Abstract N°: 605

Gendered Differences in the effect of Housing Insecurity on Diarrheal Infection in Kenyan Informal Settlements

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Background:
Kenya is home to informal settlements where housing insecurity, characterized by limited amenities, overcrowding, poor infrastructure, and high rates of diarrheal infections are present. Studies have focused on either housing insecurity or diarrhea; few explore their relationship and how it differs by gender. Therefore, this study examines the gendered effect of housing insecurity on diarrheal infections in Kenya’s informal settlements.

Methods:
Data were drawn from the **R**esource **I**nsecurity and **W**ell-being in **I**nformal **S**ettlements study in Kenya (N=1010). Surveys were conducted using multi-stage sampling. From these households, participants over 16 years who were most educated about household resource vulnerabilities were interviewed. Analyses were conducted on three levels, 1) descriptive and bivariate analyses of sample characteristics and diarrhea using chi-squared tests and 2) multivariate analysis using generalized linear models with a complementary log-log link function. Additionally, the interaction effect between housing and water insecurity on diarrhea was assessed, along with stratified models on the effect of housing insecurity on diarrhea by gender (of participant and household head). Participant verbal or written consent was received, and the University of Texas at Arlington and the University of Notre Dame Institutional Review Boards provided IRB approvals for study implementation.

Findings:
Of the 1010 participants, 35.5% reported a diarrheal infection, and 46.8% had housing insecurity scores above the median *(M*=7.5; range:1-17). After adjusting for covariates at $p<0.05$, housing insecurity was significantly associated with diarrhea (AOR=1.05; 95%CI:1.00-1.09; p=0.038). Other significant measures included water insecurity, number of people in the household, number of children <5 years, and housing material ($p<0.05$). The main effect of housing (AOR=1.10; p=0.038) and water insecurity (AOR=1.06; $p<0.01$) remained significant in the interaction model, but no significant effect was found in the main interaction. In the stratified models, housing insecurity had a significant effect for male-headed households (AOR=1.06; p=0.024) but not female-headed households.

Interpretation:
In Kenyan informal settlements, housing insecurity has deleterious diarrheal outcomes in males and male-headed households. Although water insecurity also increases the risk of diarrhea, its effect is less than housing insecurity. Our study's cross-sectional design limits causal conclusions but offers a foundation for future research on housing insecurity and disease. However, the novel scale used is a strength as it captures multiple axes of housing insecurity. Future policy should address key challenges with housing insecurity, particularly those related to water and toilet access, sludge, flooding, and sanitation.

Source of Funding:
Canadian Institutes of Health Research (CIHR)

Abstract N°: 681

Use of modern contraceptives on the basis of disability status in Uganda: Analysis of the 2016 Demographic and Health Survey

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Background:
In qualitative studies, women with disabilities have reported limited access to contraceptive services due to discrimination, lack of knowledge, and an inaccessible medical system. There is limited quantitative analysis to assess the impact these experiences have on use of services. This study uses Demographic and Health Survey (DHS) data to analyze the association between disability and modern contraceptive use in Uganda.
Methods:
The data was analyzed using a disability severity indicator based upon recommendations from the Washington Group on Disability Statistics. Bivariate analysis was performed using chi-squares to determine if a significant association exists between modern contraceptive use, disability, and other covariates. Logistic regressions were run to generate odds ratios for crude model and adjusted model which took demographic data and covariates into consideration.
Findings:
Disability was not found to be significantly associated with modern contraceptive use. All of the covariates included in the model (age, parity, residence, relationship status, education, and wealth) were significantly associated with modern contraceptive use. Women with disabilities did not have significantly different odds of using a modern form of contraceptive when compared to women without disabilities in both the crude and adjusted models.
Interpretation:
These findings are inconsistent with previous studies conducted in Uganda. Additional research should be conducted to determine if there are disparities in the type of contraceptive used, sustainability of the method, and whether there is an unmet need for contraceptives. Based on the findings of this study, it is clear that women with disabilities use contraceptives. Therefore, it is essential for family planning services to be accessible to women regardless of functional limitations.
Source of Funding:
None

Abstract N°: 1789

Patient Education: A Necessary Step to Empower Refugees and New Immigrants

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Background:
The global increase of resettled refugees in the United States has resulted in mistrust and a prevalent lack of knowledge of the U.S. medical infrastructure. Resettled refugee populations consistently incur higher rates of preventable emergency room visits, hospitalizations, and mortality. Healthcare services are often provided in a downstream, reactive manner, seeing as how symptoms and health conditions are treated without consideration of upstream social drivers of health. Migrant and refugee health requires a preventative approach to facilitate better patient outcomes and long-term prevention of health care issues. Patient education is an upstream approach to addressing health inequities and increasing patient autonomy.

Methods:
Four health literacy workshops will be administered to Afghan refugee patients at a refugee resettlement agency in Dallas County between June and September 2023. In small-group workshops, topics including types of healthcare environments, personal rights, insurance, and women's health will be discussed. Participants will complete pre- and post-intervention surveys, including the Refugee Health Literacy Assessment Tool (RHLAT). Data will be analyzed using paired t-tests to determine the effectiveness of the workshops in enhancing medication, functional, and comprehensive health literacy.

Findings:
Of the 15 participants, 12 (80%) were originally from Afghanistan, 2 (13.3%) were from Turkey, and 1 (6.7%) was from Iran. 3 individuals (20%) had resettled in the U.S. less than six months ago, 5 individuals (33.3%) had resettled between six and twelve months ago, and 4 (26.7%) had resettled over one year ago.

Based on RHLAT scores, there was a mean improvement of 31.25% in overall health literacy levels ($p<0.05$) following the completion of this program. Specifically, medication health literacy levels improved by 41.67% ($p<0.01$). Additionally, functional health literacy improved by 20% ($p<0.05$) and comprehensive health improved by 33.34% ($p<0.0001$).

Interpretation:
This health education program aims to empower refugees with the knowledge and resources to effectively navigate the U.S. healthcare system. Future efforts should hone in on the role of health education in reshaping healthcare utilization patterns and positively impacting both refugees' health outcomes and quality of life.

Source of Funding:
Catholic Charities Dallas Afghan Health Promotions Grant

Abstract N°: 1878

Knowledge, Attitudes, and Practices (KAP) towards Cervical Cancer Screening among Peruvian women in two LMIC cities

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Background:
Cervical cancer is the fourth most common cancer among women worldwide and the leading cause of cancer-related deaths for women in Peru. This study aimed to evaluate knowledge, attitudes, and practices (KAP) related to cervical cancer screening among Peruvian women.
Methods:
We conducted cervical cancer KAP surveys with women aged 18-65 years living in low-income areas of the capital city, Lima, and an Amazonian city, Iquitos, in 2017.
Findings:
Of the 1227 women surveyed (608 Lima, 619 Iquitos), the mean age was 39.66 (SD 14.5) years, and most (62.3%) reported having health insurance for Peruvians living in poverty. Regarding knowledge, 87.4% of women reported having heard of cervical cancer. Only 3.7% respondents knew that cervical cancer could be prevented with HPV vaccines, and 45.6 knew it could be prevented by regular screening (i.e., Pap smears, VIA tests). Most (77%) women reported having had cervical cancer screening at least once: 78.9% of these reported being screened in the past three years, 4.9% in the past five years, and 16.2% more than five years prior. Of note, 29 women reported a history of cervical cancer. The most common motivators for cervical cancer screening were experiencing symptoms (23.1%), healthcare professional recommendations (21.1%), pregnancy (20.2%), and preventative health check-ups (15.2%). The strongest association between both cervical cancer knowledge and up-to-date screening was having children (compared to none), followed by higher education levels (compared to only elementary). Women in common-law partnerships or marriages and those with higher cervical knowledge scores also had significantly higher rates of screening. Women with government-issued SIS insurance or no health insurance had both lower levels of knowledge and decreased odds of up-to-date screening. Living in Iquitos compared to Lima was also found to be a predictor for up-to-date screening.
Interpretation:
Since Pap testing is offered as prenatal care, having children influences screening cervical cancer knowledge and screening coverage, which are currently low in Peru. Public health efforts to increase knowledge may improve screening rates. Efforts could go beyond prenatal counseling e.g. educational interventions in schools and other health services.
Source of Funding:
None

Abstract N°: 65

Criminal Legal System Involvement and Hepatitis C Infection: Longitudinal Findings from a Community-based Cohort of Women Sex Workers in Vancouver, Canada (2010-2022)

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Background:
Sex workers (SWs) face a disproportionately high burden of Hepatitis C (HCV), which has been linked to dual drug and sexual-related risk exposures. Although incarceration has been associated with HCV infection among people who inject drugs, little is known regarding the relationship between criminal legal system involvement (e.g., policing, incarceration) and HCV risk among SWs. Given these research gaps and the intersecting forms of criminalization faced by SWs, we evaluated the separate associations of rushed negotiation with clients due to police presence and incarceration (i.e., being in jail overnight or longer), with time to HCV seroconversion, among SWs.
Methods:
Baseline and semi-annual questionnaire and lab data were drawn from AESHA (An Evaluation of SW Health Access), a prospective, community-based cohort of women SWs in Vancouver, Canada (2010–2022). AESHA is an open cohort that uses time-location sampling to recruit self-identifying women who exchange sex for money. We used bivariate cox regression to examine the relationship between time dependent (1) rushed negotiation with clients due to police presence, (2) in jail overnight or longer, and the outcome of time to first positive HCV lab test.
Findings:
Analyses included 367 baseline HCV-seronegative women who contributed 2158 observations over the 12-year study period. At first study visit, the median age was 36 (interquartile range:28-43), 29.2% (n=107) identified as Indigenous, and 36.8% (n=135) reported soliciting clients in public/outdoor locations. The cumulative incidence of HCV seroconversion was 21.3%, with an incidence rate of 3.04/100 person-years. The period-prevalence of experiencing rushed negotiation due to police presence was 38.1% (n=140) and period-prevalence of spending a night or more in jail was 21.3% (n=78). In bivariate cox analysis, rushed negotiation with clients due to policing (hazard ratio (HR)=2.58, 95% confidence interval (CI): 1.34-4.97) and incarceration (HR=2.78,95%CI:1.16-6.66)_ were both associated with HCV seroconversion.
Interpretation:
Women SWs involved with the criminal legal system faced elevated HCV risk. Findings suggest the need for policy reforms that shift away from criminalization and enforcement-based approaches towards models that uplift SWs' health and human rights, including decriminalization of sex work.

Source of Funding:
National Institutes of Health and Canadian Institutes of Health Research

Abstract N°: 1343

The Effect of Housing and Energy Insecurity on Psychosocial Health Outcomes Among Those Living in Urban Informal Settlements in Ghana

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Background:
Previous studies have linked housing and energy insecurity to poor psychosocial health outcomes. However, there is a dearth of studies examining this relationship in low-to-middle-income countries, especially those from sub-Saharan Africa. This study aims to examine the effect of housing and energy insecurity on psychosocial health outcomes and to elucidate the drivers that mediate this relationship in the Ghanaian context.

Methods:
Surveys were conducted with 1,036 household representatives in Accra, Ghana. The outcomes of this study were moderate-to-severe anxiety and clinical depression. Anxiety was determined through the General Anxiety Disorder-7 scale, and depression by the WHO Well-being Index. The exposures were housing insecurity and household energy insecurity, measured by the previously validated Multilevel Multidimensional Housing Insecurity Scale and Household Energy Poverty Experiences Scale, respectively. Logistic regression models were used to assess the relationship between each exposure and outcome. The University of Texas at Arlington and the University of Notre Dame Institutional Review Boards provided ethics approval.

Findings:
A total of 516 (49.8%) respondents were found to be clinically depressed, while 239 (23.1%) experienced moderate-to-severe anxiety. Housing insecurity was positively associated with depression (aOR=1.22, 95%CI: 1.14-1.29, p<0.001) and moderate-to-severe anxiety (aOR=1.15, 95%CI 1.09-1.20, p<0.001). Similarly, energy poverty was associated with increased likelihood of depression (aOR=1.08, 95%CI: 1.05-1.11, p<0.001) and moderate-to-severe anxiety (aOR=1.07, 95%CI: 1.04-1.10, p<0.001). Covariates that were associated with lower odds of depression were higher SES (aOR=0.87, 95%CI: 0.763-0.996, p=0.043) and living near other households (living in Kiosk: aOR=0.22, 95%CI: 0.9996-0.4709, p<0.001). Similarly, religion (Islam: aOR=0.15, 95%CI: 0.047-0.447, p=0.001; Christianity: aOR=0.19, 95%CI: 0.06-0.57, p=0.003) seemed to attenuate the odds of experiencing moderate-to-severe anxiety. On the other hand, female-identifying household representatives had higher odds (aOR=2.02, 95%CI: 1.35-3.03, p=0.001) of moderate-to-severe anxiety. Our findings provide evidence for the deleterious effects of housing and energy insecurity among slum dwellers. It also underscores the buffering effect of SES, living near other households, and religion on psychosocial health outcomes. Although the cross-sectional nature of this study precludes inferring causality, the consistency of our results with prior studies assures the validity of our findings.

Interpretation:
These findings underscore the need for global health actors to intensify efforts in addressing mental health in urban slums through programs targeting poverty and gendered inequities. While housing programs in Ghana should remain focused on safety and affordability, it is also important to foster community cohesion.

Source of Funding:
Canada Research Chairs Program in support of Dr. Godfred Boateng

Abstract N°: 272

Patterns and Correlates of Depression, Anxiety and Coping Strategies among Asian Americans and Pacific Islanders in Eastern Virginia During the COVID-19 Pandemic

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Background:
Although the health impacts of racial discrimination for immigrants have been widely acknowledged in major US cities, little is known about the effect of the anti-Asian racism on Asian Americans and Pacific Islanders (AAPI) during the COVID-19 pandemic. This study examined the correlates of depression, anxiety, and coping strategies, using mixed-methods data collected in Eastern Virginia in April/August 2022.
Methods:
Online quantitative surveys (N=1,795) and semi-structured in-depth interviews (N=48) were conducted among AAPI recruited via various channels using three sampling criteria: 1) being decedents of AAPI; 2) aged between 18-85 years, and 3) residing in Hampton Roads and the Eastern Shore region. A range of information was collected, including mental health status and experiences with stigma and discrimination (S&D) during COVID-19 pandemic. Descriptive statistics and multivariable regressions were performed to analyze survey data. Thematic analysis was performed to identify key themes from qualitative interviews guided by the grounded theory.
Findings:
Around 8% of AAPI have been diagnosed with mental health problems. 16% had symptoms of anxiety, and 14% had depression, and 40% experienced more than 10 S&D items. Adjusting for confounding factors, receiving a mental health diagnosis was associated with levels of S&D (AOR:1.52, 95% CI:1.01-1.52), sex (AOR:1.66; 95% CI:1.05-2.64); insurance status (AOR:0.49; 95% CI:0.24-0.98) 1.01: 2.35), education level(AOR:0.47; 95% CI:0.27-0.85), and income (AOR:0.54; 95% CI:0.29-0.99). Furthermore, having symptoms of anxiety was associated with sex (AOR:1.41; 95% CI:1.05-1.89) and birth location (AOR:4.23; 95% CI:2.55-7.02); and having religious beliefs (AOR:1.72; 95% CI:1.22-2.44). Common stress coping strategies included talking with friends/families (44%), engaging in a game/sport (31.2%), and increased screen time (TV program or social media). Qualitative interviews revealed higher mental health risks among AAPI with lower income, education-level, and an English language barrier with significant buffering effects due to strong family/community support.
Interpretation:
Findings revealed elevated depression/anxiety and mental health risk among AAPIs who were socially and economically disadvantaged and who had higher exposure to anti-Asian S&D. Findings highlighted the needs for interventions to combat racism against AAPIs and improve mental health among those living in smaller cities in the U.S.
Source of Funding:
EVMS Presidential Research Fund

ORAL PRESENTATIONS SESSION: Pandemic Prevention, Covid-19, Emerging Infectious Diseases, and Other Communicable Diseases

Abstract N°: 1073

Bridging Research and Innovation for Resilient Epidemic and Pandemic Preparedness in the Arab World

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Background:
The COVID-19 pandemic underscored a critical global health paradigm – the need for robust, equitable, and context-specific pandemic preparedness, especially in regions with fragile healthcare infrastructure and sociopolitical instability, such as the Middle East and North Africa (MENA). Against this backdrop, the American University of Beirut Global Health Institute (AUB GHI) established the 4-year Epidemic and Pandemic Preparedness Program (EPaPP), which aims to generate contextualized evidence and solutions for equitable and responsive preparedness in the MENA region.

Methods:
EPaPP incorporates four tailored projects designed to address the needs around preparedness in the MENA region: (1) An interactive stakeholder map which strategically identifies and connects key preparedness stakeholders in the region. (2) Data portal which includes a comprehensive resource center that compiles datasets, reports, visualizations, and other relevant materials related to preparedness in the region. (3) Online Asynchronous Certificate, composed of four courses, that strengthens regional capacity in preparedness, specifically tailored to the needs of the region. (4) Collaboration Portal: An online gateway that empowers users to identify and collaborate with researchers in the region who are actively contributing to the field of preparedness. EPaPP employs a highly participatory approach, involving a diverse range of stakeholders, such as policy makers, emergency managers, medical and public health practitioners, risk communicators, and civil society leaders, to effectively translate knowledge into potential actionable policies.

Findings:
In a concerted effort to enhance preparedness in the region, EPaPP's projects are continuing to demonstrate measurable progress. The interactive stakeholder map has successfully identified 2,510 individuals and 851 organizational stakeholders, paving the way for a more coordinated and inclusive approach to epidemic and pandemic preparedness in the region. The training needs assessment of such stakeholders is informing the development of the online certificate on preparedness. Complementing these interconnected projects, the collaboration portal, which now includes over 7,000 researchers sets the stage for enhanced collaborations and multisectoral solutions for preparedness.

Interpretation:
Despite challenges such as data scarcity and low stakeholder engagement, EPaPP has the potential to serve as a regional and global model for preparedness through informing evidence-driven policies, developing context-specific capacity building, and enabling high-impact research and practice collaboration.

Source of Funding:
International Development Research Centre, Canada

Abstract N°: 1080

HIV and Syphilis Coinfection in Pregnancy and Adverse Birth Outcomes in Uganda

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Background:
The incidence of syphilis is increasing worldwide. Little is known about combined impact of maternal HIV and syphilis coinfection on birth outcomes, especially in sub-Saharan Africa (sSA), where HIV prevalence is high.
Methods:
We analyzed data from two prospective birth cohorts enrolled in southwestern Uganda from 2017 – 2023. All PHIV reported taking antiretroviral therapy (ART). Participants were tested for syphilis using a *Treponema pallidum* particle agglutination (TP-PA) rapid test on peripheral blood (positive test indicates treponemal exposure but cannot distinguish current vs prior infection). In one cohort, we also tested umbilical cord blood for and performed rapid plasma reagin (RPR) testing for TP-PA positive blood samples. Our primary outcome was a composite adverse birth outcome, including low birthweight (<2.5kg), stillbirth, neonatal death within 14 days of birth, or 5-minute APGAR<7. We compared outcomes by HIV and TP-PA seropositivity using chi-square tests and fitted multivariable logistic regression models to determine adjusted associations between maternal HIV and syphilis infection and birth outcomes.
Findings:
Of 944 women, 93 were TP-PA positive PHIV, 385 were TP-PA negative PHIV, 24 were TP-PA positive people without HIV and 442 were TP-PA negative people without HIV. Mean age of TP-PA positive PHIV was 28 6 years, 60/93 (65%) initiated ART before conception, and 13% had detectable HIV viremia. Of 117 (12%) TP-PA positive people, 93 (79%) were PHIV (*P*<0.001). There were 52/944 (6%) adverse birth outcomes, occurring in 9/93 (10%) TP-PA positive PHIV (including 5/93 [5%] stillbirths), 20/385 (5%) of TP-PA negative PHIV, 2/24 (8%) of TP-PA positive people without HIV, and 21/442 (5%) of TP-PA and HIV negative people (*P*=0.26). Of 54 PHIV with RPR titers available, 8 (15%) were non-reactive, 38 (70%) were <1:32 and 8 (15%) were ≥1:32. In multivariable analysis, gestational age (adjusted odds ratio [aOR] 0.91, 95% confidence interval [CI] 0.86-0.97, *P*=0.005) and attending ≥4 antenatal care visits (aOR 0.50, 95% CI 0.27-0.91, *P*=0.02) were independently associated with the composite adverse birth outcome, but maternal TP-PA seropositivity (aOR 1.75, 95% CI 0.82-3.73, *P*=0.15) and HIV infection (aOR 0.87, 95% CI 0.47-1.59, *P*=0.64) were not. An HIV×TP-PA product term was not statistically significant.
Interpretation:
Maternal HIV or TP-PA seropositivity did not increase the risk of adverse birth outcomes, though stillbirth incidence among TP-PA positive PHIV was higher than prior studies from sSA. High TP-PA seroprevalence and RPR positivity among PHIV emphasize the need to improve prenatal care with enhanced syphilis screening and treatment.
Source of Funding:
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Abstract N°: 983

Lessons from Global Digital Exposure Notification Implementation: Successes, Barriers, and Future Direction

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Background:
In response to the COVID-19 pandemic, public-health authorities (PHAs) worldwide deployed novel exposure notification (EN) applications to supplement manual contact tracing (CT) efforts. EN systems typically used smartphones to allow those infected with COVID-19 to anonymously notify other system users whom they may have exposed, even if those individuals were not personally known to the index case. There is a growing body of evidence about implementation success and the effectiveness of the EN systems on reducing the burden of COVID-19; however, little is known about the most optimal implementation methods and how best to measure system impact.
Methods:
We conducted a structured literature review and compiled evidence of EN effectiveness to investigate priorities for augmented disease mitigation when implementing EN systems in the future–taking particular emphasis on systems built off the Google-Apple Exposure Notification (GAEN) technology.
Findings:
Multiple studies indicate that EN systems mitigated the burden of COVID-19 in their respective jurisdictions. An evaluation of the UK and Wales National Health Service COVID-19 app reported that approximately one case of COVID-19 was averted for every EN received. Likewise, an evaluation of the EN app in Pennsylvania, USA reported that between November 8, 2020 and January 2, 2021, 7-69 cases were potentially averted for every 1,000 ENs received. The actualized success rates, however, are dependent on adoption rates. These studies also further exemplified the lack of consensus as to how best to configure the systems, nor is there a defined standard of measurement when evaluating an application's impact due to the GAEN system's privacy preserving nature. The following EN-related topics require further consideration prior to any future implementations (1) functionalities and design characteristics; (2) applicability to additional diseases; (3) global bureaucratic partnerships; (4) privacy; and (5) accessibility.
Interpretation:
While EN systems successfully supplemented CT efforts during the COVID-19 pandemic, building consensus about measuring success and system optimization is critical to future outbreak responses. There are also barriers in adoption that need to be addressed in order to increase the impact of future applications worldwide. This study helps to establish baseline categories for implementation considerations that can be further assessed through the Delphi method.
Source of Funding:
None

Abstract N°: 274

Sanitation and Hygiene Insecurity Predict Abscess Incidence Among People Who Use Drugs in the Tijuana-San Diego Metropolitan Area: A Longitudinal Cohort Study

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Background:
People who inject drugs (PWID) are at high risk of developing infection-related diseases associated with increased morbidity and mortality, such as abscesses. Access to water, sanitation, and hygiene (WASH) are global health priorities and human rights frequently violated among marginalized communities. WASH insecurity has been underexplored as predictors of abscesses among PWID.
Methods:
Longitudinal analysis was employed among a binational cohort of PWID to determine if WASH insecurity is associated with abscess incidence over a 24-month period in the Tijuana, Mexico and San Diego, California metropolitan area. We used univariate and multivariable Cox regressions with time-varying covariates controlling for city of residence, homelessness, and gender identity to assess seven WASH insecurity indicators.
Findings:
At baseline, 21% of participants reported having an abscess, and over the 24-month follow-up the incidence rate of new abscesses was 29.6 (95%CI: 26.3-33.0) per 100 person-years. Hand hygiene insecurity, bathing insecurity, and open defecation were reported by 60%, 54%, and 38% of participants, respectively. In univariate analysis, abscess incidence was significantly associated with the use of non-improved water sources for preparing drugs for injection (HR: 1.93 [95%CI: 1.38-2.71], p<0.01) and for handwashing (HR: 1.78 [95%CI: 1.13-2.79], p=0.01), hand hygiene insecurity (HR: 2.01 [95%CI: 1.52-2.64], p<0.01), bathing insecurity (HR: 1.94 [95%CI: 1.50-2.51], p<0.01), sanitation insecurity (HR: 2.07 [95%CI: 1.49-2.87], p<0.01), and open defecation practices (HR: 2.08 [95%CI: 1.61-2.69], p<0.01). After adjusting for covariates of interest, the hazard of developing an abscess remained significantly elevated among individuals experiencing insecurity accessing basic hand hygiene (aHR: 1.43 [95%CI: 1.05-2.0], p=0.03) and open defecation (aHR: 1.46 [95%CI: 1.06-2.0], p=0.02).
Interpretation:
Among PWID in the binational Tijuana-San Diego metropolitan area, abscess incidence was about five to ten times the rates observed in cohorts of PWID in other contexts, and was associated with open defecation practices, insecurity accessing handwashing facilities with water and soap (i.e., basic hand hygiene), bathing, improved toilet facilities, and the used of non-improved water sources for preparing drugs for injection and for handwashing. PWID reported high rates of insecurity accessing WASH services, mainly hygiene and sanitation. Accessible WASH infrastructure should be ensured among PWID communities and championed as a component of key harm reduction infrastructure.
Source of Funding:
National Institute of Drug Abuse (NIDA) grant number R01DA049644.

Abstract N°: 475

Pre-Exposure Prophylaxis: Attitudes and Knowledge Among Young People in Nigeria

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Background:
Nigeria has one of the largest HIV epidemics in the world, with 1.9 million Nigerians seropositive for HIV. Pre-exposure prophylaxis (PrEP) has the potential to decrease the incidence of HIV infections, however, there is a suboptimal uptake of PrEP among at-risk populations. While there are a growing number of studies on PrEP awareness and implementation in Nigeria, there has been limited focus on PrEP knowledge among young people (14-24 years old- a group that makes up a disproportionate number of new HIV infections in Nigeria). This study aims to explore attitudes and knowledge of PrEP among Nigerian youth.
Methods:
This Wake Forest University and Nigerian Institute of Medical Research IRB approved cross-sectional study surveyed 77 young people (14-24 years old). Young people were recruited and consented in person from local colleges in Lagos, Nigeria, and online across multiple different states. Participants were required to fall between 14-24 years old, be Nigerian Nationals, and were excluded if they were healthcare students. Quantitative data were analyzed using descriptive and inferential statistical analysis on SPSS Software.
Findings:
The young people surveyed had a median age of 18 (IQR=3.0), and 55% were female, originating from 18 different states. 22% of participants endorsed sexual activity in the last year with 67.2% of all respondents not using a condom during "occasional sex". 66.7% of young people thought they were at low/no risk of contracting HIV. Only 13% knew what PrEP was, however, after learning about PrEP efficacy, over half (58%) of respondents were extremely/highly likely to ask a physician about PrEP if they were at risk of HIV. The majority of the participants indicated that they were more likely to use PrEP if it was free (60%) and if they had more information (54.8%). Most of the participants indicated low risk perception for HIV as the reason for not using PrEP (63%). Gender (p=0.243), education level (P=0.609), ethnicity (p=0.317), and previous HIV testing (p=.151) were not associated with PrEP knowledge.
Interpretation:
The findings from this study point to low PrEP knowledge among young people, however, there was high perceived acceptability for PrEP. We recommend that interventions aimed at PrEP expansion among Nigerian youth address the structural and social barriers related to PrEP uptake and promote awareness among youth.
Source of Funding:
MSRP, Wake Forest University School of Medicine and the NIH

Abstract N°: 1403

From Hesitancy to Resilience: Mobile Vaccination Services and Their Impact on COVID-19 Vaccine Uptake in Madhesh Province, Nepal

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Background:
The impact of the COVID-19 pandemic had resulted in an unprecedented level of public interest in vaccines worldwide. Nevertheless, a vaccine hesitancy survey conducted by ADRA Nepal in 2021 revealed a significant hesitancy rate in Madhesh province, standing at 37.5%. This hesitancy was primarily attributed to the difficulty in accessing vaccination services, which accounted for 26% of the hesitancy. It's important to note that pregnant and lactating women, individuals with disabilities, and those with underlying health conditions are particularly vulnerable to COVID-19. Swiftly vaccinating these high-risk groups is crucial for reducing fatalities and easing the burden on healthcare systems. One effective approach to reach these vulnerable populations is through mobile vaccination services.
Methods:
ADRA designed a door-to-door vaccination approach, known as mobile COVID-19 vaccination services (MoCoVs) in collaboration with the three tiers of government. The goal was to make sure that even the most vulnerable and isolated communities could access the COVID-19 vaccine. We set up MoCoVs vans in all eight districts of Madhesh Province, equipping them with safety measures, vaccine storage and kits for handling adverse events after immunization (AEFI). We also put together a skilled team of vaccinators and nurses to ensure that everyone gets vaccinated, leaving no one behind.
The program's efficacy in increasing vaccine utilization between July 2022 and June 2023 was evaluated using data from the project reporting system, which was analyzed using an easy-to-understand approach in an Excel spreadsheet.
Findings:
MoCoVs model has successfully administered 100,518 doses of COVID-19 vaccine to target population with a male female ratio of 1:1.6. To make this happen, we used a Risk Communication and Community Engagement (RCCE) strategy and reached out to pregnant and lactating women (57.0%) followed by elderlies (12.4%), people with disabilities and morbidities (14.0%) and others (3.9%) among the total administered.
In addition to our COVID-19 vaccination efforts, MoCoVs made a significant impact on increasing the number of children aged 5-17 years getting vaccinated in schools across Madhesh Province. We successfully vaccinated 12.7% of children during the project's duration.
Vaccination coverage increased from 24% to 96.7%, demonstrating its effectiveness, especially for populations struggling to access regular vaccination sites.
Interpretation:
This approach significantly boosted COVID-19 vaccine coverage in Madhesh Province, reducing transmission, mortality, and morbidity. Ultimately, MoCoVs played a crucial role in safeguarding the health and well-being of the province's vulnerable population and mitigating the impact of emergencies. Additionally, the MoCoVs model is easy to replicate in similar health emergencies.
Source of Funding:
ADRA International

Abstract N°: 891

Impacts of the COVID-19 Pandemic on Health Interventions Coverage: A Population Level Assessment of the Effects on Maternal, Newborn and Child Health Services in Burkina Faso

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Background:
While countries' epidemic emergency contingency and response plans were designed to prevent and control the spread of the COVID-19 pandemic, they also can cause major disruptions to health service utilization. We assessed the impacts of COVID-19 on the coverage of selected maternal, newborn and child health services and inequalities in Burkina Faso.
Methods:
We analyzed data from two cross-sectional household surveys to understand the population level impact of COVID-19 in urban and rural areas. The first survey, covering 3375 households, was conducted immediately before the pandemic (February-March 2020). We carried out a second survey after the pandemic outbreak (May-June 2022) using a similar sampling design and sample size in the same areas. We quantified the impacts of the pandemic on disruptions of health service coverage, timing and sources of care-seeking, and content of care for antenatal (ANC), delivery and postnatal care (PNC), and child immunization.
Findings:
We found an increased proportion of late antenatal care-seeking (11 pp in rural areas) and lesser pregnant women accompanied by their partners for antenatal visits during the pandemic, but the differences were not statistically significant. There were no significant impacts on the content of antenatal care interventions received by pregnant women, despite slight decrease of neonatal tetanus toxoid vaccination, particularly in the urban areas. Data showed dramatic drops in the percentage of women (23 pp) accompanied by their partners for delivery and in c-section (C-S) rates in urban areas. The decline in C-S rate was due to prioritization of emergency C-S, fewer requests for elective C-S and task shifting of health staff. We found no significant disruptions of PNC for mothers and babies, despite marginal drops in the receipt of PNC interventions in urban areas. Similarly, small declines were observed for child immunization coverage and timing, but they were not statistically significant in urban or rural areas.
Interpretation:
COVID-19 related restrictions did not appear to have substantially decreased the coverage of maternal, newborn and child health interventions in Burkina Faso. However, no substantial increases in coverage of these interventions were also observed either. In the absence of a counterfactual, it was challenging to disentangle the effects.
Source of Funding:
Bill & Melinda Gates Foundation

Abstract N°: 1634

Assessing Multilateral Banks' Role in Combating Climate Change: A Post-Paris Agreement Analysis of Asia-Pacific Region

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Background:
The 2015 Paris Agreement marked a pivotal moment in the global battle against climate change, with its ratification in November 2016 representing a significant commitment to addressing climate challenges. Multilateral development banks (MDBs) have a critical role in supporting the agreement's implementation, particularly in the vulnerable Asia Pacific region. This project investigates climate project financing in Asia Pacific developing countries by the World Bank and the Asian Development Bank (ADB) before and after the Paris Agreement (2011-2016 as Pre-Paris Agreement and 2016-2023 as Post-Paris Agreement).
Methods:
Regression Discontinuity Analysis (RDA) was employed to assess the Paris Agreement's impact on climate-related financing patterns. We navigate through data from 2011 to 2016 as pre-Paris Agreement and from 2016 to 2023 as post-Paris Agreement. The RDA method involves estimating linear regression models for both periods and comparing coefficients to measure the treatment effect of the Paris Agreement.
Findings:
The results indicate no statistically significant evidence (at a 5% significance level) of the Paris Agreement having a substantial impact on climate funding from the World Bank in the Asia Pacific region. However, at a 10% significance level, there appears to be a positive effect on climate-related financing post-Paris Agreement, although this finding should be interpreted with caution. In contrast, for the Asian Development Bank, there may be a negative impact of the Paris Agreement on climate financing in the region.
Interpretation:
While these findings offer insights, they are subject to limitations, including data anomalies and the assumption of smooth variations. Furthermore, factors beyond the Paris Agreement, such as economic conditions, political environments, and donor priorities, may influence climate financing trends. The project utilized the ND-GAIN Index and GDP per capita to account for country-specific differences in vulnerability and economic capacity, revealing disparities in funding allocation among vulnerable countries.
Despite successes in mapping and visualizing climate funding, ongoing challenges persist, including limitations in project data availability and analysis methodologies. Unmet goals include the comprehensive inclusion of all climate-related projects.
This study emphasizes the importance of considering multifaceted factors in assessing climate financing trends. While the Paris Agreement represents a critical milestone, its impact on climate finance may be more nuanced and contingent on various contextual factors. Understanding the impact of global climate agreements on funding patterns is crucial for shaping future policies and interventions. Our results can guide policymakers in optimizing multilateral development bank strategies for climate financing, contributing to global efforts in addressing climate change impacts.
Source of Funding:
None

Abstract N°: 1336

Evaluating Particulate Matter Levels and Their Impact on Residents in Choba and Mgbuoba Areas of Rivers State: Implications for Environmental Health, Climate Change, and Pollution

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Background:
This study investigates the health implications of exposure to Black Soot particulate matter among residents of Choba and Mgbuoba regions in Port Harcourt, with a broader consideration of Planetary Health, One Health, Environmental Health, Climate Change, Biodiversity Crisis, and Pollution. Air pollution, particularly particulate matter, poses a significant threat to both environmental and human health globally. This research aims to assess the extent of health impacts and air quality in these areas.
Methods:
The study employed a comprehensive research approach involving 100 respondents, equally divided between Choba and Mgbuoba. Data collection utilized structured questionnaires covering various aspects of respondents' lives, such as living conditions, occupations, environmental exposures, existing health conditions, fitness, and cleanliness. Additionally, Key Informant Interviews (KII) were conducted with healthcare professionals to provide valuable insights. Environmental data, including wind speed, temperature, and relative humidity, were collected using a handheld Kestrel weather tracker. Air quality measurements were conducted using an Aerosol Mass Monitor (Model GT – 531, met One Instrument, Inc.). Biochemical parameters, including lipid profiles, renal markers, and liver markers activities, were assessed through the analysis of blood samples via spectrophotometric methods.
Findings:
The study's analysis revealed notable findings. First, the air quality in Mgbuoba exhibited a significant increase in total suspended particulate matter (TSPM), PM10, and PM2.5 levels compared to Choba, particularly during the 6 am to 8 am period. These elevated levels exceeded the 24-hour PM10 and PM2.5 limits recommended by the World Health Organization. Second, residents in both Choba and Mgbuoba demonstrated elevated levels of alanine transaminase (ALT) and low-density lipoprotein (LDL) beyond the reference limits set by the Medical Council of Canada, in the absence of local standards. These findings suggest that Mgbuoba residents face heightened health risks and increased vulnerability to adverse effects associated with air contaminant exposure.
Interpretation:
Considering these results, this study underscores the urgent need for responsive measures to address black soot emissions in the Choba and Mgbuoba areas, particularly considering the broader context of environmental health, climate change, and pollution within the framework of Planetary Health and One Health.

Source of Funding:
No external funding was received by the authors.

Abstract N°: 691

Khat Use Among Pregnant & Lactating Women in Haramaya, Ethiopia

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Background:
Khat is a psychoactive plant with amphetamine-like properties and is culturally significant and economically vital in eastern Ethiopia. While its usage has been associated with adverse health effects, especially among pregnant women, limited research exists. This study aimed to investigate khat utilization and influencing factors among pregnant and lactating women in the Oromia Region.

Methods:
This cross-sectional mixed methods study was conducted using questionnaires and focus group discussions (FGDs) within the Haramaya District of Ethiopia. Pregnant women aged 18 to 49 from eight randomly selected kebeles within the Haramaya Health and Demographic Surveillance System participated in the quantitative arm of the study. Trained enumerators collected data on sociodemographic information, pregnancy history, dietary diversity, and khat use. FGDs involving pregnant or lactating women from different kebeles were conducted and analyzed to explore knowledge, attitudes, and practices related to khat. Quantitative data were analyzed using SPSS v28, while qualitative data underwent directed content analysis using NVivo 14 to identify themes and subthemes through an iterative process conducted by independent reviewers.

Findings:
Among 444 pregnant women with a median age of 25 (range 18-45), 66.8% reported current khat use during pregnancy, with the majority being married, Muslim, and engaged in agriculture and khat cultivation and sale. Older age (above 25 years) was associated with 5.42 times higher odds of khat use, while lacking formal education increased the odds by 1.52 times, and living in households growing khat increased the odds by 2.84 times. Five FGDs involving a total of 40 women with varying education levels and family sizes revealed five themes related to khat use. These themes included Economic Livelihood, Maternal Significance, Medicinal Implications of Khat, Pesticide Use, and Social and Cultural Applications.

Interpretation:
The study found a high prevalence of khat use among pregnant women, attributed to accessibility and economic dependence on khat cultivation. This underscores the importance of research on khat's health impact on pregnant and lactating women and interventions to improve agricultural practices to reduce chemical exposure in khat farming households.

Source of Funding:
University of Florida, the University of Notre Dame, and Haramaya University

Abstract N°: 1268

Geographic Disparities in Prenatal Exposure to Mercury and Lead in Surinamese Pregnant Women: Implications for Maternal and Child Health

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Background:
In Suriname, where around 20% of pregnancies lead to adverse birth outcomes, prenatal exposure to metals is of concern, such as mercury (Hg) originating from gold mining in its Amazonian Interior. Previous research from a subset (n=400) of the Caribbean Consortium for Research in Environmental and Occupational Health (CCREOH) cohort in Suriname, showed that pregnant women were exposed to high levels of Hg and lead (Pb). This study assessed the concentrations of Pb and Hg, as well as selenium (Se) in all pregnant women from the CCREOH cohort (n=1189), including an examination of geographic differences.
Methods:
Blood samples were analyzed for several elements by the Human Health Exposure Analysis Resource (HHEAR), using inductively coupled plasma mass spectrometry. Geographic differences in blood elemental concentrations were tested with the Mann-Whitney U-test, and differences between these concentrations and CDC reference value for Pb (3.5 ug/dL) and suggested action level for Hg (3.5 ug/L), with the Wilcoxon signed rank test. Ongoing analyses include multivariate logistic regression models to assess associations between demographics and high exposures of Pb and Hg, of which the results will be available at the time of the conference.
Findings:
Median blood concentrations of Pb, Hg, and Se among Interior women, 6.58 µg/dL, 12.4 µg/L, and 185 µg/L, respectively, were significantly higher than in women from the Urban and Suburban areas ($p < 0.001$). In addition, the Pb and Hg concentrations in Interior women, were significantly higher than the levels of concern ($p < 0.001$).
Interpretation:
This first comprehensive exposure assessment in Suriname showed high levels of Hg and Pb, especially in Interior women. Addressing geographic disparities requires customized interventions and source investigation. Future studies will examine the implications for maternal and child health, and will explore Se's potential protective role.
Source of Funding:
NIH Fogarty International Center (grant numbers U01TW010087 and U2RTW010104)

Abstract N°: 1429

Prenatal Exposure to Air Toxics and Adverse Birth Outcome: An Integrated Rural-Urban Mother-Child Prospective Cohort Study from Southern India

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Background:
Household air pollution (HAP) emanating from biomass-based cooking is a significant risk factor for disease burden in India. Exposure to multiple air toxics released from HAP sources during pregnancy could impact the development of the fetus. The primary aim of this study was to assess the effect of pregnancy period exposures to fine particulate matter ($PM_{2.5}$) and polycyclic aromatic hydrocarbons (PAHs) on birthweight in a rural-urban cohort of pregnant women in Southern India.
Methods:
Eligible and consenting pregnant women (n=325) were recruited from the antenatal clinics (ANC) from a rural (n=225) and an urban (n=100) site in the state of Tamil Nadu, Southern India, between November 01, 2020, and April 30, 2023. Personal exposures to $PM_{2.5}$, PAHs and BC were monitored over a 24-hour duration at each trimester. Mass concentration of $PM_{2.5}$ was determined gravimetrically using a microbalance with a sensitivity of ±0.001 mg. Black carbon was measured using an offline SootScan OT21™ and particle-bound PAHs were determined by HPLC-fluorescence detection following the NIOSH 5506 method. We collected data on birthweight from the institutional records within 24 to 48 hours from the date of delivery.
Findings:
The mean birthweight of liveborn neonates was 2781.4 g (n=325, SD: 427.9 g) with mean gestational age at delivery of 38.6 weeks (SD: 4.1). 291 (89.5%) of 325 births were full-term and 34 (10.5%) were classified as pre-term births. Normal birthweight (2500 g and above) recorded was 80.9% and low birthweight was 19.1%. In adjusted linear models, an interquartile increase in gestational exposure to $PM_{2.5}$ was associated with 83.2 g (95% CI: 138.0,27.4) reduction in birthweight, for BC it was 66.7 g (95% CI: 113.6,24.6) and 122.9 g (95% CI: 227.7,20.2) for PAHs. In fully adjusted logistic models, exposures to BC [OR: 1.50 (1.13,1.97) p=0.002] and PAHs [1.83 (1.49,3.33) p=0.037] significantly increased the odds of low birthweight but not $PM_{2.5}$.
Interpretation:
Prenatal exposures to air toxics emitted from HAP sources results in low-birth weight babies. This could disrupt the normal growth and development of the child.
Source of Funding:
Indian Council of Medical Research (ICMR), New Delhi, India

Abstract N°: 970

A Model for Building Equitable Partnerships with International Volunteer Coordinators Implementing Hybrid Professional Development Courses

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Background:
The University of Washington Department of Global Health E-Learning Program (eDGH) offers 11 affordable hybrid professional development courses annually. Since 2014, eDGH has run courses in 148 countries. These courses are delivered to over 25,000 health professionals annually through partnerships with more than 500 local volunteer site coordinators.
In April 2022, eDGH launched the Certified Partner initiative to strengthen partnership opportunities with coordinators and organizations who offer our courses to train local professionals.
The aims of the initiative are to:

- build equitable relationships through partner involvement in eDGH's initiatives,
- optimize course implementation for improved participant experiences,
- ensure responsible business practices, and
- foster partner-to-partner interactions.

Methods:
eDGH recruited potential partners from its existing pool of volunteer site coordinators using criteria that included the number of courses they had offered, their site participant pass rates, coordinator ratings by participants, and geographic representation. To become a certified partner, coordinators must pass a free, 6-week online course focused on leadership development and successful site management. They must also meet with the eDGH partnership manager and submit a site operations plan for approval. Partners receive guidance on recruiting participants, managing payments, facilitating meetings, and promoting participant engagement. Since April 2022, 50 participants (82% of enrollees) from 20 countries have become certified partners.
Findings:
The partnership model has resulted in a closer and more equitable collaboration between eDGH and international volunteer site coordinators. Partners provide an integral advisory role: guiding eDGH program direction and resource allocation, providing feedback about policies through discussions with the partnership manager, and helping pilot new courses and initiatives.
Through one-on-one meetings and the site operations plan, eDGH better understands the different ways partners implement courses at their local sites. This, coupled with stronger relationships, has led to joint problem-solving efforts on challenges coordinators experience.
Additionally, course discussion forums and quarterly meetings have fostered partner-to-partner engagement, nurtured peer mentorship, and strengthened relationships among the coordinators.
Interpretation:
We intend to expand partner interaction opportunities beyond quarterly meetings to establish a WhatsApp community of practice to facilitate partner discussions on challenges and successes, publish a newsletter showcasing partner best practices, and host an annual virtual conference.
Our partner engagement model serves as an exemplary approach for universities, NGOs, and ministries of health aiming to foster equitable relationships with stakeholders. It provides a way to encourage valuable input and feedback, and provides a platform to acknowledge collaborator contributions.
Source of Funding:
None

Abstract N°: 1067

Mind the Gap: Impact of Institutional Affiliation on International Publication Distribution in Anesthesiology

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Background:
The 2015 Lancet Commission on Global Surgery (LCoGS) report identified information management and research as integral components to National Surgical, Obstetric, and Anesthesia Plans (NSOAPs)[1]. Yet universally accepted indicators designed to track capacity building of international information systems and research infrastructure are underdeveloped. While recent bibliometric analyses provide insight into capacity building within low- and middle-income countries (LMIC), the influence of non-LMICs over local research agendas confounds accurate monitoring of capacity building efforts aimed at enhancing academic agency[2,3]. We hypothesize that accounting for authorship affiliation can reduce confounding from non-LMIC agendas in methods that assess research capacity and academic agency in anesthesiology.
Methods:
Article counts per nation per search term and Human Development Index (HDI) data were aggregated from the E-Utilities NCBI Entrez API and the United Nations Development Programme portal, respectively[4,5]. Article counts were generated with and without an affiliation filter and limited to publications up until 2015 for the search terms “anesthesiology,” “obstetric anesthesiology,” “maternal mortality,” “perioperative outcomes,” and “cesarean section.” Data were graphically depicted using violin and density plots. Statistical comparisons were assessed using the non-parametric Wilcoxon Rank Sum Test. All analyses were conducted using R.
Findings:
Filtering by national affiliation significantly reduced median article counts across each HDI tier for all search terms (Panel A, p-values <<< 0.01). The difference between unfiltered and filtered publication counts was smaller in the very high development tier relative to all other tiers. The distributions for obstetric anesthesiology articles with an affiliation filter were heavily skewed towards null in the low, middle, and high development tiers. A Filtration Index (FI) was thus created to evaluate publication volume per country in obstetric anesthesiology when at least one author is affiliated with an institution located in the country under evaluation. The median FI for obstetric anesthesiology articles in very high HDI nations was significantly lower than all other tiers (Panel B). FI distributions were heavily skewed towards one in low, middle, and high HDI tiers (Panels B and C).
Interpretation:
Our analysis reveals an overrepresentation of articles, particularly in obstetric anesthesiology, that are published without an author affiliated with a local institution. Tracking academic agency through computation of national FIs can facilitate integration of information systems and research into NSOAPs internationally, in line with LCoGS recommendations.
Source of Funding:
None.

Abstract N°: 299

Building Research Capacity Among Students and Faculty in Ghana: The Initiation of a Bilateral Medical Student Research Grant

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Background:
Publications from the Global South comprise less than 10% of worldwide articles. Barriers include experience, mentorship, and funding. The goals of this grant program are to allow students to consider projects limited by funding and learn the process of applying for a grant; faculty to co-engage in grant development and administration, and research dissemination; and global research collaboration.
Methods:
This grant program was established in 2022 between Family Health Medical School (FHMS) in Ghana and the University of Michigan (UM) in the United States. The grant supports Ghanian medical students' research focusing on women's or children's health. Five grants are awarded every year, each 1,000 to 2,500 USD. All procedures, policies, and documentation were co-developed by faculty from FHMS and UM. A call for applications was shared with FHMS students. Applications consisted of student and faculty advisor information; letter of support from the faculty advisor; research proposal (title, background, objectives, study design and methods, significance, timeline, personal impact); and itemized budget. Six faculty and senior trainees from Ghana and six from UM with expertise in maternal or child health were invited to be grant reviewers.
Findings:
The inaugural grant call was sent to 120 medical students. Ten eligible submissions were received: seven women's health and three children's health. Each application was reviewed by one Ghanian and one UM reviewer. Using standardized forms, submissions were reviewed on scientific merit, significance, feasibility, and personal commitment to research. Virtually, a review committee of FHMS and UM faculty discussed final scores. Five grants were awarded: three women's health and two children's health for a total of 8,600 USD. The funded research is currently underway. Students will disseminate their research findings through a virtual presentation to stakeholders and receive co-mentorship to submit a conference abstract.
Interpretation:
By increasing funding and mentorship opportunities for medical students in Ghana, this grant program provides the opportunity to develop meaningful projects and translate it into academic success, while also building faculty research capacity. This partnership grant can be implemented at other institutions using a similar protocol to build collaborative research capacity.
Source of Funding:
The grant is funded by Elaine Schwitzer.

Abstract N°: 1779

Lessons Learned from the Implementation of a Funded Fellowship for University Mental Health Advocates

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Background:
In 2023, Generation Mental Health launched the first cycle of its University Fellows program, providing five young people from diverse backgrounds with capacity building training and funding to develop and implement programming addressing mental health concerns on their university campuses.
Methods:
A monitoring and evaluation framework for the fellowship included organizational reflection by Generation Mental Health leadership, interviews with fellows and their mentors, and a longitudinal assessment of fellows' program development skills throughout the experience.
Findings:
Through the monitoring and evaluation process, our team has identified several lessons learned with relevancy for global health programming outside of Generation Mental Health. Here, we highlight two areas of success and two challenges. First, the ability to offer stipends and funding for university changemakers allowed us to recruit fellows from diverse backgrounds who may have been otherwise unable to participate. However, the number and breadth of applications forced us to think critically about ethical issues in youth-led programming by ensuring that students proposed interventions that were appropriate in scope. Our second success was that we intentionally built supports for fellows' mentors throughout the process, including mentoring workshops and a supervision structure. While we successfully cultivated successful mentor-mentee relationships, the peer community we expected to develop organically among fellows never materialized. Our evaluation data suggests that we will need to find new ways to facilitate these relationships in a virtual environment across global time zones.
Interpretation:
There has been a recent wealth of interest in centering young people in global health research and programming. Generation Mental Health's experience piloting the University Mental Health Fellowship highlights key lessons in successfully empowering young people. Our ability to offer funding and mentorship allowed us to reach university students from diverse backgrounds who may have been unable to participate without financial and social support. Incorporating lessons learned, we intend to scale up this program in the future to increase the reach of this innovative program. In future years, we will consider providing pre-application information on global health ethics to ensure students propose appropriate programs in their initial application. We plan to provide more synchronous opportunities for fellows to build peer-to-peer relationships. More broadly, financial and social support must be taken seriously as elements of youth-focused leadership development beyond this program, and incorporating young people directly in the development and evaluation of youth-centric programming is a key strategy for ensuring the success of this programming.
Source of Funding:
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Abstract N°: 1395

Implementation of a Bidirectional Exchange of Obstetrics and Gynecology (OBGYN) Fellows

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Background:
International medical observerships have traditionally favored one sided exchanges, with high-income countries sending trainees to lower-income countries. This approach lacks the mutual benefits of a bidirectional exchange. Here, we outline a bidirectional model between Korle Bu Teaching Hospital (KBTH) in Accra, Ghana, and the University of Michigan (UM) in the United States. The aim is to foster collaboration among advanced fellowship-level OBGYN trainees, engage in local healthcare experiences, and explore subspecialty care.
Methods:
Our exchange has been ongoing for over 15 years, recently expanding to include advanced fellowship-level trainees. Annually, six Ghanaian fellows are selected to participate in one-month observerships in their chosen subspecialty at UM. Fellow-specific learning objectives are co-developed by the KBTH and UM fellowship directors and include (1) exposure to OBGYN subspecialty advanced clinical techniques (2) systems-level learning to promote capacity in quality improvement and running subspeciality units (3) development of research collaborations. Both institutions provide financial, educational, and administrative support to improve access to the rotation.
Findings:
The expansion commenced in 2022 with three Ghanaian Maternal Fetal Medicine (MFM) fellows. In 2023-2024, six Ghanaian fellows were selected from MFM, Urogynecology, REI, and Family Planning. During this period, three UM OBGYN residents, six medical students, and one fellow rotated in Ghana. Ghanaian participants gained exposure to inpatient wards, clinics, labor and delivery, and high-level sub-specialty care, including fetal surgery, gynecologic laparoscopy, and complex placenta accreta cases. UM participants were immersed in their chosen fields and initiated collaborative research projects with local trainees with similar exposure. One limitation is that Ghanian rotators cannot engage in hands-on patient care at UM due to country-level regulations. This bidirectional exchange program at the advanced fellowship level has been highly successful, benefiting both individual trainees and healthcare systems. Challenges like visa procurement and funding persist, but expanding access to similar rotations holds substantial advantages. Trainees gain exposure to healthcare in diverse settings, and programs gain fresh perspectives on their practices.
Interpretation:
Although bidirectional exchanges are relatively uncommon, our program demonstrates the feasibility of such a collaboration as well as the potential to enrich both medical education and global healthcare collaboration.

Source of Funding:
None

Abstract N°: 1102

SolarSPELL Health Libraries for Student Nurses in Malawi

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Background:
Healthcare students in developing regions lack meaningful access to high-quality health information due to infrastructure constraints including limited internet access, scarce textbooks, and often outdated library collections at campus settings, with even more austere information conditions in rural and remote training sites. As a result, students and clinicians have limited ability to employ evidence-based practice in information-austere settings. SolarSPELL Health is an offline digital library initiative delivering high-quality health information to healthcare students and clinicians to enable evidence-based practice in settings where library resources are otherwise unavailable.
Methods:
Beginning in 2022, the SolarSPELL initiative collaborated with Peace Corps Response staff and Kamuzu University of Health Sciences (KUHeS, Malawi) librarians and faculty to curate locally-relevant content to support nursing education in rural settings. In January 2023, the SolarSPELL team conducted training workshops for KUHeS nursing faculty, librarians, and students including written surveys at the completion of workshops. We deployed 10 digital libraries for student nurses to use during multi-week clinical rotations in rural and remote areas. SolarSPELL staff conducted 6-month monitoring and evaluation in July 2023 including written surveys, skill assessments, and semi-structured interviews.
Findings:
Post-workshop and 6-month surveys and indicated high confidence and motivation to use the digital libraries. Skill assessments demonstrated high facility with navigating library resources, even for users with minimal prior experience. Semi-structured interviews found that users felt more confident in preparing for patient care and academic assignments, making strong use of textbook and video resources in the library. Anecdotal faculty feedback indicated that student nurses at sites with a SolarSPELL library were perceived as more skilled and competent by hospital and clinic staff than student nurses at sites without a SolarSPELL library.
Interpretation:
Early findings from field deployments of SolarSPELL offline digital libraries suggest that healthcare students with access to high quality information resources may demonstrate higher confidence and perceived clinical skill than students without robust information access. Based on these findings, we plan further quantitative assessments of student performance to support expansion of the SolarSPELL Health library program in Malawi and additional countries where information access is limited due to infrastructure constraints.
Source of Funding:
Private philanthropy

Abstract N°: 938

Training Vulnerable Women Community Health Workers in Fragile Settings in Lebanon Through Capacity Building and Communities of Practice: The Mobile University for Health

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Background:
Due to multiple recent crises, Lebanon's healthcare system became significantly strained, compromising its response capacity to population health needs. Vulnerable and refugee communities were especially impacted, given their reduced ability to access healthcare services. In response, the Global Health Institute at the American University of Beirut designed and implemented the Mobile University for Health (MUH), aiming to equip vulnerable women in low-resource settings in Lebanon with the skills and knowledge needed to assume the role of community health workers (CHW) within their communities. Through capacity building and community of practice components, MUH's goal was to prepare and empower women CHWs to promote positive health knowledge and behaviors within their communities.

Methods:
Through a mixed-methods approach, three of MUHs' certificates delivered between 2019 and 2022 were evaluated (i.e., women's health, mental health and psychosocial support, and non-communicable diseases). A total of 83 CHWs graduated from the program. Short-term data assessing knowledge, satisfaction, and community member feedback were collected through surveys. 93 semi-structured interviews with CHWs and 14 focus group discussions with community members were also conducted to evaluate the long-term impact of both the capacity building and CoP components.

Findings:
The data revealed multiple strengths of the initiative, including increased access to education for the community, effectiveness of blended learning modality, successful planning and delivery of the CoP sessions, improved knowledge, skills, and health behaviours over time. The supplementary CoP sessions fostered trust in CHWs, increased community empowerment, and increased leadership skills among CHWs. However, some challenges persisted, including limited access to healthcare services, implementation logistical issues, difficulties with some aspects of the learning modality, and some resistance within the communities.

Interpretation:
MUH promoted and improved health knowledge and behaviours within targeted communities, and the supplementary CoP component was instrumental in empowering CHWs and improving their impact at the community level. The study highlights the need for ongoing training and support for CHWs and underscores the importance of continued investment and adaptation of such initiatives. This evaluation provides evidence on the successes of MUH as a model that has strong potential for scale and replication across health topics in conflict-affected contexts.

Source of Funding:
International Development Research Centre, Canada

ORAL PRESENTATIONS SESSION: Translation and Implementation Science, Bridging Research to Policy, Innovation and Research

Abstract N°: 398

Virtual/Telesimulation is Non-Inferior to In-Person Helping Babies Breathe Training in Jimma, Ethiopia: A Randomized Controlled Trial

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Background:
Helping Babies Breathe (HBB) teaches healthcare providers newborn resuscitation knowledge and skills. However, instructors and participants encounter logistical challenges when they need to travel for in-person HBB training at various sites. The study aimed to assess whether virtual/telesimulation HBB training is non-inferior to in-person training in a low-resource setting.

Methods:
In this randomized, controlled, non-inferiority trial, we recruited clinical medical students in Ethiopia who had not received HBB training. Participants were randomized (1:1) in blocks to virtual/telesimulation (intervention) or in-person (control) training. Intervention training was taught via Zoom using a PowerPoint presentation and instructional videos. Control training consisted of HBB lectures and didactics. Each arm received identical content delivered by the same four trainers in a single day in real-time. HBB multiple-choice knowledge test was assessed before, immediately after, and two months after the training. Objective Structured Clinical Examinations (OSCEs; OSCE A and OSCE B), bag and mask checklist, and resuscitation performance on the NeoNatalie Live (NNL) mannequin were assessed immediately after and two months after the training. The primary outcome was the OSCE B scores after two months. The non-inferiority margin was 13%, which has been used in educational studies for resuscitation. Group differences were assessed by intention-to-treat analysis using linear regression. A non-inferiority p-value <0.05 suggests non-inferiority. ClinicalTrials.gov NCT05854745.

Findings:
We enrolled 262 medical students (intervention: n=123; control: n=139). Less than 5% of medical students in both groups received prior training in newborn resuscitation. The intervention was non-inferior to the control group for OSCE B scores two months after training (p<0.001), with similar passing rates of 60% and 62.8%, respectively. Immediately after the training, non-inferiority was demonstrated for OSCE A (p<0.001), OSCE B (p=0.006), bag and mask checklist (p=0.03), and knowledge (p<0.001). Two months after the training, non-inferiority was also demonstrated for OSCE A (p<0.001), bag and mask checklist (p=0.005), and knowledge (p<0.001). In the first 45 seconds of a simulation on the NNL mannequin, the performance of the intervention group was non-inferior to the control group as measured by differences in the area under the curve for the heart rate immediately after and 2 months after the training (both p<0.001).

Interpretation:
Virtual/telesimulation is non-inferior to in-person HBB training about knowledge and resuscitation skills among medical students with minimal prior newborn resuscitation experience. Telesimulation training was effective and offers potential solutions for addressing logistical challenges in educating healthcare providers in low-resource settings about newborn resuscitation.

Source of Funding:
Laerdal Foundation, Stanford Maternal & Child Health Research Institute

Abstract N°: 479

Prevalence of prostate cancer and its Correlation with Prostate Specific Antigen among African men in Northern Tanzania

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Background:
The critical prostate-specific antigen (PSA) cut-off of 4 ng/mL, commonly used for prostate cancer screening, has been questioned in native Africans because it is originated from non-African populations who are assumed to have higher normal PSA levels. The study aimed to determine the correlation between PSA levels and prostate cancer diagnosis in a Northern Tanzanian community.
Methods:
From May to October 2022, a community-based prostate cancer screening was performed including men aged ≥40 years. PSA levels were measured from venous blood samples, and those with PSA >4 ng/mL were invited for a biopsy. Independent pathologists evaluated the biopsy samples. PSA levels were categorized as >4-10, >10-20, >20-50, 50-100, and >100 ng/mL. Each PSA category was assessed for its correlation with positive biopsy, sensitivity, specificity, positive predictive value, negative predictive value, and area under the receiver-operating characteristic (AuROC) curve. Significance was set at the value of $p<0.05$.
Findings:
The study involved 6164 African men with an average age of 60±11 years. Among them, 912 (14.8%) had PSA >4 ng/mL. Only 581 (63.7%) agreed to undergo biopsy, of whom 179 (30.8%) were confirmed to be prostate cancer. High Gleason scores (8-9) were present in 46 (25.7%) of the cases. Over 2/3 (64.7%) of participants with PSA >20 ng/mL had prostate cancer, reaching nearly 100% at PSA >100 ng/mL. A positive correlation between PSA levels and prostate cancer as well as aggressive disease, was observed. The optimal PSA cut-off was found at >10 ng/mL. PSA demonstrated the overall 84% ability to distinguish prostate cancer from non-cancer cases and a 71% ability to differentiate aggressive from non-aggressive prostate cancer disease.
Interpretation:
Thirty percent of biopsied participants had prostate cancer, indicating the need for control measures. PSA showed excellent potential in distinguishing prostate cancer among African men aged ≥40 year. The findings implies that in circumstances where biopsy is impractical, treatment can be initiated for those with PSA levels >100 ng/mL. This study underscores the importance of considering population-specific PSA threshold for prostate cancer screening.
Source of Funding:
This work received support from PCF-Pfizer Global Health Equity Challenge Award (Award No. 67641037) and American Society for Clinical Pathology/ Coalition for Implementation Research in Global Oncology (ASCP/CIRGO).

Abstract N°: 1543

Implementation Research on Cervical Cancer Screening in Nepal

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Background:
Cervical cancer (CC) can be prevented through early detection and treatment. However, only 8.2% of eligible Nepali women have undergone cervical cancer screening. It is important to conduct implementation research in low-income settings like Nepal to get unique insights into the major opportunities and challenges associated with the cervical cancer screening. In this study, the implementation of a community-based CC screening program utilizing self-sampling and careHPV in a hilly region of Nepal was evaluated.

Methods:
We developed a community-based model of cervical cancer screening in which female community health volunteers (FCHV) recruit women through household visit. In this study, developed as a convergent parallel mixed methods design, a total of 1856 women were recruited with the assistance of female community health volunteers (FCHV) via household visit. The eligibility criteria included being aged 30-60 years, having an intact uterus, no history of cervical intraepithelial neoplasia (CIN), and not being pregnant. The women were offered care-HPV self-sampling services near their communities, and those who tested positive were referred to Dhulikhel Hospital (DH) free of charge. We assessed acceptability (proportion of women who accepted the self-sample kit and expressed satisfaction with their decision), feasibility (rates of VIA positive follow-up and treatment), marginal cost, and fidelity (proportion of women who accurately completed the self-sample collection) of the self-sampling and care-HPV using Proctor's Framework. Additionally, we conducted 47 in-depth interviews, comprising 16 women undergoing cervical cancer screening, 15 women who declined the screening, 8 health workers, and 8 Female Community Health Volunteers (FCHVs). Quantitative and qualitative data were analyzed and integrated to interpret the results.

Findings:
Approximately 65% of participants provided samples, and 5% tested positive for HPV. Among those who tested positive, 44% attended follow-up visits at DH clinics. The acceptability of self-sampling was high, with over 90% finding the self-sampling process was understandable, and supported by qualitative findings. Around 75% of women fully adhered to the sample collection guidelines. The marginal cost per person screened using HPV testing at USD 28; 55% of this was direct cost.

Interpretation:
Engaging FCHVs or similar community health workers cadres for promoting the screening of cervical cancer can be promising even in resource-limited settings. Self-sampling careHPV was acceptable among women aged 30-60 years in semi-urban Nepal but the follow-up visits among test positives were low.

Source of Funding:

Abstract N°: 489

Preliminary Clinical Study of a Securement Device Enabling the Use of Foley Catheters as Pediatric Gastrostomy Tubes in Resource-Limited Settings

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Background:
Gastrostomy tubes are used to support various feeding difficulties in children. However, due to their high-cost and limited availability, low-cost alternatives like Foley catheters are often used as feeding tubes in resource-limited settings. These catheters employ makeshift methods of securement and are prone to complications, especially in children. We have developed a low-cost securement device that enables Foley catheters to be used safely and effectively for tube feeding. This proof-of-concept study aims to validate the function and safety of the device in a Chilean pediatric hospital, and understand medical staff and caregiver perspectives to improve the device.
Methods:
The device was tested at the Josefina Martínez Hospital, a Chilean hospital for medically complex children with chronic respiratory disorders. We enrolled 11 hospitalized pediatric patients 1-15 years old, who were users of Foley catheters for >1 month without gastric complications. The study was approved by the Stanford(IRB-69424) and PUC Chile(230310005) ethics committees. Informed, written consent was received from children's guardians. Patients used the device for 8-14 days, during which in-person visits were conducted nearly daily to assess complications. Medical staff reported complications between visits. Staff and caregivers completed a pre- and post-study survey about their experiences with old methods of securement and the new device.
Findings:
The device did not result in any major complications. 73%(24/33) of medical staff and caregivers believe the device had the same or fewer complications than previous methods of securement. Device complications included mild leakage and the device coming apart. 36%(4/11) patients experienced leakage and the device came apart in 91%(10/11) patients, with a median of 4(IQR 1.5-4.5) times per patient. Peristomal skin quality did not change after device use. 95%(34/36) of staff and caregivers reported they were able to properly feed children through the Foley catheter with the device installed, and 85%(28/33) could use the device without any help. 82%(28/34) would use the device again with improvements—highlighting its ability to roll up the catheter and prevent children from pulling on it, but wanting more resistant material.
Interpretation:
This study validates the device's potential to properly secure Foley catheters and improve their use as feeding tubes. The device allows children to be easily and safely fed, but requires improvements in durability. This feedback will be used to further device development and advance tube feeding innovation worldwide.
Source of Funding:
Stanford MedScholars and PUC Chile Pediatric Surgery

Abstract N°: 1372

Strengthening Cross-Border Surveillance in South America: Insights for Program Planning from a Literature Review

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Background:
Enhanced health surveillance is critical for preparedness and response to pandemics and other public health threats. However, many surveillance strengthening initiatives focus on improving national systems, often overlooking cross-border surveillance. In 2023, with US Centers for Disease Control and Prevention support, the University of Washington and colleagues in five South American countries launched a project to address cross-border surveillance needs at two triple borders: 1) Brazil-Peru-Colombia and 2) Brazil-Argentina-Paraguay. To begin, we conducted a literature review which provides insights into regional challenges and opportunities.
Methods:
To understand the current state of cross-border surveillance and identify effective strategies, we conducted a literature review using PubMed and supplementary resources. Two readers assessed 52 potentially relevant article abstracts and extracted data from 33 articles, including 12 articles and six resources in the review.
Findings:
Our review underscores innovative successes and enduring challenges in South American cross-border surveillance. Progress includes harmonizing data formats and creating regional data exchange platforms. Bilateral cooperation agreements between Colombia, Peru and Brazil facilitate information sharing. A Cross-Border Malaria Monitoring System has been built between Brazil and French Guiana. The cross-border surveillance guide by ORAS CONHU includes Bolivia, Chile, Colombia, Ecuador, Peru, and Venezuela.
However, we identified at least four challenges:

- **Lack of formal communication** processes **between border agencies and neighboring countries** result in gaps in information sharing, disjointed efforts, and difficulties in coordinating surveillance activities across borders.
- **Political tensions and instability, differing priorities, and bureaucratic hurdles** hinder effective coordination, cooperation, and sustainability of surveillance systems.
- **Limited availability of surveillance equipment and other technologies, and outdated infrastructure with varying capabilities across borders** present obstacles to implementing effective surveillance systems.
- **Insufficient funding** for infrastructure development, equipment procurement, training, and personnel impedes the establishment of comprehensive and sustainable surveillance programs. Funding disparities between countries can also create inequities and hinder cross-border collaboration efforts.

Interpretation:
Informed by our review, this project will emphasize development of processes and tools for cross-border data sharing, harmonized surveillance framework, technology investment, capacity-building, and cross-border communication mechanisms. We advocate for regional governance and partnerships as vital elements. These strategies aim to translate research into actionable policies, impacting and strengthening cross-border surveillance in South America.
Source of Funding:
US Centers for Disease Control and Prevention.

Abstract N°: 585

Implementing Birth Companionship of Choice within a Referral Maternity Hospital in Freetown, Sierra Leone: a Qualitative Assessment, August 2022

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Background:
WHO has recognized birth companionship of choice (BCC) during delivery as an effective measure to improve quality of care in childbirth, delivery outcomes, and facility-based delivery rates. Regardless, most resource-limited countries like Sierra Leone, facing a maternal mortality rate of 443 per 100.000 live births, do not consistently offer this approach. In March 2022, Princess Christian Maternity Hospital (PCMH) in Freetown began recommending and encouraging BCC for women during delivery. The aim of our study was to assess perspectives and experiences regarding BCC among involved healthcare workers, delivering women and their birth companions.

Methods:
We conducted a qualitative study at PCMH in Freetown, Sierra Leone in August 2022. At this point, BCC had been implemented for six months at PCMH. Recruitment was done purposively through the facility, selecting 15 individuals per each of the three participant groups, i.e., healthcare workers, delivering women, and birth companions (4 male, 11 female). In total, we conducted thirteen focus group discussions and eleven in-depth interviews. Discussions and interviews were recorded, transcribed, and thematically coded for analysis. We used the TAMS analyzer software, and coded manually in the synthesizing process.

Findings:
Women described multiple empowering forms of support from BCC throughout delivery, including emotional care, practical guidance, and having someone advocate for their needs. Healthcare workers emphasized that, despite initial hesitation, companionship was advantageous. BCC presented some challenges, such as maintaining patients´ privacy, but healthcare workers described several strategies to deal with those and highlighted the benefits of BCC, such as improved workload and job satisfaction. Birth companions revealed that they were learning about facility-based delivery through companionship and sharing their positive experiences with their community. With a few exceptions, both companions and women reported overall satisfaction with their treatment in the delivery ward.

Interpretation:
Findings suggest that BCC is a key component of a positive birth experience, and should represent a constituent part of Respectful Maternity Care. The presence of a birth companion inside the delivery ward increases appreciation for facility-based care and potentially alleviates mistrust between the healthcare system and the community. Policy makers in resource-limited settings should consider large-scale implementation of BCC, representing a substantial precondition for high quality birth care.

Source of Funding:
German Ministry of Economic Cooperation (BMZ)

Abstract N°: 1661

Enhancing Maternal Healthcare Infrastructure and Education Capacity in The Gambia: A Comprehensive Approach to Reducing Maternal Mortality

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Background:
The Gambia, located in West Africa, faces a significant maternal mortality challenge with a rate of 289/100,000 live births, ranking 17th highest worldwide. Approximately 80% of these deaths result from avoidable obstetric complications such as hemorrhage, hypertensive disorders of pregnancy, and sepsis.
Assessments conducted by Baylor College of Medicine (BCM), Baylor University, and Horizons Trust in The Gambia revealed critical deficiencies in obstetric and anesthesia care provision, primarily related to under-equipped facilities. Specifically, 86% reported inadequacies in obstetrics infrastructure, while 88% of respondents (health system employees) identified anesthesia infrastructure shortcomings.
Based on this assessment, we are implementing an approach combining infrastructure enhancement and comprehensive training, which includes deployable mobile operating and recovery rooms, telehealth, and ongoing education. Our goal is to improve cesarean capacity from 1-3 daily to 9.6-12 daily, roughly 288-360 monthly. We'll achieve this by boosting expertise in emergency obstetrics and anesthesia and expanding infrastructure with BCM Smart PodsTM, to accommodate more mothers. Through educational capacity building, we aim to impact 600- 1200 healthcare workers in The Gambia in the next 3 years.
Methods:
Our intervention adopts a dual approach to reduce maternal mortality rates: implementation of Smart Pods and a didactic, integrated educational program for healthcare workers (doctors, nurses, midwives, administrative staff) involved in all aspects of obstetrical care, including anesthesia.
BCM has developed rapidly deployable, ISO-standard, expandable container units for operative care, labor and delivery, and pre-operative/recovery care. The units are interconnected with a vestibule to maintain sterility. BCM is currently conducting virtual didactic training in obstetrics and anesthesia, neonatal resuscitation, communication, teamwork, and other critical areas of training materials, through telemedicine.
Findings:
To date, BCM is in the manufacturing stage of the Maternal Health Smart Pod TM and has undergone shipping container testing and container certification for both pods. BCM has also successfully completed 7 out of 14 virtual training courses, with over 75% improvement on average from pre-lecture assessments to post-lecture assessments.
Anticipated deployment in 2024 will facilitate qualitative and quantitative assessment and expand interventions in wider Gambia.
Interpretation:
Challenges include assessing long-term knowledge sustainability, measuring impact on mortality rates, and addressing issues in electricity and water supply.
The results of our intervention have the potential to inform global health policies, optimize resource allocation, and guide strategies for improving healthcare systems. Policymakers can focus on educational capacity building and monitoring to combat maternal mortality on a global scale.
Source of Funding:
Local Philanthropists

Abstract N°: 1579

A Comparative Analysis of Legislation for the Protection of Healthcare Workers Against Violence in Five Countries of the Asia-Pacific Region

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Background:
Violence against healthcare workers (VAHCW) is a growing issue with global implications. The lack of safety and dignity experienced by healthcare workers is a violation of Article 23 of the Universal Declaration of Human Rights, ratified by 192 countries, which mandates favorable working conditions. Healthcare workers face high rates of threats, aggression, and violence that have only increased during the COVID-19 pandemic. Various nations have enacted legislation to address this silent crisis. This study aims to analyze the existing legal provisions in the Asia Pacific region to advocate for the need for international standards for preparedness, mitigation, and response to VAHCW.
Methods:
We conducted a baseline analysis of the Asia-Pacific region using data from the Safeguarding Health in Conflict Coalition Reports between 2017-2022 and identified five countries with reported incidence that have enacted laws to combat VAHCW: India, Philippines, Nepal, Taiwan, and China. A comprehensive analysis of the legislative framework encompassing definitions, objectives, scope, provisions, and procedures was undertaken to assess their strengths and weaknesses.
Findings:
India's Epidemic Diseases Act Amendment (2020) defines the healthcare workforce, workplace, violence, procedures, and timelines for grievance redressal during a declared Epidemic, but lacks mention of ambulance drivers and other field health workers. The Notifiable Diseases and Public Health Emergencies Act Amendment (2020) of the Philippines and its amendment address VAHCW, however, has unclear definitions, that were later included in the Benefits and Allowances Act for Public Health Emergencies (2021). The Ordinance on the Safety and Security of Health Workers and Health Institutions (2022) to the Constitution enacted in Nepal establishes VAHCW as a non-bailable offense, but no information on further parliamentary action is available. The Medical Care Act Amendment (2017) of Taiwan is well-rounded, only overlooking ambulance service and drivers but emphasizing medical personnel safety, site-wise risk assessment, and a reporting mechanism and follow-up announcement. The Law of China on Basic Medical and Health Care and the Promotion of Health Law (2019) emphasizes the safety and dignity of healthcare personnel, outlining the responsibilities of all stakeholders but omits mention of clear definitions or sanctions.
Interpretation:
The unification of India's clear definitions, China's objective of safety and dignity, Taiwan's preventive strategies, Nepal's strict penalties and the compensation during public health emergencies in the Philippines can inform essential principles of a holistic legal framework to strengthen global policies to protect healthcare workers against violence worldwide.
Source of Funding:
None

Abstract N°: 967

Medical Humanitarianism in Gaza, Palestine: The Evolution of Aid Delivery in Light of Siege, 1994-2014

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Background:
The long history of the Occupied Palestinian Territories (OPT) provides a rich example of a complex, political, humanitarian crisis. The Palestinian people—having endured a 74-year long history of displacement by conflict, blockade, and occupation—represent a population that is heavily dependent on humanitarian support. Today, the country receives one of the highest amounts of humanitarian aid in the world. This is in spite of significant efforts, launched by the World Health Organization & the National Health Plan in 1994, to develop a Palestinian healthcare system that is self-sustainable and independent of humanitarian assistance.
The purpose of this study is to provide a historical examination of the attempted transition from “humanitarian” to “developmental” models of medical delivery in Gaza, Palestine – namely through the “humanitarian-development nexus.” It explores how the Gaza siege and its structures allowed the humanitarian model to persist.

Methods:
Two-fold research approach.

1. Scoping literature review & case-study development.
2. Analysis of primary historical documents – specifically official reports issued by the United Nations (UN), the World Health Organization (WHO), and the Palestinian Ministry of Health between 1994 to 2014.

Findings:
My analysis of the secondary literature and archival documents has allowed me to map the historical role that humanitarian aid has persistently played in medical structures of the Gaza Strip. In light of this analysis, the conclusion must be drawn that since the establishment of the Palestinian Ministry of Health in 1993 with the support of the WHO, developmental aid under the structures of siege has failed to achieve the goal of placing Gaza’s healthcare system on the path of sustainable development. The siege and its constraints on Gaza have rendered developmental efforts as inadequate and enforced a continuous cycle of short-term response. In my study, I explain how the siege – as a political structure – has dismantled the health landscape and produced a disjointed and rudimentary collection of healthcare services, producing a health care system that continues to depend on foreign aid provision and short-term intervention after almost 74 years of the onset of conflict.

Interpretation:

Source of Funding:
Cordeiro Fellowship from the Harvard Department of Global Health & Health Policy

Abstract N°: 1526

Assessing Violence Against Healthcare: A Retrospective Analysis of 97 Countries from 2017 to 2022

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Background:
Violence against healthcare workers (VAHCW) is a key occupational hazard with severe implications for healthcare workers and costs to health facilities globally. Multiple national and cross-national surveys have attempted to capture VAHCW outcomes. However, cross-country assessments are missing. We used surveillance data to assess comparable metrics of VAHCW outcomes.
Methods:
This is an observational retrospective study. Data was compiled using multiple Safeguarding Health in Conflict Coalition reports for 2017-2022 in 97 countries. We extracted incidents where HCWs were killed, kidnapped, injured, assaulted, arrested, threatened, or sexually abused and health facilities (HFs) that were destroyed or damaged. Country-specific healthcare workforce and health facilities data were obtained from the Institute for Health Metrics and Evaluation and WHO, respectively. The VACHW rate was calculated as the number of violent incidents per 10,000 HCWs. The HF attack rate was calculated as the total number of healthcare facilities destroyed or damaged per 10,000 facilities. Both outcomes were grouped further by six WHO regions and four World Bank Income Groups (WBIGs) and compared using the Krushkal-Wallis rank sum test. For all analyses, 2019 was used as the base year.
Findings:
Globally, the mean VACHW rate ranged from 0 to 643.33 incidents per 10,000 HCWs impacted and the HF attack rate ranged from 0 to 309.85 attacks per 10,000 facilities impacted. Ten countries reported zero mean VAHCW and HF attack rates. Palestine reported the highest mean VAHCW rate. VAHCW rates differed significantly across WHO regions ($p<0.001$). The highest rate of VAHCW was reported in the Eastern Mediterranean WHO region (643.33) and the lowest in the Western Pacific region (0.36). HF attack rates did not differ significantly across WHO regions ($p=0.082$). EMR reported the highest HF attack rate of 309.85 while Europe reported the lowest rate of 27.18. VAHCW rates differed significantly across country income groups ($p<0.001$) ranging from 643.33 in LMICs to 1.49 in HICs. HF attack rates did not differ significantly across WBIGs ($p=0.069$) and ranged from 309.85 in LMICs to 27.18 in HICs.
Interpretation:
VAHCW has a global footprint but EMR performs the worst among WHO regions and LMICs have the highest VAHCW rate. High violence rates can be attributed to political instability and resource disparity, depending on context. There is a need for robust surveillance and reporting mechanisms to guide strong policies to tackle VAHCW.
Source of Funding:
None

Abstract N°: 570

How a national parliamentarian advances global health agenda: a policy entrepreneur analysis

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Background:
The role of policy entrepreneur in global public policy is little researched, let alone in the global health arena. Being multi-dimensional, fragmented, and diffused, global decision-making is totally different from the national policy process. Moreover, the dual goals of global health, which involves both cosmopolitanism and nationalism, perplex the analysis. This study aims to analyze how Professor Keizo Takemi, Member of the House of Councillors of Japan’s National Diet, wisely and flexibly utilized his political capital to advance global health agenda, surrounding human security, health system strengthening, universal health coverage, and global health governance.

Methods:
We gathered information through literature review and interviews with informants. Three interviews were conducted with Professor Takemi, supplemented by 8 other interviews with informants who hold positions in various organizations. The multiple streams framework was used to organize the findings.

Findings:
As an adept diplomat, Professor Takemi wisely utilized his political capital to seek supports from high-level politicians and international decision-makers to advance global health agenda, highlighting human security health system strengthening and universal health coverage in this field. Experienced at venue shopping, he perfectly advocates for global health during Japan’s presidency of G7/8, G20 Summits as critical control points, who also takes the initiative to organize international conferences to consolidate global efforts. He links global agenda with domestic needs, who successfully addresses the nationalism challenges and raises awareness of both domestic and international leaders. In response to governance fragmentation in global health, he values multi-stakeholder participation, thus his proposals can be widely accepted and the momentum can be sustained.

Interpretation:
Three political strategies of Professor Takemi were summarized: (1) for problem awareness raising, linking global agenda with domestic experiences, thus convincing both domestic and international leaders; (2) for policy formulation, valuing multi-stakeholder participation and building strong coalitions at home and abroad to ensure wide acceptance and continuous implementation; (3) for political advocacy scaling up, seizing or even creating windows of opportunity to cultivate political wills and build consensus. This study also discusses the nationalism challenges (what), the governance fragmentation (how) and the critical control (who) of global health agenda setting.

Source of Funding:
None

Abstract N°: 321

Encouraging Democratic Participation in Health Accountability Programs: Evidence from a Randomized Evaluation in Uganda

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Background:
Worldwide, 5.2 million children die annually, mainly from causes that can be prevented or treated cost-effectively. Many such deaths stem from the “last mile” of healthcare provision, where widespread accountability gaps — e.g., health worker absenteeism, poor performance, inventory theft, bribery — hamper public health facilities in many countries. Citizen participation in local affairs has been emphasized as a key strategy for mitigating such accountability shortfalls. While several studies have evaluated the effects of participatory programs on public service provision outcomes, few studies have examined strategies to increase citizen participation itself, especially in the health sector. Given the essential role of collective action in the political process, it is important that we understand how to better foster grassroots participation.

Methods:
Implemented in collaboration with the Office of the Prime Minister (OPM) in Uganda, this study is situated within a local meetings program that provides citizens a platform to exercise their health and political rights to better hold their leaders accountable for health service quality. Specifically, the study consists of a randomized controlled trial to evaluate the effect of differently themed messages encouraging households to attend the community accountability meetings. Targeting different economic pathways for motivating prosocial behavior in the health sector, the message themes include public duty, private benefits, and civic participation. The messages are delivered via multiple modalities, including verbal and written form, SMS, and posters. Data collection utilizes a household baseline survey merged with meeting attendance records. A multi-level randomized research design enables measurement of the effect of being assigned any encouragement message and the effect of the specific message themes.

Findings:
Receiving a message — of any type — nearly doubles household participation in the meetings, increasing the likelihood of attendance by 15.3 percentage points. Furthermore, treatment households are 6.8 percentage points, or 51.9 percent, more likely to send more than one household member to meetings. At the same time, the specific message type does not appear to induce any further effects. The positive outcomes will inform citizen mobilization strategies as the OPM ultimately aims to integrate the meetings intervention as standard protocol in Uganda’s local governance system.

Interpretation:
The findings imply that the messages act as economic substitutes, and that none of the specific message themes crowd out prosocial behavior. The results provide important mechanistic evidence on the effects of nudges and demonstrate promising strategies to better foster democratic participation by citizens in the health sector.

Source of Funding:
J-PAL, Perkins Foundation, NIH, NSF, U.S. Department of Education, UMichigan

Abstract N°: 1368

Examining Decreases in Development Assistance for Health for Reproductive and Maternal Health, 2019-2021

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Background:
Between 2019 and 2021, development assistance for health (DAH) increased by 56.3%, largely due to the Covid-19 pandemic. However, preliminary estimates suggest that there were specific health focus areas which saw decreases between 2020 and 2021, notably reproductive and maternal health (RMH) and non-communicable diseases. As DAH makes up a large portion of the health spending of low-income countries—28.5% in 2019, it is meaningful to examine the health focus areas for which DAH decreased in the low-income country context.

Methods:
We used data on DAH generated by Institute for Health Metrics. The database is generated utilizing data from various sources such as budgetary documents, financial statements, and online databases of international development agencies. In addition to characterizing the decreases in relation to current total health spending, we also cross referenced with IHME Global Burden of Disease estimates on Disability Adjusted Life Years (DALYs) lost in the target countries in our health focus areas of interest.

Findings:
Between 2019 and 2020, the decrease for low- and middle- income countries who received DAH for RMH was 7.94%. In low-income countries this decrease was 34.4%. To contextualize, this 34.4% is equivalent to 1.4% of the total health expenditure of these low-income countries in 2019. Preliminary estimates show this decrease widens between 2019 and 2021, to the equivalent of 3.42% of the 2019 THE of low-income countries. The last time the DAH for RMH share in low-income countries was as low as in 2020 (10.6%) was in 2011 (9.68% for same countries). For comparison, share of DALYs in the RMH area in low-income countries out of non-higher-income countries has been around 14-15% in this time. No correlation was found between rates of DALYs in specific countries and decrease in spending on RMH.

Interpretation:
Decreases seen in DAH for specific health focus areas between 2019 and 2020 to low-income countries, particularly in RMH, form a significant portion of overall health expenditure. This could be a concerning trend if it continues according to preliminary estimates for 2021 funding.

Source of Funding:
The Bill & Melinda Gates Foundation

ORAL PRESENTATIONS SESSION: Non-Communicable Diseases, Health Systems, Public Health, Primary and Surgical Care

Abstract N°: 542

Investigating Community-based Preventive Programs for Older Adults in Japan to Address the Challenges of an Aging Population

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Background:
Japan boasts one of the highest life expectancies with people over 65 comprising 27.7% of the total population in 2017— estimated to be 38.4% by 2065. This demographic shift accompanies increased long-term care (LTC) service expenses over the past 18 years, culminating at $6.6 million in 2021. To address escalating healthcare costs, local Japanese governments established *kayoinoba* community programs, fostering social participation and interaction among older adults. Programs offer enjoyable, informative activity-based opportunities for older adults to gain quality relationships. By adopting *kayoinoba* programs, Japan aims to curb LTC expenses while addressing mental and physical disabilities through enhanced social participation and health education, aligning with its commitment to elder care and well-being.

Methods:
We performed a systematic literature review on established community-based *kayoinoba* studies on PubMed dated 2019-2023. Data portraying *kayoinoba* program success were subsequently extracted and analyzed to examine improvements in health outcomes among older adults.

Findings:
Participation in *kayoinoba* increased participants' physical activity, which can greatly and directly prevent or reduce disability by 0.88-fold, significantly improving quality of life. Participants who formed or maintained social relationships via *kayoinoba* reduced the risk of cognitive decline, functional disability, and depressive symptoms by 0.46-fold.

Interpretation:
Promoting community gathering places like *kayoinoba* for high-risk older adults fosters social participation, networking, and support, which other countries have yet to endorse and establish. This social network for older adults establishes positive health outcomes and decreases mortality than non-participants. However, ongoing challenges with older adults include: recruitment, retention, and funding of community-based programs, exclusion of those susceptible to chronic diseases, and transportation concerns. A concerted global effort and commitment to prioritize older adults and their well-being is fundamental for integrating community-based interventions to reduce LTC costs, healthcare expenditures, and health inequities mentally, physically, and socially. Future research efforts and programs must aim to be culturally relevant to respective countries' demographics, population distribution, and activity preferences for older adults. Comprehensive pilot programs can work to promote health education and physical fitness programs in other projected aging populations, such as the U.S., China, Germany, and South Korea.

Source of Funding:
None.

Abstract N°: 894

Closing the gender gap: Using an all-women surgical program to increase mentorship opportunities and improve stigma around women in medicine

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Background:
While making up 75% of the healthcare workforce, only 25% of leadership positions are held by women, according to Women in Global Health. Women often cite lack of mentorship and role models as barriers towards advancing in their careers. Meanwhile, there are 5 billion people who lack access to safe surgical care which could be addressed by better engaging women in healthcare. Operation Smile (OS) launched the Women in Medicine program to create education and training opportunities for women healthcare workers by women healthcare workers through the provision of high-quality comprehensive cleft care.
Methods:
Four all-women surgical programs took place in Morocco, Peru, Malawi, and the Philippines throughout 2022. The all-women volunteers participated in one week of programming to bring comprehensive cleft care to patients which included training opportunities across all specialties (surgery, anesthesia, nursing, pediatrics, speech language, nutrition, psychosocial, and dentistry). Each program consisted of an education day where the women discussed the global experiences of being women in medicine as well as participating in specialty workshops, keynote speakers, and mentorship. The education day allowed for more didactic teaching, while the screening and surgery days consisted of hands-on training. Volunteers were from 36 countries across the four programs with 71% coming from the host region.
Findings:
During the four programs, there were 287 surgeries completed with no complications, as well as hands-on training for 61 trainees across thirteen specialties. 97% of participants reported improvement in technical and non-technical skills. 99% said that the program motivated them to provide mentorship to another woman. Across all regions and specialties, participants agreed on the importance of having women in senior leadership (98%), while fewer reported having experience with women in senior roles (79%). The all-women surgical team increased the confidence of at least 85% (Philippines) to 98% (Morocco) of parents' confidence in women to deliver quality care. Parents cited "understanding" as the most common reason for increased preference towards women providers, followed by "patience" and "communication".
Interpretation:
The results of these programs are significant as they support growing research that shows the power of investing in women. Women in medicine not only want to participate in leadership and mentorship, but when women are included in these spaces the experiences of the patients and providers is enhanced.
Source of Funding:
Operation Smile, Inc.

Abstract N°: 15

Blending Community Empowerment, Imaging Technology, and Social Accompaniment for Improved Women's Health in LMIC Conflict regions

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Background:
Task sharing has been extensively documented in the literature for its value in expanding healthcare access in LMICs and conflict-affected regions (Raviola et al., 2019)(Anand et al., 2019)(Joshi & Peiris, 2019)(Rimawi et al., 2022). In terms of ultrasonography and task sharing, several rigorous studies have described effective training programs that have successfully taught healthcare professionals (physicians, nurses, midwives) who are novice ultrasound users to efficiently utilize the technology in resource-limited settings(Hall et al., 2021)(Toscano et al., 2020). Despite the well-established significance of ultrasonography in women's healthcare and the growing interest in reinforcing healthcare workforces through task sharing, a considerable gap exists in the literature and praxis concerning the feasibility of training community health workers (CHWs) in ultrasound and the potential advantages of employing them to address women's critical reproductive healthcare needs in resource limited and conflict settings.
Methods:
This pilot study examined whether it is feasible to teach point-of-care ultrasound (POCUS) to community health workers and midwives using an Obstetric Volume Sweep Imaging Protocol (ObVSI), and if so, will community members accept this novel model for addressing gaps in access to essential imaging and quality care. A training program teaching ObVSI using POCUS and Teleguidance was developed for ten (10) community health workers (CHWs) and nine (9) midwives in rural villages of the West Bank. The program was designed to train participants on POCUS competencies as well as soft skills to link women in rural villages to timely imaging and rapid diagnosis.
Findings:
By the end point of the training program both Community Health Workers and Midwives achieved all critical performance objectives including additional challenge material incorporated in the course. The level of performance was tied to the implementation approach engaging social accompaniment longitudinally. It was also encouraging to note the high level of trainee and community acceptance of community driven care. This approach is significant in terms of potential for translation and scalability on a global basis.
Interpretation:
It can be used to address pressing healthcare needs by utilizing community workforces, task sharing, and technology in a way that delivers healthcare to where it is needed, strengthens healthcare systems, and targets the social forces driving health inequities at the root level.
Source of Funding:
Global Affairs Canada’s Fund for Innovation and Transformation Grant

Abstract N°: 302

A Sustainable Model for Expanding Pediatric Surgical Care and Training in Small Island Developing States: A 20-Year Review

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Background:
Orofacial clefts are a common congenital anomaly, but disease burden is unevenly distributed, with a strong negative association with the size of the surgical workforce, suggesting that having available surgical intervention is vital to improve disease burden (Massenburg et al). Short-term missions have been a strategy for surgeons from high-income countries to support surgical needs globally. However, these missions have come under criticism due to issues with sustainability and continuity of care. A more sustainable model of care is essential to address these inequities in the distribution of pediatric surgical care, particularly in populations where the prevalence of surgical needs is low, yet unmet. In this paper, we describe our experience from 20 years of implementing a Regional Model for diagnostic clinics with centralized surgical care as a potential model for global surgical programs. We describe why this model is appropriate in the Eastern Caribbean Region and the composition of our referral network of craniofacial and plastic surgery services.
Methods:
We used retrospective data of patients receiving craniofacial or neurosurgical care from our organization in the Eastern Caribbean Region from 2002-2023 to provide a cross-sectional descriptive analysis of services provided. We then conducted online surveys to construct network mapping of these pediatric surgical services available in the Eastern Caribbean Region.
Findings:
From 2005-2023, we provided 295 craniofacial and plastic surgery services and 249 neurosurgery surgical services to the Eastern Caribbean Region. We developed a referral network map of our organization's craniofacial and plastic surgery services, providing evidence for the establishment of a Regional Model for pediatric surgery in the Eastern Caribbean (see Figure 1).
Interpretation:
In partnership with regional health agencies and governments, our Regional Model aims to provide comprehensive pediatric surgical care to children in the Eastern Caribbean with critical healthcare services often unavailable in these small island nations. Our organization adopted this model, which increased access to services in a more cost-effective manner. This regional model provides a framework for other global surgery programs, especially in other regions where resources and incidence of surgical needs are low and unmet. The technology of network mapping can be used to establish a needs assessment of plastic surgery and neurosurgery services available in the region. Understanding best practices and models to implement global surgery programs that increase surgical access in LMICs will continue to be important to the growth and development of the global surgery field.
Source of Funding:
The authors have nothing to declare.

Abstract N°: 1323

Scaling up Blood Pressure Control in the Province of Iloilo, Philippines through Healthy Hearts Program

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Background: Non-communicable Diseases remains a public health problem in the Philippines and is responsible for almost 70% of all deaths in the country. Hypertension is the strongest risk factor for Cardiovascular Diseases (CVDs) and it is estimated that only 52% of Filipinos are aware of their condition, 36% are treated, and only 17% have their blood pressure (BP) controlled. The Healthy Hearts Program (HHP) aims to reduce premature mortality and morbidity due to CVDs by increasing access to hypertension diagnosis and treatment, and to increase the control rate of hypertension.
Method: The HHP was piloted in the seven municipalities of first district of Iloilo province. Health Workers in the project sites were trained by World Health Organization (WHO) and Department of Health (DOH) on the HH Technical Package to strengthen the implementation of the Philippine Package of Essential Non-Communicable Diseases (PhilPEN) Interventions. Job aids were provided for easy reference of health workers on the simplified hypertension screening, diagnosis, and management protocols developed by WHO, DOH and Philippines Society of Hypertension (PSH). A Microsoft Excel-based Electronic Patient Registry (e-Registry) was developed to gather data on key indicators of the program. Information, Education, and Communication (IEC) materials were developed to guide the health promotion activities of the project sites, and evaluation and monitoring tool developed by WHO and DOH was used to regularly assess the performance of the project sites and monitor the results of the program. Access to essential hypetensive medicines was established to support the program and ensure patient adherence and compliance to treatment protocols.
Findings: Baseline data in 2021 revealed that there were 5,788 patients enrolled in the program (covering active, moved out, lost to follow up, and deceased) and only 13.1% had BP control among the active patients. After the end of pilot implementation in December 2022, total patients enrolled increased to 22, 395 and BP control increased to 83.3%.
Interpretation: The HHP contributed to improved access of the community to hypertension diagnosis and treatment directly resulting to improved BP control.
Source of Funding: WHO, Resolve to Save Lives, DOH

Abstract N°: 385

Improving Blood Pressure Control in Low Resource Areas of the Philippines through Medical Mobile Clinics and Bluetooth Remote Monitoring

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Background:
Lack of access to quality healthcare and the advent of Covid 19 pandemic put Filipinos at risk for the consequences of uncontrolled hypertension, diabetes, and high mortality rates. This project aims to evaluate the success of a Mobile Medical Clinic (MMC) and Bluetooth remote monitoring devices in managing blood pressure, assessing participation rates, and promoting lifestyle changes in low resource areas of the Philippines.

Methods:
The MMC conducted monthly visits to eighteen disadvantaged communities within 30-mile radius from the headquarter, providing primary healthcare services and monitoring blood pressure using electronic health records. Patients were adults diagnosed with hypertension and were seen at least twice by the MMC. Digital blood pressure machines from the MMC were used pre-pandemic, and Bluetooth remote monitoring devices with telemedicine were implemented during the pandemic. A retrospective analysis of blood pressure data was conducted.

Findings:
A total of 7,472 patients were seen and treated by the MMC. On average, there was a decline of 2.61 mmHg in systolic blood pressure and 2.31 mmHg in diastolic blood pressure from the initial visit to subsequent visits. Increased frequency of visits was correlated with further decline in BP control. Patients with good follow-up visits had better blood pressure control and higher proportions of reaching target goals compared to those with poor follow-up.

Interpretation:
The MMC approach and utilization of Bluetooth remote monitoring devices have shown promise in improving blood pressure control in low resource areas. Expanding these programs and collaborating with local government units can contribute to equitable healthcare globally.

Source of Funding:
None

Abstract N°: 1128

Traditional Birth Attendants (TBAs) Bridging the Gap between Rural Women and accessing Family Planning Services in Sierra Leone

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Background:
The 2019 Demographic Health Survey in Sierra Leone revealed that teenagers aged 15-19 in rural areas have a higher delivery rate (29%) than their urban counterparts (14%). Indicating a lower prevalence of contraceptive use, and higher risk of unplanned pregnancies. The study further indicates that modern contraceptive utilization is more pronounced among urban women (26.5%) than their rural counterparts (23.1%). Barriers such as cultural and religious beliefs, limited access to healthcare facilities, and general distrust in healthcare services have collectively contributed to the suboptimal uptake of family planning methods. This project demonstrates the successful integration of Traditional Birth Attendants (TBAs) in bridging the gap between rural women and accessing Family Planning.
Methods:
The NWOGLB project, spanning from 2019 to 2024, adopted a multi-tiered approach to enhance maternal and newborn outcomes. This initiative targeted 22,419 women residing in the project area. In 2021, the project trained 137 TBAs, who played a vital role by providing reproductive health education and accompaniment to health care facilities and services.
Findings:
From October 2021 – April 2023, 137 TBAs successfully referred 45,861 (205%), women to 28 healthcare facilities within the district. Among these women, 8,518 (19%) were referred and received Family Planning services, second only to Antenatal Care (ANC) clients (18,706, 41%). A more detailed analysis of the data revealed that 4,905 of these women belonged to the 15-19 age group, 1794 were between 20 and 24 years old, and 1819 were 25 years and above. Family Planning methods used: 25% of these women opted for short-term contraceptive options, whilst 75% chose Long-Acting Reversible Contraception (LARC). This preference for LARC reflects a noteworthy shift towards more effective and sustainable contraceptive solutions among the served population.
Interpretation:
TBAs have the capability to positively impact and guide women to access facility based healthcare. As reputable community members, they dispelled myths and misconceptions about family planning increased women's trust and access to reproductive healthcare services, including LARC.
Source of Funding:
No Woman or Girl Left Behind Project, funded by Global Affairs Canada through Partners In Health, Canada.

Abstract N°: 944

Improving Disaster Preparedness of Tanzania's Emergency Medicine Workforce

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Background:
Disaster medicine is a sub-specialty of Emergency Medicine (EM), and in some parts of the world is included as a core topic in EM resident education. There is minimal literature on disaster training of EM physicians outside the United States, and there is no published literature on disaster education for EM residents in East Africa including Tanzania. This study utilized data gathered from interviews with EM faculty to develop and implement a new disaster training program for EM providers in Dar Es Salaam, Tanzania.

Methods:
EM faculty from Muhimbili National Hospital participated in semi-structured interviews. Interviews explored duration of EM experience, disaster education, experiences in disaster response, faculty impressions of EM trainees' learning needs, and the roles EM physicians are expected to fill in disasters. Results were shared with residency leadership and used to develop a week-long disaster training program. Pre and post-surveys examined participants' knowledge, confidence in managing disasters, and explored future training needs.

Findings:
EM faculty identified disaster triage, hospital disaster management, trauma mass casualty incidents, and scene management as the primary topics EM residents should receive training on. Twenty EM physicians and nurses participated in the pre-course survey, and 14 completed the post-course survey. Knowledge check questions were both answered correctly by 65% in the pre-course survey and by 71% in the post-course survey. Prior to the course 10% of respondents reported being very confident in their ability to respond to a disaster, compared to 50% after the class. Prior to the training only 10% reported being either prepared or very well prepared to prioritize which patients to treat first in a disaster compared to 100% after the course. Participants requested additional training on some specific disaster types such as combat and marine or flood related disasters.

Interpretation:
More than 20 EM physicians and nurses participated in the first disaster training program at Muhimbili National Hospital, Tanzania. Participants learned disaster terminology, chain of command structures, triage protocols, and gained hands-on experience in a disaster drill.

Source of Funding:
None

Abstract N°: 90

Assessing Barriers of Contraceptive Uptake Among Adolescent Girls in a Rural District of Malawi

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Background:
The unmet need for family planning for unmarried adolescent girls in Malawi remains high despite efforts to improve provision and uptake, leading to a high rate of adolescent pregnancies. This subsequently leads to school dropouts, unsafe abortions, a lack of employment opportunities, and in the long run increases the poverty levels among adolescents and the population at large. In a rural Malawian district of Neno, the unmet need for family planning in adolescents is at 52%, with 32% of young women giving birth before the age of 18.
Methods:
We conducted a mixed-methods study on family planning provisions for adolescent girls in Neno District. Quantitatively, we collected data from 3 sources: (a) family planning reports from 11 health facilities, (b) mobile health data from Community Health workers in two catchment areas, and (c) facility survey data from six randomly selected facilities. Qualitatively, we conducted 3 focus group discussions with teachers and parents and 32 in-depth interviews with 20 adolescents, 4 local leaders, 4 service providers, and 4 facility managers. All the above methods helped to identify barriers to contraceptive uptake by adolescent girls in Neno.
Findings:
Only 2.9% of adolescents 10-14-year-old and 10% of 15-19-year-old adolescent girls, accessed family planning services in Neno District in 2019. In 2020, during the COVID-19 pandemic, FP uptake was 20% lower than in 2019. Uptake was higher in the dry season when compared to the rainy season. We identified barriers to contraceptive uptake including poverty, lack of youth-friendly health services, lack of privacy, misuse of media, and the impact of the COVID-19 pandemic.
Interpretation:
Despite the availability of required resources in health facilities, uptake of family planning among adolescents is very low. Barriers to adolescent contraceptive uptake are multi-factorial and inadequately addressed by existing programs in Malawi. Efforts are needed to provide effective and culturally acceptable interventions to increase adolescent contraceptive uptake. Continuous community engagement would be highly recommended so families could continue supporting adolescent girls so they can be kept in school and reach their goals. The Malawi government is needed to put much effort into moving from having an excellent policy on youth-friendly health services theoretically to having it in actual practice.
Source of Funding:
The Harvard University and the Ronda Stryker and William Johnston MMSc Fellowship in Global Health Delivery

Abstract N°: 45

Integration of Continuous Professional Development in Public Health in Georgia, Armenia and Moldova

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Background:
In 21st century prevention, preparedness, and response are one of the main priorities of global and public health. That contributes to countries resilience and improves local and regional responses to public health emergencies and health crisis. Meanwhile, health and social care systems in Georgia, Armenia and Moldova are going into the "digital transformation" process, and public health specialists started widespread use of digital registers and databases. All these challenges highlight the importance of workforce upskilling. However, in these countries there are not well functioning Continuous Professional Development (CPD) system, although High Educational Institutions (HEIs) prioritize offering academic programs and less attention is paid to widening access to life-long learning (LLL) education.
Methods:
Study aimed to explore needs on CPD and perspective of development in public health field in above mentioned three countries, based on stakeholder's opinion study. Delphi study was initiated in Georgia, Armenia and Moldova in November and December 2022.
Findings:
Totally 122 stakeholders from various areas (Ministry of Health, public health institutions, hospitals, HEIs) participated in the Delphi study. Response rate was 98%. Of them, 58,7% being at a high management level and 82.5% having more than 15 years of total working experience. The majority of respondents (94,6%) worked in the state sector.
Study reveals several common needs and perspectives in all three countries. Majority of stakeholders (97,8%) suggested that the main gap for well-functioning national public health is the health and social care systems lack of having qualified personnel with the necessary competencies and skills according to the current needs. In addition, big share of stakeholders (95,7%) mentioned that there is a lack of training opportunities and relevant CPD Programs in e-health and digitalization, medical and social registries, electronic surveillance systems, as well lack of financial support (93,4%), and absence of appropriate regulation (90,2%).
Interpretation:
Recent challenges and gaps in global and public health can be filled through strengthening national system of CPD and development of high quality CPD Programs oriented on specific knowledge and skills with a focus on digital skills in Georgia, Armenia and Moldova. HEIs can play significant role in delivering LLL for public health workforce.
Source of Funding:
None.

Abstract N°: 1281

UCSF Center For Health Equity in Surgery And Anesthesia Fellowship: An Innovative Toolkit for Surgery and Anesthesia Champions

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Background:
Over 5 billion people lack access to safe surgical care. A shortage of surgeons and anesthesiologists compounds these inequities, especially in low- and middle-income countries (LMICs). CHESA has curated a one-year, multidisciplinary program to train emerging leaders in global anesthesia and surgery who demonstrate passion and potential in improving perioperative health equity. Initiated in 2020, the Fellowship has quickly grown into one of the largest global surgery fellowships in the US.

Methods:
After identification of program leadership, fellowship objectives were clearly defined: 1. enhance Fellows' education, research, advocacy, mentorship skills, and career development plans; 2. develop Fellow expertise in core global health domains; and 3. build a diverse learning community. A hybrid curriculum with in-person and remote components was created including self-study modules adapted from CUGH Global Health Competency Toolkit Domains; biweekly meetings to review curriculum content through expert talks, interactive small groups, and critical skills workshops; structured mentorship; and a scholarly project to apply curriculum competencies. Project funding is provided for Fellow initiatives to improve the quality of surgical care in their communities. The program was piloted in 2022 with Fellows selected via social media and snowball technique. For the 2023-24 cycle, applications were accepted from the global surgery and anesthesia community. Sixty applications were reviewed against a holistic scoring rubric. The current class of fellows were selected by a multidisciplinary panel of CHESA faculty.

Findings:
Since 2021, the CHESA Fellowship trained 55 Fellows (current and alumni) representing 10 specialties and 13 countries. Since 2022, fellows have generated 81 publications. Survey respondents have found the program to be “excellent, unique, and truly a global experience”. Examples of projects funded include scaling advanced trauma training to providers across Uganda, establishing a laparoscopic simulation lab in Tanzania, and evaluating surgical outcomes among the unhoused population in San Francisco.

Interpretation:
Through training, mentorship, community, and career development support, CHESA amplifies Fellows' impact locally and globally. The program continues to evolve based on feedback from Fellows and partners. Future directions include opening the program to nurses, recruiting Fellows from unrepresented geographic regions, and for advanced clinical training for select LMIC Fellows.

Source of Funding:
UCSF Department of Surgery, Department of Anesthesia and Critical Care

Abstract N°: 1370

Quality Improvement education provided virtually to a global audience

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Background:
Health care workers everywhere want to bridge the gap between actual patient care and ideal care. Such is the basis of Quality Improvement endeavors, which are particularly applicable to lower resource settings. These settings have fewer material supplies, but staff are resourceful and work well as a team. This camaraderie can be channeled to improve the health care system. Our department provides a Quality Improvement (QI) course to the American International University of West Africa (AIUWA) in The Gambia to teach this methodology to our nurse anesthesia colleagues.
The University of Utah has had an MOU with AIUWA to share educational resources since 2015. In addition to in-person lectures, we advised students on their required research theses. Past projects included “Reasons for surgical cancellation: the role of pre-operative evaluation” and “Post-operative pain control: opiate use by Gambian anesthetists versus visiting providers”. All projects were essentially QI endeavors. Both parties believed a QI knowledge base would help students better implement improvements to their health care system.
Methods:
Adapting a QI curriculum created by the University of Minnesota, we provided an eight-week QI course to AIUWA nurse anesthesia students in 2022 and again in 2023. The course was conducted via Zoom, WhatsApp, e-mail, and a website. Concurrent with the material presented, students worked on and presented their projects. Students were counseled on how to implement QI methods to improve their projects’ sustainability.
Findings:
In post-course surveys, students felt better prepared to implement change in their health system. Student requests included increased involvement of practicing local nurse anesthetists. They were also frustrated by unreliable internet. We learned that the course should run over a longer period to allow students more time to implement QI methods into their projects.
Providing a course improved QI knowledge and confidence to effect change in health care among nurse anesthesia students in The Gambia. Challenges include internet connection, feasibility of project ideas, recruiting enough faculty to advise every project, and staffing shortages pulling students away to provide clinical care. We believe knowledge of QI methodology will help clinicians raise the standard of care wherever they practice.
Interpretation:
Providing Quality Improvement education in lower resource settings will empower health care workers to improve their own health care systems.
Source of Funding:
None.

Abstract N°: 147

Connecting all SDGs by providing interdisciplinary education – a global public health master at a German Institute of Technology

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Background:
The sustainable development goals (SDGs) are key to global development and health for all is at the center of SDG 3 (health and wellbeing). In 2015 the Deggendorf Institute of Technology established an international campus in rural Bavaria that aimed to put all SDGs at the center of their study programs. The technical university combined at this location programs connecting SDG 3, 7, 9, 11, 14, 15 all guided by quality education (SDG 4) and gender equality (SDG 5). In 2021 a global public health (GPH) Master program was added to educate students from around the world.
Methods:
Utilizing the technical expertise and entrepreneurial spirit at the university of applied science, the GPH-program connects engineering (digital health/programming, entrepreneurship, biotechnology) and health science (epidemiology, essentials in public health, ethics) with a global vision and the SDGs. All courses are taught in English, in a hybrid format enabling students with caring responsibilities to join online for parts. With education being free in Germany (service fee for international students) and living expenses low, the offer is attractive to less well-off students from around the world.
Findings:
Currently, 97 students (~50/cohort) are enrolled in the GPH master from 34 countries and close to 900 applicants from 67 countries applied for the upcoming semester. Students with various health backgrounds are embracing public health topics, learn to code, and think about technological innovations for public health. The multidisciplinary setup of the campus leads to cross-discipline pollination, with GPH-students supporting teaching activities in engineering subjects linked to health, pollution, and sustainable energy. To date, the feedback received from GPH students as well as engineering students exposed to the health aspects of the SDGs is overwhelmingly positive. It is apparent that the interconnectedness of the SDGs (eg. energy-architecture-health) needs to be specifically addressed to inspire the integrated solutions needed to achieve them by 2030 and sustain success beyond. The goal is to educate a new generation of health professionals that can work across disciplines, and we aspire to provide the spaces for interdisciplinary changemakers of the future to connect.
Interpretation:
Connecting disciplines and working towards a more cross-disciplinary future in global health starts early by connecting students and ideas at university.
Source of Funding:
Bavarian Government

Abstract N°: 1147

GHEARD: A Modular Curriculum to Incorporate Equity, Anti-Racism and Decolonization Training into Global Health Education

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Background:
Interest in global health (GH) is rising among high-income country medical trainees across specialties, yet GH engagement is historically and presently marred by systemic bias and colonial legacies.. While a plethora of GH curricula have been developed in medical education, curricula to explicitly address decolonization, anti-racism and equity are rare. We describe the efforts of a grassroots, interdisciplinary, international workgroup to develop a modular, peer-reviewed, customizable, open-access curriculum to address these topics within GH training programs.
Methods:
GH educators from the Association of Pediatric Program Directors (APPD), American Academy of Pediatrics (AAP), Consortium of Universities for Global Health (CUGH), and Midwest Consortium for Global Child Health Educators, including international and indigenous scholars, established a grassroots curriculum development workgroup to create the Global Health Education for Equity, Anti-Racism, and Decolonization (GHEARD) curriculum. Using Kern's six steps of curriculum development, we completed a needs assessment and identified 8 critical gaps in current GH pedagogy that were shaped into modules and a facilitator training module. We developed learning objectives and activities using a variety of educational strategies and grounded in transformative learning theory and trauma-informed educational approaches.. We developed an evaluation package and implementation guide and disseminated GHEARD as an open-access resource in June 2023.
Findings:
GHEARD includes 7 modules, a facilitator training module and implementation guide that use a variety of educational strategies to introduce topics, cultivate critical reflection on GH engagement and encourage ongoing commitment and action toward a more equitable field of GH. The curriculum was peer-reviewed through the AAP and piloted at multiple national academic conferences and individual institutions. Among workshop participants across multiple national conferences who completed evaluations (n=40), 100% stated that GHEARD activities were "effective" to "very effective" in encouraging and supporting critical reflection on decolonization and structural inequities within GH, and 96% stated they were likely to implement GHEARD at their institution.
Interpretation:
GHEARD is an open-access resource that equips educators and institutions with the tools to integrate contexts and perspectives of decolonization, history, anti-racism, and equity into GH training with flexible options for customization and creative implementation based on program needs.
Source of Funding:
None

ORAL PRESENTATIONS SESSION: Featured LLMIC Young Investigators

Abstract N°: 740

Combating Counterfeit Medicines: An Egyptian Pharmaceutical Traceability System Case Study

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Background:
Counterfeit medicines pose a global health risk and financial burden, with 10% of global pharmaceuticals being counterfeit, with higher percentages in developing countries. When ensuring that genuine medicine reaches the ultimate point of distribution in Egypt, all parties in the supply chain, such as manufacturers, distributors, hospitals, and retail pharmacies, encounter significant obstacles. Accordingly, Egypt has attempted to adopt an Egyptian pharmaceutical track-and-trace system (EPTTS) to secure supply chains. It is a logistical technology that enables the tracking and localization of any medicine throughout the supply chain. This qualitative study aims to explore counterfeit medicines in Egypt, understand the role of the Egyptian Drug Authority, and the policy motivations behind launching a pharmaceutical traceability system. To achieve this goal, the study examined the pilot implementation of the project, focusing on success factors and challenges that policymakers need to address.
Methods:
Three cohorts were targeted for semi-structured in-depth interviews: supply chain stakeholders, organizations involved in policy implementation, and independent experts. The research involved fifteen key informants who provided valuable insights and perspectives. Before recording the interviews, all necessary consents, both verbal and written, were obtained. The study employed identification numbers to anonymize respondents, ensuring they were kept separate from the study data. The collected data was analyzed and triangulated with previous documents and published research for further data collection and validation.
Findings:
The adoption of EPTTS was primarily driven by improving patient safety, combating counterfeit medicines, managing logistics and inventories, and preventing reimbursement fraud. Even though stakeholders experienced technical and budgetary difficulties throughout the pilot implementation attempts, they all agreed that this system was beneficial. Based on the experiences of other countries and according to the Egyptian context, the study put recommendations forward to help establish a successful national pharmaceutical traceability project. They included establishing harmonized policies and regulations, offering incentives to pharmaceutical companies, promoting awareness and education, and promoting collaboration among various stakeholders. Finally, when Egypt can modify the system in response to stakeholder needs, it will successfully implement the pharmaceutical track and trace system, witness a significant revolution in the supply chain, and combat counterfeit medicines.
Interpretation:
Lessons from this case study on the Pharmaceutical Traceability Pilot Project in Egypt can be used for large-scale implementation; however, triangulation utilizing quantitative data on medication quality and public health effects is needed. Moreover, Egypt's experience can be extended to other countries experiencing comparable challenges.
Source of Funding:
None.

Abstract N°: 354

Widowed and at risk: Increasing HIV prevalence among Kenyan widows in the last decade

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Background:
The majority (66%) of the 1.3 million people living with HIV in Kenya are women. Sexual behaviors increase the risk of HIV transmission; however, little is known about the HIV epidemiology among widowed women. Using 11 years of data, we measured the HIV prevalence and its correlates among widowed women, in comparison to married women in Siaya, Kenya.
Methods:
We conducted a cross-sectional analysis of data collected between 2011 and 2022 for widowed and married women enrolled in the health and demographic surveillance system in Siaya, Kenya. Widows were women who reported ever having a deceased husband. The participants' HIV status was determined either by blood tests or self-report. We reported the HIV prevalence among widowed and married women and assessed the correlates of HIV infection by logistic regression analysis
Findings:
Of 14,445 women included in the study, 27.2% (3,930) were ever widows and 72.8% (10,515) were married women. Widows had an overall HIV prevalence of 24.1% (95%CI: 23.5% - 24.6%) compared to 17.5% (95%CI: 17.1% - 17.8%) for married women. In the last decade, the trend in HIV prevalence increased among widows while declined among married women. HIV prevalence was higher in widowed than married women across all characteristics: <45 years (55.8% vs 18.4%), 45-59 years (46.7% vs 18.6%), having a younger sexual partner (69.9% vs 34.0%), ever had transactional sex (62.9% vs 16.6%), and ever experienced forced sex (42.4% vs 21.1%). In the adjusted analysis, widows had 4.12 times higher odds of HIV prevalence than married women (95%CI: 3.62, 4.67). The odds of HIV infection were higher among younger (<45 years) than older women (60+ years) (AOR: 13.2, 95%CI: 10.5, 16.5), women in age-disparate relationships with younger compared to older male sexual partners (AOR: 2.20, 95%CI: 1.75, 2.77), and women who ever experienced forced sex (AOR 1.24, 95%CI: 1.10, 1.40) had higher odds of HIV prevalence.
Interpretation:
From a decade long follow-up, we show a disproportionately high and increasing rate of HIV infection among widowed women in Siaya, Kenya. This is significantly elevated among; the younger women, women with younger sexual partners, and who experienced forced or transactional sex. This calls for policy to prioritize widows in HIV control strategies and develop targeted interventions that address the unique challenges they face.
Source of Funding:
None

Abstract N°: 1663

Availability and Accessibility of Suicide Prevention Services: A Global Investigation

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Background:
Suicide is a pressing global public health issue necessitating effective prevention strategies. Suicide prevention services, especially helplines, provide crucial crisis intervention and support for at-risk individuals. However, their accessibility varies worldwide, and their impact on reducing suicide rates remains uncertain.

Methods:
To address these gaps, we conducted a worldwide survey, collaborating with local collaborators from 150 countries to create a comprehensive directory of helpline services. The survey was distributed via "Find A Helpline," a prominent global suicide helpline resource, and directly by local collaborators in areas with limited outreach. We collected data from 446 helplines across 104 countries.

Findings:
The majority (93.86%) of these services operated at a national (74.09%) or state (19.77%) level. We identified a significant correlation between operational longevity and reported satisfaction (p=0.045). These helplines primarily served individuals dealing with suicidal thoughts, suicide survivors, and those with personal experiences of suicide (92.78%). Support also extended to suicide loss survivors (86.23%), individuals with mental health issues beyond suicide (81.72%), and victims of sexual assault. Some groups received less attention, including the elderly (59.82%), military veterans (58.24%), and individuals with special needs (55.53%).

Service delivery primarily relied on telephone calls (89.14%), followed by face-to-face counseling (52.04%) and video calls (49.77%). Most services operated 24/7, with slightly reduced availability on Sundays (88.54%). Funding sources included charitable foundations (63.45%), fundraising campaigns (58.07%), and individual donations (43.3%), with 45.7% receiving government support. During the pandemic, 56.08% faced reduced funding, while 15.09% saw no changes, and 19.60% observed increased funding. Notably, 84.30% offered free services.

Staff composition comprised full-time (59.87%) and part-time (54.26%) employees. Full-time staff received more extensive training (45.07%) compared to their part-time (25.56%) and volunteer (25.56%) counterparts. Quality assurance measures included call tracking (37.30%), documentation checks (35.73%), and peer monitoring (30.79%).

Challenges encompassed funding limitations (79.73%), inadequate compensation (62.84%), heavy workloads (51.58%), consulting with youths (38.81%), and the absence of active rescue policies (61.57%).

Interpretation:
These findings can inform policymakers and stakeholders in developing strategies to improve the availability, quality, and sustainability of suicide helpline services globally. Notably, the challenge in consulting with youths underscores the need for specialized training and tailored services for this vulnerable demographic.

Source of Funding:
Gladson Vaghela received funding from the National Institute of Health and Care Research, United Kingdom, as an awardee of the Royal Society of Tropical Medicine and Hygiene Small Grant Awards 2021.

Abstract N°: 307

Ebola Virus Disease: Knowledge, Attitude, and Perception - The Case of Uganda

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Background:

Ebola virus disease (EVD) is a severe hemorrhagic disease caused by the Ebola Virus. The EVD is highly infectious with a high fatality rate. Uganda has experienced multiple Ebola outbreaks. The end of the recent outbreak was officially declared on January 11, 2023. The lesson learned from many pandemics is the need to always renew the social contract between the government and its citizens through various stakeholders from different parts of the country. Therefore, this study is intended to identify knowledge, attitudes, and public perceptions of Ebola in the different regions of the country.

Methods:

A descriptive community-based cross-sectional design was conducted. The study implored a quantitative approach. The study involved three districts from each region in the country Mbale district from Eastern Uganda, Mbarara district from Western Uganda and Lira district from the Northern Region. Participants were randomly assessed on their knowledge, attitude and prevention of the EVD. Data was analysed with Stata 15

Findings:

The study enrolled 737 participants. from Mbale City, Eastern Uganda, (118, 16%), Mbarara City, Western Uganda (380, 51.6%) and Lira City North Eastern Uganda (239, 32.4%). The majority of the participants 81 (68.6%) from Mbale, 178 (69.7%) from Mbarara, and 265 (69.7%) from Lira demonstrated good knowledge levels about Ebola Virus disease. Participants who obtained information from social media had higher knowledge levels across the respective study regions of the country; (OR = 9.8, CI: 2.2-43.5, p = 0.03) and (OR = 8.6, CI: 4.0-18.45). The use of television as an information source significantly positively affected knowledge levels in Mbale city, Eastern region (OR = 4.0, CI: 1.6-10.1, *P*= 0.004). Health workers exhibited significantly higher knowledge compared to the others (OR = 8.9, CI: 1.1-69.6, P= 0.038) Knowing how to approach a suspected case, had a significant level in Mbale city, Eastern region (OR = 8.6, CI: 2.4-30.4, *P*=0.001). Similarly, knowing how to use PPE was associated with higher levels in Lira city's Eastern region (OR = 2.0, CI: 1.1-3.3) *P*= 0.021.

Interpretation:

Urban communities are more knowledgeable with better attitudes towards pandemic outbreaks, though this varies from region to region. Public perceptions, community engagement and social media may be useful tools in mapping knowledge and awareness strategies for disease outbreaks.

Source of Funding:

SEED GLOBAL HEALTH

Abstract N°: 97

5-fold cross-validation approach in evaluating the robustness of Machine learning models for prediction of oesophageal cancer

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Background:
Oesophageal cancer is a major health concern around the world, accounting for 3.1% of all cancer burdens and responsible for 5.5% of all cancer-related deaths. Due to its impact, there has been growing interest in adopting advanced methodologies. Machine learning techniques offer a promising avenue for understanding the disease better.

Methods:
The study is based on a case-control study design, with a total of 400 case-control subjects equally sampled. The study explored different machine learning-based prediction models, and for each model, various performance metrics were evaluated. To optimize and determine the importance of the models, a 5-fold cross-validation technique was employed, and the ranking of feature importance was done based on their weights in each model.

Findings:
The study identified the Extra tree classifier model as the optimal approach in the prediction of oesophageal cancer, with a model accuracy of 87.50%, sensitivity of 92.5%, and specificity of 80%. When compared to the top 10 risk factors on basis of weight of feature of importance, the model showed an ROC-AUC value of 0.913, representing a substantial improvement of 10.1% over the baseline of the traditional risk prediction model (ROC-AUC 0.812; 95% CI 0.59-0.94).The model identified Tooth loss, Smoking, Alkaline ethnic food, Smokeless tobacco, and Co-morbidity as the top 5 features of importance out of a total of 20 risk factors fitted in the model, these top five variables contributed to 34% of oesophageal cancer. If we incorporated Smoked fish, Betel nut use, Alcohol consumption, Traditional alcoholic drink, Use of fertilizer and Use of pesticide, the contribution rises to about 63%. The model algorithm predicted 36 out of 40 cases (sensitivity 0.90) and 33 out of 40 non-cases (specificity 0.825). It outperformed the traditional model by correctly predicting 3 more additional cases, resulting in the Extra Tree classifier model having 7.5% more sensitivity in the detection of oesophageal cancer cases compared to the baseline prediction model.

Interpretation:
The Extra tree classifier model exhibited higher predictability and accuracy in identifying important predictors of oesophageal cancer. The incorporation of this machine learning-based model presents exciting opportunities for policymakers to focus on specific risk factors.

Source of Funding:
None