-middle), Kenya (lower-middle), Vietnam (lower-middle), and Nepal (low-income) — to assess the current capacity of PHC facilities to provide CMD care in low-resource settings and patient experiences in access, use, and satisfaction of PHC services.
Methods: We adopted a standardized mixed-methods approach both at the facility level and from patient perspectives. We selected ten PHC facilities in each country, with five of them in an urban region and five rural. In each facility, we conducted a survey using the “Facility Assessment Questionnaire” and a key-informant interview of one knowledgeable leader. In addition, ten CMD patients from each facility (stroke, hypertension, or diabetes) were included for surveys and one or two for in-depth interviews. Quantitative data were analyzed with STATA and interview recordings were transcribed and analyzed through a thematic framework approach combined with interpretative analyses.
Findings: In four countries, we conducted 56 PHC facility surveys, 42 provider interviews, 429 patient surveys, and 65 patient interviews. Defined by travel and wait time for services, people’s access to PHC care in our sample facilities was generally considered “reasonable” with high satisfaction among patients. However, substantial barriers were identified from facilities in all four countries in the quantity and quality of PHC personnel. Insufficient professional training, overload work, and shortage in numbers of the PHC providers limited the extent, level, and quality of the care provided, which was exacerbated by the lack of essential medicines and equipment especially among facilities in Kenya, Nepal and Vietnam. However, notably, the ownership of electronic devices among both providers (e.g. computers) and patients (cell phones) was high in different facilities, which may provide opportunities for innovations.
Interpretation: Multi-dimensional enhancements are needed to incrementally increase the capacity of the PHC facilities for better prevention and management of CMD and other non-communicable diseases. Our study identified the following interventions worthy of prioritization: providing continuous on-the-job training for PHC providers, incentivizing more qualified personnel to work for PHC, and exploring innovative service delivery pathways such as eHealth technologies.
Source of funding (if none, enter "None"): Asian Pacific Observatory of the World Health Organization, and Duke Kunshan University

SAT_133

The challenges of educating children about schistosomiasis: A comparative case-study across Madagascar, Malawi and Tanzania.

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Background: Schistosomiasis affects 240 million people worldwide. Potential long-term effects include anaemia, growth-stunting, and bladder cancer. Mass-drug administration (MDA) of Praziquantel is the preferred method to control the disease. However, there is growing acknowledgement that health education is essential to sustain gains made through preventive chemotherapy. At present, no studies have examined how education strategies shape children's understandings of the disease. Schistosomiasis' complex transmission cycle (interactions with water sources inhabited by snail hosts, previously contaminated by human urine or excreta containing parasite eggs) constitutes an educational challenge.

This study contrasts children's health concerns around water-contact across interventions combining preventive chemotherapy and sensitisation in Madagascar, Malawi, and Tanzania (Zanzibar). Madagascar's and Malawi's programmes disseminated basic information during MDA campaigns but differed in the length of their operations (since 2015 and 2011, respectively). Since 2011, Zanzibar's programme has conducted a participatory community-based intervention aimed at promoting safe practices among children. MDA campaigns reached treatment targets in all countries (>75%).

Methods: 290 children (8 to 11) participated in the study (Malawi: 92; Madagascar:118; Tanzania: 80). Children were asked to draw their quotidian activities around water sources and the surrounding biodiversity. An interview ensued, discussing health concerns and views on forms of transmission.

Findings: Awareness of snails was minimal in Malawi and Madagascar (<10%) but greater in Zanzibar (46%). Awareness of schistosomiasis was 17.8% in Madagascar, 42.4% in Malawi and 95% in Zanzibar. References to other illnesses, chiefly stomach problems, were substantive in Malawi (38.0%) and Madagascar (41.5%) but negligible in Zanzibar (2.5%). Children's narratives in Malawi and Madagascar centred around representations of "dirty vs clean water" as indicators of transmission risk. In Zanzibar, concerns focused on direct water contact (e.g., swimming), with mediated interactions (e.g., carrying water) being perceived as safer.

Interpretation: Results indicate that whilst regular provision of basic health messages can improve general awareness of schistosomiasis, ecological awareness of snail hosts require dedicated training. Questions are raised regarding the extent to which intensive training around schistosomiasis may hinder mindfulness of other water-borne diseases relevant to children's health. The disease's ecological features vis-a-vis water's fluidity constitute a major hurdle for educational interventions.

Source of funding (if none, enter "None"): DFID -Integrated Control of Schistosomiasis in Sub-Saharan Africa(ICOSA) UBS - Optimus Foundation

SAT_134

Evaluating the Demand for Provider-Assisted HIV Partner Notification Services among HIV-Positive Prisoners in Indonesia

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Background: More than 10.3 million people are incarcerated worldwide at any given time, including ~389,000 persons with HIV (PWH), most of whom have sex partners in the community. Assisted HIV partner notification services offer a promising means to assist incarcerated PWH to notify their at-risk partners in the community of possible HIV exposure. We conducted research in Indonesia, a country where HIV prevalence in prisons is high, to assess the demand for assisted HIV partner notification services in prisons.
Methods: Incarcerated PWH (N=150) were recruited from two large male correctional facilities in Jakarta, Indonesia and completed questionnaires assessing pre-incarceration drug and sexual risk behaviors and acceptability of HIV partner notification. The study protocol was approved by institutional review boards in the U.S. and Indonesia and all participants provided informed consent.
Findings: Most participants were sexually active (91.3%) and many (42.7%) were unaware of their HIV status before incarceration. Participants identified 412 sex partners in total with whom they had shared a possible HIV exposure immediately before incarceration including women (85.6%), men (27.4%) and transgender persons (<1%). Consistent condom use with main (8%) and casual partners (6.7%) was low during the 6 months before incarceration, when most participants also were using (96%) or injecting (38%) drugs. Most participants had not disclosed their HIV status to sex partners (72.7%), yet a majority (64.7%) endorsed voluntary and anonymous provider-assisted HIV partner services to notify sex partners residing in the community. Main reasons for notifying sex partners were so that partners could be HIV tested and to prevent partners from becoming infected. Fear of rejection and concerns about loss of confidentiality were stated as reasons for preferring anonymous provider-assisted partner notification.
Interpretation: Sex partners of incarcerated PWH may be at risk for HIV infection but overlooked for HIV testing. Risks to partners are both sex and substance use related. Incarcerated PWH mostly support partner notification and are willing to participate in voluntary and confidential HIV partner notification services, yet may require assistance to communicate such sensitive information to partners residing in the community. HIV partner notification services may provide an important new HIV prevention approach in global regions where HIV prevalence is high in prisoners.
Source of funding (if none, enter "None"): NIDA K23DA041988/K01DA042881

SAT_135

Clinical Outcomes of Ertapenem-Resistant Versus Ertapenem-Susceptible Klebsiella pneumoniae: A Seven Year Retrospective Study in a Level 3 Hospital in Chile.

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Background: Antimicrobial resistance is a growing problem worldwide. The aim of our study was to determine if different clinical outcomes exist for patients with ertapenem-resistant (intermediately resistant or resistant) versus ertapenem-susceptible Klebsiella pneumoniae bacteremia.
Methods: In this retrospective study, patients from January 2012 to June 2018 with positive blood cultures for Klebsiella pneumoniae in one level three hospital in Chile, Hospital Padre Hurtado, were included. The medical records of these patients were analyzed. The blood cultures were also analyzed to determine resistance or susceptibility to ertapenem. Patients without ertapenem sensitivity testing were excluded. If one patient had multiple episodes of Klebsiella pneumoniae bacteremia, only the first episode was included.
Findings: 270 patients were included in this study. Of the 270 patients, 190 had ertapenem-susceptible Klebsiella pneumoniae bacteremia (70.37%) and 80 had ertapenem-resistant Klebsiella peumoniae bacteremia (29.63%). The overall mortality was 150/270 (55.72%). The mortality of the ertapenem-susceptible group was 109/190 (57.37%) and the mortality of the ertapenem-resistant group was 41/80 (51.25%). There was no significant difference between the overall mortality of the ertapenem-resistant versus the ertapenem-susceptible groups ($p = 0.356$).
Interpretation: Other studies have shown that patients with ertapenem-resistant Klebsiella pneumoniae bacteremia have poorer clinical outcomes than patients with ertapenem-susceptible Klebsiella pneumoniae bacteremia. Our study suggests that the overall mortalities of these two groups are not statistically significant. One major concern about ertapenem-resistant Klebsiella pneumoniae is its ability to produce extended spectrum beta lactamases. These extended spectrum beta lactamases could also taper the effects of other carbapenems, reducing the efficacy of these medications and causing poorer clinical outcomes. However, our study suggests that the clinical outcomes between the two groups are not significantly different. More research is needed to more fully understand the relationship between these organisms and patients' clinical outcomes.
Source of funding (if none, enter "None"): None

SAT_136

Burden and Quality of Life Among Caregivers of Patients With Schizophrenia in Gaborone

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Background: Schizophrenia is a debilitating psychiatric disorder affecting patients and their caregivers' quality of life (QOL). Caregiver's have reduced QOL affecting dimensions of physical and emotional health, social and economic wellbeing. This study aimed to describe the changes in the QOL among caregivers of patients with schizophrenia in Botswana in order to identify their needs and suggest ways to support them.
Methods: A cross-sectional survey of consenting caregivers aged >21-65 years, caring for schizophrenia patients attending psychiatry outpatient clinic in a tertiary hospital in Gaborone, Botswana was undertaken. A self-administered questionnaire adapted from Zarit Burden Interview 22 items, which explores QOL was used. Frequencies and proportions were employed to describe categorical variables and comparisons done using Chi-squared/ Fishers exact test. Ethical approval was granted from University of Botswana Institutional Review Board and Ministry of Health.
Findings: 34 caregivers responded to the questionnaire, with 19 females and 15 males. Majority (50%) were aged 21-35, while 44% were 36-50 years old. Highest education was tertiary level (59%), followed by secondary at 21%. Most were unemployed (50%), with only 12 (35%) employed and 12% pensioners. In assessing QOL, 44% met criteria for major depressive disorder. There is a high frequency (68%) of caregivers who feel that their social-life and time has been affected by caregiving. Majority (56%) reported a negative economic burden. However, 65% reported good physical health despite caregiving. Total scores of Zarit burden showed that 56 % of caregivers had moderate to severe burden while 15% were severely burdened. Most caregivers (61%) with moderate to severe burden had been taking care of their relative for a longer duration i.e. >2 years. Severely burdened caregivers had a propensity to develop depression with a p-value <0.05 (fisher extract =0.011). No association was found between level of education and severity of burden, fishers exact 0.502.
Caregivers counseling (55%), education on the illness (59%) and extra help from other family members (55%) were preferred coping mechanisms.
Interpretation: Carers of schizophrenic patients in Botswana have an important experience of emotional, economic and social burden. Depression was high among caregivers. It is important to recognize the carer's needs and provide personal and family counseling and education.
Source of funding (if none, enter "None"): None.

SAT_137

Systematic review on epidemiology, interventions and management of noncommunicable diseases in acute and emergency care settings in Kenya

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Background: Deaths due to non-communicable diseases (NCDs) have surpassed those due to communicable diseases globally, and are projected to do so in Africa by 2030. The Emergency Department (ED) acts as a primary access point for entry into the healthcare system where patients present with a variety of NCD-related complaints from across the age spectrum. The objective of this study was to describe the evidence on NCDs in the Kenyan ED setting in order to inform research priorities and resource allocation. This is the first study of its kind in the country.
Methods: This is a systematic review, which is registered at PROSPERO (CRD42018088621). The databases searched were MEDLINE, Embase, Scopus, Web of Science Core Collection, Africa-Wide Information, and CINAHL. All searches were run on July 15, 2015. In addition, a search of the grey literature was performed in both the Intergovernmental Organization and Nongovernmental Organization Google Custom Search Engines and Greylit.org. The formal search strategies used relevant controlled vocabulary terms and synonymous free text words and phrases to capture the concepts of NCDs, and Emergency Medicine (acute care, emergency services, emergency department).
Findings: The final searches retrieved a total of 510 references, which were pooled in EndNote and de-duplicated to 461. Two separate reviewers screened the articles by title and abstract; 97 of these were evaluated by full text. All articles were vetted by a third reviewer. Ten articles were included in the final analysis such as: a retrospective chart review on acute coronary syndrome cases in the national referral hospital ED; a cross-sectional study on diabetic retinopathy at an outpatient eye clinic; a case report on colon cancer presenting as appendicits in an elderly patient, and a facility capacity assessment which included NCD care. Primary reasons for exclusion included: study performed outside Kenya, review article or concept paper, and basic science studies with no clinical relevance to acute or emergency care.
Interpretation: There is very limited evidence on the burden of NCDs in Kenyan EDs, and on management of disease. Opportunities for research include epidemiological studies, and implementation science to guide improvement in outcomes for those with NCDs in the Kenyan ED setting.
Source of funding (if none, enter "None"): Yale University Provost Faculty Development Fund

SAT_138

VWF Levels as a Predictor of Survival in Different Syndromes of Liver Disease

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Background: Background: Patients with different syndromes of liver disease have been shown to have elevated levels of von Willebrand factor (vWF), resulting in higher risk of mortality. As of now, several studies exist that have proposed cutoffs for vWF to guide treatment options and predict mortality.
Objectives: To conduct a systematic review of case series that have defined optimal cutoff values for vWF to predict mortality and determine the possibility of performing a meta-analysis. To show the utility of vWF as a simple, cheap, noninvasive tool to predict mortality in patients with liver disease and describe how it can be used in conjunction with existing scores (ie. MELD) to strengthen the case for treatment.
Methods: Methods: PUBMED, Cochrane library, and MEDLINE were used to identify studies related to the main study question. Only case series were included in the review. The case series observed patients with different syndromes of liver disease, such as liver cirrhosis and acute-on-chronic liver failure (ACLF) and noted overall mortality and follow-up time for the study patients.
Findings: Results: Data collection was performed using Cochrane data extraction forms to note AUC, vWF levels, mortality, correlations, and hazard ratios with 95% confidence intervals. Risk of bias was assessed using the Quality in Prognosis Studies (QUIPS guidelines). A meta-analysis was not possible, but a total of seven studies with 845 patients were included. Most trials were at low to unclear risk of bias.
Interpretation: Conclusions: Although a meta-analysis was not possible, each study has shown vWF to be an effective tool to predict mortality in patients with liver disease. vWF is commonly performed and is simple to do at the bedside. vWF levels were shown to equal existing scores, like MELD, in mortality prediction and was shown to correlate with other existing scores, like Child-Pugh and HVPG.
Source of funding (if none, enter "None"): None

SAT_139

Community leaders as social support for adults with hypertension in La Dade Kotopon community of Accra, Ghana

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Background: West Africa, and specifically Ghana, is experiencing a double burden of infectious and non-communicable diseases. Cardiovascular disease (CVD) has become a leading cause of death, largely due to an increased prevalence and incidence of hypertension. In Ghana, Community Leaders are unofficial representatives appointed by community members. They are an important source of information, resource linkages, and support that could be leveraged to provide education and risk reduction strategies for CVD prevention.
Methods: We conducted a blood pressure (BP) screening event in the La Dade Kotopon community of Accra, Ghana. Those with BP ≥140/90 mmHg were asked to complete a CVD knowledge/risk survey. A random sample of those participants was invited to participate in a pilot study, which leveraged Community Leader support to achieve BP reduction. Five Community Leaders were trained and assigned to follow-up with 4-7 participants each. They made weekly home visits to perform BP screenings, provided daily medication reminders, and prompted participants to communicate with healthcare providers. Final BP was recorded at three months.
Findings: During the screening event, 267 individuals were screened (mean age 61, 79% female). Approximately half (136/267; 51%) had BP ≥ 140/90 mmHg, and 118 of those hypertensive individuals completed the CVD knowledge/risk survey. Among hypertensive survey respondents, 57% (67/118) had little or no knowledge about heart disease and only 58% (68/118) reported being prescribed medication to lower BP. Twenty-three participants completed the Community Leader pilot program. Their mean BP at baseline was 155/83 mmHg and after three-months it fell to 148/82 mmHg, although results of a paired t-test showed this reduction was not significant (p=0.241 for systolic BP and p=0.925 for diastolic)
Interpretation: Hypertension prevalence was high in this community sample and large proportions of those with hypertension were untreated and had little or no knowledge about heart disease. Community leaders are trusted and influential figures in Ghana, who may positively impact knowledge and health behaviors related to hypertension. In our pilot Community Leader program, participants had a modest reduction in BP at three months. This novel intervention approach may be relevant in tailoring CVD prevention strategies in low and middle-income countries.
Source of funding (if none, enter "None"): None

SAT_141

Correlating Maternal Iodine Status with Neonatal Thyroid Function in Two Hospital Populations in Ghana.

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Background: Congenital hypothyroidism (CH) is a common, yet easily treatable cause of poor growth and intellectual disability. Therefore, many countries have newborn screening programs for early detection and treatment. However, an estimated 71% of children are born in countries such as Ghana, which does not have a screening program. Recent data suggest that iodine deficiency, a common cause of CH, is present in the Ghanaian population. Mild to moderate maternal iodine deficiency may negatively impact cognitive function in children. Thus, a structured approach to examine the association between maternal iodine levels and infant thyroid function using Thyroid Stimulation Hormone (TSH) may have important ramifications on our understanding of CH in Ghana. We investigated the hypothesis that CH is under-recognized in Ghana and driven by maternal iodine deficiency.
Methods: A cross-sectional design compared urine iodine of 250 mothers and TSH in their neonates. Participants were recruited from 1- or 2-week post-natal clinics in Accra and Tamale, two cities with varying geographic and demographic features. Mothers provided informed consent and assent on behalf of their infants. IRB approval was granted by Korle-Bu Teaching Hospital, Tamale Teaching Hospital, and Vanderbilt University.
Findings: There were no cases of CH identified in this study; however, there was a slight positive correlation between maternal urine iodine and infant TSH - 0.12 in Accra and 0.19 in Tamale. Mean urine iodine was 170 ug/L vs 168 ug/L in Accra and Tamale, respectively. 30% of women in both locations had biochemical evidence of iodine deficiency. Infant TSH was slightly higher in Accra at 5 mIU/ml than in Tamale at 3.65 mIU/ml. Iodized salt use was higher in Accra with 89% of women reporting its use vs 75% in Tamale. Bouillon cube use was 89% in Accra and 93% in Tamale.
Interpretation: Data in Ghana regarding the incidence of congenital hypothyroidism is sparse. This study demonstrated a positive, though weak, correlation between maternal iodine and infant TSH. Bouillon cube which is often iodized appears to be an important factor in the provision of iodine to participants. A larger, multi-site study is needed in Ghana to assess the true scope of this relationship.
Source of funding (if none, enter "None"): Vanderbilt-Emory-Cornell-Duke/Fogarty D43TW009337

SAT_142

The Lagos State Ambulance Service: A Performance Evaluation

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Background: Injury is a growing concern in the field of global health as five million people die from traumatic events each year, outnumbering those dying from HIV, tuberculosis, and malaria, combined. Emergency Medical Services (EMS) systems play a fundamental role in the pre-hospital management of injury and, in Africa, 25 EMS systems exist in 16 countries (30% of the continent). The Lagos State Ambulance Service (LASAMBUS) was established in March 2001, and objective of this study is to assess its performance.
Methods: We received completed LASAMBUS intake forms spanning January 2015 to May 2018 from the Lagos State Ministry of Health. We conducted a preliminary analysis of the forms in September 2016, which represents the midpoint of the dataset and a monthly average number of forms. When analyzing the outcome of each dispatch call, which was written as a narrative in the “Remarks” section, we categorized the responses into six groups: I. Upon arrival, no crash was sighted; II. Upon arrival, LASAMBUS addressed the crash; III. Upon arrival, the crash was already addressed, IV. LASAMBUS did not respond to the crash, V. Other, VI. Form was illegible.
Findings: We catalogued the 16,574 forms by month and found an average of 404 completed forms per month. For September 2016, there were 413 forms with the following distribution: Group I. = 34.4%; Group II. = 28.3%; Group III. = 21.1%; Group IV. = 13.6%; Group V. = 2.2%; Group IV. = 0.5. Reasons why an ambulance did not respond to a crash included, “unable to go [because] there is no fuel” and responses in the “Other” group included, “found crash, but no injuries” and “found crash, but victim had already died.”
Interpretation: Of the total number of road traffic injury calls that LASAMBUS responded to in September 2016, 62.7% of them were not managed by LASAMBUS, either because there was nothing found at the site or because the crash had already been addressed by a Good Samaritan, relative, etc. through transporting the victim to a nearby health facility. Analyzing ambulance response times and their potential barriers (ex: poor description of location and severity or traffic congestion) are the topics of our future work.
Source of funding (if none, enter "None"): None.

SAT_143

An Innovative Mobile Medical Record Keeping System for Rural Pediatric Community in Tanzania: A Unique Partnership between Historically Black Colleges & Universities(HBCU) Medical School and a Non-Governmental Organization

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Background: In the Siha District of Tanzania, there is a rural community without direct access to modern healthcare: Karansi Ward, 60 km from nearest hospital, is an impoverished village where 44% are <14 years. Although population health data on neighboring Arusha exists, little health data is available for Karansi. Morehouse School of Medicine (MSM) is an HBCU medical school, recognized for its social mission. UboraTZ is an Atlanta based NGO with the mission to assist the Siha community in securing physical, spiritual, educational and economic well-being. A collaboration between these organizations was created to bring sustainable modern healthcare to Karansi, and address health equity for its citizens. This collaboration intends to educate US medical students on rural global health, while creating a bi-directional culturally sensitive opportunity between US and TZ- public health and primary/acute health providers. A primary goal was to create a mobile, electronically based health record system so that continuity of healthcare could be established.

Methods: The project's goal was to create/implement a mobile electronic health record system (EMR), which could be used as part of global health training for medical students while providing continuity of care to rural children. Working with MSM, UboraTZ, and TZ public health, medical team provided healthcare to students. EMR documented care given and served as the means to communicate health information between schools, families, and public health providers and officials. Medical - social information could be entered in real time, using mobile devices which did not require internet through the REDCap platform.

Findings: 1,852 students were treated (July 19-August 6, 2018). Interim analyses on 682: 49% male; age distribution-10%-3-5Y, 29%-6-8Y, 35%-9-11Y, 22%-12-14Y, 4%-15+Y. 95% were underweight (WHO-BMI). Primary Diagnoses: 3% Scabies, 12% Tinea, 2% Wound, 7% Upper respiratory infections; 3% Musculoskeletal pain and 73%-Well child. Social-home history: 92.5% -pit latrine; 99%-open fire for cooking; 50%-no place to wash/dry dishes; and 87%-community pump as water source. Average household -7 (3-21). Mobile devices for EMR can be used in this remote setting.

Interpretation: A mobile electronically based health record will inform families, public health and medical providers of conditions which impact health and provide longitudinal tracking to improve health outcomes.

Source of funding (if none, enter "None"): MSM MD-Summer Research Program; UboraTZ; Donations

SAT_144

A Cross-Sectional Study of the Patients Served by the Peru Health Outreach Project in Chincha Alta and Sacred Valley, Peru

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Background: The Peru Health Outreach Project (PHOP) organizes an annual medical mission trip to Chincha Alta (CA) and Sacred Valley (SV) in Peru to provide medical services and health education. The group is composed of physicians, residents, nurses, and medical students from Case Western Reserve University and Cleveland Clinic. The aim of this study was to obtain health data regarding chief complaints, disease frequency, and treatment in the two communities served by PHOP.
Methods: This IRB approved cross-sectional study utilized convenience sampling of all patients who sought care by the PHOP physicians over two weeks. Demographic and health information was gathered from case report forms filled out by clinic personnel. Descriptive statistics were used to summarize the results to characterize the patients and conditions evaluated. Comparative statistical analyses are pending.
Findings: 420 patients were seen over two weeks (CA n=197; SV n=223) with majority being males in CA (n=109, 55%) and majority being female in SV (n=135, 60%). Median age in CA was 33.1 years (IQR=28.3) and SV was 31.6 years (IQR=14.2). Most common chief complains in CA were respiratory (n=161, 81.7%) and gastrointestinal (n=101, 51.3%) compared to SV which were respiratory (n=194, 87%), gastrointestinal (n=185, 83%), and musculoskeletal (n=148, 66.4%). Top diagnoses in CA were respiratory illness (n=86, 43.7%), gastrointestinal illness (n=34, 17.3%), and metabolic disorders (n=32, 16.2%), whereas in SV, musculoskeletal pain (n=65, 29.1%), respiratory illness (n=60, 26.9%), and gastrointestinal illness (n=45, 20.2%) were the most common diagnoses. In both groups, main treatments included prescribing medications (CA n=143, 72.6%; SV n=129, 57.8%) and education (CA n=85, 43.1%; SV n=123, 55.2%). Most commonly-prescribed medications were antibiotics (CA n=44, 22.3%; SV n=16, 7.2%), NSAIDs (CA n=33, 16.8%; SV n=37, 16.6%), and acetaminophen (CA n=22, 11.2%; SV n=57, 25.6%).
Interpretation: This health information will substantially improve the preparation for PHOP to better serve the needs of the patients. Future trips should refine education projects and optimize medical supplies to focus on the most common diagnoses and treatments encountered distinct to each location. Limitations include incomplete medical records and need for follow up over time, as this was a cross-sectional study, and strengths include a comprehensive view of the population served.
Source of funding (if none, enter "None"): Hearst Summer Research Fellowship $4,900.

SAT_145

Identifying Contributing Factors for Pediatric HIV Loss to Follow-up in a Rural Tanzanian Population

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Background: The goal of our study was to determine the most significant factor(s) in loss to follow-up in pediatric HIV care at Shirati KMT hospital.
Methods: After identifying a group of HIV+ pediatric patients who had been seen in the clinic at least once, but never returned for subsequent treatments, we implemented a training session for the community health workers to interview the parents or guardians of the HIV+ pediatric patients in the villages with a tape recorder, a translated survey and interview script. The survey questions included child's age, gender, HIV status, whether the child had received treatment for HIV, why they had not returned to the hospital, and what factor(s) would encourage them to bring their children to the hospital for treatment again.
Findings: Among the 24 parents and/or guardians of HIV+ pediatric patients interviewed, 95.8% (23/24) cited the long distance to the hospital as the primary reason they had not brought their child for follow-up HIV treatment. Additional factors were poverty/lack of funds (5/24), long wait times at the clinic (5/24), child's health (3/24), child needed at home (1/24), and lack of family support (1/24). When asked what factors would encourage them to bring their child for treatment to Hospital, 91.6% (22/24) said a means of transportation. Other responses were any type of financial support (5/24) and family support (4/24).
Interpretation: Despite the implementation of a meal program aimed to encourage families to bring their children to receive treatment at Shirati KMT Hospital, a large number of HIV+ pediatric patients remained lost to follow-up. Our results suggest that lack of transportation is a main contributing factor in preventing pediatric patients from receiving treatment. By sharing these results with Shirati KMT, we anticipate that they may consider implementing a transportation program, or subsidizing the cost of public transport for pediatric patients and their parents/guardians coming to the hospital for HIV care. They may also benefit from including a mobile HIV clinic as part of their existing maternal and child health outreach program.
Source of funding (if none, enter "None"): Fundraising (silent auction, GoFundMe page)

SAT_146

Knowledge, Attitudes, and Practices Regarding Climate Change and the Coastal and Marine Ecosystem in a Small Island State, Grenada

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Background: This study was conducted to assess knowledge, attitudes, and practices of residents in a small island, Grenada, with regard to climate change and the coastal and marine ecosystem.
Methods: A cross-sectional study was conducted with 221 randomly selected residents in two parishes in January, 2018 focusing on knowledge of climate change, coastal and marine ecosystems, and marine protected areas; impact of climate change on the ecosystem; attitude and response to climate change and impacts; and sources of information.
Findings: The majority of respondents were familiar with the term “climate change.” There was less familiarity with the terms “ecosystem” and “marine protected areas.” While at least 50% of the respondents correctly identified factors that can contribute to climate change, the majority also felt they were only "somewhat informed" about causes, impacts, and measures to mitigate the impacts of climate change. The respondents reported they observed several changes in the coastal and marine environments that were associated with weather. Overall, about 90% of respondents did not participate in programs to raise awareness about climate change or coastal ecosystem management in the past five years. Residents who completed their education lower than college, residents above 45 years and residents in St. Mark were found to have significantly lower levels of knowledge and awareness about climate change and coastal ecosystem. Together, almost 50% of respondents reported they were somewhat concerned, not concerned at all or not sure if they should be concerned about climate change. More than 50% of the respondents felt the communities were prevented from taking action due to lack of knowledge, cooperation, and resources, respectively. There was moderate to high support for designating Marine Protected Areas (MPAs) in St. John or St. Mark.
Interpretation: The results indicate there is need to increase knowledge and awareness about the relationship between climate change, coastal and marine ecosystem, and community development and sustainability. Increased level of knowledge is also expected to have a positive effect on participation in the Coastal Protection for Climate Change Adaptation in Small Island States project.
Source of funding (if none, enter "None"): German Ministry for Economic Cooperation and Development (BMZ) through support to the Caribbean Community Climate Change Center (CCCCC)

SAT_147

The Association Between Hair Mercury Levels And Serum-Based Liver And Kidney Function Tests In Surinamese Pregnant Women.

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Background: Mercury (Hg) is used in artisanal and small-scale gold mining (ASGM) operations in Suriname, South America. Mercury exposure levels are associated with a decline in liver and kidney function. We present preliminary results of liver and kidney function in pregnant women potentially exposed to mercury participating in the Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) MekiTamara environmental epidemiology study.
Methods: 50 blood samples of pregnant women with known Hg hair levels were tested for liver and kidney function, 20 with high (>2ugHg/g hair), 10 medium (<1.9 ug/g hair) and 20 low mercury hair levels (<0.99 ug/g). Clinical indicators for liver and kidney function were Alanine aminotransferase (ALT >45U/L), Aspartate aminotransferase (AST >35U/L) and serum Urea (>7.1mmol/L) and Creatinine (>97µmol/L) respectively. Testing was done on the DXC-600 Beckman Coulter analyzer. Analysis was done using SPSS version 20. We will compare means between various groups of Hg concentrations.
Findings: Mean age of the women was 28.4 years (min 16.9; max 41.2). 22% had secondary or higher education and 78% lower or primary education. 80.4% lived in urban areas and 19.6 % in the interior.
Interpretation: Hair Hg data of women from the interior region analyzed to date show that more than 80% have levels above the US Environment Protection Agency action level. CCREOH will prospectively evaluate the impact of exposures to Hg and pesticides on liver and kidney function. With the liver and kidney function data still to be obtained we anticipate a positive correlation between hg exposure levels and hepatic and renal organ system functioning. Further research will focus on exposure of lead as well. A combination of mercury and lead exposure and the effect thereof on liver and renal function are not yet fully understood. Also the combined effect on birth outcomes will be investigated.
Source of funding (if none, enter "None"): FIC/NIH U01TW010087-01 and U2RTW010104

SAT_148

Exploring Perceptions and Issues of Snakebite Envenomation in Livestock: A Qualitative Study Among Community and Industry Stakeholders in Costa Rica

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Background: Snakebite envenomation (SBE), a neglected tropical disease, poses a great risk to both agricultural workers and livestock animals. While SBE can lead to severe morbidities and mortality in humans, the burden on farmers caused by SBE-mediated livestock loss has not yet been studied. To better understand if and how farmer livelihoods are affected by SBE in livestock, this study aims to explore community and industry stakeholders' experiences with envenomed livestock and antivenom treatment in Costa Rica.
Methods: A total of 15 farmers were purposively selected for participation in semi-structured, qualitative interviews. All farmers owned livestock and had experienced SBE in their animals. We interviewed farmers until theoretical saturation was met. To obtain data on antivenom treatment, we also interviewed six employees of the Instituto Clodomiro Picado (ICP) who worked on the production and distribution of antivenom. Informed consent was obtained from all participants, and interviews were conducted with the help of a Spanish interpreter when necessary. Interviews were analyzed using framework analysis.
Findings: Four main themes were identified from farmer interviews: 1) role of livestock in farmer's lives, 2) management of SBE in livestock, 3) access to appropriate treatment, and 4) impacts of SBE-related treatment and death. Subjects reported frequent loss of livestock animals to SBE due to difficulties in accessing appropriate treatment. As these animals were often their primary source of income, farmers suffered negative economic and emotional effects after the loss of their livestock. ICP employees highlighted balancing human and veterinary antivenom production, lack of distributor regulation, and human-snake conflict as primary challenges for managing SBE treatment in Costa Rica. The snake reported most often by interview participants as responsible for agricultural-related SBE was Bothrops asper, one of the most medically important venomous snakes in Central and South America.
Interpretation: These results suggest that SBE in livestock has significant negative economic and emotional effects on farmer livelihood. Barriers to treatment for animals are likely exacerbated due to the prioritization of antivenom for human use and the often-rural locations of farms. Further research is recommended to fully understand the burden caused by SBE in livestock and the benefits of treating this animal health issue.
Source of funding (if none, enter "None"): University of California, San Francisco

SAT_149

Improving gastrointestinal nematode management in Canadian beef cattle to reduce anthelmintic burden in the environment.

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Background: Blanket treatment at set times of the year of all cattle for gastrointestinal (GIN) parasites is likely to lead to anthelmintic resistance, and has been documented in North America. Understanding how producers make GIN management decisions would be helpful to promoting change, although there is little information on how that takes place. This research developed a basic spreadsheet tool to allow beef producers to estimate changes in economic impact from use of various anthelmintic options, based on production and market price knowledge.
Methods: A basic stochastic production frontier (SPF) approach was applied for cow-calf herds using data from aggregated public records in Western Canada. Functional form was based on a standard Cobb-Douglas approach, and was derived econometrically using corrected ordinary least squares (COLS) regression methods. Additionally, 350 participants were invited through producer groups' social media webpages to participate anonymously from across Western Canada. Using an online questionnaire, data were collected regarding anthelmintic useage, production demographics, and ecozone. These variables were used to define expected differences from the mean for production. Output was valued using current market prices. From these data a spreadsheet tool capturing production function and impact of anthelmintics use was develped.
Findings: A spreadsheet tool to estimate impact from anthelmintic application was developed and tested based on concordance with producer records. Sensitivity analysis yielded a deviation of +/- 20% from expected outcomes. Previous use of an SPF approach to cow-calf herd GIN management was not located in the literature. This approach accepts modest deviations from perfectly efficient expectations and allows producers to enter their own production details to estimate economic gains from changing GIN management. Anthelmintic useage in this proof-of-concept tool showed less than 1% impact on production, although it was not always a profitable decision.
Interpretation: A spreadsheet tool was developed that can be used to demonstrate the limited effect of anthelmintics in beef cattle when used routinely, which would include non-indicated treatments. Such an interactive tool is expected to be helpful for discussions with producers regarding options for reducing their use of GIN antiparasitics. This will be a valuable contribution to sustainable prudent use of anthelmintics, reducing resistance and the burden of anthelmintics in the environment.
Source of funding (if none, enter "None"): Canadian Cattlemen's Association

SAT_150

Shifting Climate Connections Enhanced Malaria Resurgence in East African Highlands: Developing Evidence for Policy

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Background: After successful eradication measures in the 1950s, the East African Highlands observed an unexpected resurgence of malaria in the 1990s. Although the epidemic episodes decreased again during the mid-2000s, they caused high mortality and morbidity rates in the population for over a decade. In addition to changes in herd immunity and control operations, climate drivers including anthropogenic global warming, El Niño-Southern Oscillation (ENSO) and the Indian Ocean Dipole (IOD) have been suggested to have independently played a role in the re-emergence of malaria in the Highlands. To date there is still debate on which climate drivers were involved, and if malaria transmission could be enhanced again by similar conditions in the future.
Methods: First, we perform an exploratory analysis using Spearman rank and Kendall's tau correlations for two distinctive periods, 1966-2015 and 1990-2015, to identify general sea-surface temperature climate drivers connected to malaria in Kericho (Kenya), in the East African Highlands. Then we compute wavelet coherence spectra to analyze the non-stationary connections between malaria cases in Kericho and those climate drivers, to identify potential superposition of climate signals acting at multiple timescales. Finally, we conduct a canonical correlation analysis to build a statistical forecast model whose predictors are those empirical orthogonal functions associated with the climate drivers identified via the wavelet coherence approach, and the predictand is the Kericho's malaria cases.
Findings: We found that a combination of climate signals acting at multiple timescales, involving global warming, the Pacific Decadal Oscillation (PDO) and the IOD, affected malaria resurgence in the 1990s. We found that the PDO set the stage for the malaria re-emergence during ~1988-1995, impinging a positive trend that was then supported by the IOD during ~1995-2000, all embedded in the global warming background signal. Moreover, the observed malaria cases in the region cannot be explained by the isolated effect of any of these climate drivers, but only via a superposition of their signals. This particular combination is not always present, but its monitoring could help predict similar epidemic episodes in the near future.
Interpretation: This analysis underscores the importance of climate and health scientists working together to elucidate climate and malaria interactions.
Source of funding (if none, enter "None"): Wellcome Trust Principal Fellowship (# 103602) to RWS

SAT_152

Nutrition, Food Safety and Dietary Pattern Analyses of Prahoc Consumption in Rural Villages in Siem Reap Province, Cambodia

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Background: Prahoc is a traditional Cambodian fermented fish paste product that has a strong taste and provides a low-cost source of protein and micronutrients for local people. However, few studies have sought to understand the risks and benefits of this common Cambodian food. Fermented foods are thought to offer nutritional benefits, of particular value for nutritionally-vulnerable groups and low-income families. However, long-term storage and the use of freshwater fish threatens parasitic exposure and microorganism contamination. This exploratory study aims to report the general consumption uses of prahoc, analyze nutritional compositions, and assess food safety.
Methods: This is a descriptive, cross-sectional study. WorldFish helped recruited potential participants who are household mothers with experience in making prahoc and with children ages six to twenty-four months in their families. Of eligible participants, 14 mothers from rice field fishery households were randomly selected from Santey and Ou-Kralanh Village in Siem Reap Province. Participants participated in prahoc production and consumption interviews and provided prahoc samples for analyses. Forty percent of participants (four from Santey and two from Ou-Kralanh) were randomly selected for video recording of their prahoc making processes.
An oral consent script was read and agreed to by each participant before conducting the interview or recording. Participant identifiers were not collected. Participants were provided with a small stipend (equivalent of $5) for participating. The study was approved by Cornell University's Institutional Review Board.
Findings: Interview results indicated that households in rural villages in Siem Reap consume either bone or meat prahoc year round. Households reported that children are fed with dishes made with prahoc starting from six-month of age. All households reported they followed the doctor's advice to avoid eating prahoc when sick but did not know the reason behind this recommendation. Nutritional composition, food safety, and parasite analyses are in progress and will be completed by November 2018.
Interpretation: Our study addresses key knowledge gaps about prahoc, an under-studied, yet commonly consumed food in Cambodia. However, this is a small-scale, exploratory study focused on two villages in Siem Reap, and there may be variations in preparation, consumption, and knowledge of prahoc among different regions in Cambodia.
Source of funding (if none, enter "None"): The study was funded by the Food, Conservation and Health Foundation

SAT_153

A Pharmaco-Epidemiologic Approach to Link Medication Use with Environmental Contaminant Exposure

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Background: Gold mining, agriculture, and fisheries are among the most important means of subsistence of the economically declining multi-ethnic Republic of Suriname (South America). However, the lack of public health policies and legislation have led, among others, to the uncontrolled use of mercury for gold amalgamation and pesticides and herbicides for large-scale agriculture. The resulting environmental pollution is likely to affect particularly vulnerable populations such as pregnant women and their (unborn) children. This may occur after direct exposure to environmental pollutants and the consumption of contaminated food and interaction with (prescription) medications may influence the impact on health of such exposures. To date, no baseline assessment has been conducted regarding prescription medication use in pregnant women in Suriname. The aim is to assess prescription medication use in pregnant Surinamese women.
Methods: Information about the age, socio-economic status, and place of residence of the women who were pregnant in the year 2017 as well as medication claims has been extracted from the claims database of the State Health Fund (SZF), Suriname's largest insurance company. The criteria for selecting the pregnant women were, age between 16 and 49 years, having undergone a diagnostic echo, and having been tested for HIV, VDRL, and HBsAg. The demographic data were anonymized; prescription medications were recoded and categorized according to the WHO-ATC nomenclature. The relationships between the retrieved data were analyzed using Crosstabs in SPSS 24 and associations were tested using the Chi square test.
Findings: A total of 2,983 pregnant women were selected from the approximately 300.000 clients in the SZF database. Paramaribo (43 %) and Wanica (22%) were largest districts of residence. The mean age was 28 (SD 7) years. They received a total of 78,820 prescription medications, the most frequently prescribed ones were anti-anemics (25%), anti-bacterials (11%), analgesics (8%), and vitamins (6%).
Interpretation: Despite some bias (due to, for instance, uninsured individuals or clients from other insurance companies), the preliminary data from this unique pharmaco-epidemiologic study provide an important baseline to evaluate the impact of interactions between medication use and exposure to environmental contaminants during pregnancy on birth outcomes.
Source of funding (if none, enter "None"): The Fogarty International Center of the National Institutes of Health under Award Number U01TW010087-01.

SAT_154

Fish Consumption Patterns Among Pregnant Women Potentially Exposed to Mercury in Suriname

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Background: The Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) examines the impact of environmental exposures (including mercury) on birth outcomes in 1000 mother-child dyads in Suriname. One in four study participants had hair mercury levels exceeding WHO and US EPA action levels. Freshwater carnivorous fish, especially Hoplias aimara, Serrasalminae rhombeus, and Cichla ocellaris showed significant methylmercury bioaccumulation.
The purpose of this dietary assessment was to characterize fish consumption patterns in Suriname, where fish is a primary source of protein.
Methods: An interviewer-assisted dietary questionnaire was administered to pregnant women (n=798) enrolled in CCREOH.
Findings: Most women reported consuming fish (97%). On average, 2.6 [max: 35] servings (a serving size of 4oz) per week, of the most preferred fish type were consumed. Fish intake was higher among women who had three previous pregnancies (3.5 servings per week), of indigenous ethnicity (4.2 servings per week), with no or primary education (3.9 servings per week), living in the rural coastal districts (3.3 servings per week) compared to those living in urban districts (2.3 servings per week) but not those living in the interior (3.0 servings per week). Intake did not vary by maternal age.
Top ten consumed fish included Nebris microps, Callichthys caliichthys and Hoplosternum littorale, Plagioscion auratus and squamosissimus, Hoplias aimara, Hoplias malabaricus, Centropomus spp, Cynoscion spp, Cynoscion virenscens, Megalops atlanticus, and catfish. Participants living in the interior mostly consumed freshwater carnivorous fish including, Serrasalmus rhombeus and Cichla ocellaris. Freshwater carnivorous fish were frequently consumed among women aged 30+ years (53.1% vs. 44.8%; RR 1.19 [1.0-1.4]), women who had 4+ previous pregnancies (63.4% vs. 45.6%; RR 1.39 [1.2-1.6]), and women living in the interior (87.2% vs. 45.7%; RR 1.91 [1.7-2.2]). On average, women living in the interior consumed 2.6 (max: 8), 1.4 (max: 2), and 3.7 (max: 14) servings per week of Hoplias aimara, Serrasalminae rhombeus, and Cichla ocellaris respectively.
Interpretation: While fish consumption can be a major source of protein and beneficial fatty acids, consumption of mercury-contaminated carnivorous fish is resulting in exposures to mercury at levels of public health concern.
Source of funding (if none, enter "None"): NIH/FIC grants (U01TW010087-01, U2RTW010104) for CCREOH.

SAT_155

Impact of Household Air Pollution on Olfactory, Pulmonary, and Cognitive Function in Households of Karnataka, India

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Background: Household air pollution (HAP) from the burning of biomass fuels to cook or heat homes is a major public health problem in India and worldwide. The mechanisms by which air pollutants gain access to and impact the central nervous system are unknown. One possible point of entry is through the olfactory system due to its direct exposure in the nose. We sought to quantify HAP exposure in rural residents of India and evaluate its effect on olfactory, cognitive, and pulmonary functions.
Methods: We recruited one man and one woman (18-60 years old) from households near Kasturba Medical College (KMC) (Manipal, Karnataka, India). Fuel usage patterns for each household were characterized, and particulate matter (PM) levels over a 24-hour period were determined using a Dylos DC1700 air quality monitor. Olfactory threshold and identification was assessed by commercially available smell tests (Sniffin' Sticks). Cognitive ability was evaluated using the Montreal Cognitive Assessment. Pulmonary and nasal airflow were evaluated using spirometry and nasal peak flow. Nasal mucus and epithelial cells were collected and stored. Subjects also completed a brief health survey. The study was approved by the Manipal Institutional Ethics Committee and written, informed consent was obtained.
Findings: Initial data were obtained from 5 households (n=9 adults) after pilot studies of measures. All households relied upon wood and petroleum gas as fuel sources. Olfactory threshold varied widely across the sample size (median score/8 3, range 1, 7), whereas olfactory identification was high (median score/8 7, range 6, 7). Peak nasal inspiratory flow for men and women were 60-100 and 30-60 L/min, respectively. All participants reported at least one illness related to smoke exposure during the previous year (median 4, range 1, 9).
Interpretation: Initial data indicate that HAP exposure and related disease burdens are high in rural south Indians. Examination of olfaction as an indicator of brain exposure to HAP may help us understand its deleterious effects on human health.
Source of funding (if none, enter "None"): The University of Chicago

SAT_156

Exposure to Indoor $PM_{2.5}$ and VOCs and the Prevalence of Respiratory Symptoms among Nigerian Children Less than Five Years Old

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Background: Household air pollution (HAP) from burning of solid fuel is a leading cause of morbidity and mortality in Sub Saharan Africa. HAP, which exposes women and young children to large concentrations of particulate matter ($PM_{2.5}$) and volatile organic compounds (VOCs), has been linked to non-communicable diseases. Children (age<5years) are at higher risk of developing respiratory disorders like pneumonia and asthma because they are usually found with their mothers for long periods during cooking.

Methods: A cohort of fifty children born by non-smoking women of a randomized controlled trial (RCT) conducted in Ibadan, Nigeria (June 2013-October 2015) were recruited. Randomization included mothers in the control (C) group (cooked with either firewood or kerosene) and intervention (E) group (cooked with bioethanol-burning CleanCook stove). The current stove being used determined the classification of the children into the respective groups. Seventy-two hours household sampling for $PM_{2.5}$ and VOCs was performed with Blueair Airware air quality monitor that were placed in the bedrooms. Outdoor $PM_{2.5}$ concentration was determined using Edimax air box sensor. Prevalence of HAP-related respiratory symptoms among children (age<5years) was obtained from their mothers using an interviewer-administered questionnaire. SPSS was used to analyze the data and determine descriptive statistics and ANOVA at 5% level of significance.

Findings: Children were similar in age [39.16±6.13K; 36.21±7.50F; 37.22±5.60Emonths;$p>0.05$] Household $PM_{2.5}$ levels differed significantly across the groups [229.68±80.57K; 299.50±166.50F; 257.90±168.35µg/m^3E; $p<0.0001$]. VOCs concentration also showed similar trend [302.59±423.42K; 305.12±499.86F; 244.91±266.02ppb E; $p<0.0001$].No significant difference in VOC concentration was observed between kerosene and firewood households ($p>0.05$). The prevalence of running nose was significantly higher among children in the firewood/kerosene group (92.9%F;80.0%K) compared with the intervention group (66.7%E; $p=0.02$). One child in the firewood group had pneumonia.

Interpretation: Postnatal HAP exposure of children was significantly higher in kerosene and firewood homes compared to the intervention homes. Since HAP exposure results in adverse health impacts in adults and children, reductions in HAP exposure through use of cleaner cooking fuels and improved cooking technologies should be recommended in policy guidelines.

Source of funding (if none, enter "None"): Global Alliance for Clean Cookstoves through the United Nation Foundation. Susan and Richard Kiphart Family.

SAT_157

Mercury levels in hair from pregnant women from Suriname, South America, including sources of exposure

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Background: Artisanal and small-scale gold mining (ASGM) in the country of Suriname has led to local and regional contamination of the environment and biota with mercury. Our aim was to evaluate hair mercury levels in coastal populations and in interior communities where we hypothesized levels in participants in the interior would be higher because of their consumption of fish with higher levels of mercury.

Methods: Pregnant women were recruited from the capital Paramaribo and the city of Nickerie both of which are located on the coast and where mostly marine fish and freshwater fish that tend to have relatively lower levels of mercury are consumed. In addition, pregnant women from the interior were also recruited from several interior communities where current ASGM activities are ongoing. As part of our current research project, we have analyzed hair for total mercury using cold-vapor atomic absorption spectrometry from 354 pregnant women from Paramaribo, 83 pregnant women from Nickerie, and 44 pregnant women from the interior. Written informed consent was obtained from each subject prior to hair sampling, and this study has been approved by human subjects research boards in Suriname and the United States of America.

Findings: Women from the interior have hair mercury levels that are significantly higher ($p<0.01$) that those from women in either Paramaribo or Nickerie consistent with our hypothesis. Median levels of total mercury in hair were 2.22 ug/g (95^{th} %-ile; 6.96 ug/g) in the interior, 0.63 ug/g (2.00 ug/g) in Paramaribo, and 0.75 ug/g (2.05 ug/g) in Nickerie. These higher levels in the interior are consistent with reasonable consumption of local freshwater fish.

Interpretation: Hair mercury levels in pregnant women from the interior are similar to those that have been found in previous large, longitudinal studies including the neuropsychiatric studies of children in the Faroe Islands and the Seychelles. A question that remains is to whether or not children in the interior are experiencing neuropsychiatric decrements such as those observed in children from the Faroe Islands as opposed to the Seychelles.

Source of funding (if none, enter "None"): Fogarty International Center and the NIH awards U01 TW010087, U2R TW010104, R24 TW009561.

SAT_158

Understanding Lived Experiences of At-Risk Teenage Boys in Taiwan Through Photovoice

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Background: At-risk adolescents often have a range of unmet physical, developmental, and mental health needs and may suffer from negative outcomes, including substance use, economic instability, and increased likelihood of becoming adult offenders. Limited data exists regarding at-risk adolescent boys in Taiwan. This study aims to address this gap by: 1) identifying common themes about the lived experiences of at-risk boys in Taiwan, 2) generating compelling evidence to better advocate for these youth, and 3) empowering participants by helping to raise awareness about their needs and experiences.
Methods: Photovoice is a qualitative research method in which participants use photography and narratives to communicate their perspectives. Ten boys from a Taiwan residential treatment facility for teenage boys with backgrounds in foster care or the juvenile court system will participate in this study, which is facilitated by a US medical student of Taiwanese heritage. After receiving in-depth training on photography and Photovoice methodology, participants will spend three months taking photos that relate to their perceived health needs and sources of resiliency and support.
Then, in a series of facilitated individual and group meetings, the most powerful photos will be chosen and narratives will be added. Key themes will be discussed and a final set of photos best reflecting the group's experiences and messages will be compiled into an exhibit targeting local community members and stakeholders. The study has been approved by National Taiwan University and the University of Southern California.
Findings: Results are pending; however, it is expected that the study will shed light on a greater need for support systems in the lives of these youth. While some findings may be unique to the Taiwanese culture and setting, the results will add to the scant literature that suggests these youth lack attention, perspective and discipline in their living environments. Post-study reflections are also expected to show that the study led to participant empowerment.
Interpretation: It is expected the study will increase understanding of social determinants of health among at-risk Taiwanese youth and help inform policy recommendations regarding resiliency- and health-promoting services.
Source of funding (if none, enter "None"): Keck School of Medicine Dean's Research Scholarship

SAT_159

Increasing Health Literacy by Increasing Preventable Hospital Stays in Illinois

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Background: Older adults are more vulnerable to health inequities in the healthcare system and have more chronic illnesses and acute care needs. By investigating population health trends, one can identify certain variables that are associated with adverse health outcomes. This paper looks at population health data from county-level indicators in the state of Illinois.
Methods: It is hypothesized that the number of primary care physicians (PCPs) per capita and number of Medicare enrollees that are diagnosed with diabetes decrease the number of preventable hospital stays for Medicare beneficiaries in Illinois. Regression models were conducted to investigate at these trends.
Findings: The model for number of PCPs per capita and preventable hospital stays (adjusted R2= 0.991) and the model for number of Medicare enrollees with diabetes per capita and preventable hospital stays (adjusted R2= 0.991) was strongly associated.
Interpretation: Public health and social work professionals need to continue monitor these trends to increase the health literacy of the population while defraying healthcare costs to the state.
Source of funding (if none, enter "None"): None

SAT_160

A Holistic Approach to Healthcare in Maclovio Rojas, Mexico

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Background: Maclovio Rojas is a squatter community near Tijuana, Mexico that has limited access to healthcare, education, and professional skills development. Access to primary care is a challenge for many in Maclovio Rojas due to inadequate health insurance coverage. Fellowship for International Service and Health (FISH) is a student-run non-profit organization at the University of California, Los Angeles (UCLA) that focuses on improving access to healthcare and educational opportunities in Maclovio Rojas. Over the past 12 years, FISH has organized primary care clinics, health fairs, and English classes in hopes of empowering the community by providing them with regular access to healthcare and education.

Methods: Additional stakeholders include local physicians, community leaders, and Maclovio Rojas residents. FISH and community leaders work together to publicize programs such as health fairs and recruit participants for focus groups. This long-term relationship also allows residents to receive the services listed above even when FISH is not present. After conducting a comprehensive needs assessment in 2016, changes have been made to FISH's health model and English curriculum to promote a more holistic approach to healthcare including biological health, environmental awareness, and professional skills development.

Findings: From our newly-started focus groups, we identified health education as a need within the community; thus, we launched an online database where community members can have easy access to health education and other skill-building software. We have also improved our English lessons by creating structured lesson plans and interactive classroom presentations based off of reputable ESL workbooks. We began to incorporate online English-learning software and environmental health activities within our lessons to promote environmental awareness and professional skills development. With our new English lesson model, we saw a 16% average score increase in pre- and post- test performance and increased knowledge of environmental health determinants.

Interpretation: Ongoing challenges include the provision of additional services such as adult English lessons and consistent vision and dental care services. We also aspire to introduce environmental health interventions such as improved waste management and, when funding is adequate, a local water filtration system.

Source of funding (if none, enter "None"): Funding is obtained through school-sponsored grants at UCLA, including the Community Activities Committee Annual Fund and Community Service Mini Fund.

SAT_161

Use of the Precede-Proceed Model of Community Health Promotion to Establish a 'Power of Exercise' Program to Increase Health Knowledge in the Hispanic Population of San Jose Clinic

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Background: The Hispanic population is projected to be the majority in Texas by 2026, yet 1/3 of Hispanics lack health insurance, contributing to poorer health outcomes. San Jose Clinic (SJC) is a safety-net multi-discipline clinic that serves the uninsured with 51% of its patient population living below 100% of the federal poverty level. Prevalence of hypertension, diabetes, and heart disease are high among its predominantly Hispanic patient population. There is a lack of awareness or knowledge about these conditions and access to information about health promoting behaviors for disease management is limited. A group of Doctor of Physical Therapy (DPT) students conducted a service learning project from July-December 2017 to address these issues. A group based, multi-session "Power of Exercise" (POE) program was created. Program interventions included education, discussion, and experiential learning activities about how exercise can influence health. The primary outcome of the program was to provide the volunteer physical therapist (PT) staff with a ready-to-implement program and, through instruction, increase their self-efficacy in delivering the program to the at-risk population of SJC.
Methods: The PRECEDE-PROCEED Model of Community Health Promotion Planning was used for program development. A needs assessment revealed knowledge and awareness of health conditions, their behavioral causes, and how exercise can influence health as important issues. Project goals were to provide the PT staff with ready-to-use modules. The stakeholders were the SJC staff and PT volunteers. Future participants of the POE were patients identified as at-risk for diabetes, hypertension or heart disease by the medical staff and recruited by SJC staff. Sustainability was addressed by providing training to the PTs as well as a comprehensive facilitator's guide.
Findings: The primary goal of increasing self-efficacy of the PT staff in delivering the program was met by December 2017 following incorporations of suggestions made by PT staff. The program materials include pre-/post- questionnaires, process evaluations, and an outcome evaluation with an overall suggested timeline.
Interpretation: Challenges have been in gaining administrative approval to conduct the program. Upon approval, DPT students will assist in program implementation and evaluation with the ultimate goal of reducing risk factors for diabetes, hypertension and heart disease and improving quality of life of this underserved population.
Source of funding (if none, enter "None"): None

SAT_163

Alcohol availability, cost, age of first use and association with at-risk alcohol use in Moshi, Tanzania

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Background: The Kilimanjaro region has one of the highest reported alcohol intakes per capita in Tanzania. Age at first drink has been found to be associated with alcohol problems in adulthood, but there is less information on the age of first use in Kilimanjaro region and its effect on alcohol-related consequences later in life. Furthermore, local alcohol cost and availability may influence the prevalence of alcohol use and alcohol use disorder. This study was designed to explore the relationship of the age at first drink, perceived alcohol cost, and availability with alcohol use, dependence, and consequences.
Methods: Data on the age of first drink, alcohol use disorder, and alcohol consequences were collected from an alcohol and health behavior survey (N = 246, 43 women) in Moshi, Tanzania. Generalized linear models were used to test age at first drink, alcohol cost, alcohol availability, and their association with AUDIT scores, DrInC scores, and alcohol use.
Findings: Consuming alcohol at an age before 18 was significantly associated with higher AUDIT and DrInC scores, with odds ratios of 1.22 and 1.72, respectively. A female gender is a strong protective factor for both alcohol use and alcohol consequences, represented by an odds ratio of 0.27 with the AUDIT above 8 and an odds ratio of 0.26 with the DrInC score. A positive perceived alcohol availability is significantly related to higher alcohol use quantity, with the odds ratio of 1.6.
Interpretation: First use of alcohol before the age of 18 greatly heightens the risk of having alcohol consequences and progression to the development of alcohol use disorders. Therefore, age at first use is a reasonable target for intervention that looks for delayed first use as a way of preventing negative alcohol-related consequences later in life.
Source of funding (if none, enter "None"): This project was funded by the Fogarty International Center of the U.S. National Institutes of Health under Award Number K01TW010000 (PI, Staton) and the Duke Division of Emergency Medicine.

SAT_164

The Prevalence and Determinants of Herbal Medicine Use during Pregnancy in Rural Malawi

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Background: Many pregnant women in sub Saharan Africa (SSA) reportedly use herbal medicines. In vitro studies have shown that some of the herbs induce significant uterine contractions that could lead to various life-threatening complications. Notwithstanding, little is known about the prevalence and determinants of herbal medicine use during pregnancy in low-income countries, where most of the maternal deaths occur. Understanding the drivers of herbal medicine use and the magnitude of the users is an essential step towards development of appropriate interventions. Consequently, we assessed the prevalence and factors that determine the use of Mwanamphepo, a type of herbal medicine commonly used to induce labour in Malawi and neighbouring countries.
Methods: We analysed secondary household data relating to 8,219 pregnancies delivered between 2005 and 2010 in Mchinji district, Malawi. The data were collected from pregnant and postpartum women as part of a cluster-randomised controlled trial (RCT) of a community intervention to reduce maternal and neonatal mortality. Data were collected using a questionnaire and the women were asked questions about their maternity history, demographic characteristics, pregnancy outcomes and exposure to Mwanamphepo. Descriptive analysis was performed to describe the prevalence and population. Mixed-effects models were fitted to examine determinants of Mwanamphepo use while adjusting for relevant covariates and the clustered nature of the survey.
Findings: Mwanamphepo was used in 2,113 out of 8,219 pregnancies, which represents an estimated prevalence of 25.7%. Childbirth with a traditional birth attendant (AOR=3.65; 95% CI= 2.94-4.54), home delivery (AOR = 2.31; 95% CI=1.87-2.83) and unsuccessful previous pregnancy (AOR=1.32; 95% CI=1.12-1.54) were significantly associated with increased odds of using Mwanamphepo. Being in the highest wealth tertile (AOR=0.83; 95% CI=0.69-0.99) and attending secondary or higher education (AOR=0.68; 95% CI=0.47-0.99) were significantly associated with decreased likelihood of using Mwanamphepo. For each additional year in age, the odds of using Mwanamphepo significantly decreased by 4% (AOR=0.96; 95% CI=0.95-0.98).
Interpretation: The use of herbal medicines of unproven safety during pregnancy is high. This requires some attention as the herbs may affect pregnancy outcomes. Individual and social factors, previous pregnancy experience and the place of delivery influence herbal medicine use in pregnancy. Interventions to promote safe use of alternative/complementary medicines in pregnancy should recognise these factors.
Source of funding (if none, enter "None"): None

SAT_165

Association of Adverse Childhood Experiences with Health-risk Behaviors among College Students in Zambia

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Background: Adverse childhood experience (ACE) is a significant risk factor for health. It may affect the growth of brain structure and nervous system, thereby further leading to psychological and physiological adverse effects in adulthood. Nevertheless, the association between ACE and health risk behaviors among young adults in Zambia remains unclear.
Methods: A total of 644 college students in Lusaka, Zambia participated in this cross-sectional study. A self-administered questionnaire was used to collect information on their ACEs and health risk behaviors (current smoking, binge drinking, suicide attempt, risky sexual behaviors and illicit drug use). A two-step cluster analysis was performed to identify groups of participants with similar health risk behaviors into “healthy cluster” and “unhealthy cluster”. Logistic regression was performed to examine the association between the number of categories of ACEs and the clusters of health risk behaviors.
Findings: Among the participants, 364 (58.3%) reported having some forms of ACEs, with 27.6%, 16.3% and 14.4% being exposed to 1, 2, and ≥3 ACEs, respectively. The prevalence of health risk behaviors ranged from 6.0% to 34.2%. Overall, ACEs were associated with increased risk of current smoking, binge drinking, suicide attempt, risky sexual behaviors and illicit drug use in both males and females, although some associations were statistically insignificant. Two-step cluster analysis suggested that male students with ≥3 ACEs (OR: 3.20; 95%CI:1.55-6.64) and female students with 1 ACE (OR: 2.18; 95%CI:1.23-3.87) and ≥3 ACEs (OR: 3.83; 95%CI:1.69-8.67) were more likely to engage in the unhealthy cluster than those without ACE.
Interpretation: Findings of this study indicate that ACEs were associated with individual and clustering of health risk behaviors among college students in Zambia. Our results highlight the need for screening the individuals for early intervention and/or treatment in order to reduce risky health behavior-related consequences.
Source of funding (if none, enter "None"): None

SAT_166

Analyzing the affordability and distribution of glasses to patients in Chincha & Sacred Valley, Peru

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Background: The Peru Health Outreach Project (PHOP) organizes an annual medical mission trip and provides medical services and education to Sacred Valley (a rural site) and Chincha Alta (an urban site), Peru. The vision services provided have proven to be some of the most popular offerings amongst visiting patients. However, little is known about what niche this program fills in these areas' ophthalmological services. Our study aims to look at the different factors that affect the affordability and distribution of glasses to PHOP patients in Chincha and Sacred Valley.
Methods: This was a cross-sectional study that utilized convenience sampling of all patients that were referred to the vision clinic over a 2-week period. Patients filled out a survey that included past medical service utilization, previous use of glasses, current income, employment, age, and other socioeconomic data. Statistical analysis of binary categorical data was conducted to analyze the differences in the demographic data between the two regions using a 2-proportion z-test. Numeric data was analyzed using an unpaired t-test.
Findings: Overall, 470 patients had filled out the survey. There were significantly more patients who had previously worn glasses in Chincha (54.9%) as compared to Sacred Valley (30.8%) ($p < 0.01$). Most patients who had previously worn glasses received them from a private doctor (25.9%) or a community clinic (16.1%). The primary reason reported by respondents for previously being unable to receive glasses was cost (46.9%). Respondents who were concerned about cost reported, on average, a mean income of 123.3 Soles/week ($37.34/week) compared to 217.3 Soles/week ($65.80/week) for respondents who were not concerned about cost ($p < 0.01$).
Interpretation: The issues of cost underscore the importance of affordable glasses for these two regions within Peru. We provided all qualified patients with glasses; because more patients in Sacred Valley had never worn glasses before as compared to Chincha, we believe that the cost burden of acquiring glasses is a greater issue in Sacred Valley. Further research is needed to better characterize this issue.
Source of funding (if none, enter "None"): None

SAT_167

Impact of language on cesarean section odds among non-US born Latinx women

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Background: Simultaneous increase of Latinx immigration to the U.S. and cesarean delivery has warranted research into language's impact on obstetric health care practice. This study seeks to explore the negative health effects caused by unindicated cesarean sections on non-U.S. born Latinas.
Methods: Using multivariate logistic regression of 2011-2012 National Health and Nutrition Examination Survey (NHANES) data (n=1097), we hypothesized that there was an association between odds of cesarean delivery and language spoken at home in a sample of non-U.S. born Latinas. Covariates controlled for include: birth country, time spent in the U.S., age, race, income, diabetes during pregnancy, and health insurance status.
Findings: Of those who had a cesarean section, 54.4% spoke primarily Spanish and 39.3% spoke primarily English in the home. The odds of cesarean among women speaking primarily Spanish in the home exceeds twice the goal of Healthy People 2020. Women within the >$75,000/yr and <$24,999/yr income range had a 40.44% and 40.8% prevalence of cesarean, respectively. Income was a confounder. After adjusting for income and covariates, women who speak primarily Spanish in the home had 2.13 (95% CI 1.31-3.46) greater odds of cesareans than women who speak primarily English in the home.
Interpretation: Findings demonstrate a relationship between language spoken at home and cesareans; further affected by income. These findings demand greater attention to the disparities in healthcare services, specifically in obstetrics health, for non-US born Latinas.
Source of funding (if none, enter "None"): None

SAT_168

Improving Patient Adherence to HIV Medication Therapies through Pharmacy Counseling in South Africa

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Background: The provision of antiretroviral (ARV) treatment in South Africa now begins upon diagnosis [1], thus increasing the number of patients filling prescriptions with pharmacy personnel. Medication adherence remains a serious issue [2], as viral suppression requires accurate and consistent dosing [3]. Structural (socioeconomic)[4-6], personal (beliefs, language)[7-14], and social (stigma)[15-20] barriers significantly disrupt patient adherence.

Adherence counseling improves patient adherence [21-24]; however, it is often not used due to time constraints [25, 12] or the lack of training and confidence professionals have in their own skills [23-25]. Despite their frequent contact with patients with HIV [26], pharmacy personnel could be missing an opportunity to impact patient adherence.

Methods: Twenty-four interviews were conducted with pharmacists and support staff in public clinics in Eastern Cape, South Africa, to assess their perspectives and reported practices. Transcriptions were analyzed for the descriptions of their roles in HIV patient care and barriers to adherence counseling. Counseling strategies for improving adherence, based on the analysis, were then pilot tested with role plays and discussion among pharmacy personnel for feedback.

Findings: The perceptions of pharmacy personnel of their role in patient adherence primarily focused on their responsibilities in the pharmacies within their facilities (i.e. dispensing medications) and not on improving adherence. Overall, interviewees were very aware of the barriers to adherence patients face as well as the barriers to communicating with patients effectively. However, they were not aware of how to counsel patients struggling with adherence and overcome these barriers as both the interviews and pilot trainings revealed.

Interpretation: The results of the interviews and pilot training revealed not only a need for strengthening adherence counseling skills of pharmacy personnel but a strong interest as well. With a relatively short training course, participants demonstrated significant improvements in counseling. Strengthening actors within the existing healthcare workforce already familiar with patient problems and integrated into patient care is a strategic and attainable improvement in a low-resource setting.

The next steps for this project include interviews with HIV patients regarding their perspectives with pharmacy personnel before creating a comprehensive training for low-resource settings that can be implemented in similar regions.

Source of funding (if none, enter "None"): Faculty Research Incentive Fund (FRIF) (Internal grant, St Louis College of Pharmacy)

SAT_169

Examining the Role of Women's Empowerment and Socially-Acquired Food Norms in Predicting Anemia Status Among Reproductive-Aged Women in South India

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Background: According to the World Health Organization, approximately 50% of reproductive-aged women in India suffer from some form of anemia. While fertility rates and nutritional deficiencies are common causes, women's intake of nutritional items are influenced by local customs, such as social norms that regulate food consumption, and their level of empowerment within their communities. The current study investigated the role of fertility, women's empowerment, and cultural rituals of food in predicting anemia status among reproductive-aged women residing in Mysore, Karnataka, India.
Methods: Data for this cross-sectional study were collected ifrom October 2016 to July 2017. Participants included 177 reproductive-aged women from rural and urban locations. Women completed structured questionnaires that included the following food rituals and norms: religious fasting, vegetarianism, and meat avoidances for religious purposes. Indicators for empowerment included education level and women's control over household finances. Participants also provided sociodemographic information, such as age, fertility, and whole venous blood to assess hemoglobin levels. Anemia status was categorized as normal, moderate, and severe, with moderate/severe anemia defined as hemoglobin below 10.0 g/dL.
Findings: One-half of reproductive aged women were anemic (25.0% had severe anemia and 26.5% had moderate anemia). Hemoglobin was associated with education (ß= 0.09, p=0.03), fertility (ß= -0.43, p=0.01), and moderately associated with age (ß= 0.06, p=0.09). Religious fasting, meat avoidances, and women's control over household finances did not predict hemoglobin levels.
Interpretation: To our knowledge, this is one of the first studies to investigate the role of socially-acquired food norms and women's empowerment in impacting women's anemia status. Although we did not find support for these factors in predicting anemia, results suggest that interventions to reduce anemia should focus on family planning and education among reproductive-aged women.
Source of funding (if none, enter "None"): Caitlyn Placek was funded by the Global Health Equity Scholars Training grant from the Fogarty International Center at the National Institutes of Health [R25 TW009338].

SAT_170

Access and Utilization of Healthcare Resources by Syrians in the United States

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Background: The population of Syrians in the US is increasing. No studies that examine health status and access to care among Syrians in the US currently exist. This study aims to: 1. Characterize access to care and utilization of healthcare among Syrians in the US; 2. Explore language preferences and how it influences patients' preference for healthcare providers.
Methods: This cross-sectional study utilized a self-administered questionnaire in both English and Arabic distributed at social events attended by Syrians in various cities in California and Florida from January-August 2018. Eligible participants were 18 years and older, living in the US, with both parents of Syrian descent.
Findings: Of the 530 participants, 56% were female and 44% were male with an average age of 41.66 (SD=16.47). About 83% were born in Syria, with an average of 16 years lived in the US (SD=11.55). About 86% reported having health insurance. The most common chosen reasons for lack of insurance were: "I cannot afford it" (38.98%), "I do not know how to apply for health insurance" (35.59%), "I don't get sick enough" (23.73%) and "other" (28.81%).
About 78% had undergone a routine healthcare examination within the past year. Among those that had not, the most common reasons were related to low perceived need, including "I do not feel sick" (85.14%) and "I do not see the need for yearly checkups" (18.92%), and lack of time (29.73%). Surprisingly, cost and language difficulties were not significant barriers. Compliance with recommended screening tests was low: only 35.16% of participants were up to date with colonoscopy and only 42.18% of females were up to date on mammography. The overall majority (68.58%) preferred Arabic versus English and 52.54% preferred a healthcare provider who speaks Arabic. However, among those who preferred Arabic, 68.13% preferred a healthcare provider who spoke Arabic compared to 17.76% of those preferring English.
Interpretation: Despite the fact that Syrians in the US appear to have adequate healthcare access, utilization of services, especially preventative care, is low. Increasing education among this population about the importance of routine check-ups and screening tests could improve health outcomes. Tailoring programs to Arabic-speaking populations, and increasing access to Arabic-speaking healthcare providers, are also critical.
Source of funding (if none, enter "None"): None

SAT_171

Assessing Access to Healthcare and Medications in Communities in Quetzaltenango, Guatemala

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Background: Vamos Guatemala is a service learning program in which medical students, mentored by faculty physicians, provide primary care to underserved populations in Quetzaltenango, Guatemala. Since the program's inception in 2011, no evaluation has been conducted to assess healthcare access in communities served. The purpose of this project is to evaluate the role of Vamos Guatemala's services and assess ways to establish longitudinal care.
Methods: The study was conducted in three communities which are routinely served by Vamos Guatemala: 1) Women's Center, 2) Xecam, and 3) Cuchilla. Stakeholders included our community leader who helped identify clinic locations, and the Xecam community clinic, with whom a longitudinal relationship has been maintained for years. As part of their medical history, all participants who received care were interviewed about access to and use of medical services and medications in the past year.
Findings: A total of 178 patients were surveyed. At the Women's Center, 52% visited a physician and 50% accessed medications in the previous year. Of those patients, 20% received care and 12.9% received medications from a previous Vamos Guatemala team. In Xecam, 57% reported visiting a physician in the previous year and 60% accessed medications. Of those patients, 60% and 62.5% of patients reported the regional health center in Xecam as where they received healthcare and medications, respectively. In Cuchilla, 74% of the patients reported visiting a physician and 83% accessed medications in the previous year.
Interpretation: Lack of financial resources and limited access remains a problem in these communities. For some, Vamos Guatemala serves as the only form of healthcare due to highly limited access. Regional health centers provide care to a large percentage of the community, suggesting a need for collaboration in future trips to address longitudinal care in communities with greater access. Strengths of the study include a large sample size in communities with varying degrees of access to care. Limitations include potential translation barriers and sample bias.
Source of funding (if none, enter "None"): Travel scholarships awarded by UT Health San Antonio Center for Medical Humanities and Ethics, as well as group fundraising events and donations.

SAT_172

A Scoping Review of Sexual Minority Women's Health in Latin America and the Caribbean

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Background: Sexual minority women (SMW; e.g., lesbian and bisexual women) worldwide experience considerable stigma, prejudice, discrimination and violence that contribute to sexual-orientation-related mental and physical health disparities. Research, the great majority of which has been conducted in high-income countries, shows strong associations between these factors and poor mental and physical health. However, we know little about the health of SMW in low and middle income countries, such as in Latin America and the Caribbean (LAC), where stigma, discrimination and barriers to health care are likely greater.
Methods: As a beginning step in understanding health issues for SMW in LAC we used multiple databases (i.e., PubMed, Scielo, LILACS, PsycINFO, LGBT Life, Embase, and CINAHL) to conduct a comprehensive search for peer-reviewed research articles about the health of SMW in LAC. We included all data-based articles through 2017 that were in English, Spanish or Portuguese. Through a full text review of titles and abstracts we found and reviewed 19 articles that met inclusion criteria.
Findings: More than half of the studies we reviewed were conducted in Brazil (n=7) and Mexico (n=5). Sexual health was the most studied health issue (n=10), followed by substance use (n=5) and violence (n=5). SMW were at increased risk of STIs related to low use of barrier contraceptive methods during sexual encounters with men, and low levels of sexual health education. Findings suggest that SMW are reluctant to engage with the healthcare system and also fear seeking preventive screenings. SMW reported higher rates of poor mental health (depression and disordered eating) and substance use (tobacco and alcohol use) than heterosexual women. Gender-based violence was identified as a significant concern for SMW in LAC.
Interpretation: Despite the dearth of research in LAC we know from various sources that SMW throughout the world suffer from stigma, discrimination, and violence that negatively impact their health outcomes and access to care. Pervasive stigma and other inequities that are prominent in LAC contribute to lack of acceptance and barriers to health care among SMW. To promote the health of SMW worldwide, strategies targeting individual, family, community, and societal levels are needed.
Source of funding (if none, enter "None"): None

SAT_173

Determinants of Fresh Still Births in Mubende District, Rural Western Uganda: A Case Control Study

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Background: Fresh still births make up half of the global still birth rate. In Uganda, they contribute to high perinatal
mortality of 70 per 1000 live births. Research shows that FSB can be prevented however; Mubende district
continues to register poor newborn outcomes with an FSB rate of 19 per 1000 live births and yet remain under researched. The study aimed at establishing the determinants
of FSB in Mubende district, in rural Western Uganda.
Methods: Unmatched facility-based case control study was conducted .Cases were single Fresh Still Births delivered at
the heath facilities in the last 12 months and Controls were single live babies delivered in the same period.
The study included mothers who were admitted in labor and had single FSB and single live births and excluded mothers whose information was missing to avoid misclassification. Data from maternity registers and in-depth interviews with purposively selected cases was used. Schesselmann's formula of 1982 , (Schlesselmann, 1982) was used to determine the sample size of 364 respondents. Simple logistic regression was used to get Crude and adjusted odds ratios with 95% confidence intervals at $p<0.05$.
Approval to conduct the study was sought from the Makerere University College of Health Sciences Institutional Review Board. Informed and written consent was sought from the mothers of cases.
Findings: The mean age of the mothers was 24.8 years with an average parity of 2.9 children. Chi square analysis
revealed that laparotomy delivery (92.3%) was associated with FSB. Secondary stage of labor and being referred from Traditional Birth Attendants (TBA) were significant determinants of fresh still births (aOR= 7.37, 95% CI: 1.98-28.48) and aOR=2.11, 95% CI: 0.01-3.09 respectively.
The test of model fitness using Pearson chi-square revealed a good fit at $p = 0.856$ and pseudo R^2 at 0.266,
indicating that the outcome was able to explain 26.6% % of the variation in the independent variables. Using
qualitative and quantitative methods of data collection strengthened the study. However, maternity registers
did not capture some factors that might have been useful for this study.
Interpretation: Delay to seek skilled obstetric care leads to complications that result in FSBs.
Source of funding (if none, enter "None"): None

SAT_174

Predictors of Perceived Stress and Depression during Early Pregnancy in Suriname: preliminary results of the Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH)-MekiTamara study

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Background: Depression and stress during pregnancy are risk factors for adverse health effects in mother and child. There is no systematic reporting on the impact of prenatal stress during early pregnancy on depression in multi-ethnic Suriname, South America. The Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH)-MekiTamara study assesses the influence of chemical and nonchemical stressors on pregnant women and pediatric neurodevelopment. This study aims to determine the predictors of perceived stress and depression in pregnant women potentially exposed to mercury during early pregnancy in Suriname.
Methods: Consented participants 16 years and older with singleton gestation below 27 weeks were recruited starting December 2016 in all 3 study locations. The standardized Edinburgh Postnatal Depression Scale (EPDS cut off ≥12 for probable depression) and Cohen Perceived Stress Scale (PSS) (cut off ≥ 20 for high stress) were used to assess depression and prenatal stress respectively. The association between perceived stress and depression was examined using logistic regression analyses, adjusted for maternal socio-demographic factors. Results are expressed as crude and adjusted OR with 95% Confidence Interval (95% CI) and p-value <0.05.
Findings: Data from 722 pregnant women were analyzed; 24.9% had EPDS scores ≥12, 30.2% had a high perceived stress level. 49.1% of women with a high stress level, had EPDS scores ≥12. Each one-unit on the stress scale is associated with a 32% increase in the odds of depression (OR 1.32 [1.25-1.40] p<0.001). Women with high stress levels were more often younger than 20 years (OR 2.07[1.27-3.38] p=0.004), had lower household incomes (OR 1.44 [1.00-2.06] p=0.05) and were lower educated (OR 2.43 [1.47-4.00] p<0.001): Ethnicity and marital status were not associated. In multivariate analyses education (OR 2.06 [1.15-3.70] p=0.02) and perceived stress (OR 5.46 [3.78- 7.91] p<0.001) remained associated with probable depression.
Interpretation: One out of 4 pregnant study participants potentially exposed to mercury have EPDS scores indicative of probable depression, 3 out of 10 participants have high stress levels and nearly half of these women have probable depression. These findings emphasize preventive actions to reduce prenatal stress and increase wellbeing during critical physiological changes in at-risk future mothers.
Source of funding (if none, enter "None"): FIC/NIH U01TW010087-01, U2RTW010104

SAT_175

“I Am Still Confused as to What Caused the Problem”: Mothers in Northern Ghana Report Not Understanding Causes of Newborn Illness and Death

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Background: Neonatal morbidity and mortality remain a significant challenge in Ghana, due in part to delays in care-seeking for newborn illness. Given the relationship between care-seeking and understanding of illness, this study aimed to explore mothers’ perceptions of cause of illness and/or death in rural northern Ghana.

Methods: The study was conducted as part of the larger PREMAND project in rural northern Ghana, which was implemented across four districts in northern Ghana (Sissala East, Kassena-Nankana West, East Mamprusi and Kassena-Nankana municipality). All neonatal deaths and near-misses (those babies who survived a life-threatening complication) in the districts in 2015 and 2016 were identified through a community- and facility-based surveillance system. Mothers of the deceased were contacted and interviewed. Qualitative data related to care seeking were obtained through an open narrative. The narratives were audio recorded, transcribed and imported into NVivo 10.0. Narratives that included explicit discussion of whether the mother understood what caused her baby’s illness or death were included in the analysis. Qualitative analysis followed the Attride-Sterling methodology.

Findings: Interviews with 156 mothers included discussion of their perception of the cause of newborn illness or death, including 108 interviews with mothers whose babies died and 48 interviews with mothers whose newborns survived a life-threatening illness. Only 14 of the 156 mothers interviewed reported understanding the cause of death or illness of their babies. Those women who did not understand were either not told (providers told family members instead of the mother, providers did not tell mothers to ‘protect’ them, or mothers were afraid to ask) or were told but did not understand (due to a variety of reasons including language barriers, complex explanations, or being too emotional to ‘hear’ the explanation).

Interpretation: Most mothers with sick newborns in rural Ghana did not understand what caused their illness or death. Newborn health outcomes may be improved by increased maternal and familial awareness and understanding of neonatal illnesses and causes of death. Future interventions need to address communication issues that impair mothers’ understanding, facilitate recognition of danger signs, and prompt timely care-seeking.

Source of funding (if none, enter "None"): USAID-Ghana, University of Michigan, Navrongo Health Research Center

SAT_176

La Maison Bleue: Strengthening Resiliency Among Recently-Arrived Migrant Mothers Living in Montréal, Canada

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Background: La Maison Bleue is a perinatal health and social centre, based within the community in Montreal, that provides services during pregnancy up to age five to families living in vulnerable contexts. The study aimed to describe: 1) the challenges and protective factors that affect the well-being of recent, migrant families receiving care at La Maison Bleue; and 2) how La Maison Bleue strengthens resiliency among these families.
Methods: We used a focused ethnography, a qualitative methodology that involves describing and interpreting the shared and learned patterns of behaviours, beliefs and values among a specific cultural group, in this case “recent, young migrant families”. Recently-arrived immigrants, refugees, asylum seekers and undocumented migrants were invited to participate. Recruitment was facilitated by La Maison Bleue staff. We collected data from September to December 2017 via semi-structured interviews and participant observation. 24 mothers participated in the study. For interview participants (n=9), three were citizens, one was a refugee, two were asylum seekers, two were immigrants and one had no status. Women were from a range of countries including Morocco, Democratic Republic of Congo and Cameroon. Data were thematically analyzed using a resiliency lens. The study was approved by the McGill University and the Health and Social Services Center ethics' committees.
Findings: Challenges to well-being included family separation, isolation, loss of support, the immigration process, an unfamiliar culture and environment, and language barriers. From this study, resiliency was a process, rather than a static trait, influenced by accumulated life experiences. Resiliency was also not just an individual capacity, but rather a process that necessitates the social environment to provide resources to newcomers. La Maison Bleue fostered resiliency by; creating safe spaces, offering holistic care that responded to their health and psychosocial needs and by empowering women to achieve their full potential.
Interpretation: In the current political climate, neediness of migrants is viewed negatively and a drain on scarce resources. Contrary to this discourse, migrant mothers in our study had many strengths and were highly motivated to integrate into their new country. Furthermore, the results suggest that public health providers should pay greater attention in identifying and fostering the strengths of migrant mothers to promote their successful settlement.
Source of funding (if none, enter "None"): None.

SAT_177

Disease and Tribal vs. Nontribal Status as Indicators of Whether Patients Follow-Up on Doctors' Referrals in Rural Karnataka

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Background: The Mobile Health Unit (MHU) is an initiative of the SVYM Vivekananda Memorial Hospital (VMH) intended to reach rural communities in Mysore District. These communities are separated by large distances from Primary Health Centers (PHCs) where members would often have difficulty receiving primary care. Weekly, MHU doctors circulate to each community, treating and, if necessary, referring patients for further treatment at PHCs. However, MHU data gathered from April 2017 to April 2018 indicated that patients often did not follow-up on doctors' referrals. We hypothesized that the disease a patient is referred for determines whether they seek further treatment.
Methods: Patient information including age, sex, caste, tribal vs. non-tribal status, village, reason and date of referral, referring physician, follow-up date(s), and referral outcome were documented for each person seeking treatment from the MHU. Once de-identified, patient data were grouped into categories of disease that had a sample size of greater than four individuals. All patients with an outcome of "migrated, death, not available," or had no documented result were removed from the sample size, leaving a total of 142 entries to analyze. Outcomes labeled as having gone to a "PHC, VMH," or documented as "cured" counted as positive for follow-up. Those labeled as "postponed" were treated as negative.
Findings: Chi-squared analysis resulted in a significant p-value of 0.0090, with UTIs and trauma receiving the most follow-ups. Furthermore, we analyzed whether age, sex, tribal vs. nontribal status, tribal caste, physician, village distance, and female urogenital conditions also predisposed patients to seek care after referrals. Only tribal vs. nontribal status proved significant with a p value of 0.0031.
Interpretation: Though more analysis with a biostatistician's aid will be performed before completion, initial work suggests an association between patient discomfort levels and seeking further healthcare. Additionally, cultural differences between tribal and nontribal communities suggest that qualitative analysis is necessary to determine why tribal members follow-up less often than their nontribal counterparts. Limitations of the study included small sample sizes for individual categories of disease and lack of biostatistical expertise, but preliminary analysis proves promising in our ability to provide further healthcare access for both tribal and nontribal communities in rural Karnataka.
Source of funding (if none, enter "None"): None

SAT_178

Why are babies dying in rural northern Ghana? It depends on where they live

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Background: Like many low-resource countries, Ghana continues to struggle with high rates of neonatal death. Variability in resources, beliefs, and practices within and across districts likely influences how and why babies are dying by location, yet little data exist on this topic.
Methods: As part of a larger study, information was collected on the location and cause of all neonatal deaths in 4 districts in rural northern Ghana over a 20-month period. Cause of death was determined using a verbal autopsy survey and coded by a single panel of expert physician coders for all districts. Qualitative interviews were also conducted to understand the perception of respondents (mothers or close family members) about what happened surrounding the illness and what could have been done differently.
Findings: Cause of death was determined for 246 neonatal deaths across the 4 districts, and the cause varied greatly by district. While the leading cause of death was neonatal sepsis in Sissala East (SE) (40%, N=28), it was prematurity/low birth weight in East Mamprusi (EM) (40%, N=47) and Kassena Nankana West (KNW) (50%, N=10), and birth asphyxia/birth trauma in Kassena Nankana Municipal (KNM) (26%. N=10). How respondents answered the question “could something have been done differently?” also varied by district, with the majority of respondents in EM saying “no” (60%) while in the other three districts, the majority of respondents said “yes” (47-68%).
Interpretation: These findings exemplify the importance of incorporating geography into data collection, and the need to consider that resources and behaviors at the local level can greatly influence outcomes. Even if death rates are similar, the causes of death can vary within regions, which should have an impact of the types of interventions employed. A community with high rates of sepsis would likely require a different intervention than one that struggles with complications from prematurity, and a community that believes nothing could have been done differently to save a baby’s life would likely also require a different type of intervention – such as one that works with local religious leaders or addresses community norms of deference to authority figures like medical professionals, for example.
Source of funding (if none, enter "None"): USAID-Ghana, University of Michigan, Navrongo Health Research Center

SAT_179

Role of Family Support Groups in Improving Health Outcomes of HIV-Positive young women in Low Resource Settings.

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Background: In Uganda, Family Support Groups (FSGs) were adopted as part of the USAIDS broader program to eliminate HIV transmission from mother to child. The bigger objective was to encourage HIV-positive women enrolled in EMTCT programs to take an active role in supporting and advising their peers and partners to actively seek and remain in HIV care. The role of FSGs was assessed in this study.
Methods: In this qualitative study, 269 HIV positive young women and their partners who attended HIV clinics were purposively selected from seven health facilities in highly burdened Kalangala fishing district in Uganda. Group interviews were conducted (men and women separately) for both HIV positive women and partners who belonged to a Family support Group and those who did not belong to one. A total of 5 key informant interviews (1 HIV-positive Male champion, 1 HIV-positive Mentor Mother, 2 FSG facilitators, 1 Adherence officer in charge of EMTCT) were done.
Findings: The study found significant differences in the reported positive health between participants who attended FSGs versus those who did not. Family Support Groups borrowed a peer concept, which recognized equal status hence maximized "meaningful engagement" and raised hopes for survival. The fact that the group's sessions were led by “Experts by experience” broke the long standing self-stigma and promoted treatment adherence. However, FSGs did not improve coping, trust between partners and disclosure outside the FSG itself. And even if, some instances showed that some HIV-positive young male champions emerged from traditionally female dominant environments, feelings of fear and loss still overwhelmed their decisions to fully participate, to an extent of influencing their female partners. Failure to agree to terms often resulted into domestic violence, public withdrawal, suicidal tendencies like self harm and invlovement in risky behaviors including sex and use of drugs.
Interpretation: Family support groups can be vital in strengthening capacities of PLHIV in reducing new HIV infections and improve health for members that voluntarily agree to them, but their effects can be brutal if not well monitored. Also, if the benefits and lesson learnt are not well documented, the current prevention efforts and progress towards the 90-90-90 will be undermined.
Source of funding (if none, enter "None"): None

SAT_180

Outcome Of CPAP Use In Neonates at KUTH-Rwanda In 2015

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Background: The study was done to look into why neonatal death consisted of 44% of deaths in under five aged children, Even though continuous positive airway pressure (CPAP) was introduced which facilitates transitioning from intra-uterine to extra-uterine life.
Our main aim or hypothesis was there was a remarkable mortality rate in Neonates regardless of CPAP being used and there wasn't any published outcome of CPAP usage in Rwanda.
The study was done in Rwanda in one of its leading teaching hospitals called Kigali University Teaching Hospitals in Heart of Kigali.
Methods: This study was descriptive and was carried out retrospectively from the month of January to December 2015. The data I needed was retrieved from the patient's files and hospitals records.
The participants were neonates admitted in the Kigali University Teaching Hospital for the year 2015.Inclusion criteria was the neonate used CPAP. Exclusion criteria was that they did not use CPAP. Total number who used CPAP was 185. male at 53.5%, while females were 46.5%.
Consent for the study was by the ethics committee of medical of Kigali University Teaching Hospital.Results got was by statistical analysis done using SPSS software version 20.
Findings: The results came in that most were pre-term with very pre-term at 55.1% and late pre-term at 27.6% with small number of pre-term at 1.1% there were also term babies at 16.1% .The neonates that were found to have VLBW at 35.7% ,LBW at 27%,ELBW at 20.5% and only 16.8% had accepted weight.The five top diagnosis were prematurity at 79.5%,respiratory distress syndrome at 42.7%,17.8% had neonatal infection,11.4% had transient tachypnea of the new born and sepsis had 9.4%.The mean days on CPAP SD:3.5 +-2.872days.As our outcome 40% died and 60% improved.
Interpretation: In summary our results showed us that Prematurity, low-birth weight neonates and those not using steroids and Aminophylline as should be administered had a high chance not to survive regardless of CPAP use.We found a need in improving on the current antenatal care system, maternal education and lifestyle change to try and prevent premature labors ,treat maternal infection effectively hence better outcome in neonates.
Source of funding (if none, enter "None"): None.

SAT_181

Fathers of Adolescents in Southern Chile: Perspectives on adolescent sexual and reproductive health

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Background: In the last 5 years, the Chilean Ministry of Health has initiated numerous national public health campaigns to reduce rates of teenage pregnancy and sexually transmitted infections, such as HIV. Research in the last decade has identified sources of information and social factors that influence the sexual behavior of the Chilean adolescent, and while parents are a statistically significant source of information, the content of that education has yet to be explored. This study was initiated in order to understand the experiences and knowledge of fathers of adolescents in Chile's 7th region regarding sexual behavior, sex-education, and reproductive health. We hope to learn where their perspectives come from, how those perspectives influence what they teach their children, and if they are informed by the national preventative programs. Finding attitudes that may either promote or discourage safe-sex practices in adolescent sexual encounters could guide future interventions.
Methods: The study was conducted in Hospital Base de Linares, a regional hospital in Linares, Chile. Participants were recruited from the polyclinic, urology, and cardiology ambulatory clinics within the hospital. Participants were adult fathers of adolescent children. Inclusion criteria were having at least one 'adolescent child' defined as being between 9 and 19 years of age at the time of interview, and a willingness to participate. Interviews covered topics such as sexual education, experience with contraceptive methods, opinions on the HPV vaccination campaign, and methods of approaching conversations with children about sexual behavior. Investigators recruited participants using daily appointment lists, approaching patients in phlebotomy, and approaching men accompanying other patients. Both American and Chilean investigators analyzed interview data by creating a codebook and identifying relevant themes using the interview data.
Findings: Thirty men participated in semi-structured interviews, lasting between 15 and 45 minutes. Primary outcomes highlight a values-systems approach to communicating with children about sexual behavior and suggestions for improving public awareness of HPV.
Interpretation: Focusing on fathers allows for a unique opportunity to examine the interplay between masculinity and parental sexual education for both male and female adolescents. This is particularly thought-provoking, as the societal attitudes and governmental programs in Chile towards sexual behavior become more explicit and widespread.
Source of funding (if none, enter "None"): Albert Einstein College of Medicine Global Health Department

SAT_182

Community Health Metrics In the Andean Highlands: A Pilot Survey

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Background: Despite improved health services in Peru, many rural communities remain without access to services. A notable lack of improvement in health indicators now exists in these communities. Sacred Valley Health (SVH), a non-profit organization, has worked for years in the Sacred Valley of Peru to bring health equity to isolated, Quechua-speaking communities. SVH utilizes the community health worker (CHW) model, known as “promatoras.” Promatoras, local women elected to be health advocates, use a curriculum adapted to the health needs of their community. Despite years of ongoing health projects in the Valley, no standardized community data have been collected in systematic form. A survey tool was created and implemented in March 2018. We strove to create an innovative approach to collecting data, using Promatoras, which could be used for health advocacy and monitoring of health interventions.
Methods: Five communities were selected based on variables including population, economy, and proximity to health centers. The survey was performed in March 2018. Attention was paid to the Sustainable Development Goals when choosing questionnaire indicators. Indicator categories included: Poverty Reduction, Childhood Health, Maternal Health, Communicable Disease, and Gender Equality. Surveys were conducted verbally in Spanish and Quechua by a health worker and local promatora. Goal participation was 30% of each community, which is an accepted standard rate of participation in similar published studies.
Findings: Five communities were surveyed, representing 500 individuals. Rates of participation were >50% in all communities. Data was successfully collected in all indicator categories.
Interpretation: Our approach to collecting data was a success with a higher rate of participation than expected. We are not aware of any studies utilizing community health workers to help collect data in this location. High rates of community member participation were attributed to intimate community knowledge by Promatoras. Despite the pilot’s success, language was a significant barrier.
Given the success of this pilot study, implementation of a comprehensive needs assessment using similar techniques is planned for the remaining communities served by SVH. Recurrent data collection is planned at 3-year intervals to assess impact at community levels from this point forward.
Source of funding (if none, enter "None"): None

SAT_183

Antimicrobial Use for Pediatric Upper Respiratory Tract Infections: Parent's Knowledge, Attitudes, and Practices on Antibiotic Use in Mangalore, India

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Background: The misuse of antibiotics has contributed to the emergence and spread of resistant bacteria and is now a major public health problem in India. We evaluated the perspectives of parents regarding antibiotic use in children to treat upper respiratory tract infections (URTIs) in community-based primary care practices and primary health care centers in Mangalore, South India.
Methods: This qualitative study was conducted in May-July 2018. After informed consent, parents, whose children (≤18 yrs) were treated for suspected URTI by primary care providers at two major teaching hospitals in Mangalore/Manipal City, and by community physicians in and around Mangalore city, Karnataka State, India, were invited to participate in the study. Consenting participants underwent individual, in-depth interviews (n=25) or joined focus group discussions (n=2). Discussions were recorded, transcribed, translated, and analyzed via thematic analysis.
Findings: All parents denied pressuring physicians to prescribe antibiotics and that they never disagreed with physician treatment plans. Parents, however, do expect a prescription medication to be provided by the physician to ameliorate their children's illness before considering physician compassion and open communication. Those of lower socioeconomic status(SES) noted regularly purchasing antibiotics directly from the pharmacy using old prescriptions to avoid physician costs and reported ending antibiotic courses when symptoms have improved. Parents of higher SES always consulted physicians for antibiotic prescriptions and followed course regimens strictly. All parents acknowledged a lack of awareness on antibiotics and believed that education is key to improving community knowledge on proper antibiotic use. Parents stated that physicians have the primary role in educating their patients and that the Government should use social media to spread awareness.
Interpretation: Parents have differing practice patterns based on SES. Those of lower SES may be contributing to rising antibiotic resistance due to their circumnavigation of the healthcare system and their inappropriate antibiotic use. The parent's strong need to leave the clinic with a medication increases the probability that physicians will prescribe antibiotics instead of having patients leave their practice. Efforts should be made to limit pharmacy independence and to increase education of the community.
Source of funding (if none, enter "None"): Funding was obtained from WFSOM's Medical Student Research Program (MSRP) and from Infectious Diseases Society of America's Medical Scholars Program.

SAT_184

Sepsis in Low-Resource Settings: An Assessment of Barriers and Facilitators to Sepsis Care in Tanzania

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Background: Sepsis is a leading cause of morbidity and mortality and requires rapid assessment and treatment to avert death. However, in many low- and middle-income countries (LMICs) appropriate treatment is delayed until a patient reaches a facility capable of providing the level of care they need. This study assesses patient and provider views of barriers and facilitators to timely sepsis care in Tanzania.
Methods: This qualitative study was performed as a part of an ongoing trial evaluating patients presenting with sepsis to the Muhimbili National Hospital Emergency Medical Department (MNH-EMD), a tertiary hospital in Dar es Salaam, Tanzania. All patients who presented with possible sepsis during the study timeframe were approached and semi-structured in-depth interviews with patients (or relatives) who consented were conducted to assess perspectives regarding access to timely sepsis care. Semi-structured focus groups were conducted to gain MNH-EMD provider insight as well. Written, informed consent was obtained prior to the interviews, which were conducted by trained research staff. Interviews were analyzed using a framework approach and coded using Atlas.ti.
Findings: 35 patient interviews and 7 focus groups with 36 total providers were conducted over a 4-week period. Patient interviews praised the quality of service provided by MNH-EMD, but often identified payment, insurance, and transportation as major barriers to accessing care. The most common suggestions were to improve access to insurance as well as hospital facilities. Providers identified lack of equipment and lack of specialists as the most common challenges to caring for sepsis patients in Tanzania in general. They identified inadequate provider knowledge at prior facilities as well as patient financing as the most prominent barriers to accessing care, and highlighted the difficultly in seeing emergent conditions at a tertiary care center.
Interpretation: Our findings indicate the difficulties in navigating the referral system for emergently ill patients in Tanzania. Patients and providers particularly identify financial constraints concerning hospital bills and transport as primary barriers. Providers also highlight the lack of clinical knowledge about sepsis in the country, while patients praise the care received at MNH-EMD in comparison with care at prior facilities.
Source of funding (if none, enter "None"): UCSF Hellman Family Award for Early Career Faculty, UCSF Master’s program

SAT_185

Determinants of Health-Care Utilization for Symptomatic Reproductive Tract Infections in Rural Indian Women

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Background: Reproductive tract infections (RTIs) cause a great public health burden worldwide, and that burden is amplified because health-care seeking for treatment of RTIs is currently inadequate for resolution of disease. Many socioeconomic factors impact a woman's likelihood to seek treatment, but there are gaps in knowledge about whether these factors stem from general challenges with health care access versus women's response to gender-specific disease symptoms. We aim to identify determinants of care seeking behavior and analyze the difference of utilization of health-care resources in response to RTI symptoms and general symptoms to provide more information on potential target populations for interventions that promote care seeking behavior.
Methods: Our analysis uses data from a cross-sectional, population-based surveillance survey investigating personal hygiene habits, gynecological health, and health-care seeking behavior in response to symptoms that was conducted with rural, non-pregnant women in Odisha, India, from 2013-2014 (n=3,600). We utilized logistic regression techniques to determine the degree that certain variables, selected with a directed acyclic graph, impact a woman's likelihood to seek treatment.
Findings: Of the 342 respondents that self-reported RTI symptoms, 161 women (47.1%) reported that they sought care for those symptoms, compared to 204 women (59.6%) who reported to have sought medical care the last time they had symptoms of an adverse non-reproductive disease. Full model analysis showed that previous health-care seeking behavior in response to general symptoms and status as a married woman were shown to be significant predictors of health-care seeking behavior for RTI symptoms. There was no association between education level or possession of a Below Poverty Line card and health-care seeking behavior. When those who did not seek treatment for RTI symptoms were asked why they did not seek treatment, the overwhelming majority (73.8%) reported they did not think they needed treatment for their symptoms.
Interpretation: Interventions aimed at increasing health-care seeking behavior in Indian women should be targeted at unmarried women who are less likely to use formal providers for general health-care, and those interventions should focus on both reproductive health education and improving access to diagnostic and treatment facilities.
Source of funding (if none, enter "None"): Sanitation and Hygiene Applied Research for Equity (SHARE) consortium Iowa Medical Student Summer Research Fellowship

SAT_186

Piloting a Community-Based Participatory Global Health Service Elective for Medical Students at an HBCU Medical School in Collaboration with Tanzania Public Health and US-based NGO

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Background: Karansi Ward is a rural community in northern Tanzania (TZ) with no access to modern healthcare. Service learning is an effective tool to teach community-based participatory health service. Morehouse School of Medicine (MSM), an HBCU medical school, currently does not have a formal global health elective for medical students. We piloted a Global Health Service Learning Project for medical students, whereby, the students, working with TZ-community leaders before, during, and after service project, would gain (1) a better understanding about TZ-healthcare, (2) meaningful experiential cultural exchange, and (3) key leadership skills.

Methods: The goal was to train medical students on community-based participatory service in a global setting. Students, working with a primary mentor, constructed and then implemented a global health project. Using mixed-methods approach, the medical students assessed the following objectives:Facilitate cross-cultural clinical training between US and TZ physiciansIdentify cultural and community social determinants of health and their implications for health interventionsEvaluate attitudes, beliefs, and understanding of different cultures among healthcare professionals through surveys, structured interviews, and reflection journals

Findings: From July 19 – August 6, 2018, medical teams provided healthcare to 1,852 students attending 4 public schools. Engagement between US and TZ stakeholders prior to travelling to TZ, provided the culturally sensitive platform for medical teams to work with the TZ-Public Officials, community social workers, Tanzanian healthcare providers, and religious leaders in holistically assessing the needs of the community. Results aligned to project's objectives include: A memorandum of understanding to construct cross-cultural exchange between US and TZ providers and medical trainees is in development.Public health surveillance found 95% of students were underweight,, which is informative for current TZ-social wellness/nutrition program officials. 55.6% believed that health care, clean water, food, and legal assistance should be available, regardless of resource level of country.Qualitative analyses of in-country reflection journals are pending. Ongoing challenges include language barriers, and inadequate infrastructure.

Interpretation: This pilot project will guide the development of a formal global health elective for medical students. UboraTZ and MSM will continue to collaborate to assess this community's dynamic needs through the development of a medical education elective in global health.

Source of funding (if none, enter "None"): MSM MD-Summer Research Program; UboraTZ; Donations

SAT_187

Empowering Through Education: An individualized sponsorship model to increase Maasai girl school enrollment in Laikipia County, Kenya.

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Background: Even with free primary education in Kenya, less than 50% of Maasai girls are enrolled in school and only 10% of Maasai girls make it to secondary school. Early forced marriage, lack of school fees and unwanted pregnancy are the most common reasons girls drop out of school. My inital formative research targeted the Il Ngwesi Ranch in Laikipia County, Kenya, a primarily Maasai region with exceptionally high girl dropout rates. My initial work in Kenya identified 32 girls between the ages of 15-24 that had dropped out of school and were unable to return because of school fees. This research led to the foundation of the non-profit SAWA Kenya (Schooling & Action for Women's Achievement). This project follows an individualized sponosrhip model, matching at-risk girls living in remote communities of Laikipa County that have dropped out of school with individual sponsors in the United States.
Methods: This project empowers girls that would likely never otherwise have an opportunity to further their lives to return to school by matching them with sponsors invested in their education. Currently, the 5 villages in Laikipia County involved with SAWA have a designated community leader who identifies girls in the community that have either never been sent to school or that have dropped out of school. These community members were selected by the Kenyan board members of SAWA, selection was based on their dedication to girls education and their relationship with the community. Community leaders counsel each individual girl on her future and, with her family's permission, creates an educational plan.
Findings: To date, 55 girls have been incorporated into SAWA's program. All of the girls re-enrolled in school are being monitored by the community leaders on their performance. Future implications for this project include evaluating the efficacy of this sponsorship model by tracking retention in school.
Interpretation: Even girls enrolled in school are continuing to face challenges at home, including being subjected to cultural pressures of marriage. Future next steps include creating a boarding home for girls to stay in while they are enrolled in school and continued counseling with the community leader.
Source of funding (if none, enter "None"): Frank H. Netter School of Medicine Summer Research Fellowship

SAT_188

Hair Cortisol Concentrations among Urban and Rural-Dwelling Mother-Child Dyads surrounding La Romana, Dominican Republic

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Background: Maternal chronic physiological stress can affect child cortisol responses. However, maternal hair cortisol concentrations (HCC), a unique measure of cumulative cortisol exposure, do not always correlate with child HCC. This study used HCC as a biomarker of chronic stress levels of mothers and their offspring.
Methods: A convenience sample of 90 mother/child (ages 7-14 years) dyads were recruited from an urban hospital in La Romana and in the bateyes surrounding La Romana. Bateyes are rural sugarcane worker villages that largely consist of a marginalized Haitian population. Mothers self-reported demographic factors, perceived stress, asthma status, and childhood asthma using the International Study of Asthma and Allergies in Children questionnaire. Height, weight, and hair samples were collected and HCC were assessed via ELISA. Linear regression examined associations between HCC and demographic characteristics and between maternal and child HCC.
Findings: Mothers were age 35 ± 9 years, Dominican (60%), born in the Dominican (69%), spoke Spanish (57%), in a domestic partnership (54%), with a median household income of $140/month, mean BMI of 27 ± 5.2, and median HCC of 3.72 pg cortisol/mg hair. Children were age 10 ± 2 years, female (98%), Dominican (94%) with a median HCC of 4.18 pg cortisol/mg hair. In adjusted analysis, mother's place of birth was the most significant predictor of maternal HCC. Women born in the Dominican Republic had a HCC 4.9 times lower than women born in Haiti ($p=0.013$). In adjusted analysis, mother's marital status was the most significant predictor of Child HCC ($p=0.057$). Mother's HCC and child HCC were not correlated ($p=0.085$).
Interpretation: Women born in Haiti, who have experienced a long history of marginalization, experience higher HCC, a potential biomarker for chronic stress. This may adversely affect their offspring's HCC levels along with maternal marital status but more research is needed to determine hair cortisol synchrony.
Source of funding (if none, enter "None"): None

SAT_190

Protecting Kids in Cars: A Three-Country Project on Improve Use of Child Safety Seats

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Background: Motorization growth worldwide is increasing children's exposure to motor vehicle occupant crash injury. The use of child safety seats and seat belts, as appropriate for a child's age and development, is one of the most effective ways to reduce child occupant injury in a crash. However, child safety seat use varies throughout the world. The objective of this study was to compare child occupant protection use, knowledge, barriers, and interventions.
Methods: Child occupant protection was observed and driver surveys were conducted in Iowa City, USA, Cluj-Napoca, Romania, and Shantou, China. The observational survey was geographically representative of the location and children aged 1 – 17. More than 7,000 children in vehicles were observed and more than 65% of drivers were interviewed. Participatory research in each country was used to identify steps to improve child seat use, and evaluations of resulting programs will be presented.
Findings: For children aged 0 to 3, who should be in a safety seat, 95.9% of children in the US, 49.6% in Romania and 0.1% in China were properly restrained. For children aged 4 – 12, booster seats use was 65% in the US, 34.6% in Romania, and 1.5% in China. For children aged 13 -17, seat belt use was 82.7% in the US, 65.0% in Romania, and 25.2% in China. In China, 26.8% of drivers reported that they did not know about safety seats. In Romania, 68.4% were aware that some type of law was in place. Partners in the USA and Romania identified policy improvement as the best intervention approach, and policies were improved in both locations. Changes pre- to post-law changes will be presented. In China, a hospital-based educational program was implemented, and 20% of mothers purchasing car seats (compared with none of the controls).
Interpretation: Prevalence of child occupant restraint was highly correlated with the country's policy status, although barriers to use were similar. Intervention approaches and impact will be discussed.
Source of funding (if none, enter "None"): partial funding from: 5D43TW007261 NIH/Fogarty: International Collaborative Trauma and Injury Research Training Grant; 5 R49 CE002108 CDC/NCIPC: University of Iowa Injury Prevention Research Center; and, the Iowa Governor's Traffic Safety Bureau.

SAT_191

Using Intervention Mapping to Design and Implement a Quality Improvement Strategy Towards Elimination of Lymphatic Filariasis in Northern Ghana.

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Background: The Global Strategy to Eliminate Lymphatic Filiariasis (GFELF) through Mass Drug Administration (MDA) has been implemented in Ghana since the year 2000 and transmission has been interrupted in 76 of 98 endemic districts. To improve the MDA in the remaining districts with microfilaria (MF) prevalence above the 1% threshold for the interruption of transmission, there is a need to identify and implement appropriate quality improvement (QI) strategies. This paper describes the use of intervention mapping to select QI strategies to improve an existing evidence-based MDA program in Northern Ghana.

Methods: Due to the complexities associated with implementing evidence-based programs (EBP) such as the lymphatic filariasis MDA and variability in the context, an initial assessment to identify implementation bottlenecks associated with the quality of implementation of lymphatic filariasis MDA in the Bole District of Ghana was conducted using a mixed methods approach. Based on the findings of the initial assessment, a context specific QI strategy was designed and operationalized using intervention mapping strategy in terms of seven domains: actor, the action, action targets, temporality, dose, implementation outcomes addressed, and theoretical justification.

Findings: The initial needs assessment shows that the persistent transmission of lymphatic filariasis in the Bole District is characterized by high levels of refusal to ingest the drug, high levels of reported adverse drug reactions, low MDA coverage at community level, poor adherence to the MDA protocol and non-participants' responsiveness.

Interpretation: This study has shown that it is feasible to develop a context specific QI strategy for an existing evidence-based intervention based on an initial needs assessment through stakeholder participation using the IM approach. However, working (towards) QI requires more time than is usually available in public health service. Sufficient theoretical knowledge of implementation science and experience with technical IM experts must be available.

Source of funding (if none, enter "None"): This work has been funded by TDR, the Special Program for Research and Training in Tropical Diseases, which is hosted at the World Health Organization and co-sponsored by UNICEF, UNDP, the World Bank and WHO. TDR grant number: B40299. First author ORCID ID: 0000-0002-7005-5707.

SAT_192

Developing an Assisted Partner Notification Services Model for Incarcerated Persons with HIV in Jakarta, Indonesia

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Background: The WHO recently recommended that all persons with HIV (PWH) be offered provider-assistance to notify their sex and needle-sharing partners in the community of possible HIV exposure. These recommendations, however, do not specifically address implementation of HIV partner notification services in the prison setting. This omission is a critical gap in global HIV prevention and care. Worldwide, prisons are often the first site at which incarcerated PWH are diagnosed and offered HIV treatment, but their partners remain unaware of their possible exposure and need for testing. We conducted formative research in Indonesia to culturally adapt APS in anticipation of a future randomized controlled trial that will pilot the new prison-based APS model.

Methods: To culturally adapt APS for the Indonesian prison setting, we conducted a rapid ethnographic assessment that drew upon questionnaires completed by 150 incarcerated PWH and key informant interviews (N=21) with healthcare providers, correctional authorities, and prisoner advocates in Indonesia. A bi-national expert panel and community advisory board reviewed these data sources and current APS guidelines to recommend adaptations likely to render the new prison-based APS model acceptable and feasible.

Findings: Recommended adaptations for APS in the prison setting was guided by key ethical priorities: patient autonomy, confidentiality, and access to HIV services for notified partners. Recommendations included the use of easily understandable educational materials and decision aides to assist informed decision-making and the involvement of non-prison medical staff to minimize coercion. To protect confidentiality and ensure that provider-assisted notification is conducted anonymously, separate teams should perform partner elicitation and notification and documentation used for contact tracing should be secured separately from the medical records of index patients. To ensure that partners diagnosed as HIV-positive can easily access affordable health services, APS protocols should include interventions that improve linkage and retention in care, such as peer educators, immediate $CD4^+$ T-cell quantification, and home visits. Referrals to HIV testing and services should also be made available when incarcerated PWH choose to notify partners themselves.

Interpretation: An assisted partner services model developed with incarcerated PWH and their advocates may provide a culturally acceptable approach to reach undiagnosed PWH in the community.

Source of funding (if none, enter "None"): NIDA K23 DA041988 to GJC and K01 DA042881 to VAE.

SAT_193

Prospective monitoring and evaluation of key surgical indicators during implementation of the Surgery for the People Project in Nicaragua

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Background: Globally 5 billion people lack access to surgical care; the lack of access to surgical care is particularly acute in rural areas. Surgery for the People Project Nicaragua was established in 2017 to bring surgical care closer to communities in rural Nicaragua. Our aim was to measure key surgical indicators as implementation of the surgical project progressed.
Methods: The Surgery for the People Project is being implemented at 2 rural district hospitals in Las Minas Nicaragua in partnership with Operation Smile, the Nicaraguan Ministry of Health, and the Global Initiative for Children's Surgery. Following a baseline assessment and progressive implementation of community engagement, workforce training, and investments in infrastructure, and equipment, we prospectively measured key surgical indicators including: surgical volume, surgical outcomes (mortality and complication rates), and use of the World Health Organization (WHO) surgical safety checklist. We calculated 95% confidence intervals to determine statistical significance.
Findings: From October to December 2017, a total of 660 surgical procedures were performed; this represented a 25% increase in the average monthly surgical volume compared to the average surgical volume in 2016 (CI 0.17; 0.33); use of the WHO surgical safety checklist went from 0% to 77% (CI 0.69;0.85); mortality and complication rates were 0.4% (CI 0; 0.02) and 1.9% (CI 0; 0.04) respectively.
Interpretation: Monitoring and evaluation of key surgical indicators revealed significant improvement in surgical volume; and the significantly low surgical mortality and complication rates demonstrated that the surgical care provision was safe during progressive implementation of an integrated surgical project in rural Nicaragua. Monitoring and evaluation of key surgical indicators is critical to measuring progress in surgical project implementation.
Source of funding (if none, enter "None"): UBS Optimus Foundation

SAT_194

Evaluation of Health Management Information System in India: Mixed Methods Study

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Background: Role of Mental Health Information Systems (MHIS) in the measurement and management of mental health service is pivotal in scaling up MH services. Lillte research has been undertaken into monitoring and evaluating data systems such as MHIS in India and other low and middle-income countries. This paper aims to evaluate the implementation of 15 mental health indicators in Sehore district of Madhya Pradesh, India. Specifically, this study aims: a) assesses the feasibility, acceptability and utility of a set of indicators for routine monitoring of mental health care; and b) evaluate the performance of a set of indicators for routine monitoring of mental health care.
Methods: A sequential mixed methods approach is employed to guide the study. Structured questionnaires (at two time points), case records review (at two time points) as well as semi-structured interviews with key informants at facility and district level were conducted. Quantitative data was analysed in excel and a conceptual framework called the PRISM (Performance of Routine Information System Management) was used to analyse qualitative transcripts.
Findings: The evaluation of mental health information systems in Sehore district of India was conducted at two time points in a time span of one year. At the first-time point, 16 structured questionnaires and 61 case records review were conducted whereas at the second-time point, 9 questionnaires and 74 records were reviewed. 26 of the stakeholders responded to the qualitative guides. Overall, we saw higher degrees of indicators being completed, at both time points, especially for diagnoses and treatment. We generally found higher degrees of accuracy, with scores >80% for all indicators except for follow-ups. Especially right after training (time 1), we find very high scores (>90%) on perceived motivation, importance, understandability, relevance, confidence and integration into routine HMIS.
Interpretation: Emphasising process of indicator implementation and measuring effective coverage of mental health services is a key for reliable measurement. Our study effectively showed possible measures which can be used for effective implementation and evaluation of mental health indicators in similar contexts in India and elsewhere.
Source of funding (if none, enter "None"): Emerald (Emerging Mental Health Systems in Low and Middle Income Countries) project funded by EU 7th framework prgramme

SAT_195

The gap between international guidelines and antibiotic prescription practices for cesarean section patients at a rural hospital in eastern Rwanda

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Background: Antibiotic stewardship is a major challenge in developing countries, partly, due to limited trainings, written guidelines, and compliance processes on proper antimicrobial prescriptions. This challenge remains under-reported, and in particular among cesarean section (c-section) patients for whom international guidelines recommend a prophylactic antibiotic within an hour prior to incision and administering postoperative antibiotic only in case of infections, no published studies on current antibiotic prescribing practices. We characterized, perioperative, antibiotic prescription practices for C-section patients at a rural Rwandan hospital

Methods: Antibiotic prescription data, including the name of the drug administered, indication, and dose, frequency, route, duration, and time of administration, were extracted from medical charts of all women 18 years or older who received c-sections at a rural district hospital in eastern Rwanda between November 2017 - February 2018. Rwanda National Ethics Committee approved the study. Participants were recruited at the postoperative ward after each provided written consent.

Findings: Of the 332 patients eligible for chart review, 255 (76.8%) received an antibiotic preoperatively. Only about 60% received the antibiotic within one hour before incision. Ceftriaxone (n=204; 80.0%) and Ampicillin (n=47; 18.4%) were the most commonly prescribed preoperative antibiotic. Postoperatively, even though only one patient had an indication of infection, 327 (98.5%) were given at least one antibiotic- almost all these patients received Ampicillin. Of these, over 98% received a second postoperative antibiotic, the most common being Gentamycin, for prophylaxis purpose. About 3% received a third antibiotic postoperatively. At discharge, close to 75% of patients were prescribed antibiotics, such as Amoxicillin (n=169; 52.3%) and Cloxacillin (n=64; 19.8%).

Interpretation: A limitation of the study was incomplete records and illegible handwriting. However, because the data were collected within a month of chart reviews, data quality issues were resolved in consultation with the prescribing personnel. Our data show a significant non-compliance by rural hospital personnel of international antibiotic prescription guidelines for C-section patients. A better understanding of the rationale for prescription habits observed and the effect of over-prescription on infection prevention and antibiotic resistance are required to establish a robust antibiotic prescription practice in Rwanda.

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SAT_196

Health Knowledge, Beliefs, and Behaviors of Primary and Secondary School Students in Rural Uganda

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Background: The Oyam district of northern Uganda is still recovering from decades of armed conflict that destroyed local infrastructure and caused massive displacement. The under-5 child mortality rate in Oyam is 3 times higher than all of Uganda. Less than 1% of children enrolled in primary school complete secondary school[1]. To best tailor education-based health programs to students in the area, a highly contextualized approach must be taken in designing health interventions. Our study aims to measure levels of health literacy, attitudes, and beliefs among students in order to tailor future programs and target these health priorities.

[1] Global Health Network, Uganda: Research. http://www.ghnu.org/research.html

Methods: A cross-sectional survey was conducted in June 2018 over the course of five days among primary and secondary school students from 20 schools in Oyam participating in the annual RUFC Youth Camp. Schools were selected to participate in the camp by the District Education officer, and students were then selected by their head teacher. Parental consent was obtained prior to their attendance and youth assent was obtained in the field. The study was approved by the University of Southern California IRB (#HS-17-00520) and the Ugandan Research Council.

Findings: A total of 244 students, 148 females and 96 males, between the ages of 10 and 17 were surveyed. Students were selected randomly to participate in the study by the data collectors from among 1,000 camp participants. The most notable results include: 82.1% were unaware HIV is treatable; 7 in 10 attributed mental illness to witchcraft; one third indicated that violence is common in their community. Further analyses and correlations are currently being undertaken.

Interpretation: Our data indicates that there remain significant health programming needs within our target population, specifically to improve sexual health and HIV knowledge, mental health awareness, non-sexual risky health behaviors (tobacco and alcohol use, bush meat consumption, and violence), and to address feminine hygiene challenges in schools. The major limitation to the study is that we only collect data with youth enrolled in school and fail to capture the health knowledge and beliefs of the overall youth population in Oyam. Our strength lies in our access to a marginalized, hard-to-reach community.

Source of funding (if none, enter "None"): None

SAT_197

Tracing Outcomes Using Home-based Care Providers in Re-engaging HIV+ Individuals to Care

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Background: Approximately 1.4 million individuals are living with HIV/AIDS (PLWHA) in Tanzania and 1 out of 3 are not receiving the necessary antiretroviral therapy (ART) (Tanzania Bureau of Statistics, 2016). Consequently, emphasis has been placed on the use of home-based care providers (HBCs), in the form of patient tracking and linkage to HIV care, to supplement overburdened health facility staff and overstrained services. Although HBCs are a key resource in bridging the gap between formal health services and community care, few studies have provided a detailed analysis of the HBC processes in locating patients for reengagement to care.
Methods: We assessed the implementation of 24 HBCs tracing 562 PLWHA (≥18 years) presumed out-of-care from patient medical records at three health facilities in Northern Tanzania. At each facility, patient tracking lasted for three months, from April to July 2018. To facilitate tracing, HBCs, trained by health facilities/local NGOs, were provided with resources (e.g., phone credit); additionally, in-person interviews, weekly contact with HBCs, and group meetings were conducted to thoroughly understand and improve tracing.
Findings: Among individuals who required tracing, only 56% could be successfully located: 33% had transferred to a different clinic, 7% were truly out-of-care, 4% were engaged in-care but miscategorized as out-of-care, and 12% had died; 44% could not be traced, and therefore, final status could not be established. Tracing revealed some challenges in HBC processes, particularly related to verifying patient status, depth of tracing, and structural factors, including the volunteer nature of HBC work, competing obligations, and limited financial incentives. Additional barriers to tracing appeared to be mediated by incomplete data in patient's medical record (e.g., address). Gender, district, and time since last appointment were found to be unrelated to successful tracing. We received approvals from the National Institute for Medical Research, Tanzania and University of California, Berkeley.
Interpretation: This study details the outcome of tracing out-of-care PLWHA by HBCs and highlights factors that may enhance tracing. It underscores the need to strengthen HBC process implementation as a critical component in effectively reengaging PLWHA to care. Mentoring on effective tracing, closer supervision, and provision of complementary resources to strengthen and standardize current procedures are recommended.
Source of funding (if none, enter "None"): NIH-Fogarty Global Health Equity Scholars-D43TW010540.

SAT_198

The Validation of Linguistic Comprehension and Acceptability of Translated Measures of Sexual Orientation and Gender Identity (SOGI) for Use in Thai LGBT Research

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Background: In the U.S., much research has demonstrated sexual/gender minorities are at an increased risk for health disparities. In Thailand, the absence of sexual/gender identity measures represent a key research barrier. To address this gap, thestudy's aims were to: 1) translate validated SOGI measures from English to Thai language, and 2) evaluate the linguistic comprehension and acceptability of translated SOGI measures.

Methods: A leading LGBT research institute has identified SOGI measures as a best practice in assessing sexual/gender identity among Americans consisting of three main questions with multiple options: biological sex, gender identity, and sexual orientation. This cross-sectional descriptive study was added to three sub-queries evaluating comprehension and acceptability of each main question. The first two queries assessing comprehension were rated on Likert scales (1–11, high scores = more comprehension). The third query evaluating acceptability was rated on 0/1 scales. After receiving IRB approval from the University of Illinois at Chicago, the SOGI measures were translated by forward/backward techniques (English/Thai, Thai/English). Feedback on the translation accuracy and clarity was received from a Thai nurse panel (N=8) and was applied to refine the measures. The finalized version was then evaluated via an online Qualtrics survey using e-consent forms. Convenience and snowball samplings were used to enroll diverse volunteers of Thai adults aged 18-60 (N=282) during January-March 2017. SPSS was utilized to conduct descriptive statistics.

Findings: Most participants reported their biological sex as female (65%). Regarding gender identity, 91% reported being cisgender and 9% transgender. The participants' sexual orientation was primarily heterosexual (75%), followed by homosexual (19%), and bisexual (6%). Mean comprehension scores for the three SOGI questions and options were high (M = 9.4, 10.2, 10.3 and 10.2, 10.0, 10.3, respectively). Overall acceptability ratings were also high ($\bar{x}$ > 98%, S.D. = 0.1). Transgender identified individuals reported marginally lower comprehension of the biological sex question compared to cisgender respondents.

Interpretation: The translated SOGI measures had high linguistic comprehension and acceptability ratings that can be used in general Thai populations. The availability of standardized measures will facilitate Thai nursing research and allow for direct cross-cultural comparisons of health-related factors to other countries.

Source of funding (if none, enter "None"): None

SAT_199

The Cultural Adaptation of a WHO scalable Digital Mental Health Intervention for Filipino Transnational Migrants

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Background: Digital mental health interventions offer scalable solutions to meet the needs of diverse populations living in contexts of adversity and where there are few mental health providers. To increase intervention effectiveness and aid dissemination and implementation efforts, cultural adaptation is essential. The aim of this presentation is to describe the cultural adaptation of the World Health Organization's digital mental health program, Step-by-Step, for use among Filipino transnational migrants. Our adapted framework posits cultural adaptation should enhance: (a) relevance; (b) acceptability; (c) comprehensibility, and; (d) completeness. An English and Filipino, and male and female version was produced.

Methods: Three experienced Filipino psychologists provided their perspectives on the program and how it might be adapted. We then adapted the program and obtained further feedback and suggestions from 28 migrants working in diverse industries through focus group discussions (FGDs). We conducted seven FGDs with all-male participants and nine FGDs with all-female participants. In each FGD, cognitive interviewing was used to probe for relevance, acceptability, comprehensibility, and completeness of illustrations and text. Participant feedback guided a further round of iterative program adaptations, which were again shown to participants to seek additional feedback for validation and improvement.

Findings: We made a number of key adaptations. To enhance relevance we adapted the program narrative to match migrants' experiences, incorporated Filipino values and illustrated familiar problems and activities. To increase acceptability, our main characters were changed to wise elders rather than health professionals (reducing mental health and help-seeking stigma), potentially political or unacceptable content was removed, and the program was made suitable for migrants working in a variety of sectors. To increase comprehension, we used English and Filipino languages, simplified the text to ease interpretation of abstract terms or ideas, and ensured that text and illustrations matched. Lastly, we retained the core elements and concepts included in the original Step-by-Step program to maintain completeness.

Interpretation: This study showed the utility of using the four-point framework that focuses on acceptance, relevance, comprehensibility, and completeness. We achieved a culturally-appropriate adapted version of the Step-by-Step program for OFWs. We discuss lessons we learned in the process to guide future cultural adaptation projects of digital mental health interventions.

Source of funding (if none, enter "None"): Macau Foundation, Macao (SAR) China

SAT_200

Stakeholder Engagement in ITN Distribution Among Primary Schools In Central Uganda

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Background: The World Health Organization (WHO) malaria prevention guidelines recommend continuous distribution of ITN in schools as part of a multi-pronged approach to sustainable ITN access. The Ugandan School structure has created a robust platform for systematic distribution and monitoring of LLIN distribution among young children above 5 years of age. Uganda significantly contributes to the high prevalence of malaria cases in Sub-Saharan Africa. Little attention has been directed towards children >5 years through adolescence yet malaria infection has contributed to the increased cases of absenteeism in primary schools. PMI over the years has supported mass net distribution as a malaria prevention strategy. Malaria Consortium, Uganda through the NMCP piloted a school LLIN distribution program as a follow up on the universal ITN distribution campaign started in 2017. The program sought to enhance malaria control interventions in Mukono district with greater than 30% malaria incidence by increasing bed net coverage through ITN distribution in schools.
Methods: Between 13th March and 13th June 2018, 18 stakeholders in Mukono were sensitized about SBCC and the role of the education system in increasing ITN use. The emphasized themes included SBCC, stakeholder roles, ITN use and Coverage, relevance of school LLIN distribution, the role of children as agents of change. 10 district officials were trained and a half day orientation of the school based LLIN strategy was conducted to orient sub-county leaders in Mukono district. Teachers were oriented and provided with registration and distribution tools for student registration.
Findings: 18 stakeholders reached,10 district officials trained and 108 sub-county leaders oriented.559 teachers from the sub-counties were oriented and trained. 25,137 pupils were registered for receipt of ITNs. This resulted in distribution of 24,164 to most of the registered pupils. 973 pupils who registered were not available to receive ITNs. A total of 24164 pupils received nets during the distribution process.
Interpretation: Collaboration between the health and education sector stakeholders is a feasible strategy for continued distribution of ITNs. It promotes buy-in and ownership from the stakeholders (Teachers, students, Local leaders) engaged in the service provision towards achieving malaria eradication. SBCC should be done in phases for better coordination.
Source of funding (if none, enter "None"): PMI,CDC,USAID,UKAID

SAT_201

A Self-Administered, Low-cost Cervical Cancer Screening Device: A Pilot Study

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Background: Cervical cancer is one of the leading causes of female mortality worldwide, though the burden overwhelmingly falls upon women in low- and middle-income countries (LMICs). The cervical cancer mortality gap between LMICs and high-income countries stems largely from poor access to screening. While high-income countries generally recommend cytology- and molecular-based screening approaches, the World Health Organization (WHO) recommends Visual Inspection with Acetic Acid and Lugol's Iodine (VIA/VILI) as a suitable screening method in resource poor settings. Nevertheless, VIA/VILI screening programs face an array of challenges, including costly training of community health workers (CHWs) administering VIA/VILI, variation in sensitivity and specificity across CHWs, and difficulties in accessing remote, rural areas. Consequently, there remains a need for novel, low-cost cervical cancer screening methods.

Methods: SelfCerve is a novel point of care screening device developed at the University of Pennsylvania that provides a low-cost method for women in LMICs to perform VIA/VILI without the supervision of trained CHWs. The SelfCerve device is inserted into the vaginal canal, enables administration of acetic acid, and subsequently renders an image that can be interpreted remotely by a colposcopist. The device utilizes commercially available products: an inflatable balloon pessary to dilate the vaginal canal, a nozzle to spray acetic acid, an endoscopic camera to capture images, and connectivity to an electronic mobile device to display and send images.

Device functionality is being explored in a preliminary, pilot study in Philadelphia. The study will enroll 30 healthy female volunteers. Subjects will use the SelfCerve device to capture images of the cervix before and after administration of acetic acid. The percentage of unobstructed cervical area captured by the SelfCerve device will be calculated. Cervical images captured by the SelfCerve device and colposcopic images will be randomized and provided to colposcopists who will rate image quality based on focus, lighting, obstruction of the cervix, and overall quality compared to a speculum. Statistical differences between the SelfCerve and colposcopy images will be calculated. Study participants will complete a survey to assess user comfort and ease of use.

Findings: We anticipate trial completion by December 2018.

Interpretation: Pilot study conclusions will be presented.

Source of funding (if none, enter "None"): MGH Ambulatory Practice of the Future Grant

SAT_202

Nursing Students Utilization of Teach the Teacher Model to Promote Health in Vietnam Hilltribes

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Background: Northern Vietnam Hilltribes are a marginalized population lacking knowledge in basic health care and trafficking prevention. Nursing students participating in an international global health experience in Northern Vietnam partnered with a local social enterprise to provide health teaching to English speaking trekking guides. The guides are considered to be key leaders in their respected communities of Hmong and Red Dzao people due to their linguistic skills and trekking income status. Teaching key community personal empowers local tribes with health knowledgeand skills.
Methods: Nursing students prepared a wide range of teaching topics including first aid, safety, hygiene, health promotion and trafficking prevention. Additional preparation included coaching the students in teaching techniques related to a unique global, rural setting. Hilltribe community leaders attended a full day of student-lead teaching sessions. The following weeks after the teaching session, the nursing students accompanied the key leaders on treks through Hmong and Red Dzao villages. While in the villages, the newly trained community leaders conducted teaching sessions at local schools and in Hilltribe homes during which time the students functioned as expert coaches. Nursing students taught utilizing a variety of teaching strategies including demonstration, return demonstration, flip charts and scenarios.
Findings: The collaboration was a success. Students learned important principles regarding health teaching in a global setting, faculty learned lessons on student preparation and the Veitnam Hilltribes benifited from learning health from their community leaders.
Interpretation: This unique experience provides health promotion teaching experiences for undergraduate students and disseminates health knowledge in sustainable manner. Students learned to teach in rural community settings and how to adapt their teaching content to a global population. Students also learned mentoring principles as they functioned as coaches. The local leaders learned about health and trafficking prevention. They in turn shared their newly learned knowledge in their villages. The villages benefited by receiving important health education and having their key members trained in health education. This model is sustainable and has immediate impact in the lives of rural Hilltribes of Vietnam.
Source of funding (if none, enter "None"): Brigham Young University College of Nursing

SAT_203

A Comprehensive Medical, Rehabilitation and Reintegration Program for Persons with Spinal Cord Injuries in Haiti

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Background: The Spinal Cord Injury and Rehabilitation Program at St. Boniface Hospital (SBH) in Fond-des-Blancs, Haiti started in 2010 following the devastating earthquake. The Haitian Ministry of Health requested that the St. Boniface Haiti Foundation open the first national center for spinal cord injury (SCI) rehabilitation. SBHF has proven that it is possible for persons with SCIs to attain a remarkable level of well-being and to reintegrate into their communities. The program provides medical, rehabilitative, and psychosocial services, in addition to vocational training, educational support, and community reintegration assistance. The primary outcome of the program established a framework of inpatient medical and mental health care, home visits, rehabilitation services, and patient advocacy.
Methods: The goals for the spinal cord program are to improve access to clinical and rehabilitation care for people with an SCI; to provide rehabilitation services to non-SCI patients; to increase access of clinical care through mobile clinics and home visits; to increase the community reintegration services; to provide capacity development opportunities for staff; to promote health system strengthening; and to engage in local and national advocacy activities. The participants are referred to SBH from community health workers and medical facilities. Program staff conduct trainings at SBH to expand the network of health care professionals and community health workers to increase the access of care to persons with a SCI.
Findings: Since the program's inception, 190 beneficiaries have been enrolled. During the past four years, 20,000 inpatient and 2200 outpatient rehabilitation sessions have happened. The interdisciplinary team has conducted over 2100 home visits and mobile clinics. To improve the reintegration process, 79 home modifications have been completed, monthly community activities were organized, and more than 1250 vocational trainings have been conducted. 51 program participants participated in the Health and Reintegration Survey with 92% of participants classifying life as "good, average, or above average" and 74% satisfied with their capacity for daily activities. 70% report that they receive support from their friends, family and community.
Interpretation: The program's ongoing challenges include meeting the needs of patients due to limited access to rehabilitative and medical care at other institutions. There are no unmet goals in the program.
Source of funding (if none, enter "None"): Leahy War Victims Fund (USAID); Neilsen Foundation

SAT_204

Global Community Partner Impact: Case studies on the impact of University Global Health Partnerships on the host communities

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Background: Global health partnerships have proliferated over the past few decades, especially involving North American educational institutions and global partners. Sustainability is based on mutually beneficial relationship. The benefits of Global health partnerships have been well studied from the perspective of North American students. Less is known about the benefit derived by host communities and potential negative impact of these relationship. This project asked these questions: 1. What are the benefits to the host partner and their community? 2. What are the challenges or negative impacts? 3. What are the host partners' future goals or vision related to the partnership

Methods: This project uses qualitative research in the form of comparative case studies to explore the positive and negative impacts and challenges faced by global partnerships from the perspective of global hosts in several countries. Several sites were selected in Haiti and Tanzania to find potential commonalities. Interviews were conducted with individuals in all levels of host organizations including administrative, clinical, and support staff. Interviews were transcribed and searched for commonalities.

Findings: Consensus on benefits to host communities included transfer or sharing of knowledge and acquisition of resources for the host organization or community. Barriers and challenges fell into two categories: preceptor burden and student issues. Preceptors often spent additional time and effort working with foreign students that took away from their ability to care for patients or required them to work long hours. Student issues included language barriers, unprofessional behavior, and students exceeding their scope of practice. Goals included improved student preparation, better communication, and increased reciprocity.

Interpretation: Global partners were helpful in highlighting benefits and challenges as well as providing advice for enhancing the impact of partnerships on both partners. Suggestions for better student and preceptor experience included strong leadership within the host organization, direct communication between the host preceptor and the student program supervisor, student accountability through feedback and student evaluation, and student preparedness specific to the planned experience. Reciprocity was a major theme for future interaction and an area that was universally lacking.

Source of funding (if none, enter "None"): GHR Foundation

SAT_205

The Refugee Crisis of Lesbos - Creating New Problems

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Background: Since the start of 2017, more than 1500 refugees have arrived in Greece with an estimated 65 arriving each day (UNCHR). The UNCHR has reported that the funding available to provide healthcare and other necessities for this migrant population only covers 70% of the displaced population. This gap in funding has left thousands of individuals without basic needs such as shelter, food, water, and proper healthcare.
Methods: Using semi-structured individual interviews among X newly arrived Syrian refugees on the island of Lesbos in Greece, we sought to answer 2 research questions: 1) “what new health complications are these individuals are facing?” and 2) “what can governments and non-government organizations do to improve their quality of life?” We analyzed these data using the Grounded Theory Approach to iteratively discover themes and parallels that exist in the compiled data.
Findings: Respondents noted that The European Union and Greek government has failed to rise to the occasion to provide adequate healthcare for the incoming migrant population (especially dental and mental health care). This has led to entirely new problems: thousands of individuals are living in suboptimal conditions, children are receiving little to no education, and inadequate provision of social resources.
Interpretation: The humanitarian crisis on Lesbos is not an isolated event, many other communities around the Mediterranean and the middle east are facing similar if not worse conditions. Many new health disparities have become prevalent in this population. Unattended, these scenarios will place those populations in grave danger.
Source of funding (if none, enter "None"): The Clendening Summer Fellowship - KUMC Department of History and Philosophy of Medicine.

SAT_206

Incentivizing Volunteer Health Teams: Recommendations for Omni Med, Mukono District, Uganda

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Background: Uganda has only one doctor and thirteen nurses for every 10,000 people - well below the WHO recommendation of 23 doctors per 10,000 people. To help solve for this gap in critical human resources, the Uganda government utilizes a decentralized and tiered healthcare system which includes the use of Volunteer Health Teams (VHTs). VHTs are trained to carry out general prevention and primary care for a set number of families in their assigned village. The government largely relies on non-governmental partners to provide ongoing support and training to VHTs. Omni Med, a small non-profit operating in Mukono District since 2008, is one such partner. Under the Omni Med model, volunteers from the United States work in close collaboration with local Omni Med staff to train and supervise 1,250 VHTs.

Methods: In May 2018, I spent four weeks embedded with the Omni Med team in Mukono District. My goals were two-fold: to review the literature on non-monetary incentives for VHTs and, based on this review and my observations in the field, make recommendations for improvements to Omni Med's model.

Findings: VHTs play a critical role in Uganda's health system. These volunteers are dedicated community leaders who work hard to improve the health and wellbeing of their neighbors. Motivating and incentivizing VHTs for long term retention and effectiveness is key to the sustainability of this volunteer model. The literature shows that VHTs have the spirit of volunteerism and are less motivated by monetary compensation than quality supervision, strong relationships with health systems, and the respect and recognition of the community.

Interpretation: Organizations like Omni Med are critical partners in the drive for successful and effective VHT programs. Omni Med's model is based in sound evidence but needs to be strengthened in practice to allow for the collection of data for quality assurance and program improvement, and higher quality trainings and supervision practices. Most importantly, the model must ensure that local Omni Med staff are always at the forefront of programming to maximize their expertise and model the organization's commitment to local ownership, sustainability, and justice.

Source of funding (if none, enter "None"): None

SAT_207

Transformative Learning: Global Health Observerships improve Cultural Sensitivity and Personal Advocacy

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Background: Transformative learning (Mezirow, 1991) in global health settings has been credited as a force for psychological, convictional, and behavioural change of health professional students. To this end we have implemented a global health observership, as part of a Global Health Enrichment program, for health professional students that is designed to motivate transformative learning experiences and facilitate change in their lives and careers.
Methods: This study combines a mixed method program evaluation (Mertens, 2007) with a pre-post design using validated instruments measuring ethnocentricity (Neuliep & McCroskey, 1997) and advocacy (Stafford, Sedlak, Fok, & Wong, 2010). Thirty-six health sciences students across medicine and rehabilitation sciences completed surveys before and after their observerships as a measure of their worldview transformation. During the pre-departure and post-return debriefs, reflections were captured and thematically analysed (Fereday & Muir-Cochrane, 2008).
Findings: Participants returned from their placements with a transformed understanding of their ethnocentrism and advocacy (quantitative final analyses are ongoing). Participants observed that ethical concerns often conflicted with their desired advocacy. Thematic analyses of reflections reveal that changes in worldview are palpable, and that, observerships are perspective-changing opportunities for students to become more globally-minded with an increased tendency towards advocacy while seeking opportunities for ongoing personal growth.
Interpretation: This study supports the belief that global health observerships are transformative learning experiences for students. Our findings show that completing a global health observership increases student tendency for advocacy while also increasing global-mindedness as measured inversely by ethnocentrism.
Source of funding (if none, enter "None"): The authors wish to acknowledge the Faculty of Health Sciences and the Centre for Teaching and Learning at Queen's University.

SAT_208

Initiating a Data Collection System to Facilitate Quality Improvement Initiatives in a New Emergency Department in Mbeya, Tanzania

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Background: Mbeya Zonal Referral Hospital's Emergency Department (ED) was opened in 2016 and has only one emergency medicine (EM) specialist. It is the only ED in the Southern Highland Region of Tanzania. To implement quality improvement (QI) initiatives and prioritize training initiatives in this new health sector, a system of tracking essential demographic and burden of acute illness and injury data is needed. This project was multi-faceted and aimed to introduced and implement a system to collect data, obtain preliminary data, and train providers to facilitate QI projects in the future.
Methods: QI variables for collection were decided by group consensus with multiple stakeholders: EM providers from across Tanzania, board certified EM physicians from other countries, and local healthcare leaders from Mbeya. These variables were combined into a data collection tool and included patient age, gender, referral status, diagnoses, disposition, and outcome. Hospital employees from different cadres were selected by hospital leadership to participate in data collection and analysis. On-site training, observation and support for 6 weeks was provided with remote support in place after the initial 6 weeks. Over the 6-week period, using the data collection tool, a retrospective review of 1000 randomly chosen electronic charts from ED visits between 01/18-06/18 was completed.
Findings: 1000 patient encounters were successfully documented and analyzed to provide baseline data. However, recruitment of an employee to continue data collection proved difficult. Employees with clinical knowledge collected data more accurately than those without, however, due to a lack of human resources, it is impractical to take clinical providers away from their duties. Furthermore, despite the support of local and national leadership for the project, there is no dedicated equipment (computers) and no local funding for QI projects at this time.
Interpretation: A system to collect data required for QI initiatives is key to monitoring and improving new healthcare sectors. However, the success of implementing such a system is multi-faceted. In our project, despite the support of multiple stakeholders, human resources were the primary limitation to the successful implementation of the system in a sustainable manner. Future efforts in this project will aim to address this shortcoming.
Source of funding (if none, enter "None"): This project was funded by the Emory Global Institute of Health.

SAT_209

Effects of a Demand Creation Strategy on Household and Community Social Norms: Evidence from Ethiopia

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Background: The neonatal mortality rate in Ethiopia is considerably higher than the global average, which has led to a national effort to reduce newborn mortality using a community-based approach. In 2013, the government introduced the Community-Based Newborn Care (CBNC) program to bring critical prevention and management interventions closer to communities in need. Save the Children (SC) piloted a demand creation strategy as part of the CBNC program to create an enabling environment to support appropriate maternal, newborn, and child health (MNCH) behaviors and practices. This study explores the extent to which the demand creation strategy contributed to changes in social norms at the household and community levels.

Methods: Using an embedded multiple case study design, we purposively selected one district in each of two zones—East Shewa and Gurage—supported by SC's Saving Newborn Lives program. We then selected two kebeles (or wards) with varying levels of demand creation implementation from each district—one with low and one with high implementation strength. We collected qualitative data from key stakeholders (e.g., government health workers, community health workers, mothers, fathers, and mothers-in law) in each kebele using in-depth interviews, focus group discussions, and illness narratives. A total of 56 interviews were transcribed, translated into English, and coded using NVivo 10.0. We compared case reports from high and low implementation strength kebeles to develop a final cross-case report.

Findings: Overall, we found that the demand creation strategy contributed to improvements in MNCH by changing attitudes toward harmful traditional practices; increasing male involvement in decision-making and support for MNCH care practice and care-seeking; enabling women to disclose pregnancies earlier to families; increasing awareness about the importance of antenatal care, institutionalized delivery, and care-seeking for sick newborns; and shifting attitudes about breastfeeding and appropriate care of the umbilical cord.

Interpretation: These findings suggest that a demand creation approach that applies community empowering strategies to engage communities can improve access to and use of MNCH services by shifting social norms and attitudes to support the health of mothers and newborns. Community-led, participatory approaches have the potential to contribute to positive health system changes by improving the accountability of systems to the populations they serve.

Source of funding (if none, enter "None"): Save the Children – Saving Newborn Lives

SAT_210

Pediatric Nurses' Perceptions of Preparedness for Global Health Fieldwork

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Background:
Increasing numbers of pediatric nurses are participating in global health (GH) fieldwork; minimal data exists regarding preparation needs for their experience abroad. The purpose of this study was to understand the current state, perceived content and experiential needs of pediatric nurses preparing for global health fieldwork with the aim to inform stakeholders about standard and unique preparation needs.
Methods:
This foundational study used a qualitative descriptive design. IRB approvals for this study were obtained from the hospital and university. Group and individuals interviews were held at a pediatric quaternary care facility in the United States. Inclusion criteria were nurses who had at least one GH field experience. Nurses were excluded if their fieldwork was a military deployment or if the purpose wasn't healthcare. Recruitment of participants occurred via email and flyers. After signed written consent was obtained nurses shared their perspective in a single session lasting 30-60 minutes. Digitally recorded sessions were conducted using a semi- structured format of open-ended questions to stimulate discussion of perceived preparedness for fieldwork. Data from the interviews were transcribed verbatim. De-identified transcripts were used for conventional content analysis.
Findings:
An experienced GH nurse with no supervisory responsibilities facilitated one group and five individual interviews with a total of 12 participants. Qualitative content analysis revealed five thematic categories: identifying clear objectives; understanding the practice environment; self-assessment of clinical skills, cultural competencies, and adaptability; safety and logistics planning; and psychological self-care and repatriation anticipatory guidance.
Interpretation:
Nurses detailed specifics of their varied fieldwork experiences for which they were underprepared, serving as a call to individuals, academic programs, hospitals, and NGOs to examine their preparatory practices. Given the growing interest in GH nursing and the need to reduce the under-five population mortality, the importance of preparing pediatric nursing staff for fieldwork cannot be overstated. This was a single-site study focused on pediatric nurses; conclusions may not be generalizable to all global health nurses. Differing educational modalities of preparation weren't examined. This study did not achieve data saturation due to availability and situation variability of GH nurses.
Source of funding (if none, enter "None"): Funded by the Inquiry Investment Drives Evidence into Action (IDEA) Grant Program at Boston Children's Hospital.

SAT_212

Does Virtual Education Work In a Conflict Setting: The Syrian Emergency Medicine Education Collaborative

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Background: Since the start of the Syrian conflict, approximately 470,000 Syrians have been killed, 70,000 dying as a result of adequate health services. Due to attacks on medical providers 95% of all physicians have left, with 250 remaining as of July 2013. Those that remain treat patients with traumatic and emergent conditions, often outside their scope of practice.

The Syrian Emergency Medicine Education Collaborative (SEMEC) formed in 2017 in response to the lack of educational resources and training available to Syrian physicians. Emergency physicians from US-based medical centers endeavored to provide online education specific to emergent conditions. SEMEC provided free online educational resources, pre-recorded lectures and hosted live discussions. The Collaborative utilized free online platforms which protected identity and allow exchange of knowledge. Three different online platforms were utilized to provid continuous availability. Participation was free and voluntary. Participants were not required to fulfill any educational requirements.

Methods: SEMEC utilized trusted Syrian contacts, who constructed a provider database. Location, training, specialty, wifi access, and language proficiency were collected, with preference for providers in acute settings. 26 providers participated in the initial pilot project. A post-course survey was distributed to the course participants. Survey results were anonymous.

Findings: Half of participants responded. Greater than 50% of respondents were trained in Emergency Medicine. Others trained in Internal Medicine or Critical Care. More than 1/3 of participants report treating trauma and critically ill patients regularly,reported as outside the scope of their practice.

90% of respondents found the course “very useful”, finding all three platforms similar in utility.The largest barrier to participation was internet connectivity. Half of respondents stated courses in English were a limiting factor.

Interpretation: Online education may serve to supplement training during times of conflict and disruption of education during conflict.

Advantages include convenience as prerecorded lectures could be watched repeatedly at convenient times, and discussions allowed specific questions to be addressed.

Internet connectivity and lack of instruction in a local language remains a significant barrier. This pilot study suggests efficacy for this format of educational programming in circumstances such as armed conflict.

Source of funding (if none, enter "None"): None

SAT_213

Evaluation of a Two-Year Community Health Club Program Focused on Water, Sanitation and Hygiene in Rural Haiti

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Background: In 2016, Lakou LaSante, a collaboration between University of Texas Health San Antonio and Eco-Eau et Jeunesse Haiti, launched its first rural Community Health Club program in Haiti's Central Plateau, near the source of the 2010 cholera outbreak. Over two years, 54 community-based facilitators were trained and formed 41 Clubs with over 1,500 members benefiting an estimated 9,000 people. By February 2018, almost 1,100 participants across four communes completed our six-month water, sanitation and hygiene (WASH) curriculum.
Methods: This program was evaluated using a quasi-experimental design with a pre- and post-intervention survey measuring WASH knowledge, norms and behaviors in a random sample of intervention communities and matched comparison communities. At baseline, 701 respondents (381 intervention households and 326 comparison households) were sampled and 521 respondents (283 intervention and 238 comparison households) were resampled at final (24% loss to follow up). Although analyses of this program evaluation are ongoing, a few key indicators are presented.
Findings: In intervention households, hand washing using the 'pour to waste' method (88.7% to 95.1%) and households with clean latrines (51.8% to 72.7%) increased from baseline to final. Intervention respondents also increased their knowledge of key times to wash hands during the day from an average of 1.79 correct responses at baseline to 2.96 correct responses at final. Intervention respondents provided an average of one additional correct response on three additional knowledge questions (diarrhea transmission, prevention of skin diseases, and home-made oral rehydration) at final. These changes were all greater than that of the comparison households. Statistical tests of significance will be conducted and reported on these and other key WASH indicators.
Interpretation: The results of this evaluation demonstrate the Community Health Club model's ability to facilitate changes in key WASH knowledge, norms and behaviors in rural Haiti.
Source of funding (if none, enter "None"): Conservation, Food and Health Foundation Christ is our Salvation Foundation Private Philanthropy

SAT_215

Basic Life Support Training and Establishment of “Code Blue” System in a Resource Limited Setting – A Feasibility Study

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Background: In hospitalized settings, ancillary health staff can play an important role at monitoring patients for signs of cardiopulmonary arrest. The delivery of quality cardiopulmonary resuscitation (CPR) has been shown to improve mortality after cardiac arrest, and the establishment of medical emergency teams can improve outcomes. We adapted a Basic Life Support (BLS) training course in conjunction with the establishment of a “Code Blue” system in a hospital in a resource-limited setting in order to evaluate its feasibility.

Methods: This project was conducted in a private hospital in Porte-au-Prince, Haiti in September through October of 2017. A curriculum was developed based on the components of BLS training as taught by the American Heart Association. The curriculum included a slide-deck, digital media, as well as hands-on training using both adult and neonatal mannequins. All written curriculum was translated into Haitian Creole, and content was delivered with a translator. In consultation with the hospital administration, a "Code Blue" system was established, in which an ICU nurse, the on call Emergency Medicine physician, and the respiratory therapist would respond to a medical emergency.

Findings: Over 10 training sessions were conducted with a total of 67 participants. Participating staff included pediatric nurses, intensive care unit nurses, adult ward nurses, ER nurses and residents, operating room nurses, medical assistants, and transportation personnel. Sessions were conducted both in the daytime and overnight to accommodate staff working in different shifts. Topics included adult CPR, pediatric CPR, neonatal CPR, defibrillator use, and choking rescue. During this course, staff were trained on when to initiate a “Code Blue” alert. Concurrently, each hospital unit was provided a radio to use to alert the medical emergency team of an unresponsive or decompensating patient.

Interpretation: Basic Life Support training is a low cost and feasible strategy to improve in-hospital mortality from cardiopulmonary arrest in resource-limited settings. Support from hospital administration is instrumental in allowing staff to attend training sessions during the workday, and can increase participation rates. Introduction of a cardiac arrest team is feasible in sites with on call staff trained in advanced airway. Further research is needed on patient outcomes after cardiopulmonary arrest to determine the impact of this intervention.

Source of funding (if none, enter "None"): None