➔ **can be viewed in Salon C 1/2 and Salon C 7/8 or online:**
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FRI_01.01
A Survey of Reproductive Health Care Services Offered at Refugee Resettlement Agencies in the United States

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Background: Refugees represent a largely underserved and disadvantaged population worldwide. Female refugees are particularly vulnerable, often having faced sexual and gender-based violence. Despite the significant need for sexual and reproductive health (SRH) services for recently-resettled women in the U.S., literature describing the resources available to this population is sparse. This survey-based study assessed the accessibility of SRH resources to resettled refugees in the U.S. and provided recommendations for promoting agency and equity within this population.
Methods: A comprehensive list of resettlement agencies in the United States was compiled using the UNHCR's official website (N=397). Duplicates and offices that did not provide resettlement support for refugees were removed (N=210). An online survey was distributed consisting of twenty-nine questions assessing the availability and utilization of SRH resources and barriers to offering these services.
Findings: A total of 80 offices (38%) responded. A minority (14.7%) offered written materials on SRH to clients and 5.5% had visual aids available. Most materials provided information pertaining to pregnancy and how to access clinical SRH services. Only 38.4% offered classes or workshops covering reproductive health topics of which over half (56%) did so in a single-session workshop. While 70.7% of offices referred clients to primary health care providers, only 18.5% referred clients specifically for reproductive health care. Lack of culturally and linguistically appropriate materials (55.7%) was cited as the major barrier to ensuring clients receive information about SRH. 81.8% felt that written materials would be helpful in increasing their agency's capacity to provide SRH information, while 54.5% felt that staff training on how to discuss SRH topics with their clients would be beneficial.
Interpretation: The vast majority of resettlement organizations surveyed do not offer written materials or visual aids covering SRH topics, and workshops and classes are limited in scope. There is an urgent need for the development and dissemination of culturally appropriate SRH resources for recently-resettled refugee populations in the U.S. in addition to staff training within resettlement agencies. Health care providers and public health practitioners should collaborate with resettlement agencies and the communities they serve to ensure equitable delivery of SRH resources and care.
Source of funding (if none, enter "None"): None

FRI_01.02
Medium-term Retention of Volunteer Community Health Workers in Rural SW Uganda

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Background: Globally, community health workers (CHWs) are increasingly recognized as integral to health systems; in low-resource settings, their effectiveness has proven to reduce morbidity and mortality especially for maternal, newborn, and child health (MNCH) and where popualtions are vulnerable. A Ugandan-Canadian partnership trained and supported MNCH promotion-focused CHWs throughout Rubirizi District (population 129,000) in southwest Uganda in 2013-2014.
Methods: Between November 2013 and February 2014, Healthy Child Uganda facilitated a district-led scale up and training of CHWs in Rubirizi District. Participants identified and selected CHW from each village according to government recruitment guidelines through a process and criteria they developed; common criteria included being a parent, active community involvement, demonstrated voluntary spirit, and community trust and respect. CHW demographic information on age, sex, education level, number of children, and village was collected at enrolment, and CHWs were followed prospectively for 5 years. Exit date and primary reason was recorded for all CHWs that exited. Retention rates were by parish, year, and demographic variables.
Findings: A total of 1,021 CHWs were initially trained in Rubirizi district, representing all 342 villages. The majority (85%) were female; mean age was 43 years (SD: 10.6). Retention after 1, 2 and 5 years was 97.3%, 92.5% and 78.0%. Of the 225 CHWs who exited before 5 years, half (50.2%) left for reasons unrelated to work

such as moving to a new village (n=40), own death (n=15) and moving for a new job (n=13).Those reporting role-related reasons left due to disinterest (n=47), too busy (n=12), and peer or supervisor rejection(n=12).
Interpretation: Overall medium-term retention is relatively high in Rubirizi, suggesting that most volunteers in this setting can be retained in some capacity as CHWs even at scale, beyond training and project end, in a system supported by local facilitiesand district. Addressing CHW attrition factors may help in mitigating and improving selection processes for stronger and sustainable programs over the longer term.
Source of funding (if none, enter "None"): Global affairs Canada and International Development Research Centre

FRI_01.03

A Innovative, Scalable Model to Decrease Medical Supply Waste and Increase Global Access to Medical Necessities

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Background: Around the world, millions suffer from treatable health conditions due to a lack of access to basic medical supplies. Meanwhile, the U.S. healthcare system trashes billions of pounds of unused medical supplies every year. In fact, the medical sector is the second-largest contributor to landfills, accounting for 8% of greenhouse gas emissions in the U.S. Blueprints For Pangaea (B4P) was created to shift this paradigm of economic inefficiency, environmental burden, and human suffering. B4P is a network of nine university chapters driven by the mission to address global healthcare inequities by reallocating excess, unused medical supplies from U.S. hospitals to LMIC in need.
Methods: The model was built upon two tenets: sustainability and scalability. B4P sets up a collection system within major hospitals, gathering thousands of supplies weekly. National hospital partnerships allows B4P to maximize our collection net, creating a steady stream of shipments. Use of zero salaried employees maintains financial sustainability as all funds go directly to the cost of storing and shipping supplies. Supplies are stored in climate-controlled warehouses until a sufficient quantity for shipment is collected. The organization works with nonprofit partners to verify medical supply quality and integrity. Once vetted, supplies are sorted for shipment in 20-53 ft. containers. Communities lacking supplies are identified through outreach by B4P or nonprofit partners. Nonprofit partners ensure supplies are received properly.
Findings: B4P has sent 30,000+ pounds of medical supplies worth over $1.5 million to communities in Ghana, Niger, the Dominican Republic, Myanmar, and Syria. Our findings highlights the potential of partnerships between academic institutions, healthcare facilities, and nonprofits to tackle the issue of medical supply waste and create lasting change in the global health realm together.
Interpretation: To ensure responsible usage of medical equipment, it is important to have an established partner where supplies are sent. While building national partnerships has been B4P's strength, forming international partnerships was challenging. As a result, B4P transitioned from executing shipments independently to connecting with other organizations, allowing B4P to specialize on growing a large collection net while partners focus on the logistics of shipments.
Source of funding (if none, enter "None"): Blueprints for Pangaea has acquired a majority of its funds through fundraising initiatives.

FRI_01.05

The Art of Malaria Education

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Background: Malaria is a major health concern for the West African nation, Ghana.While prior research has highlighted promising school-based interventions to promote awareness about malaria, less is known as to how well such interventions are able to actively involve children in their own learning. This research examines the role of the performing arts as a heuristic for student-based teaching and learning about malaria.
Methods: Using a convergent parallel mixed-methods study design, an arts-based malaria education model is deployed in a junior high school in Pepease-Kwahu, Ghana. Pre- and post-surveys (disseminated to 90 student participants; analysis in SAS), coupled with pre- and post- focus groups (10 student participants; analysis in NVivo), assess the impact of this art-based approach to malaria education.
Findings: Data analysis is ongoing and will be completed in November 2018. Preliminary findings indicate strong student interests in listening and dancing to music as a means to learning. Students also receive formal instruction on malaria in the classroom setting, but they are instructed more on the disease itself rather than ways to prevent against malaria. During the intervention, students showed enthusiasm for the arts-based learning program. Students (N=77) engaged in dance dramas, skits, and songs creation to demonstrate knowledge of

malaria transmission, prevention, and treatment. Focus group participants (N=10) suggested that future programs be extended to other schools and incorporate other health information.
Interpretation: Arts-based approaches to malaria education may help students demonstrate their learning, through their own creation and participation in song and dance performances. This study may help professionals in public health and education identify the use of the performing arts as a public health tool for disseminating health information and promoting health literacy among youth.
Source of funding (if none, enter "None"): Elon University–Lumen Prize

FRI_02.01
Low Cost and Low Resource Materials and Methods to Teach Fiberoptic Intubation in Developing Countries

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Background: Successful fiberoptic intubation (FOI) depends on learning proper hand-eye coordination with an airway mannequin prior to use on patients. However, equipment and simulation mannequins may not be available in all parts of the world. During a visit to a hospital outside the USA, as no functioning airway trainer mannequin was available, a low-cost, low-resource method was devised.
Methods: An endotracheal tube (ETT) holder and glottis was devised using a cardboard square with a triangular opening representing the glottic opening and vocal cords. For successful FOI, 10 maneuvers must be mastered: Left, Right, Up, Down, In, Out, Straight, Rotate, Push, Pull. These initially should be practiced at the head and side of an intubation model. Instruction occurred over a three day period. First Day: Didactic lectures and videos of FOI principles. Second Day: Practice of basic 10 maneuvers. Third Day: Application and use of FOI in operating room (OR) on asleep patients. Important concepts are: 1) Identify necessary equipment; 2) Familiarize scope components; 3) Practice attaching scope components and video monitor; 4) Prior to intubation, practice maneuvers moving scope tip in different positions keeping scope straight to allow maximum maneuverability; 5) Practice at head/side of patient to achieve proper tube placement.
Findings: 30 residents and 10 anesthesia staff received training using the low-cost, low-resource simulation method. On the 3rd day, 6 intubations (5 asleep, 1 sedated awake) were 100% successfully performed by 2 residents and 4 anesthesia staff, Retrospective review 1-month post-training revealed 10 fiberoptic intubations (8 asleep, 2 sedated awake) with 70% success (6 asleep, 1 sedated awake). Success rate at 3-months decreased to 50% and to 30% at both 6- and 12-months.
Interpretation: Specialized FOI techniques are uncommon in 2nd or 3rd world countries because of cost and lack of availability. Various low-cost, low-resource dexterity models and simulation techniques have been used to teach FOI. The simple, low-cost method described can be used to teach a new technique to providers with no prior FOI experience. This FOI method uses lectures and videos with simulation techniques followed by actual OR practice. The decrease in success rates may be due to loss of practice, motivation, or difficulty achieving adequate airway anesthesia and sedation.
Source of funding (if none, enter "None"): None

FRI_02.02
Efficacy of Distance-Based Emergency Medical Services Education in a Low-Resource Country

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Background: Road traffic accidents are a major cause of morbidity and mortality in low-resource countries. Compounding this issue is a lack of advanced medical training in these regions and a paucity of developed emergency medical services (EMS). To help address this need, a distance-based emergency medical services educational product was developed with the goal of advancing medical training in resource-poor areas. If successful, this project could lead to the development of a more robust distance-based curriculum of graduate medical education topics in low resource countries.
Methods: This prospective before and after study evaluated the knowledge acquisition and technical effectiveness of an online delivered, distance-based EMS lecture. Volunteer medical providers at Karl Heusner Memorial Hospital in Belize City, Belize were invited to participate. Participants were given a pre-test consisting of 15 questions regarding ambulance and emergency vehicle safety. This was followed by a 45-minute lecture presented online synchronously on the same topic, followed by a post-test consisting of the same questions. One month later, a delayed post-test with the same questions was administered to assess knowledge retention. Additionally, after the lecture a questionnaire was distributed to assess technological effectiveness of the format.

Findings: Nine participants completed the pre-test, immediate post-test, and delayed post-test. Significant improvement was noted between the average scores of the pretest as compared to the post-test (32.5% vs 74.1%, p <0.00001). Significant improvement was maintained with the delayed post-test as well as compared to the pretest (32.5% vs 57.0%, p 0.0027) Overall, the participants approved of the technical aspects of the project and felt that this was an appropriate tool to help translate learning material. The average score for the technical aspects of the project ranged from a 3.22 to 3.78 on a scale of 1-5.
Interpretation: This synchronously presented distance-based EMS educational program showed significant gains in both immediate and delayed knowledge acquisition among a small sample size. These results show promise that an online distance-based education is a viable option for EMS education in low-resource countries.
Source of funding (if none, enter "None"): None

FRI_02.03

Transforming Global Health Concepts into Action in Medical Residency Programs: The Université de Sherbrooke Experience.

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Background: In response to society's changing needs, global health (GH) competencies are becoming a *sine qua non* of medical education programs. Although frameworks for GH exist, practical illustrations of how to translate framework items into concrete actions are lacking. In addition, reported initiatives are often optional and vertical in their implementation, thereby lacking a coherent longitudinal view embracing both undergraduate medical education (UGME) and postgraduate medical education (PGME) programs. The goal of our initiative was to support our PGME office in their attempt to enrich the mandatory GH content of their residency programs taking into consideration competencies already acquired in the UGME program. The first phase of the project involved the creation of practical illustrations at the PGME level of concrete actions linked to our GH framework. In a second phase, these illustrations will serve to influence pedagogical activities
Methods: A GH working group was tasked to identify and create practical illustrations of actions linked to our GH framework for our 39 residency programs. The group consisted of faculty members and student representatives who worked on phase I of the project from May 2016 to May 2018. A mapping of existing activities supplemented with pertinent literature was undertaken. Two discussion groups, one with faculty and one with residents, helped ensure buy-in from stakeholders (program directors, faculty, residents).
Findings: Through the process of creating illustrations for GH competencies within our faculty, we set the stage for phase 2 of the project (influencing pedagogical activities in residency programs linked to GH). The initiative also resulted in the development of a common language and shared vision of GH competencies by stakeholders.
Interpretation: Although the project was a local initiative, many residency programs throughout the world struggle with the integration of GH competencies into their curricula. The process of implicating stakeholders in creating concrete illustrations within their programs and the sharing of ideas among colleagues and students allowed for the emergence of new ideas for structuring pedagogical activities. Perhaps, even more importantly, it allowed for the development of a common language and shared vision of GH competencies among all stakeholders.
Source of funding (if none, enter "None"): Fond d'innovation pédagogique de l'Université de Sherbrooke (2016-2018).

FRI_02.04

The Post-Resettlement Health Care Needs, Barriers and Facilitators of Refugee Women in Navigating a New Health Care System: A Study among Diverse Refugee Women in Alberta, Canada

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Background: The health needs and expectations of refugee women during their post-resettlement into their new environment influence their access and utilization of healthcare services. There has been a global migration crisis caused by conflict, war and human right violations forcing individuals and populations to flee their home countries which has significant impact on their well-being and causes long lasting consequences. As refugees attempt to resettle in a host country, they encounter several challenges which are not limited to financial, career, housing, safety, acceptance, and health. Despite several studies on refugees' challenges in accessing healthcare services, there is the need to examine the healthcare expectations and experiences of refugee women as they settle in

Alberta, Canada and how the healthcare system provides their health needs and strategies to overcome their post-resettlement challenges.
Methods: This is an explorative qualitative research study guided by intersectionality feminist framework to explore the experiences and perspectives of refugee women from diverse backgrounds. Seven in-depth interviews and six focus group discussions were conducted for community leaders/settlement workers and refugee women respectively. Using purposive sampling strategy, participants were contacted from six communities in Alberta, Canada. An inductive thematic analysis approach was employed to analyze and interpret data from participants' different opinions and experiences.
Findings: Five main dimensions were identified to discuss the needs of refugee women in navigating the Canadian healthcare system which includes; understanding, accessibility, navigation, utilization and expectations of healthcare services. The major refugee women's health care needs mentioned were related to physiological and mental health issues, women healthcare services, language assistance, limited funding and extended support. Refugee women experience barriers and facilitators including long wait times, language and literacy challenges, discrimination, distrust, social support, adaptation challenges and limited rural health support were identified to impede refugee women resettling health experience.
Interpretation: Language differences, location (rural versus urban), culture sensitivity, long wait times, and minimal community acceptance and involvement tend to shape the health outcome and pathways to care for refugee women. Future interventions/ implications for practice should focus on refugee health needs assessment, medical outreach programs, long-term/practical support, and joint networking of ideas among stakeholders.
Source of funding (if none, enter "None"): None

FRI_02.05
A Case Study of Haiti's 2016 Hospital Strike

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Background: In March 2016, 431 health care professionals at ten public hospitals in Haiti went on strike. Motivated by poor working conditions, they demanded increased salaries and hospital operating budgets. The strike lasted six months and led to ethical controversy and unintended consequences on the population's health. This case study was written as an educational tool for health care professionals. The study analyzes the historical context that contributed to the strike and explores ethical themes and consequences related to social movements.
Methods: This case study was completed in Haiti. The methods consisted of a literature review, five in-depth interviews and an online survey distributed via social media and completed by 55 people, 90% of whom were health professionals or students in the health sciences. The in-depth interviewees included an intern at the largest public teaching hospital; a resident involved in strike planning; two medical directors at Haitian public hospitals, and the Deputy Chief Medical Officer for a local nonprofit. Consent was obtained from all participants.
Findings: Survey data: Among those who completed the online questionnaire, 92.7% believed that the care provided by public hospitals prior to the strike was inadequate. 70.9% of participants believed that the strike would successfully pressure the government to spend more on health care.
Literature review and in-depth interviews revealed recurrent themes related to consequences of the strike: Suffering of patients- Impact on hospitals not participating in the strike- Consequences on health professional education
Interpretation: Survey data suggest that among a sample of health professionals in Haiti, the majority believed that health care was inadequate prior to the strike and that the strike could affect health sector change. Literature review and interviews suggest that this strike led to considerable ethical controversy, many unintended consequences on the health of the population.
Limitations of this study include possible sources of bias, including voluntary response bias in survey results. Strengths of this study include multiple methods used to assess attitudes and multiple perspectives elicited during interviews.
Source of funding (if none, enter "None"): Radcliffe Institute For Advanced Study, Harvard University Social Medicine Consortium

FRI_02.07
University-based Global Surgery as a Community of Practice

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Background: Global Surgery focuses on improving surgical care in low-resource settings, which requires collaboration between anesthesia, obstetrics & gynecology, and surgical specialties. In Canada, the Bethune Round Table conference and the Canadian Network for International Surgery link specialties. However, many university-based Global Surgery initiatives remain in departmental silos.
A Community of Practice (CoP) is a group of experts who share a domain of knowledge, a social community, and a specific focus of practice. Members learn and develop best practices by sharing experiences and collaborating in projects. We report our experience with a CoP at McMaster University called MacGlObAS (McMaster Global Obstetrics & Gynecology, Anesthesia and Surgery).
Methods: Since 2013 we organized joint departmental activities including a Global Surgery conference, collaborations with international partners, and annual joint rounds. In 2016, we obtained financial and in-kind committement from Departmental Chairs and the Associate VP Global Health, we obtained financial and in-kind commitments, to establish a new Global Surgery initiative with a co-ordinator based in the Global Health Office. Officially launched in June 2018, MacGlObAS promotes an interdisciplinary approach to Global Surgery. The "seven actions" of a successful CoP provide a theoretical basis to guide our efforts to break-down institutional and discipline silos.
Findings: The core executive of Global Surgery practitioners meets regularly to identify strategic priorities particularly in education and research. The CoP model provides a helpful guide for designing integrative activities that enhance collaboration and foster shared knowledge generation. To support residents interchanges with our partner countries we have planned a joint resident-led seminar on international electives. Another priority is to survey our faculty members and develop a communication plan to share learning and opportunities. Thirdly, we recognize the need to develop a business plan to sustain the initiative including institutional support and grants.
Interpretation: The Community of Practice model can be applied to the evolution of university-based Global Surgery collaborations. A Global Surgery CoP mentors young faculty and residents, generates shared resources, builds institutional memory, and advances academic productivity through sharing best practices. Ongoing challenges include providing value to maintain member engagement, and sustaining a collaborative within the competing demands of an academic institution.
Source of funding (if none, enter "None"): None

FRI_03.02

Surgeons' Experiences, Perceptions, and Recommendations Regarding Surgical Procedures Supported by Ketamine as a Sole Anesthetic Agent when No Anesthetist is Available

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Background: Ketamine is a dissociative agent whose wide safety margin has led to its use as a sole anesthetic agent across resource-limited settings. Lack of muscle relaxation, salivation, and occasional movement may present operative challenges. The objective of this study was to assess surgeons' experiences, perceptions and recommendations when ketamine is used as a sole anesthetic agent to support operative procedures when no anesthetist is available.
Methods: Surgeons with experience performing operations supported by ketamine as the sole anesthetic agent were identified by purposive and snowball sampling and interviewed in a semi-structured fashion. Interviews continued until thematic saturation and were analyzed for emergent themes.
Findings: Sixteen surgeons were interviewed on their experiences across 12 countries. The most common operative procedures supported by ketamine as a sole anesthetic agent when no anesthetist was available included: cesarean sections, laparotomies, hysterectomies, wound debridements, amputations, and manual vacuum aspirations.

All interviewed surgeons stated that ketamine saves lives and that providers that perform surgical procedures in resource limited settings should be trained on the proper use of ketamine. The most frequently described challenge associated with ketamine was lack of abdominal wall relaxation. "You don't get full muscle relaxation. If you are doing an abdominal surgery you might struggle to get visualization and exposure." Surgeons also described, "it just takes time and experience to get familiar with it." Recommendations included frequent re-dosing, use of benzodiazepines and atropine for agitation/hallucinations and salivation, respectively. A few surgeons commented on the importance of: pre-oxygenation before ketamine administration, administering ketamine slowly, understanding how to manage side effects, having dedicated staff to monitor vital signs, and obtaining a good surgical assistant and a self-retaining retractor.
Interpretation: Experienced surgeons who have used ketamine anesthesia as a sole agent in support of operative procedures when no anesthetist is available believe that ketamine saves lives and that all surgical

providers in resource limited settings should be trained on its use. Ketamine has associated effects that are manageable and should not inhibit quality operative care.
Source of funding (if none, enter "None"): None

FRI_03.03

Organizational Form and the Effective Management of Local Health Systems: Evidence from Health Sector Decentralization in Honduras

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Background: Decentralization is a common strategy in less developed countries for improving quality, increasing accountability, and decreasing costs of local health services delivery. The efficacy of such efforts, however, varies based on policy design and contextual factors. Health sector decentralization in Honduras involves two administrative reforms: devolution of key authorities and responsibilities from the central Ministry of Health to the Regional Health Authorities, as well as contracting-out service delivery to decentralized managing organizations inserted between Regional Health Authorities and local health centers.
Methods: Using three waves of survey data coinciding with the rollout of the reform across health centers in the state of Intibucá, we investigate associations between the type of managing organization and health workers' attitudes on a range of topics critical to service delivery, including perceptions of their supervision, community participation, and their opinions of the reform itself. We complement this with analysis of qualitative interviews conducted with key stakeholders in three case municipalities with differing types of decentralized managing organizations.
Findings: We find that the different types of organizations -- non-profit, local government, or regional health authority -- each face distinct challenges and have an important influence on the functioning of the local health system. Specifically, we present evidence that non-profit managing organizations might have greater flexibility in marshalling additional resources, while local government leadership may increase the risk of politicizing the health system.
Interpretation: This research speaks to the tradeoffs across options for delegating responsibility in health systems and underlines the importance of developing policy solutions attuned to local context.
Source of funding (if none, enter "None"): National Science Foundation, University of Chicago Center for Global Health

FRI_03.04

Injury-related Cost-Analysis in Mongolia

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Background: In Mongolia, injury is the third leading cause of death and the primary cause of morbidity among males under 44 years of age. The social and economic burden of injuries for the Mongolian population is not fully quantified. This study aimed to evaluate the direct medical costs and to identify key epidemiologic drivers of cost and length of stay following injury.
Methods: All patients admitted in 2016 to Ulaanbaatar's Traumatology and Orthopedic Research Hospital (TORH), Mongolia's only trauma center, were identified in the administrative database. Patients who died of their injuries or who were admitted for under 24 hours were excluded. The direct medical costs were collected, and univariate and multivariate linear regression analyses were conducted to identify demographic, epidemiologic and clinical variables associated with increased cost and duration of hospitalization.
Findings: 10,958 patients were included in this study. Mean age was 34 years, 67% of patients were male and 66% of injuries occurred in the Ulaanbaatar. The mechanism of injury was blunt in 76% of cases, with the most common diagnoses being upper and lower extremity fractures (combined total 30%). Mean length of stay was 9.9 days and mean direct medical costs were $USD 219. On multivariate analysis, age, female gender, traumas occurring in peripheral provinces, thermal injuries and surgical interventions were associated with increased cost and length of stay. (p-value <0.05)
Interpretation: The total direct costs of those patients was $USD 2,746,627, representing 0.03% of the Mongolian GDP. By extrapolating the result to to the total number of injuries in 2016 (107,559), the national direct

cost was $USD 23,555,421, representing 7.8% of the budget for health. Furthermore, the drivers of cost that we identified give the baseline for subsequent study and public health measures.
Prospective analyses assessing indirect cost of injury are necessary to fully quantify the financial burden and barriers to healthcare access for the population, and these are currently underway.
This study was conducted only at the TORH. However, we believe it represents well the spectrum of injuries and patients because 80% of trauma cases are treated there.
Source of funding (if none, enter "None"): None

FRI_03.05
Trimodal Analysis of Trauma Deaths In Mbarara, Uganda

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Background: Injuries account for 16% of the global burden of disease. Low and middle-income countries bear a disproportionate amount of this trauma burden and have underdeveloped trauma systems. Mbarara Regional Referral Hospital (MRRH) covers 10 Districts in western Uganda with a referral population of 3 million. It serves as a regional trauma centre with an available CT scan, orthopedic and neurosurgery specialties. This study analyzed trauma mortalities at MRRH over 15 months.
Methods: With local REB approval, a trauma registry database was implemented at MRRH in March 2017. Baseline data were collected prospectively on admission for all trauma patients by local trained research assistants. The minimal data set included Kampala Trauma Score (KTS), location and cause of injury, time and mode of transport and 14-day follow-up of inpatients. Anonymized data were shared with Canadian co-investigators through a secure online database and reviewed for quality and completeness. The first 1500 patients were analyzed using SPSS software, with a specific focus on trauma related mortality.
Findings: There were 170 trauma deaths (11.3% overall mortality rate). Ten patients (5.9%) were prehospital deaths, 33 (19.4%) deaths occurred in the Casualty Department, and 127 (74.7%) deaths were inpatients. Only 4.7% of trauma patients arrived by ambulance, with the majority brought in by family or good Samaritans. Road traffic accidents led to 97 (57.1%) of deaths, with motorcyclists accounting for 47 (48.5%). KTS (mean 10.4 +3.0 for deaths) did not correlate with mortality risk. Head/neck/face injuries were present in 143 (84.1%) and 52 (30.6%) had surgery. Most (69.9%) inpatient deaths occurred after 3-7 days. Children <18 years had a higher mortality rate (14.8%) than adults (10.8%), and 22% of pediatric deaths had major burns. Female deaths (18.2% of total) were more likely associated with intimate partner violence.
Interpretation: Pre-hospital deaths are underestimated due to lack of a national database. In addition to primary trauma prevention, prehospital approaches include training lay-people as first responders. Improved transport and triage, resuscitation resources and trauma team training may decrease casualty department deaths. Inpatient deaths could be addressed with quality improvement initiatives. Trimodal analysis of trauma deaths allows development of a comprehensive plan for interventions as part of a regional trauma system.
Source of funding (if none, enter "None"): McMaster Surgery Associates

FRI_04.01
Systemization of Clinical Documentation in a Community Health Clinic in Jalisco, Mexico

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Background: Clinical documentation facilitates communication between providers, and between patients and their providers, to support quality care and positive clinical outcomes. Poor documentation contributes to the burden of chronic disease, such as hypertension and diabetes, because patients need early assessment, intervention, and follow-up to prevent potential long-term damage. In Mexico, community clinics outside of the public health system provide important services to low resource populations. However, they often lack systemization of clinical documentation necessary for carrying out critical strategies for early detection and case management. At Tiopa Community Clinic in Autlan, Jalisco, Mexico, a quality improvement project to enhance clinical documentation was implemented to better identify and treat chronic diseases.
Methods: Through a collaboration with UCSF and the Tiopa Community Clinic, UCSF advance practice nurses and Tiopa medical personnel identified the gaps in chronic care management, including poor communication between providers and lack of documentation of risk factors. The team assessed the charting system, designed improvements, implemented changes, and evaluated results.

Findings: Results from the assessment were: 1) patients had to opt-in to have a chart created, therefore patients who chose not to opt-in had no continuity of care 2) providers did not routinely conduct patient histories, and 3) documentation from visits was incomplete. In response to these findings, the following improvements were implemented: 1) established documentation procedures for new patients, 2) standardized procedures for patient histories and physicals, 3) the use of SOAP notes (subjective, objective, assessment, and plan) format, and 4) training for personnel on the importance of these procedures. Testing of change is ongoing. Early results show an increase in the number charts created, more complete documentation of visits, an increase in complete histories and physicals, and better systems for tracking charts through the clinic.
Interpretation: Future focus will be on assessing and documenting risk for chronic diseases, documenting care plans, and referrals to appropriate resources. Clinical documentation continues to be a challenge at Tiopa because the focus of patients and providers is on treating acute complaints versus chronic diseases management. Systemic changes can establish clinical care and documentation practices aid in the early detection of non-communicable diseases.
Source of funding (if none, enter "None"): The Milagro Foundation

FRI_04.02

Age-specific and Sex-specific All-cause Mortality in 34 Indonesian Provinces, 1990-2015

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Background: All-cause mortality is the foundation for many important population-level health indicators, but it can be difficult to quantify accurately if no complete recording of deaths exists. Currently, publicly-available estimates of all-cause mortality in Indonesia rely on a single data source rather than combining sources, are not at subnational level, and/or are not age/sex-specific.
Methods: In the absence of a vital registration system, the estimation of all-cause mortality rates in Indonesia relies on complete birth histories, summary birth histories, household deaths, and sibling histories. This process has three main components: estimating under-5 mortality, estimating adult mortality, and estimating final age-specific mortality using life tables. The first two components include identifying data sources, extracting the relevant metrics from these data while accounting for measurable data biases, and data synthesis methods. The third component uses these child and adult mortality estimates along with a model life table system to generate annual mortality rates for all 34 provinces, 19 age groups (neonatal, postneonatal, 1-4, and 5-year age groups up to 80+), and two sexes, from 1990 to 2015. Each component propagates uncertainty from sampling error, estimated non-sampling error, missing data, and model parameters.
Findings: I produced annual estimates of under-5 mortality from 24,148 empirical measurements and adult mortality from 1,232 data points across 34 Indonesian provinces. From 1990 to 2015, life expectancy at birth for Indonesia increased by 8.2% for males and 10.1% for females, to 70.14 years and 73.81 years, respectively. The probability of death declined in children under 5, by over 60% for both sexes. In fact, age and sex-specific mortality rates have declined in every age group from 1990 to 2015 in Indonesia, with the largest relative improvements observed in children. Life expectancy at birth improved for all provinces from 1990 to 2015, and 30 of 34 provinces saw declines in deaths among children from 2000 to 2015.
Interpretation: Life expectancy improvements are in large part due to declining child mortality in all provinces, with probability of death before age 5 decreasing by 50%-85% in more than two-thirds of the provinces over this time period. This is first set of comprehensive, consistent all-cause mortality estimates for Indonesian provinces.
Source of funding (if none, enter "None"): None

FRI_04.05

Cross-sectional Study on Perceptions Regarding Cervical Cancer Screening and HPV Vaccination among Female Patients in Rural Taiwan

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Background: Cervical cancer remains the 8th leading cause of cancer mortality among women in Taiwan. Despite availability of a National Health Insurance program with free yearly screenings, Pap smear testing and HPV vaccination rates have historically been low in Taiwan. Even in the US, cervical cancer screening rates for Asian women are significantly lower than other ethnic groups. The goal of this study is to direct future

interventions by providing insight on barriers leading to low screening and vaccination rates among Taiwanese and Asian women.
Methods: Anonymous surveys with no patient identifiers were randomly administered to patients at a Traditional Chinese Medicine Clinic in Hualien City, June 2018. Inclusion criterion was females. No exclusion criteria were defined. Participants provided written consent, and 63 completed surveys were received. A chi-square test was used to determine statistical significance (α=0.05).
Findings: Results indicated that formal education levels correlated with increased knowledge of HPV (p=0.001), its route of transmission (p=0.044), its link to genital cancer (p=0.0024), and HPV vaccination (p=0.0039). There was no correlation between age and knowledge of HPV (p=0.44). Women were more likely to have pap smears if they were >30 years of age (p=0.0033), visited the gynecologist (p=0.00076), or were recommended one by their physician (p=0.00072). While 57% of respondents knew of the HPV vaccine, only 19% were vaccinated. Among those who were not vaccinated, most cited reasons included an inability to find a physician providing it (23.5%), safety concerns (16.4%), belief that it encourages sexual behavior (14.5%), and high out-of-pocket expense (9.1%).
Interpretation: Our data suggests that knowledge on HPV does not predict higher adherence to cervical screening guidelines. Instead, diligent physician recommendations on pap smears can elevate adherence rates among patients. Significant contributors towards low HPV vaccination rates in rural Taiwan include lack of awareness and access to the vaccine: an important gap that physician guidance can fill. Our study emphasizes the physician-patient relationship as a means to target vulnerable populations and increase rates of cervical cancer screening and HPV vaccination.
Limitations to this study include a small sample size and a multiple choice format that cannot encompass all possible responses. We hope to address these issues in a future larger study.
Source of funding (if none, enter "None"): None.

FRI_04.06
Determinants of Depressive Symptoms in Adults 50 Years and Older from Japan, Mexico, England and the US: A Secondary Data Analysis

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Background: The aim of this study is to find the overall prevalence of depressive symptoms and the contextual individual characteristics act as longitudinal determinants of these symptoms highlighting the importance of the environment. Depression in the elderly has been recognised a hidden public health problem. Worldwide estimates vary from 10-20% depending on the diagnostic method or measurement scale. However, this condition seems more prevalent in Mexican as the prevalence has been calculated to be as high as 29.1%. Using nationally representative samples of older adults will aid in calculating a more accurate estimate of this prevalence while studying the longitudinal determinants of depressive symptoms will aid in preventing the long term consequences.
Methods: Using the harmonised versions of JSTAR, MHAS, ELSA and HRS, we did “between-within” random effects panel data analyses for each of the countries in order to determine which contextual characteristics influence the prevalence of depressive symptoms. This method allows to control for individual heterogeneity and assess change while including time invariant characteristics.
Findings: Several characteristics significantly increased the likelihood of depressive symptoms overtime across all countries. For example, results from panel data analyses from Japan, Mexico and the Us showed that female gender, higher number of chronic conditions, worse self-rated health and IADL disability were significantly associated with depressive symptoms longitudinally. However, in Mexico and the Us which are countries with broader socioeconomic inequalities, there is a significant effect of lower education. Finally, it seems that lower net worth and the decrease of net worth is associated with depressive symptoms only in the US.
Interpretation: In conclusion, it seems that in countries with broader social inequalities socioeconomic characteristics such as education and net worth seem to play a more significant role on the presence of depressive symptoms.
Source of funding (if none, enter "None"): None

FRI_04.07
Assessing type 2 diabetes screening among the indigenous population in rural Guatemala

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Background: Over 380 million people around the world suffer from type 2 diabetes. New and improved screening tools have been implemented over the years to facilitate the early identification of at risk individuals. However, barriers such as cost, practicality, and overall availability in low- and middle-income countries (LMICs) have made it challenging for some communities to apply recommended guidelines. This holds true for some rural indigenous Guatemalan communities where use of the casual plasma glucose (CPG) test remains in use over the recommended hemoglobin A1c (HbA1c) test. This study sought to determine the clinical implications of the continued use of CPG over HbA1c among the indigenous population in rural Guatemala.
Methods: This was a community-based cross-sectional study. A random geographic stratified sampling approach was used to enroll a total of 362 adults. Demographic information was obtained using a short, open-ended verbal questionnaire. Anthropometric information to calculate body max index (BMI) was collected using a standard measuring tape and electric mobile scale. Point-of-care testing was used to analyze CPG levels and a blood draw delivered to a local laboratory was used to analyze HbA1c levels. CPG and HbA1c data was compared using HbA1c as the standard. The World Health Organization (WHO) screening guidelines for type 2 diabetes was used as a reference point to identify at risk individuals.
Findings: CPG values detected a lower number of individuals at risk for type 2 diabetes compared to HbA1c (12.9% vs 18.5%, $p<0.001$). In addition, the false negative rate and the false positive rate for CPG was 36.4% and 1.4%, respectively. This translates to roughly 3,640 false negative and 140 false positive test results using CPG for every 10,000 individuals properly screened using HbA1c.
Interpretation: Our results suggest that type 2 diabetes screening using CPG overlooks high numbers of at risk individuals who could have otherwise been detected using HbA1c. Future strategies should account for improved screening methods to reduce existing disparities and prevent avoidable morbidity and premature mortality.
Source of funding (if none, enter "None"): Guatemala-Penn Partnership, Center for Global Health, Perelman School of Medicine, University of Pennsylvania.

FRI_04.08

Curbing the rise of NCDs: Perspectives of national policy actors on how to manage and control NCDs in Uganda

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Background: Non-communicable diseases (NCDs) are expected to become the leading cause of death in Sub-Saharan Africa by 2030. Countries like Uganda face a complex policy landscape where infectious diseases, like HIV/AIDS and malaria, continue to grab the attention of policymakers and the health system has been unable to adequately respond to growing burden of NCDs observed in all socioeconomic strata. In this context, we sought to understand the barriers and facilitators national-level decision-makers face in developing policies for NCDs in Uganda, and we describe the current approaches being discussed.
Methods: We conducted in-depth interviews with 30 policy actors and stakeholders from the Ugandan Ministry of Health (MoH), non-government organizations (NGOs) and researchers to examine their perspectives on: (i) existing gaps in NCD preventive and curative services in Uganda; (ii) policy and programmatic options being discussed to fulfill those gaps; and (iii) potential obstacles affecting their development and/or implementation. A thematic analysis was conducted to analyze the data. We also reviewed policy documents, peer-reviewed and grey literature to capture the NCD evidence-base and scope of policy-related discussions in Uganda.
Findings: All national actors viewed funding constraints as a critical barrier – which diminished the government's role in the NCD space but elevated the role of external actors, such as NGOs, in spearheading several NCD program activities in country. The crowding of non-government actors was found to fragment efforts to develop a National NCD policy. However, recent MoH efforts to gather partners and researchers via the NCD Technical Working Group have facilitated the development of separate policies for tobacco and alcohol, and now a Multisectoral Action Plan on NCDs. Despite this, skepticism about the government's ability to implement policies and develop an overarching comprehensive NCD policy remains, particularly in the absence of: commensurate increases in budgetary allocations, investments in building health systems capacity to address NCDs, and NCD policy champions.
Interpretation: This study highlights the immediate need for strong government leadership to reconcile the disconnect between discourse and action, reduce fragmented efforts in the NCD space, and prioritize investment in NCD prevention and management in Uganda.
Source of funding (if none, enter "None"): NIH/R21 Grant Award

FRI_04.09

A Comparative Analysis of Kratom Abuse in Thailand and the United States from 2010-2017

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Background: This study describes characteristics, common co-abuse substances, clinical effects, treatments, and outcomes of kratom abuse exposures reported to the Ramathibodi Poison Center (RPC) in Thailand and the National Poison Data System (NPDS) in the United States (U.S.).
Methods: This is a retrospective analysis of kratom abuse exposures reported to the RPC and the NPDS from 2010 to 2017. Characteristics, clinical effects, treatments, and medical outcomes were described and compared between two databases. Subgroup analysis of both single- and multiple-substance exposures were performed. NPDS was used as reference for comparative analysis. Severe outcome was defined as major clinical effects or fatal outcome.
Findings: Nine hundred twenty-eight cases from NPDS and RPC were included (760 from NPDS and 168 from RPC). There was a higher proportion of kratom co-abuse in Thailand (65.0% and 35.0% in Thailand and U.S. respectively; odd ratio [OR] 3.10, 95% confidence interval [95%CI] 2.15-4.47). Ethanol, opioids, and stimulants were the most commonly co-abused substances in both countries. There were more reports of stimulant co-abuse in Thailand (21.43% and 2.89% in Thailand and U.S. respectively; OR 9.15, [95%CI] 5.04-16.82) but no difference in ethanol or opioid co-abuse rates between countries.
Common clinical effects were tachycardia (30.39%), agitation/irritability (26.19%), and drowsiness/lethargy (21.12%). There were more reports of dystonia in Thailand (OR 15.89, [95%CI] 5.43-56.07) and more coma in U.S (OR 0.23, [95%CI] 0.05-0.72). Common treatments provided in both countries were IV fluids (40.09%), benzodiazepines (27.26%), and supplemental oxygen (10.88%).
There were 6 deaths, including 1 single-substance exposure in U.S., 3 multiple-substance exposures in U.S., and 2 multiple-substance exposures in Thailand. No deaths were reported from kratom abuse alone in Thailand. Single-substance kratom abuse resulted in 48 cases (10.08%) with severe outcomes in U.S., whereas none occurred in Thailand (0) (OR 0, [95%CI] 0-0.58). In multiple-substance abusers, 58 cases (20.42%) in U.S. and 3 cases (2.75%) in Thailand reported severe outcomes (OR 0.11, [95%CI] 0.02-0.35).
Interpretation: Kratom abuse in Thailand is more likely to involve multiple-substance exposure than in U.S.; however, severe medical outcomes were reported more frequently in U.S. in both single- and multiple-substance kratom abuse.
Source of funding (if none, enter "None"): UTSW Office of Global Health

FRI_05.01

Assessing the Feasibility and Barriers of a Diabetic Diet in a Rural Guatemalan Community

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Background: Non-communicable diseases such as diabetes are growing in prevalence across the globe with the majority of people affected living in low and middle-income countries. In Guatemala, the prevalence of diabetes continues to increase with a higher burden of disease found in indigenous rural communities. Modifiable lifestyle factors, especially diet, can play a significant role in establishing good diabetic control, but dietary changes may not be easily undertaken in many developing countries. In this study, we aimed to assess knowledge of and adherence to a diabetic diet and to identify barriers to maintaining a diabetic diet in a rural indigenous Guatemalan population.
Methods: Interview participants (n=32) were selected from a convenience sample of adults with type 2 diabetes identified by local health promoters in villages around San Lucas Tolimán, Guatemala. Interviews occurred at weekly diabetic clinics or at home visits. A structured interview was used to assess knowledge about diabetic diet, current dietary habits and perceived obstacles to maintaining a diabetic diet. Thematic analysis was used to reveal common barriers and solutions identified by participants.All interviews were conducted in Spanish and verbal consent was obtained from all participants.
Findings: 81% of participants interviewed were female, the mean age was 53.5 years, and the mean weekly per capita expenditure on food was reported to be 58.8 GTQ (7.85 USD). 28 participants (87%) were able to identify foods important to a diabetic diet including vegetables (*hierbas)*, lean-meats and 'foods without sugar'. Cost (31.25%), access/transport (31.25%), incompatibility with traditional diet and cultural norms (22%), time required to prepare diabetic foods (16%), and lack of knowledge (9%) were the most commonly cited barriers to maintaining a diabetic diet. Participants were able to identify several possible solutions to these barriers including a community garden and a mobile market.

Interpretation: Although participants in this study were able to identify foods important to a diabetic diet, several structural and cultural barriers exist to prevent adherence to this diet. Interestingly, participants were also able to identify creative local solutions to decrease cost and improve access. More research is needed to further evaluate if such solutions could improve adherence to a diabetic diet in this patient population.
Source of funding (if none, enter "None"): Herman and Gwendolyn Shapiro Foundation

FRI_05.02

Treatment of CMV Retinitis in Resource Limited Areas, The Case for Valganciclovir

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Background: CMV retinitis is commonly thought of as a local disease however many argue that it should be thought of systemically. Cytomegalovirus and HIV transactivate each other, and CMV has additive immunosuppressive effects to HIV. Clinical and autopsy studies have demonstrated a high prevalence of extraocular disease in those with CMV retinitis. Although such studies from resource-limited areas are scarce, one study from Botswana found disseminated CMV infection in 43% of HIV positive children. Studies in the US have shown that CMV retinitis and viral load are associated with increased mortality and that systemic treatment of CMV retinitis is associated with a decrease in mortality, new visceral disease, and second eye disease.
Methods: In 2010 the most common treatment for CMV retinitis in resource limited settings is the injection of intravitreous ganciclovir due to its low cost and ease of administration. At the same time valgancyclovir had become the drug of choice to treat CMV retinitis in high-income countries as it can be administered orally and achieve blood levels similar to IV ganciclovir. At first the drug was only available from the patent holder, Roche, and was prohibitively expensive but in August 2013 Roche entered into an agreement with the Medicine Patent Pool effectively reducing the price of valganciclovir by up to 90% in 138 countries. Generic valganciclovir has been available since 2014 and has been manufactured in India but prices for a typical course of treatment are still well north of US$1000. While this price is high it is not outside the scope of government and NGO sponsored treatment programs.
Findings: The WHO recognizes and itself advocates for valganciclovir as the treatment of choice for CMV retinitis. Despite this, the use of valgancyclovir is varied throughout the world: it is available in Botswana and Myanmar through national programs but is not available in many other countries such as Brazil, Ethiopia, Russia, Thailand, and Venezuela.
Interpretation: While there are challenges to the use of valgancyclovir, namely bone marrow suppression, there is a large need for studies on the use of valgancyclovir in resource limited settings to determine if the decrease in mortality, new visceral disease, and second eye disease outweigh the risks.
Source of funding (if none, enter "None"): None

FRI_05.03

Coordination Accountability Regulation Resourcing and Ownership of National Action Plans on Antimicrobial Resistance

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Background: In September 2016, the United Nations General Assembly issued the political declaration on Antimicrobial Resistance (AMR) requiring countries to have in place National Action Plans (NAPs) on AMR aligned to the Global Action Plan (GAP) on AMR which has the One Health Approach (OH) as its central tenet.
Aim:
The aim of the project was to ascertain whether countries explicitly adopted the OH approach in their NAPs in terms of coordination, accountability, regulation, resourcing and ownership.
Methods: A documentary analysis of 43 NAPs published in English on the WHO website was undertaken. Coordination was measured by the existence of a multi-Ministry governance structure, accountability was confirmed if responsible office/r(s) , timelines and indicators were identified in the implementation arrangements, the inclusion of legislative/regulatory review/ amendments and a dedicated budget was a measure for regulation and resourcing respectively while statements of commitment from relevant Ministries was a measure of ownership.
Outcome Measure:
NAPs that adopted and implemented AMR containment measures in the OH approach as evidenced by coordination, accountability, regulation, resourcing and ownership arrangements.

Findings: An average of 72% of the countries had coordination mechanisms stated in their NAPs, 81% of the countries had a responsible person or unit for each activity from each sector in terms of accountability but only 16% of the countries had a monitoring and evaluation plan included in their NAPs. Seventy percent of the countries had included regulation measures in their NAPs, only 19% had included a budget and 9% had costed their activities. Seventeen percent had statements of commitment signed by each of the health, agriculture and environment sectors. Coordination and accountability were more evident in the low. Regulatory mechanisms were frequently stated in low-income countries. A greater number of high income countries had a budgeted NAP and statements of commitment signed by the three sectors.
Interpretation: NAPs should be costed and allocated dedicated human, infrastructural and operational resources for successful implementation and regulatory measures should include enforcement arrangements. Political will and commitment are crucial for the collaborative OH approach to reduce AMR.
Source of funding (if none, enter "None"): This research project was jointly funded by the South African Medical Research Council (SAMRC) and Swedish FORTE.

FRI_05.06
A Review of Factors Affecting Access to Malaria Diagnostics and Treatments in Endemic Countries

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Background: The cornerstone of malaria treatment is the availability and affordability of quality antimalarial medicines and their rational use. Delivery of quality-assured artemisinin-based combination therapies (ACTs) increased since 2005 followed by increased sales of malaria RDTs extending coverage of testing and treatment, yet current estimates suggest large gaps remain. A better understanding of why these gaps occur and which groups are affected will facilitate the design of strategies to ensure universal access to care. This paper explored the non-financial determinants of access to malaria diagnostics and treatment in endemic countries in terms of health systems; health workforce; supply chain management; availability of medicines/diagnostics; health provider knowledge; attitudes/behaviour; patient/community knowledge, attitudes/behaviour, cultural norms; marketing and education messages.
Methods: This review was based on a literature search using PubMed, as well as grey literature sources (e.g. websites and policy documents). Broad search terms such as “malaria” and “access” were used. 3081 publications were retrieved. Abstracts were read to filter out articles on financial determinants, epidemiology of disease, use of insecticide bed nets, and intermittent preventative treatment in pregnant women. A total of 92 relevant articles were included in the final review.
Findings: Studies indicated that public-sector policies are in line with WHO-recommended guidelines, and procurement for public-sector distribution played an important and increasing role in ensuring access to malaria diagnostics and treatment. However, extending the coverage of iCCM and ensuring affordable prices of the products provided through the private sector may significantly contribute to expanding access to these goods by the population in need.
Interpretation: Changing policies to extend the provision of malaria diagnostics and treatment beyond the reach of formal health facilities, thus meeting the requirement of universal health coverage in rural, remote and underserved areas, will require major commitments and investments from policymakers, stakeholders and regulatory bodies.
Source of funding (if none, enter "None"): none

FRI_05.07
Maternal Health Care Utilization in African Immigrant Women: A Review of The Literature

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Background: Migration is an important social determinant of health that can influence health outcomes. People encounter multiple health challenges, such as lack of access to health care and inadequate use of health care services with women being more vulnerable as they migrate from low-income countries to high-income countries. African immigrant women are often at risk for poor prenatal care and poor pregnancy health outcomes because of barriers to health care utilization. Therefore, there is a critical need to understand the maternal health experiences and the barriers to health care utilization of African immigrant women. The purpose of this literature review is to summarize the maternal health experiences of African women who have migrated to the United States regarding health care utilization. This literature review examined the impact of health disparities, health characteristics and behaviors on the healthcare utilization of African immigrant women in the United States.

Methods: We identified journal articles from 1998 to 2018 from the following databases: CINAHL, Family & Society Studies Worldwide, MEDLINE, PsycINFO, Global Health, Women's Studies International, and PubMed. We used the following search terms: *maternal health, pregnancy care, health knowledge, health literacy*, *health disparities, African immigrants, the United States.* Our search yielded 40 studies, 28 were excluded based on relevance to study objectives. A total of 12 studies were included in this review.
Findings: Out of the 12 Studies we included in the review, 10 were conducted exclusively among Somali immigrant women. Health characteristics such as health knowledge, health beliefs, health literacy and cultural practices influenced the health care utilization of women. Health disparities such as reduced access to health facilities. inadequate health insurance and poor communication with healthcare providers affected the use of health services of pregnant women.
Interpretation: Africa is a large and diverse continent. The literature is limited on the maternal health experiences and the use of health care in African immigrant women from a wide array of African regions. The few published studies available have investigated mostly Somali populations in the United States. More information about African immigrant women's needs and culture are essential for reducing health disparities and developing health education and health promotion materials that are culturally responsive.
Source of funding (if none, enter "None"): None

FRI_06.01
Satisfaction with malaria care in Ibadan, Southwest, Nigeria: A cross sectional evaluation study

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Background: Patient satisfaction is globally becoming relevant as an important measure of health system performance. This study assessed patient's satisfaction with malaria care among pregnant women and mothers of children under five (5) years of age in Ibadan, Nigeria.
Methods: This is a cross sectional survey conducted between the period of May and August 2016 using modified validated patient satisfaction eighteen items questionnaire (PSQ-18). Study population included consenting pregnant women and mothers of children under 5 years of age randomly selected based on malaria symptoms from Adeoyo maternity hospital, Ibadan-South West Nigeria. Data was scored and scaled to seven measuring points to assess patient's satisfaction. Statistical analysis was conducted using SPSS version.
Findings: Out of the 1373 respondents enrolled into the study with overall mean age of 29.5 years (SD:5.2 years). Majority of the respondents 818 (59.6%) were pregnant women, while 555 (40.4%) were mothers of children under 5 years of age. Lowest satisfaction 41.4% (mean 3.06, SD:45.1) among pregnant women was reported on item 4 (Sometimes doctors make me wonder if their diagnosis is correct), and 45.1% (mean 3.16±1.3) among mothers of children under 5 years of age. From the seven satisfaction scales items, interpersonal manner of health care providers to patients had highest satisfaction rate of 90.0% and 83.8% among pregnant women and mothers of children under 5 years of age respectively. The ordinal regression analysis to determine the association of some explanatory variables with satisfaction for malaria care showed that pregnant women who had a secondary education were three times more likely (OR: 3.50, 95% CI: 1.19-10.28) than those with tertiary education to be satisfied with technical quality of the malaria care provided. Among mothers of under-five children, those with poorest wealth status were 70% (OR: 0.30, 95% CI: 0.10-0.92) less likely to be generally satisfied with malaria care than the richest.
Interpretation: Patient perceived quality of care and socio economic status plays a role in influencing patient's health seeking behavior. This should be targeted for strategic improvement by relevant health stakeholders.
Source of funding (if none, enter "None"): College of Health Sciences, University of KwaZulu-Natal, South Africa

FRI_06.03
Perceptions, Beliefs, and Feasibility of Distributing HIV self-test kits to Young MSM Population in Uganda: A qualitative study

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Background: HIV self-testing is a flexible, accessible and acceptable emerging technology with a particular potential to identify HIV-infected individuals who are reluctant to interact with conventional HIV testing

approaches. We assessed the perceptions, attitudes, and feasibility of distributing HIV self-test (HIVST) among an MSM population in Uganda.
Methods: We enrolled 74 MSM aged >18 years purposively selected and verbally consented to participate in 8 focus group discussions (FGDs) in TASO Masaka and Entebbe and two FGDs of health workers between February and May 2018. MSM FGD groups included; 1) HIV tested between 6 months-1 year previously, 2) tested 3-6 months previously, 3) never tested and 4) health care providers. FGDs examined: i) the use of existing HIV testing services, ii) the acceptability of HIVST, iii) preferences for various HIVST distribution channels iv) perceptions about the accuracy of HIVST, v) linkage to care. We identified major themes and developed and refined a codebook. We used Nvivo version 11 for systematic data management.
Findings: Ages of MSM participants ranged between 19-30 years. Participants described HIVST as a mechanism that would facilitate HIV testing uptake in a rapid, efficient, confidential, non-painful; and non-stigmatising manner. MSM preferred HIVST to the traditional HIV testing approaches. Health workers were in support of distributing HIV self-test kits through MSM peers. MSM participants were willing to distribute the kits and recommended HIVST to their peers and sexual partners and suggested HIVST kits distribution points to be similar to the peer-model used for condoms and lubricants. Preferred channels were peers, hot-spots, drop-in centers, private pharmacies, friendly health facilities. Key concerns were; unreliable HIVST results, social harm due to a positive result, need for a confirmatory test, how to account for testing kits, and linking both HIV positive and negative participants for additional HIV services.
Interpretation: Distribution of HIVST kits by MSM peers is a feasible and acceptable strategy to promote access to HIV testing. HIVST was perceived by MSM and health workers as beneficial because it would address many barriers that affect their acceptance of testing. However, a combined approach that includes follow-up, linkage to HIV care and prevention services are needed for effective results
Source of funding (if none, enter "None"): UCSF CFAR

FRI_06.04

Using Stochastic Simulation to Inform the Design of Emergency Intervention Trials in Low- and Middle-Income Countries

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Background: Emergency intervention trials are difficult to implement because of ethical and logistical challenges. Such trials are further complicated in low- and middle-income countries (LMIC); these settings compound typical trial challenges with the added complexity of constrained resources, limited infrastructure, and more heterogeneous demography and geography.
However, these additional complexities can be managed with more detailed analysis. One way to include that detail is via agent-based, stochastic simulation. We describe a framework to apply this approach to evaluate emergency intervention trial designs, divided into four distinct phases: event population generation, randomization according to trial protocol[s], simulation of treatment and control outcomes, and evaluation of the protocol analyses. We demonstrate this framework applied to a real-world emergency medical intervention trial in an LMIC setting.
Methods: Using our framework, we developed a trial simulation based on a proposed protocol for a multisite, randomized controlled trial in South Africa. We generate events based on a census of prehospital emergency service responses, randomize according to multiple designs, simulate multiple intervention mechanisms, and evaluate a variety of outcomes.
Findings: Using our framework, we are to distinguish between a variety of scenarios within a trial in a comprehensible way and estimate important characteristics of the proposed protocols, including power and sample size, false positive rates, safety signals, and the effects of different operational approaches to the trial.
Interpretation: As medical and public health organizations seek to expand operations in LMICs, they may need to use new approaches to meet the scientific and ethical standards of trials traditionally carried out in resource-rich settings. The increasingly global availability of low-cost computational resources offers one approach to meeting this challenge.
Source of funding (if none, enter "None"): Initial project support provided by The Clinic on the Meaningful Modeling of Epidemiological Data 2018 in Muizenberg, South Africa.

FRI_06.05

Current Utilization and Perceptions of Ultrasound at Labor Triage: Initial Findings from a Baseline Survey in Eastern Uganda

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Background: In many resource-limited settings, use of early ultrasound during pregnancy is limited. Thus, ultrasound when a woman first presents to the maternity ward for delivery (triage) may be an important point of intervention, as obstetric complications can be detected and subsequently managed appropriately. However, current use and attitudes toward ultrasound at triage are not well understood.
Methods: The Preterm Birth Initiative East Africa is conducting a phased intervention study to assess the impact of a checklist and ultrasound scan at labor triage at three health centers (HC) and one district hospital (DH) in Busoga, Eastern Uganda. During the baseline period (February-June 2018), study personnel administered exit surveys to a random selection of five post-partum patients per week. Participants were asked if a scan was performed after arrival and prior to delivery and their perceptions towards it.
Findings: From 574 surveys, 37 women (6.4%, 6 HC and 31 DH) received a triage ultrasound scan; 83% said this was their first scan during this pregnancy; 97% reported that the provider asked permission and explained the procedure. All women were able to see the screen and 94.5% of providers explained the screen images. Sixteen women (43.2%) reported abnormal results: 4 preterm labor, 1 malpresentation, 2 large head circumference, 3 abnormal fluid volume, 1 fetal distress, 1 stillbirth, 1 placenta previa, 2 multiple gestation, 1 no specification. Perceptions toward ultrasound included: relief to know additional information (27%); positive or neutral feelings (27%); fear or sadness of the pregnancy outcome (18.9%); fear of the machine and pain during the procedure (16.2%); excitement to know gender (5.4%); annoyance with having to wait (5.4%). Women recommended having an ultrasound at the maternity ward to avoid queues they experienced at the outpatient department, offering free scans at government facilities, and universal ultrasound screening for all pregnant women.
Interpretation: Initial data suggests that only a small proportion of women receive ultrasound at labor triage. However, this intervention may facilitate identification of intrapartum complications and increased patient satisfaction, thus underscoring the need for further studies.
Source of funding (if none, enter "None"): Preterm Birth Initiative East Africa

FRI_06.06
Chip-Based Sample Preparation for HIV Viral Load Monitoring in Eldoret, Kenya

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Background: The purpose of this project was to compare the HIV RNA extraction efficiency of a 3D printed microchip designed in the Tripathi Lab with that of the gold standard used in the Reference Laboratory of the Academic Model Providing Access to Healthcare (AMPATH) located in Eldoret, Kenya. Sample preparation and RNA extraction are critical steps to HIV viral load monitoring. Such tests are often limited in resource constrained settings due to cost and infrastructure restrictions. The microchip was designed to extract HIV RNA in a resource limited setting by removing the need for centrifugation and a vortex machine.
Methods: Two-phase microfluidic chips were used in these experiments. Each chip consists of a sample well, an oil channel and an elution well. Silica coated magnetic beads (Ambion) were used to capture precipitated nucleic acids from the sample and isolate these nucleic acids into an inhibitor free elution buffer. Using a magnet, the HIV nucleic acid bound beads from the sample well are collected at the interface, and pulled through the oil channel and into the elution well. We examined our device efficacy in the Kenyan laboratory by running 26 plasma samples from persons living with HIV and calculating the extraction efficiency of our eluted samples. Once each sample was extracted, amplification was performed on the M2000rt (Abbott Molecular) to quantify the HIV RNA extracted. We then calculate the percent of the total HIV RNA extracted in our chip.
Findings: Of the 26 patient samples run the chip, 23 amplified on the M2000rt machine. In addition, three HIV negative samples were run as controls. These negative controls did not amplify. The average percent HIV RNA extracted on the microchip was 24.32% ± 16.8%.
Interpretation: Similar sample testing on the chip in the United States had an average of approximately 60% yield. Due to the decrease in efficiency from the trial performed in Kenya, follow up studies should be performed to determine the source or sources of yield loss. Potential areas to investigate for decreased yield include bead saturation (viral loads >10,000 copies/mL), reagent storage during international transportation and overestimation of starting viral load used in calculations.
Source of funding (if none, enter "None"): Framework for global health Scholarship

FRI_06.07

Providing Healthcare in Developing Countries through Local and Global Partnerships: The Gold Coast Medical Foundation Mission Trip

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Background: Lower respiratory infections, stroke, malaria, heart disease, HIV/AIDS, and preterm birth complications are among the leading causes of death in Ghana (WHO, 2018). There are only 258 hospitals to service a population of 27.5 million and the doctor to population ratio is 9,043. Three weeks each year, Gold Coast Medical Foundation (GCMF) partners with local and international organizations to recruit American and Ghanaian volunteers to travel to several Ghanaian regions to conduct general medical screenings and provide basic treatment for people who might otherwise have no access to medical services. In 2018, GCMF provided care to over 4,000 residents.
Methods: The goals of the GCMF Mission Trip are to: 1) screen for common diseases, 2) provide face-to-face consultations with patients to discuss screening results and/or diagnose other medical issues, 3) distribute medication to patients, and 4) refer patients to the nearest local medical services for ongoing treatment of their medical issues. Target communities include lower socioeconomic urban neighborhoods and rural villages that do not have accessible medical facilities. Program stakeholders include lay residents, village leaders, community organization staff, and elected officials. Communities self-select by submitting a request for a clinic to GCMF and are selected based on medical need, population size, and location. Sustainability efforts include the establishment of a GCMF branch located in Accra, Ghana and the partnerships that have been established with other Ghanaian organizations that work year-round to respond to community requests and needs as well as to plan and organize the annual mission trip.
Findings: To date, GCMF has established 10 partnership agreements with American and Ghanaian institutions, provided direct medical care to over 20,000 patients, and referred approximately 1,500 patients for ongoing care.
Interpretation: Ongoing challenges for GCMF include sustaining funding support, responding to the unmet need of the multiple communities that cannot be reached due to lack of resources, and scientifically rigorous monitoring and evaluation of the program. Unmet goals include expanding program components to address sexual and mental health. As a result, future program activities may be modified to 1) include process, impact, and outcome evaluation methods, and 2) recruit public health and mental health volunteers.
Source of funding (if none, enter "None"): Public and private donations

FRI_06.08

Halifax Newcomer Well Woman Clinic: Promoting the Health of Refugee Women Through Advocacy and Partnership

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Background: The Canadian Collaboration for Immigrant and Refugee Health highlights cervical cancer screening and contraception as priority areas for newly resettled refugees. Creating safe spaces for education and provision of clinical care has been identified as a method of improving uptake of these preventative health services.
With the arrival of 25,000 Syrian refugees to Canada, Refugee Health Clinics saw a significant increase in patients. To meet the women's health needs of refugee women in a timely manner in a setting that was conducive to care, we created a dedicated women's health clinic.
Methods: Since October 2015, resident physicians in the Dalhousie University Obstetrics and Gynaecology program partnered with Family Physicians at the Halifax Newcomer Health Clinic in Halifax, Nova Scotia, Canada to run dedicated, monthly Well Woman Clinics whose goals are to:
- Educate refugee women about cervical cancer screening to promote awareness and uptake
- Provide contraceptive counselling and IUD placement
- Create a discrete, safe, female-centric environment
- Foster resident advocacy and cultural competency through long-term partnerships

Female patients who are seen through the Halifax Newcomer Health Clinic were offered appointments at the Well Woman's Clinic. Women were assigned a dedicated interpreter and participated in a teaching session prior to their clinic appointment. Residents were recruited on a volunteer basis.
Evaluation of the clinic occurred through meetings with stakeholders including Newcomer Health Clinic physicians, advocates from the local resettlement agency, and patients. In response to feedback, education sessions have been expanded to include a broader scope of topics.
Findings: To date, the clinic has served 110 women in eight languages. We have provided 70 PAP tests as well as contraceptive counselling and 15 IUD placements in a comprehensive, education focused setting.

Interpretation: We have created a dedicated Well Woman clinic for the provision of care to refugee women in Halifax, Nova Scotia to ensure timely access to education and clinical care while fostering resident advocacy and engagement in local global health. Going forward, we seek to engage new stakeholders to provide expanded education sessions, explore the possibility of the provision of specialist gynaecologic care within this clinic, and consider its formal integration into the residency curriculum to ensure sustainability.
Source of funding (if none, enter "None"): None

FRI_06.09
Integration with Local Organizations in Resource-Limited Settings

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Background: The integration of BIPAI and Texas Children's Hospitals' goals, approach and reporting requirements into program partnerships with local, indigenous organizations in resource-limited settings can often derail efforts to bring healthcare solutions to populations in need. A thoughtful approach to ensure alignment, benefit and sustainability is critical to project success.
Methods: In building a network focused on patient care and strengthening local capacity requires thoughtful partnerships to ensure appropriateness and effectiveness. Several key areas have been identified that help ensure success in these partnerships.
Findings: In establishing a fully-integrated partnership with a local organization in a resource-limited setting for coordinated healthcare service delivery and capacity building, three key principles are necessary for program success: organizational alignment and benefit, operational transparency and program sustainability.
Organizational alignment and benefit is foundational to a successful global health partnership. This includes similarity in mission, values and goals and the mutual value partnering brings to each organization. While some divergence is unavoidable, direct contradictions can result in significant road blocks. To support the psychosocial needs of adolescents, the BIPAI network successfully partnered with SeriousFun to bring camp the HIV infected teens in 4 countries due to an alignment of mission, values and goals not found in other unsuccessful partnership attempts.
Operational transparency instills trust between partners and increases the efficiency of partnership. An open dialogue and sharing of relevant information helps build stronger working partnerships and solves problems through regular communication, in-person visits and document sharing. In several instances, local partners have withheld problems that could have been easily solved had they been made known earlier.
Program sustainability is both an independent necessity and an outcome of successfully satisfying the first two elements. The need being addressed and the feasibility of the intervention are the primary factors in sustainability. But success in creating a sustainable program with a local partner in a resource-limited setting requires organizational alignment, operational transparency and bilateral benefit.
Interpretation: We focus on continuous process improvement and identifying best practices, we are able to enhance and improve integration with local partners.
Source of funding (if none, enter "None"): Funded by philanthropic contributions and operational support from Texas Children's Hospital and BIPAI.

FRI_06.10
Expanding Global Pediatric and Maternal Healthcare Beyond the Clinic.

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Background: Since 1999 BIPAI has provided care, treatment and capacity building in the fight against pediatric HIV, malaria, TB and malnutrition globally. These programs have achieved clinical and operational success, but the holistic needs of children and families in our care have necessitated broadening the scope of our global health work beyond clinical and academic settings into the community.
Methods: Within the framework of the BIPAI network, our affiliated NGOs have created unique and impactful ways to address underlying health conditions that impact populations.
In Colombia, indigenous Wayúu families we serve face infant and maternal mortality rates three times the country's average. The main causes of death in children both <1-year and <5-years are due to conditions

developed during the perinatal period. Through our baseline analysis, malnutrition has been identified as the primary independent contributor to child mortality in La Guajira. Baylor-Colombia developed an egg production project in 12 Wayúu villages working towards sustainable food security, and addressing increased protein - a noted deficiency in their diet.
In Malawi, pregnant women stay for up to one month at a maternal waiting home before delivery. The permaculture program utilizes this time to provide classes on family planning, nutrition, hygiene, gardening, cooking, knitting and sewing. Adjacent to the waiting home, in a diverse, vibrant teaching garden, expectant mothers learn to produce healthy fruits and vegetables not typically grown in Malawi. They take this knowledge back to their communities where it is shared with family and community members.
Findings: In Colombia, each family produces more than 23,040 eggs each year and 5,760 eggs are sold to maintain the project and generate income to the workers. With this and other interventions, malnutrition rates dropped to zero in the 12 communities during the project period.
In Malawi, the mothers in waiting have become enthusiastic learners, in the classroom and the teaching garden. They leave the waiting home with seedlings from the garden to replicate the cultivation skills developed and provide a diverse, healthy diet for their families.
Interpretation: The impacts of these non-clinical program will continue to be measured and expanded.
Source of funding (if none, enter "None"): Funding provided by corporate and individual donors.

SAT_01.01

Using Experiential Learning to Train Graduate Students in Essential Professional Skills: The University of Washington Strategic Analysis, Research and Training (START) Center's Approach

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Background: The START Center leverages dedicated faculty mentorship and leading content expertise from across the University of Washington to respond to pressing global health questions while training future leaders in essential professional skills through a hands-on consulting experience.
START aims to supplement the classroom instruction of graduate students by providing a facilitated training experience in professional skills, including team building, leadership, project management, strategic communication, and client management. Coupling academic rigor and exposure to a breadth of health content areas with experiential skills training, START produces well-rounded professionals.
Methods: Utilizing a facilitated mentorship approach, teams are student-led, offering graduate research assistants the opportunity to practice and hone professional skills in a unique hands-on consulting opportunity. Project teams include one faculty lead and 2-3 research assistants, one of whom serves as project manager. START provides several formal and informal training opportunities, including an annual retreat, bi-quarterly meetings with content experts, peer-led lunch and learns, and 360-degree reviews to identify areas of improvement.
Findings: Bi-annually, START student researchers complete 360-degree reviews, with the goal of tracking progress throughout their tenure with START and providing feedback on performance in several skill areas. Student researchers have reported growth in all skill areas, with the improvement in strategic communication, leadership, and client management. By supplementing academic training with elevated professional skills, START aims to produce the next generation global health leaders who are better equipped to navigate the interdisciplinary workforce and effectively collaborate across diverse stakeholders.
Interpretation: START illustrates how hands-on training, and an explicit goal of imparting professional skills, can lead to graduates who are able to translate their rigorous academic methods into implementation through strategic communication and partnership and are, therefore, better prepared to enter the workforce.
It is essential that rising global and public health leaders receive training to strategically lead teams and communicate across disciplines and stakeholders with effective project management skills. Components of the START model can be adopted into academic programs and workforce training efforts.
Source of funding (if none, enter "None"): START is funded by the Bill & Melinda Gates Foundation, with additional project-specific funding from Boston Scientific, the World Health Organization, the Center for Strategic International Studies, Healthentic, Public Health Seattle & King County, and Sherris Consulting.

SAT_01.02

Maternal Fetal Health Workshop in Cusco, Peru: Shifting from Assistance to Capacity Building

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Background: Abroad medical volunteer work by United States citizens accounts for over one billion dollars in unpaid labor annually. The effectiveness of medical volunteerism in developing countries has been questioned. Changing the paradigm from assistance to capacity building might have a bigger and more permanent impact. The aim of our study is to evaluate a training intervention performed with Peruvian Ministry of Health personnel and determine its immediate impact.
Methods: The Cusco's Regional Health Directorate, University of Texas Medical Branch, and UTMB Collaborative Research Center – Cusco organized the third of a series of workshops in the "Training Healthcare Workers to Decrease Maternal and Fetal Morbidity and Mortality in the Cusco Region" collaboration. This 2 day hands-on workshop was given by MFM and Infectious disease fellows, and focused on obstetric and neonatal emergencies. Identical workshops were performed at the Hospitals of Sicuani and Quillabamba. Midwifes and general physicians from remote health centers were invited to participate. Sessions consisted of lectures, small group case based discussions, and hands-on mannequin and simulations training.
Pre and post-workshop tests were conducted. The tests evaluated knowledge in management of pre-eclampsia (4 questions), post-partum hemorrhage (3 questions), ectopic pregnancy (5 questions), maternal sepsis (3 questions), and neonatal respiratory support (5 questions). Total and topic specific mean scores in the pre and post-tests were compared using Chi square.
Findings: A total of 47 healthcare professionals participated in the workshop and 38 answered both tests. Six were physicians, 6 registered nurses, and 35 midwifes. There was a significant difference in the score of the pre and post test. (12.9 vs 15.9, p=<0.01). There was a statistical significant improvement in the areas of preeclampsia (1.5 vs 2.7, p=< 0.01), maternal sepsis (1.6 vs 2.6, p=< 0.01), and neonatal respiratory support. (3.9 vs 4.4, p=0.05)
Interpretation: Comparison of the pre and post-tests scores showed improvement in knowledge in general and in preeclampsia, maternal sepsis and neonatal respiratory support. The immediate effects of this intervention were positive. Further studies should be performed to evaluate the long term effects of these multidisciplinary workshops.
Source of funding (if none, enter "None"): None

SAT_01.03

Development of a Research Methodology Course Using a Blended Learning Format and Digitized Modules for Use in Low-resourced Settings

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Background: The lack of access to safe surgery is salient in Kenya, where there are just 156 anesthesiologists, creating a human resource gap in the provision of safe anesthesia and perioperative care. A task-sharing program was developed at AIC Kijabe Hospital, Kenya in the 1990s to train nurses on the administration of anesthesia. In 2007, this two-year training program was formally accredited by the Nursing Council of Kenya. Since then, the Kenyan Registered Nurse Anesthetist (KRNA) program has been replicated at two government hospitals and is expanding within Kenya and to Ethiopia.
The KRNA program includes a comprehensive curriculum with more than 150 digital clinical modules available to trainees. However, there was an identified need to enhance training in basic research methodology to prepare students for thesis. A research methodology course was proposed to fill this gap.
Methods: The "Research Methodology" course was designed to be delivered in a "blended learning" format, an innovative teaching approach in this context. Prior to class, trainees watch introductory videos on foundational concepts in research methodology that are later examined in class. Course resources were packaged into digital modules consisting of pre- and post-tests, journal articles, data sets, take-home assignments, in-class activities, final exam, and handbooks for students and facilitators. Through discussions with program coordinators, efforts were made to ensure relevancy to the Kenyan context. Materials were made available through an intranet learning platform developed through partnership with the Vanderbilt Institute for Global Health and Moi University.
Findings: Course evaluation tools for instructors and students queried for overall course feedback, utility of course materials, comfort level in either teaching or taking a digital course, instructors' teaching methodology, and students' level of confidence in course competencies. The evaluations aimed to understand the feasibility and

efficacy of a blended learning format in a LMIC context. Findings will inform future course formats and delivery methods.
Interpretation: The blended learning format and digitized modules provided innovative elements for this course, which can be replicated worldwide in a variety of contexts. The research methodology topics equip trainees with knowledge and skills necessary to advance the science and quality of health care in low-resourced settings through critical investigation, ultimately improving health outcomes.
Source of funding (if none, enter "None"): GE Foundation

SAT_01.04
Global Expansion of the Physician Assistant: A Comparative Analysis of Global Implementation and Practice of the Physician Assistant

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Background: The creation of the physician assistant (PA) profession first began in the 1960s in the United States. Over the following decades, the benefits of the profession have transcended US borders and gained recognition in nearly 50 countries. There continues to be a healthcare shortage globally, leading to the demand of a cost-effective, innovative, and integrative work-force that addresses the availability, accessibility, and quality shortages. PAs have been shown to address these demands with the same quality of care at a lower cost and shorter training duration than physicians. The Global Health Workforce Alliance stresses the need for international recognition of mid-level providers (PAs) in order for them to acquire the necessary legitimacy in the health system. The main goal of this study was to centralize worldwide data of the PA profession in order to recognize how PAs have developed in response to changing global healthcare demands.
Methods: Our study sought to obtain the timeline of initiation of the PA profession in specific countries, implementation trigger and current scope of practice. We performed a literature review of CINAHL, PubMed and Google Scholar. Selection criteria to include the utilization of an internal PA training program was employed, among others. Additionally, a thorough review of the website and literature associated with each country's national organization and governing body of their PAs was undertaken.
Findings: Fourteen countries were evaluated and a timeline of global PA development was established. Four trends of initiating factors of the PA development were identified.
Interpretation: This study was able to consolidate the application of the PA profession in numerous countries in response to a variety of healthcare demands. From an international perspective, the PA profession has answered most commonly to physician shortages, while still being adaptable to specific country needs. While the themes as to why the PA profession was developed in each country are varied, they do have one key aspect in common: PAs were viewed as a successful, adaptable model for meeting the unique healthcare needs of the country. The development of the PA profession within the US has had over 50 years to evolve and answer to new and ever-changing healthcare shortages.
Source of funding (if none, enter "None"): None

SAT_01.05
Improving Equity in Short-Term Clinical Experiences: A Path Forward

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Background: Large numbers of US physicians and medical trainees engage in hands-on clinical global health experiences abroad, where they gain skills working across cultures with limited resources. While there is increasing support to ensure these experiences occur within bidirectional programs that provide training opportunities for providers from low and middle income countries (LMICs), foreign medical graduates have sharply curtailed abilities to engage in clinical training at most US institutions. Instead, most are limited to observership experiences that forbid patient contact, in turn greatly reducing the educational benefit of such training. Improving access to meaningful short-term clinical training experiences is both a necessity for equity in global health medical partnerships as well as a potential route to improving LMIC health care provider access to advanced training.

Methods: We formed a working group of CUGH members across disciplines and medical specialities to look at the present regulatory and legal barriers to short-term clinical training experiences for foreign medical graduates. We then wrote a paper pending publication in Academic Medicine detailing these barriers and potential solutions to them. Finally, we convened a subsequent symposium of key stakeholders to consider what plausible next steps on local and state levels might look like.
Findings: Our paper provides concrete recommendations on regulatory modifications that would allow meaningful short-term clinical training experiences for foreign medical graduates, including the creation of a new visa category, the designation of a specific temporary licensure category by state medical boards, and guidance for US host institutions supporting such experiences. The symposium provided further clarification of how we might implement some of these ideas.
Interpretation: By proposing these recommendations, the authors hope to improve equity in global health partnerships via improved access to meaningful and productive educational experiences, particularly for foreign medical graduates with commitment to using their new knowledge and training upon return to their home countries. If interested US academic institutions expend political energy on this matter, we can quickly improve access for our LMIC colleagues.
Source of funding (if none, enter "None"): None

SAT_01.06

Impact of standardized educational curriculum modules on medical knowledge, sense of preparedness for independent practice, and trainee satisfaction among medical interns in Botswana

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Background: In Botswana, medical school graduates participate in one year of internship training before proceeding to independent practice. Challenges to training include variability in interns' medical school backgrounds and clinical resources/supervision across eight internship sites. This study is part of ongoing efforts to standardize training, improve outcomes, and promote graduate retention.
Methods: We developed a peer-edited curriculum consisting of 60 formal content-hours in internal medicine and conducted a prospective national cohort study to assess its impact from 2016-2018. Pilot-site interns served as the intervention group; interns training at seven other sites (where curricula are not yet standardized) served as controls. Before and after internship, interns completed a de-identified 50-question knowledge assessment and a self-assessment regarding perceived preparedness for independent practice, as well as a satisfaction survey. Paired data were compared using descriptive statistics, t-tests, and chi-square tests. Here we present preliminary results from 2016-2017.
Findings: Matched knowledge assessment data were available for 7/9 (78%) pilot-site interns and 24/45 (53%) control interns. Matched preparedness self-assessment data were available for 7/9 (78%) pilot-site interns and 20/45 (44%) control interns. There was a trend toward greater knowledge improvement among pilot-site interns, but the effect size was small (mean +8.3% vs +3.2%, $p=0.06$). Interns in both groups reported improved sense of preparedness; no difference was detected between groups. Pilot-site interns were more likely to report greater satisfaction with their educational sessions (75% vs 7%, $p<0.001$) and with their overall internship experience (50% vs 7.4%, $p=0.014$). 2017-2018 results will be available for presentation in March 2019.
Interpretation: Preliminary small-sample analysis demonstrated a non-significant trend toward knowledge improvement among interns undergoing a formal curriculum intervention. However, the effect size was small and no difference in sense of preparedness was detected. Notably, pilot-site interns were more satisfied with their education sessions and overall training experience. While increasing trainee satisfaction is an important piece in promoting retention in settings like Botswana, more work needs to be done to improve training outcomes. Despite limitations with regard to power, blinding, and site-related confounders, we believe these results will be of interest to others working to design clinical training programs in similar settings.
Source of funding (if none, enter "None"): Botswana-Harvard Partnership, Botswana Medical Internship Training Programme

SAT_01.07
Strenthening Health Professions Education with a Data Base for Facilitating Resource Sharing and Partnerships.

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Background: The Sustainable Development Goals emphasis on partnerships aligns well with approaches to building resources to strengthen the health care workforce and services in LMICs. The CUGH Education Subcommittee for Capacity Building is developing opportunities to build partnerships, connect health educators in LMICs and HICs to build stronger educational alliances and provide access to necessary resources for educational capacity strengthening through a needs driven flexible online database. The success of the MEPI/NEPI project, which demonstrated the value of partnerships, continues through the African Forum for Research and Education in Health (AFREHealth) Network. Our project aims to address priority concerns identified by the network while at the same time, enhancing the opportunities of partners in HICs to enrich their understanding of the health education landscape in partner countries.
Objectives: 1 Build online resources that foster opportunities for meeting the health education needs of under-resourced countries through partnership and resource sharing. 2. Develop tools that support building and sustaining partnerships in health professions education.

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Methods: In consultation with partners in AFREHealth, a database has been developed to facilitate the sharing of training needs and opportunities among institutions. The database is a streamlined approach to connecting expertise on both sides of the health education resource table across relevant curricular arenas (research, health law, social science, administration, medicine and nursing).
Findings: Addressing educational needs through institutional partnerships is a proven approach to enhancing health care capacity. Creating an online resource requires skilled technical knowledge, experience in health professions education and collaboration across contexts. Iterative dialogue and re-visioning has enabled the strengthening of this initiative. We have identified that contextual and cultural positioning, political and system differences, lexicon and language, availability of partners, power differentials, and expectations are critical guiding factors in partnership development. Reciprocity, longitudinality, an emphasis on local prioritization, and partnership equity are ultimate goals of a successful partnership structure and process.
Interpretation: Conclusion: Designing and creating a resource network with the end goal of realizable and sustained impact through partnership requires an iterative consultative process. Collaboration is crucial to the establishment of a comprehensive database with a flexible usere to meet the needs of a wide-range of stakeholder institutions.
Source of funding (if none, enter "None"): Tom Hall Educational Grant/CUGH

SAT_01.08
Measuring Accuracy and Retention of a Community Health Education Initiative in Rural India

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Background: The Community Health Education Initiative (CHEI) is a curriculum that is designed to educate a small population in a rural community in India on relevant health topics. The topics that were selected are diarrhea, wound care, basic life support, and handwashing, based on a prior needs assessment conducted in the same community. The primary goal of this initiative is to create a self-sustainable model where Self Help Group (SHG) members, a group of middle aged women, who are trained to educate members of their respective villages on these topics. Additionally, this program will assess the recipients' retention and accuracy of the education material.
Methods: This pilot study takes place in the Bulandshahr district, Uttar Pradesh, India over a period of 6 months. Three different groups received training. The first group consists of 11th and 12th grade students from Pardada Pardadi Educational Society (PPES), an all-girls school. The second group consists of the SHG. The third group are the village members. All forms of education material and assessments were translated into Hindi, the local language. Education surveys were administered for baseline, and retention purposes.

Findings: The results of the education surveys among the students were remarkable. The 11th graders pre-survey results showed that students answered 43.79% of the questions correctly and 59.5% in the post-survey. The 12th grade students' accuracy was 39.13% in the pre-survey, and 59.42% in the post-survey. The villagers' pre-survey results revealed that 38.5% of the questions were answered correctly. Post-survey will be conducted in 6 months from the pre-survey date for all villagers. Demographic data along with statistical analysis is still being assimilated and will be available for presentation at the actual conference.
Interpretation: It is interesting to conduct a project of this magnitude however, there are logistical issues that need to be resolved. Overall, the model of this initiative is unique in that we are training SHG members who are familiar with the culture and customs of the villages to be the primary educators. The initial phase of the CHEI project was greatly appreciated by both the villagers and the school and will lead to further phases with modifications.
Source of funding (if none, enter "None"): None

SAT_01.09

Building Momentum and Training Leaders Remotely: A Compelling Model From a Statewide Student Advocacy Initiative for Increased Collaboration Amongst the Global Health Community

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Background: The UC Global Health Institute (UCGHI) and advocacy firm Kyle House Group (KHG) developed the Advocacy Iniative - a California-wide global health advocacy training program encouraging student participation in the federal budget process and promoting interest in global health careers. The first cohort ran from March to November 2017, consisting of 32 students from disciplines including undergraduate, law, and medicine; 8 faculty mentors; and a director representing 10 UC Campuses. No known remote internships were found for comparison.
Methods: Experts hosted bi-weekly online meetings to equip students with relevant knowledge. Interns participated in cross-campus committees to facilitate letter writing campaigns, produce advocacy training materials, and publish OpEds. Campus-based teams led community events, and met with legislators and faculty mentors. Program activities were adjusted in real-time based on monthly surveys soliciting student feedback.
Findings: Notable accomplishments
1-3 community engagement events per campus; a letter writing campaign with 3787 signatories and 108 faculty supporters, delivered in meetings to 14 Members of Congress and Senator Kamala Harris and mailed to remaining California legislatures, and 13 published OpEds.
Satisfaction/Engagement
73% reported high satisfaction, with 89% retention. Satisfaction, retention, and engagement were each positively correlated with leadership involvement and contact with faculty mentors.
Career Impact
More students considered careers and/or advanced degrees in advocacy or global health upon program completion than pre-program. Students felt that working effectively in remote teams will benefit them in future global health and advocacy endeavors.
Knowledge/Skill Acquisition
Compared to pre-participation levels, students reported significantly increased knowledge of advocacy strategies and legislative budget processes, and 20% more students felt "extremely comfortable" talking to legislators post-participation. (93 words)
Interpretation: UCGHI AI's pilot program suggests a successful model of advocacy, and remote global health engagement that can be duplicated in most settings. Despite the challenges in encouraging active participation while geographically dispersed, most students remained engaged as evidenced by high retention and satisfaction rates, increased global health/advocacy knowledge and skills, and perceived career impact.
Program productivity also highlights the success of meeting remotely combined with frequent assessment and modification. Granting students agency in shaping the program led to modern advocacy strategies that may prove worthwhile in a digital culture.
Source of funding (if none, enter "None"): Funding provided by UCGHI and KHG.

SAT_02.01

Global Health Case Competitions as a Pedagogical Approach to Translation and Implementation Science: A Case Study from Ohio University

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Background: Global Health Case Competitions are innovative approaches to global health education when they translate into real-world solutions. As a form of pedagogy, case competitions employ problem-based learning towards the development of solutions to real-world global health challenges. The key characteristics of a global health case competition involve interdisciplinary/interprofessional teams applying their knowledge in a transdisciplinary approach towards feasible solutions in partner communities. Much of the current literature of global health case competitions focus on the program developed by Emory University; however, the purpose of this presentation is to report on the model developed by faculty and international partners at Ohio University. The Ohio University Global Health Case Competition conducted 4 years of competitions in different locations (Guyana, Botswana, Paraguay, and Hungary) where the Global Health Initiative has strong partnerships and on-going collaborations.
Methods: Self-assessment surveys were administered during two phases of the competition (prior to the competition as a form of registration, and after the competition as a form of evaluation). These surveys were never intended to be used for research; instead, they were developed to improve best practices and administration of the competition in three competency areas: interdisciplinary and interprofessional team skills, improvement of analytical problem solving skills, and identification of innovative solutions.
Findings: The first year saw the largest number of participants (N=57); however not all colleges were represented. Although the numbers have declined in year two, they have sustained (mean=37, mode=32) and the number of colleges represented have improved. The Health Sciences rank as the highest group participating; however, student representation from all colleges across campus is also found. The top winning teams all proposed a form of social adaptive innovation meeting the needs of local community partners.
Interpretation: Findings suggest that the more social innovative the solutions are, the more likely they will be implemented on site, including the establishment of more on-site collaboration, impact, and new experiential and international programming with partners. Additional post-evaluation results indicate that students struggle most with the timing of the competition and best practices are being reframed to enhance the academic learning outcomes.
Source of funding (if none, enter "None"): Support was provided by Ohio University 1804 Fund Award and the College of Health Sciences and Professions Dean's Special Projects.

SAT_02.02

Impact of Multidisciplinary Ultrasound Education in a Low-Middle-Income Country

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Background: To evaluate the ultrasound knowledge before and after a hands-on workshop, designed to increase basic ultrasound knowledge among physicians and midwives from rural health centers in the Cusco region of Peru.
Methods: Ultrasound education was identified via focus group needs assessment sessions. A basic three-day ultrasound curriculum tailored to specific needs was created by fellows. The curriculum included traditional lectures, hands-on training and pretest-posttest. The hands-on training was conducted at local clinics chosen by the Peru Ministry of Health using pregnant volunteers. Thirty-three physicians and midwives from health centers in the rural highlands and jungle attended the conference. A pretest was completed prior to starting the course. A posttest was given at the end of the course. The tests evaluated basic ultrasound knowledge (7 questions), fetal biometry and anatomy (6 questions), placenta and amniotic fluid (4 questions), and hydatid cysts (2 questions). The primary outcome was total test scores. Secondary outcomes included the scores in specific areas of knowledge. Statistical analysis was performed using univariate analyses and a $P<0.05$ was considered statistically significant.
Findings: Twenty-nine pretests and thirty-two posttests were completed. The mean percentage of correct answers in the pretest was 29.8% (IQR 21.1-31.6) and in the posttest was 77.1% (IQR 73.7-84.2), ($p<0.0001$). Participants showed significant improvement in scores in 13 out of the 19 questions included. The areas with most improvement were basic ultrasound knowledge and fetal biometry and anatomy. The percentages of correct answers on each area were: basic ultrasound knowledge: 25.6% vs. 78.6% ($p<0.0001$), fetal biometry and

anatomy: 24.1% vs. 86.5% (p<0.0001), placenta and amniotic fluid: 35.3% vs. 60.2% (p<0.0001), and hydatic cyst: 50% vs. 78.1% (p<0.0001).
Interpretation: A multidisciplinary 3-day ultrasound course tailored to identified needs of a Low-Middle-Income Country setting had a significant impact on the knowledge acquired by the participants.
Source of funding (if none, enter "None"): None

SAT_02.03
Hampton Roads Refugee Mental Health Evaluation

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Background: There are currently 65.6 million forcibly displaced people worldwide, 22.5 million of whom have refugee status. It is known that refugees are at increased risk for mental illness, particularly depression, anxiety, and post-traumatic stress disorder. Federally designated refugee resettlement agencies in Virginia screen all adult refugees for mental health conditions at the time of resettlement using the validated Refugee Health Screener-15 (RHS-15). The RHS-15 screening data collected in Newport News, VA have not been analyzed, making it difficult to assess the appropriateness of local refugee health resources and to target identified mental health needs of this population.

Analyze mental health screening data for resettled refugees in Newport News, VA from Jan 2016 - July 2018 to determine the prevalence of positive mental health screening results and associated variables.
Methods: Retrospective chart review of 324 refugees and Special Immigrant Visa holders (SIVs) between 18-89 years of age who completed the RHS-15 at the time of resettlement through Commonwealth Catholic Charities in Newport News, VA from Jan 2016- July 2018. The primary outcome of the study was positive mental health screening results. Variables of interest include country of origin, prior country of asylum, age, gender, and SIV vs. refugee status.
Findings: Odds of positive RHS-15 screen in males were significantly lower than in females, OR=0.46, 95% CI (0.28, 0.73), p=0.001. Odds of positive screen in SIVs were significantly higher than in the refugee group, OR=1.76, 95% CI (1.10, 2.83), p=0.019. There was no significant association between age and positive screen, OR=1.01, 95% CI (0.98, 1.03), p=0.60. There was also no significant association between positive screen and whether country of asylum and country of origin were the same, OR=1.38, 95% CI (0.99, 1.92), p=0.17. Study results are limited by sample size.
Interpretation: Gender and SIV status were significantly associated with positive RHS-15 screening results on mental health evaluation at the time of refugee resettlement in Newport News, VA, suggesting the need to expand mental health evaluation and support for these at-risk populations. Future studies will assess state-level data, trends in screening results over time, and explore prevalence of mental illness risk factors in the resettled pediatric refugee population.
Source of funding (if none, enter "None"): Sources of Funding: Shroeder Center-Brock Institute Summer Fellowship

SAT_02.04
Impact of Armed Conflict on Child Health in the Democratic Republic of Congo

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Background: Armed conflicts negatively impact the health of individuals directly through injury and death, as well as indirectly through the collapse of healthcare infrastructure, displacement of populations, and reduced accessibility of water, food, and other basic commodities. Over the past two decades, the Democratic Republic of Congo (DRC) has experienced ongoing violent conflicts across the country and provides a context in which to assess the health of children exposed to armed conflict. We hypothesized that children living in a province of DRC which has been the site of a high number of conflicts, Nord-Kivu, will have poorer nutritional status than children from a more stable province, Bandundu.
Methods: The study was a secondary analysis of data obtained from the 2013 DRC Demographic and Health Survey, and included data regarding family demographics and child health indicators. Outcomes of interest included prevalence of stunting, wasting, and anemia. Chi square tests were used to assess for differences in outcomes between the two provinces. Data were obtained for 1084 children, ages 1 month to 5 years, from Nord-Kivu and 2385 children from Bandundu; mean age was 2 years in both provinces.

Findings: Families from both provinces were of comparable size, with equal total number of children and those under 2 years. Despite being from a province with a recent history of armed conflict, families from Nord-Kivu were more likely to have an improved water source (69.7 vs 22.8%), improved toilet facility (52.1 vs 36.0%), electricity in the home (7.0 vs 0.7%), and be in the highest wealth quintile (14.7 vs 2.6%) (all $p<0.001$). Children from Nord-Kivu, however, were more likely to be stunted (45.7 vs 35.0%) and anemic (65.2 vs 43.1%) (both $p<0.001$), signs of chronic undernutrition.
Interpretation: Despite the improved infrastructure observed in Nord-Kivu, likely the result of an influx of aid from non-governmental agencies in the region due to the history of armed conflict, evidence of chronic undernutrition was more prevalent than in a relatively stable province with poorer infrastructure. Although our hypothesis proved correct, the complete picture of families' experiences regarding children's health in conflict zones is complex and may not allow for generalization to other regions.
Source of funding (if none, enter "None"): None

SAT_02.05

Evaluating Patients' Knowledge, Attitudes, and Beliefs Towards Feedback in at the Korle-Bu Teaching Hospital Outpatient Clinic, Ghana West Africa

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Background: Patient engagement and its impact on health is often underappreciated in the global setting, where resources may be limited and primary care infrastructure spotty. However, extensive research suggests that patient engagement leads to improvement in patient health outcomes across a variety of measures.
Methods: 40 qualitative interviews were conducted in the Outpatient Medical Clinic at Korle Bu Teaching Hospital in Accra, Ghana. Patients and caregivers were selected at random by clinic staff from the waiting room. Participants were male and female, above 18 years old, and able to speak English, Twi, or Ga. An interpreter was present for all interviews. Written informed consent was obtained from each participant. Each semi-structured qualitative interview lasted 20-30 minutes. Interviews were halted once the data set was saturated. Ethics approval for this study was obtained from Mount Sinai IRB and Korle Bu Teaching Hospital IRB.

Data Analysis:
Collected studies were transcribed from audio recordings. Transcriptions were manually coded to generate a list of codes for themes. At the study's completion, the two study researchers iteratively coded each interview according to topics covered. Once interviews were coded, study staff reviewed the codings and interpreted takeaway themes. The coding scheme will be further refined by analyzing the data on a qualitative platform (NVivo v10).
Findings: 40 qualitative interviews were analyzed. No adverse events were reported. Patients advocated for decreasing patient wait times and increased resources for navigating through the clinic. Additionally, patients desired continuity of care with their physicians.
Interpretation: Our findings suggest that there are immediate steps that can be taken to improve patient experience at the Korle Bu Outpatient clinic, such as improved signage. Additionally, in reporting these findings to the hospital leadership, we are hopeful that larger scale change, such as continuity of care, might be possible. This study is limited in that we only worked in one clinic at one hospital in Accra. However, given that Korle Bu is the major teaching hospital in Ghana, we believe these results to be significant.
Source of funding (if none, enter "None"): None

SAT_02.06

Closing the Gap? Assessing Context, Skills and Current Efforts to Improve Healthcare in 3 Subdistricts in Rural Eastern Cape, South Africa

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Background: Methods to assess teaching, skills and practice in understanding systems, problem-solving, and critical thinking to improve health outcomes are in development. Various tools have emerged to assess 1) critical thinking with system-level quality problems (QIKAT-R); 2) project plans (QIPAT-7); and 3) benchmark progress (IHI Project Progress Score). Effective teaching of skills and plans do not ensure success, as the mixed results of quality improvement efforts may be attributable to methods used but also 4) contextual factors in the organization, environment or microsystem; to understand why, when and where change ideas work most effectively (MUSIQ).

Methods: Quality Improvement (QI) was assessed in self-report surveys, document review and clinical case scenarios to test critical thinking in January-February 2017 and captured on REDCap. Tools used included: 1) QI Knowledge Application Tool – Revised (QIKAT-R), 2) adapted QI Proposal Assessment Tool (QIPAT-7), 3) Institute for Healthcare Improvement (IHI) Project Progress scoring tool, and 4) contextual analysis with the Model for Understanding Success in Quality (MUSIQ).
Findings: Over three rural sub-districts, only 2/15 facilities had active, documented improvement efforts during visits in January-February 2017; despite ongoing investment in teaching and support for clinical service delivery by district service partners. No formal quality improvement plans were observed at any facility or in the sub-district, but three clinics were working on action steps to improve care. 18 of 122 respondents (15%) completed QIKAT-R clinical scenarios with scores of 6/9 or higher; with 14/18 clinicians in management roles. There was awareness of the terms quality of care and quality improvement but varying definitions given. Self-report scores for the IHI Project Progress and MUSIQ tools were artificially high; as few facilities had active improvement work in evidence; comparison with expert assessment may moderate enthusiastic scoring by new improvers.
Interpretation: Assessment of skills, competencies and current practice are essential to assess improvement capability, develop effective teaching and to understand why improvement efforts succeed or fail. Contextual factors (environment, organizational culture, QI support and capacity, microsystem and team) as well as perceived urgency and importance of the QI effort may also affect outcomes, which teaching must address.
Source of funding (if none, enter "None"): CDC

SAT_02.07
Reinforcing the Quality of Reproductive Healthcare in Georgia

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Background: Georgia is a developing, lower-middle-income country with several problems related to healthcare system. Maternal and perinatal mortality and morbidity are frequently referred to as the most important indicators related to the health of a nation and is used as a measure of quality of the reproductive health care system. Thus, reduction of maternal and children morbidity and mortality has been an important goal for the United Nations Millennium Development Goals (MDG) and now is the priority for the Sustainable Development Goals (SDG). Maternal and newborns deaths are crucial to report accurately. Georgia has been lacking precise, comprehensive and longitudinal data dealing with reproductive health. Thus far, data on associated health services mainly derive from sporadic on-demand surveys, mostly supported by international organizations. Routine info on mortality and morbidity was available as aggregated data with a lack of epidemiological analysis.
Methods: In order to provide proper epidemiological analysis that allows dissemination of evidence-based findings of recent reproductive health events, Georgia created a nation-wide medical birth registry. The Georgian Birth Registry (GBR) was launched in 2016.
The introduction of GBR has made it possible to create a proper epidemiological analysis and recommend evidence-based findings. To kick start epidemiological research, three PhD projects were implemented a year after the GBR started operation, in the frame of cooperation of Norwegian and Georgian universities via mutual project.
The aim was to assess severe maternal and newborns health outcomes such as mortality, severe morbidity with associated risk factors.
Findings: Since application of medical birth registry as GBR by the Georgian healthcare system, to ensure accurate data records, country improved the quality and efficiency of reproductive healthcare.
Interpretation: The overall outcome of the project, beside generation of mere health statistics on reproductive health, is guaranting effective implementation of relevant public health interventions, ensuring monitoring of reproductive healthcare, transparency of highly accurate medical statistics and having a pivotal role in formulation and revision of existing public health strategies.
Source of funding (if none, enter "None"): The Norwegian Center for International Cooperation in Education funded project "Georgian-Norwegian Collaborative in Public Health (GeNoC-PH)" with participants: The Arctic University of Norway UiT, The University of Georgia, Ivane Javakhishvili Tbilisi State University, National Center for Disease Control and Public Health

SAT_02.08
Behavioral and contextual barriers to optimal UBT use among skilled birth attendants in Kenya

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Background: Postpartum hemorrhage (PPH) is the leading cause of maternal death worldwide. The Every Second Matters – Uterine Balloon Tamponade (ESM-UBT) device is effective for managing uncontrolled PPH caused by atonic uterus in low-resource settings. In Kenya, the ESM-UBT package has been introduced in nearly 500 facilities and over 4,000 healthcare providers have been trained. However, it has only been used in a small fraction of the cases for which it is indicated. The objective of this study was to evaluate behavioral and contextual barriers to optimal PPH management and use of the ESM-UBT package.
Methods: Obstetrician-gynecologists, nurse-midwives, clinical officers, and medical officers who are involved in emergency obstetric care including PPH management underwent semi-structured interviews. Interviews were audio recorded and notes were taken independently. Recorded interviews were transcribed verbatim and a data codebook was established through an iterative process. Interview transcripts were independently coded and differences reconciled. Themes that emerged were identified.
Findings: Preliminary results suggested the following emerging themes: Positive perceptions that ESM-UBT devices save lives and decrease hysterectomies. Primary barriers to optimal ESM-UBT device use include fear of making a mistake, device inaccessibility, low staff skills, high staff turnover, lack of training, preference to refer or to wait for additional support before inserting UBT, and burnout. Health provider strikes and frequent failures in supply chain function were additionally described as barriers to quality PPH care.
Interpretation: When providers have been trained and the necessary equipment and supplies are present, behavioral factors may be important contributors to under-utilization of ESM-UBT. This ongoing research will help guide interventions for improving optimal skilled birth attendant behavior and identify opportunities for improved overall PPH care.
Source of funding (if none, enter "None"): The Bill and Melinda Gates Foundation

SAT_02.09
Family Planning and Contraceptive Preference of Women in Natal, Brazil

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Background: Brazil is a unique place to study contraceptive choice due to a national healthcare system, a Catholic cultural predominance, and the recent Zika outbreak. Few studies have aimed to speak directly to women about their knowledge of and reasonings for using contraception and if their ideal family planning needs are being met.
Methods: This cross-sectional survey study was done in Natal, Brazil with 98 participants aged 13-51yrs old. Women were recruited from two preventatitve health clinics. Exclusion criteria included current pregnancy. All interviews were conducted by researcher and translator fluent in Portuguese. Women were informed of confidentiality and the study was approved through the Institute of Tropical Medicine of Rio Grande do Norte.
Findings: These are preliminary findings with further statistical analysis to come. Of the women surveyed, 84% were using contraception with IUDs (26%) and condoms (25%) used most frequently. Women commonly chose tubal ligations or IUDs as their ideal contraceptive method. 57% reported having a pregnancy that they did not plan for. Most women learned about contraceptive choices from their family, followed shortly by learning about contraceptives from a physician. Most women were unaware of vaginal rings, adhesive patches, or hormonal implants. The most common reason for using a particular contraceptive was recommendation by a medical provider (33%). Religious concerns and Zika virus were infrequently selected as a reason for using contraception. Only 11% of women had difficulty accessing the contraceptive they were using, citing unavailability or cost as the problem.
Interpretation: There is a clear preference for longer acting forms of birth control. Women frequently had unwanted pregnancies while using OCPs, a difficult method to achieve full compliance with, and yet more user-friendly options for birth control are not known about. Zika has not made a lasting impact on women's family planning choies. Results indicated that medical providers can strongly influence a woman’s choice of birth control by their recommendations. Limitations to this survey study included a potential bias by interviewers in interpreting women’s answers and potential dishonesty by participants due to the sensitive nature of questions asked.
Source of funding (if none, enter "None"): University of Iowa Carver College of Medicine- Jean Rinker Fuller and Dr. Dale Fuller Global Programs Award, Iowa Medical Society

SAT_03.01

A Model for Integrated Student-Run Medical Equipment Recovery within an Academic Global Health Program

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Background: Medical equipment waste is exceedingly prevalent worldwide. The National Academy of Medicine estimates that the U.S. Healthcare System spends $765 billion per year on wasted equipment. Low and middle income countries (LMIC) often lack necessary resources to provide medical care and may benefit from the redistribution of recovered supplies. Members of academic global health communities are poised to impact this systemic issue. Inspired by REMEDY (Recovered Medical Equipment for the Developing World), founded at Yale University, the student group EVMS REMEDY was founded to initiate:
-Collection, documentation, and ethical redistribution of unused/reusable medical supplies (according to the WHO's Ethical Donation Guidelines) through collaboration with EVMS Global Health Division initiatives and community partners in Norfolk, VA.
-Community education regarding ethical utilization of local resources and partnerships while performing needs assessments to ensure sustainable distribution of equipment.
-Reduction of medical waste and fostering a culture of sustainability.
Methods: The goal of EVMS REMEDY, a student-run group, is to utilize community resources to sustainably redistribute recoverable medical equipment for humanitarian, environmental, and educational purposes. Systems were created to support collection, sorting/documentation, and distribution of reusable medical supplies and equipment. A needs assessment was developed to survey gaps in medical supply resources at each receiving site, as well as to survey utilization of these resources. Hospital-based and community sources of recoverable medical equipment have been identified and community partnerships have been created in order to ensure ethical and sustainable longevity.
Findings: Thus far, EVMS REMEDY has recovered 909.4 lbs of medical supplies, developed a system to organize and document collected items, and distributed these items through partnerships within the EVMS Global Health Division and over seven other health care access initiatives. Overall, EVMS REMEDY is a feasible, ethical, and responsible model for distributing recovered medical equipment.
Interpretation: Ongoing challenges include expansion of our collection system into currently unutilized locations, but our future program initiatives will be implemented to address this topic; this includes a discussion series incorporating local partners to speak regarding their current methods and barriers, as well as expanding educational opportunities for students through needs assessment workshops and various health care access topics.
Source of funding (if none, enter "None"): EVMS Student Affairs grant and Division of Global Health

SAT_03.02

Meta-analysis on Surgical Site Infection in Rural Chinese Hospitals

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Background: Surgically-addressable conditions currently kill more people globally than, malaria, and HIV/AIDS combined. Though an middle income country, China is still developing its surgical infrastructure for the rural regions encompassing 603 million people. Globally, mismatched scaleup of surgical volume vs critical safety infrastructure has sometimes led to high surgical site infection (SSI) rates which threaten patient lives as well as healthcare system viability. There is not yet a comprehensive study of surgical site infection rates in China.
Methods: We conducted a meta-analysis of SSI rates, also evaluating procedure/wound types, wound culture microbiology, and clinical outcomes, through a bilingual English and Chinese search in PubMed, American Journal of Infection Control-associated databases, WanFang Med Online Database, and China National Knowledge Infrastructure. MeSH terms included (in English and Chinese terms): "surgical site infections", "SSIs," "surgical complications", "surgical wounds", "hospital infections", "healthcare-associated infections", "Chinese rural surgery". We excluded studies reporting only urban statistics.
Findings: We identified 37 studies spanning 13 out of 23 rural provinces. SSI rates ranged 0.7-14.53%, with the highest rates corresponding to hepatobiliary surgery (14.53%), craniotomy (11.48%), and hysterectomy (9.43%). Gram negative rods dominated 22 studies' wound cultures: Escherichia coli, Pseudomonas aeruginosa, Klebsiella pneumoniae, and Enterobacter cloacae. Gram positive bacteria were more prevalent in the remaining 15 studies, with Staphylococci aureus and haemolyticus dominating. Study authors correlated infections with diverse factors, spanning the patient-specific (e.g. obesity or age), pathology-specific (e.g. presence of contamination, incision depth, procedure duration), and infrastructure-specific (e.g. operating room contamination, room cleaning protocol between cases, surgeon experience). On average, each incidence of SSI increased inpatient stays by 6 days and

costs by 8,088 yuan (USD $1,255). The government and patients variably shared costs. Annual rural household income averaged 21,587 yuan (USD $3,350).
Interpretation: There was heterogeneity in SSI rates across hospitals and regions throughout China, although data were known to be limited by reporting bias and inadequate postoperative followup periods. There are disproportionately high infection rates, particularly in longer and more complex surgeries, compared with developed settings. As facilities and policymakers work on increasing surgical volume, there must be equal focus on improving quality of surgical care to reduce the SSI burden on patients and systems alike.
Source of funding (if none, enter "None"): None

SAT_03.03
Impact of simulation-based training programs on the uptake of evidence-based practices to improve prevention and management of postpartum haemorrhage in low and middle-income countries

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Background: Post-partum haemorrhage (PPH) causes 27% of all global maternal deaths. Women giving birth in low and middle-income countries (LMICs) are at more than 70 times higher risk of PPH than those in high income countries. Current standards for training healthcare providers in LMICs to prevent and manage PPH may be inadequate. Little is known about the efficacy of simulation-based training (SBT) to reduce PPH related mortality in LMICs.
Methods: I conducted a systematic review. Eligible studies were those in which SBT was used to prevent or manage PPH in LMICs. Studies except of cross-sectional design were considered, if they had a comparator or control condition. Outcomes of interest include change in PPH incidence, PPH-related maternal mortality, change in provider practice with regard to uptake of evidence-based practices to reduce PPH. Using Cochrane methods, I developed a comprehensive search strategy and searched in Embase, PubMed, and Web of Science. From resulting records, I removed duplicates and screened out irrelevant records. From records meeting inclusion criteria, I extracted details concerning study setting, design, population, SBT, data for assessing bias risk, and other relevant data. GRADE instrument was used to assess risk of bias and measure evidence quality.
Findings: Searches brought 1611 records. After removing 296 duplicates and 1315 irrelevant records, I reviewed the full texts of 23 records. Three primary studies met inclusion criteria. All three included studies were conducted in Tanzania. All were pre/post intervention studies in which providers received brief SBT and their retention of knowledge/clinical performance on prevention and management of PPH was assessed. Two studies found significant knowledge retention in providers and significant reduction in PPH incidence. Evidence from another study suggests significant reduction in whole blood transfusion rate as an indirect measure for prevention and management of PPH. All studies were at high risk of bias in multiple domains.
Interpretation: Very low quality evidence suggests that SBT may improve provider PPH practice. These findings must be viewed very cautiously, but they are promising. SBT could be an inexpensive and easily implemented approach to saving women's lives. Hence, there is an imperative need for rigorous crossover randomized trials of SBT in various settings and assessing biomedical outcomes.
Source of funding (if none, enter "None"): None

SAT_03.04
Global health training across Canadian family medicine residency programs

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Background: Strong evidence demonstrates that residents who participate in global health activities (GHAs) better understand the social determinants of health, are more likely to serve marginalized patients and are less reliant on high-cost diagnostic technology. Canadian family medicine (FM) residencies are responding to the growing demand to provide global health education to their trainees. Herein, we describe the various GHAs offered within Canadian FM programs. This project stems from the activities of the CUGH workforce subcommittee.

Methods: This is a descriptive study using a bilingual (English/French) online survey sent to all 17 Canadian Family Medicine training program directors and/or an appointed global health representative. This survey was used to obtain information on how global health activities were organized, the intensity of exposure and the proportion of residents exposed to each GHA. It further delved into organizational details such as leadership and funding of GHA.
Findings: The response rate was 100% and represented 3250 FM residents across Canada. All schools stated that they participate in some form of GHAs. There was variation in the level of organization, participation, and types of GHAs offered. 67% of programs with 200 or more residents had some formal coordination by a global health office, whereas only 27% of the smaller programs, were formally coordinated by an office. Overall, most global health activities are optional. Didactic GHAs are offered for less than 4 hours per month at 76% of the programs, for 5-10 hours per month at 12% of the programs, and for 10-20 hours per month at 6% of the programs. Domestic rotations are reportedly offered by 88% whereas international rotation by 82% of the FM programs. Approximately one third of programs receive dedicated funding for their GHAs.
Interpretation: These results suggest nationwide interest in developing a workforce trained in global health, but show great discrepancies in training, implementation and education. Further collaboration and discussion between appointed global health representatives and program directors would give the opportunity to identify strategies that have been successful, and that can be replicated nationwide. Lastly, assessing the impact on the communities hosting GHA for Canadian residents is an integral part of developing global health training and should further be examined.
Source of funding (if none, enter "None"): None

SAT_03.05
The Besrour Research Group: A global collaborative to advance family medicine research

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Background: Most research on primary care and family medicine is performed in Western contexts, with little knowledge of implementation in Low-Middle Income Countries (LMICs). One of the roles of the Besrour Centre for Global Family Medicine at the College of Family Physicians of Canada (CFPC) is to enable the family medicine research community in the Global North and South to build and maintain connections through collaborative research, scholarship and quality improvement activities aimed at strengthening family medicine globally.
Methods: The Besrour Research group is a global online community. Its goals are to offer a vehicle of dissemination for the work of the Besrour Centre and to link Canadian researchers with family doctors in LMICs to undertake actual research. The Besrour Research group has evolved over the past 5 years to achieve these goals by (1) laying the foundation; (2) finding focus; and (3) continuing to exchange collaboration.
Findings: Preliminary findings suggest the following activities have contributed to achieving the overall goals of the Besrour Research Group:
Laying the foundation: A 2015 survey assessing baseline academic skills found that 35 members of the non-Canadian Besrour research community had a diverse range of academic skills and a keen interest in a coordinated Besrour research workplan.
Finding focus: An in-person research skills workshop was delivered to approximately 40 Besrour Centre community members from over 20 countries. The workshop explored the development and design of a research question and its implementation.
Continuing to exchange collaboration: Continued collaboration between partners on a number of projects, in response to requests from the global Besrour research community has led to: the launch of a Besrour Scientific Committee in 2017; the development of a cross-comparative series of journal articles comparing Brazil and Canada's primary care systems; and contribution to global stakeholder research such as the WHO's policy development around primary health care.
To evaluate its progress, the group uses data collection methods that include literature searches, questionnaires, interviews and in-formal communication between collaborators.
Interpretation: The Besrour Research group will continue to define the scope of family practice around the globe and to fill the knowledge and skill gaps in family medicine research globally, through its various activities.
Source of funding (if none, enter "None"): None

SAT_03.06
Solving the Measurement Problem of Health Workforce: A Longitudinal Analysis of Rural Indian Healthcare

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Background: Workforce shortage in rural public health care is arguably the most cited factor impeding universal health coverage in India. This crisis, however, suffers a measurement problem making understanding difficult. This study was aimed at critically evaluating shortage across longitudinal data to indicate the niche for policy change.
Methods: We developed three new indices to measure the shortage. Functional deficit (FD) was defined as the inverse of the product of ratios - 'in position'/ 'required' and 'sanctioned'/ 'required', coverage deficit (CD) as - FD / normalized average area under a healthcare centre, and support deficit (SD) as - FD for support staff (nurses, health workers (HW), health assistants (HA), etc.) / FD for doctors and specialists. These indices account for the sanctioning-requirement quotient, remoteness of area and dependence on the support staff respectively. We analyzed longitudinal data (2005-2017) acquired from Rural Health Statistics, National Rural Health Mission (NRHM) for workforce cadres working at primary and community health care centers (PHCs, CHCs). Trends were noted and percentage changes were calculated as: $((Value_{2005} - Value_{2017})/Value_{2005})*100$.
Findings: Decreasing trends in FD for doctors at PHCs and nurses at PHC/CHCs, moderately increasing trends for HWs and HAs while starkly growing trends for specialists at CHCs were observed. The percentage change was least for doctors at PHCs (27.87%) and greatest for surgeons at CHCs (-233.87%). The CD for PHCs showed a decreasing trend (%change: 19.94) while that for CHCs portrayed an increasing trend (% change: -199.89). Unweighted SD showed a decreasing trend (%change: 44.87). Hence, recruitment of HAs and HWs at PHCs and specialists at CHCs is prudent than recent policies that focus on a doctor-centric model at the level of PHCs. The disparities in CD trends demonstrate the need to reorganize distribution of centers particularly for CHCs.
Interpretation: We created indices that are contextually relevant, scalable across levels within a system, and comparable across systems. Thus, they are useful investigative tools for public health researchers beyond India. With India's example, we set a premise for use of appropriate indices for measurement problem thereby facilitating evidence-based policy changes.
Source of funding (if none, enter "None"): None

SAT_03.07
Cardiovascular Disease Risk Profile in a Low Middle Income Country – Rural Versus Urban Differences

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Background: The World Health Organization has declared cardiovascular disease (CVD) as the number one cause of mortality worldwide with the highest death rate from CVD being in the developing world. However, the developing world is large with poor data collection systems – especially in Sub-Saharan Africa. We sought to determine risk factors for CVD and estimate risk of myocardial infarction using a validated questionnaire from the INTERHEART study for rural and urban citizens presenting to clinics in Ethiopia.
Methods: A validated questionnaire based on factors needed to determine the INTERHEART Modifiable Risk Score (IMRS) for myocardial infarction (MI) was administered to patients presenting to an urban and rural clinic in Ethiopia. All aspects required to determine a score (except for the laboratory apolipoprotein B:A1 ratio) were collected. Blood pressure, height, weight and blood glucose were also measured. An IMRS score of ≥ 10 is associated with a 3.25 year risk of MI of 0.68% (Eur Heart J. 2011;32:581-590).
Findings: A total of 91 rural and 46 urban patients completed the questionnaire. Urban patients had more cardiovascular risk factors compared to rural patients (age – 47.7 years urban vs. 40.8 years rural – p=0.01; diabetes 11% urban vs. 1% rural – p=0.01; hypertension 59% urban vs. 28% rural). Smoking rates were not statistically significantly different between rural and urban. The most prominent risk factor for CVD in urban patients was hypertension with 11% of urban patients have systolic blood pressures (SBP) over 180 mmHg (range of SBP 100 – 220 mmHg). Males were more likely than females to have SBP over 180 (10% vs. 2%, p=0.05). The risk of MI (as listed in the methods) was at least (apolipoprotein levels not available) 3% in rural patients and 9% in urban patients (p=0.001).
Interpretation: Urban Ethiopians are at increased risk for MI compared to their rural counterparts with the most prominent CVD risk factor being severe hypertension. The reason for such high blood pressure needs investigation.
Source of funding (if none, enter "None"): None

SAT_03.08

Implementing the WHO Recommendation on Definition and Management of Treatment Failure to ARVs in Nigeria; Lessons from ART Clinics in Resource Limited Setting

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Background: Though World Health Organization (WHO) states that while efforts continue to increase access to viral load testing, it is recognized that in some settings, viral load testing may remain difficult to access for some time. Nigeria is one of those resource limited setting. However, in line with WHO guideline, Nigeria National guideline recommends that virologic failure be defined as viral load (VL) above 1000copies/mL based on two consecutive viral load measurements in 3 months, with adherence support following the first VL test. This definition informs management of treatment failure by ARV/drug switch. This recommendation seemed not to consider the long turn around time (TAT) for results of VL testing, time lag between tracking patients for enhanced adherence counseling/support, repeat VL sample collection and availability of repeat VL result. We aim to assess intervention status for patients with unsuppressed/failed VL result six months after availability of result in large ART clinics in Benue State Nigeria.
Methods: This is a descriptive retrospective study done in June 2018. Registry of two large ART clinics- St Mary and St Vincent hospitals, Benue Nigeria- with access to VL test were assessed to determine intervention status of patients with unsuppressed/failed viral load (from tests done between October 2016 and September 2017). Percentage analysis was done of number of patients who had received the recommended 3 month adherence counseling, number who had repeat VL sample collected and number with repeat VL result available.
Findings: Six months after availability of failed VL test result, out of 103 patients with unsuppressed/failed VL, 89%(90/103) had received the 3 months adherence support. Out of which 45%(42/90) have had second VL sample sent and of which only 5%(2/42) have second VL result available to inform management for drug switch. Moreover, 10%(10/103) of the patients had died before completion of the recommended intervention process.
Interpretation: Following virologic failure, insignificant number of patient had timely repeat VL test result. We recommend that pending improvement in TAT of VL test result, consideration be made to use initial result of virologic failure, coupled with immunologic and clinical status to inform drug switch in face of treatment failure in resource limited settings like Nigeria.
Source of funding (if none, enter "None"): None

SAT_04.01

Health Education Videos for Tuberculosis in Androrangavola, Madagascar

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Background: Effective methods for educating remote populations about tuberculosis (TB) are needed to promote prevention among vulnerable communities and to encourage treatment for infected individuals. The Drones Observed Therapy System (DrOTS) implemented a video training curriculum to address the lack of access to TB information in remote areas of Madagascar. This research study assessed the impact of these educational videos on patient, community health worker, and community member knowledge of TB in Androrangavola, Madagascar.
Methods: This study used a pre-post-test design to evaluate the effectiveness of a video training curriculum in improving participants' knowledge of TB. Videos were short, culturally appropriate films covering TB prevention, diagnosis, treatment and stigma. The target population for this research study were individuals living in remote villages in Androrangavola, Madagascar. From May 2nd to June 8th, 2018, 146 participants were recruited from 25 different villages in the region to participate in this study. Participants completed the pre-test to assess baseline levels of knowledge, viewed the video training curriculum, and then completed a post-test to measure knowledge acquisition.
Findings: There was a statistically significant difference ($p < 0.001$) between the pre- and post-test scores wherein scores increased by a median of 10% (IQR: 0.00% – 20.0%) after viewing the video training curriculum. The median score on the pre-test was 87.5% (IQR: 70.4% – 90.0%) and the median score on the post-test was 100% (IQR: 88.9% – 100%). There was a statistically significant difference ($p < 0.001$) between the number of correct answers on the pre-test and the number of correct answers on the post-test. Of the total 146 participants,

86 (59%) improved their score on the post-test, 50 (34%) obtained the same score, and 10 (7%) received a worse score.
Interpretation: TB educational videos were found to significantly improve levels of TB knowledge among a low-literacy, remote population in Madagascar. Future research is warranted to determine if educational videos could be used as a tool to improve knowledge of TB globally.
Source of funding (if none, enter "None"): TB REACH, Government of Canada, Bill and Melinda Gates Foundation

SAT_04.02
Factors Impacting Reporting Behavior of Alcohol Use in Moshi, Tanzania

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Background: Alcohol use disorders are common in low- and middle-income countries (LMIC). However, the treatment of alcohol use disorders typically relies on self-reporting measures for identification. In LMIC settings, factors that might facilitate or hinder alcohol use disclosure to a healthcare practitioner are undefined.This study examines the potential factors associated with a patient's disclosure of alcohol use to a healthcare practitioner in Moshi, Tanzania.
Methods: This study was approved by the Duke University Medical Center Institutional Review Board, Kilimanjaro Christian Medical Center (KCMC) Ethics Committee and Tanzanian National Institute of Medical Research. Patients were included if they were seeking care for an acute injury at KCMC, over the age of 18, clinically sober at the time of enrollment, and able to communicate in Swahili and provide full informed consent. A survey collected demographic characteristics, alcohol use behaviors, the Alcohol Use Disorders Identification Test (AUDIT), the alcohol-adapted Perceived Discrimination-Devaluation scale (PDD), and the Drinker Inventory of Consequences (DrInC).
Findings: Of 341 injury patients, 246 reported current or past alcohol use. The mean age was 37.6 (SD 14.0). There were 43 women (17.5%), none of whom disclosed alcohol use to providers. 26 (12.8%) of men disclosed alcohol use. Patients who disclosed alcohol use with a healthcare provider reported a median of 4.0 drinks per day (IQR 6.0; 21.5), a higher AUDIT score (median 19.0, IQR 6.0; 21.5), a greater number of alcohol-related complications (DrInC) (median: 25.0, IQR 10.5; 36.0). There was no significant difference for PDD.
Interpretation: Those who have suffered a greater alcohol-related impact on their lives reported alcohol to use to a professional. Our findings that the factors associated with self-reporting alcohol use behavior to a healthcare provider include higher alcohol use behaviors, and higher AUDIT and DrInC scores, is of great importance to clinicians and health practitioners in the region. However, our data might not be generalizable to a larger non-injury population or the general public.
Source of funding (if none, enter "None"): Fogarty International Center of the National Institutes of Health: K01TW010000 (PI, Staton)

SAT_04.03
Characterizing the Prevalence of All-Cause Anemia in Children at One Year of Age In Saipan

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Background: The American Academy of Pediatrics recommends screening children for anemia at 12 months of age. Currently, there is little data and inconsistent screening of anemia in Saipan. The goal of this study was to determine the prevalence of all-cause anemia in children 12 to 24 months old in Saipan.
Methods: This study was a retrospective chart review of the Commonwealth Health Center in Saipan. Children were included if their birthdate was between January 1, 2015 to March 31, 2016 and had a documented hemoglobin level between 12 to 24 months of age. Patients were excluded if the type of feed and ethnicity was not documented. Information about gestational age, sex, ethnicity, types of feeding, height, weight, and anemia-related lab values was collected from the electronic medical record system. The subjects were categorized by ethnicity (Chamorro, Filipino, Chinese, Other Indigenous Islanders, and Other Asian Groups) and types of feeding (exclusive breastfeeding, exclusive whole milk, exclusive formula, mixed feeding, and unspecified milk). Anemia was defined as having a hemoglobin level less than 11 g/dL Statistical analysis was performed using the chi-square test and logistic regression analysis.

Findings: There were 1115 patients during the time period and only 213 had well child checks between 12 to 24 months of age. Of those patients, 75 (35.2%) did not have a hemoglobin level documented. Only 142 were included in the study after the exclusion criteria, and the prevalence of anemia was 14.1%. Being Filipino (p = 0.02), certain indigenous islander (p=0.01), and exclusively breastfed (p = 0.01) were risk factors for anemia.
Interpretation: The prevalence of anemia is slightly lower than the last reported prevalence several years ago (26%). Future studies should evaluate why the rates of screening are low and educational outreaches to those at higher risk for anemia.
Source of funding (if none, enter "None"): None

SAT_04.04
The Epidemiology of Kidney Stone Disease in Saipan

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Background: There has been an anecdotally higher prevalence of kidney stone patients in Saipan, but the epidemiology is not well characterized. Saipan lacks urological care and patients must travel to another island to receive procedural care if needed. Kidney stones are a common cause of morbidity worldwide, and this will be the first study to explore this medical phenomena in Saipan.
Methods: This is a retrospective chart review of patients who presented to the only hospital in Saipan between May 2014 and April 2018. Kidney stone patients were characterized as well as associations with gender, race, ethnicity, age, BMI, past medical history, diagnosis, stone characteristics, treatment, hospital admission, infection, and surgical procedures.
Findings: Of the 329 patients, most were male (60.4%) and 39.5% were female. Female patients were more likely to be younger and had higher rates of diabetes (29% vs 12%) and hypertension(30% vs 20%). Pacific Islanders had a disproportionally higher prevalence of kidney stones (54.3%) than in the general population (33.6%). Overweight or obese patients comprised 77.5% of participants, and patients who were overweight or obese were more likely to be Pacific Islander. Between 2015 and 2018, there was an average of 2.13 ER visits due to kidney stones per 1000 people in Saipan. Most renal stones measured over 10 mm (51%) and 41.8% were between 5 and 10 mm. Rates of urologic referral and surgical procedures (23% and 30.3%) in this study were much lower than what would be recommended by current urologic guidelines.
Interpretation: Kidney stones are prevalent in Pacific Islanders, male, diabetic, and overweight or obese patients in Saipan. Poor diet, obesity, diabetes, and hypertension are known risk factors for kidney stones, and there are higher rates of these conditions in Saipan. There is no urologist on the island, but there is a need for urological intervention in many of the kidney stone patients.
Source of funding (if none, enter "None"): UTSW Office of Global Health

SAT_04.05
Knowledge and Uptake Towards Cervical Cancer Screening Among University female Students at Kilimanjaro, Tanzania

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Background: Cervical cancer is the major public and global health problem. According to WHO it is the 4th leading cancer among women worldwide, most women being from LMICs. It is the leading cause of cancer related morbidity and mortality among women of reproductive age in Tanzania, whereby about 4216 women die from the disease annually. Women with HIV/AIDS, multiple sexual partners, history of HPV infections, contraceptive use and early onset of sexual activity have increased risk of the disease, university students being amongst them. Poor knowledge and limited screening programs being major contributors. This study aimed to assess the level of knowledge and uptake of cervical cancer screening amongst university female students at Moshi Municipality.
Methods: A cross sectional study was conducted from June to July 2018 involving undergraduate female students aged 18 years and above at three different universities in the Moshi Municipality. A total of 322 participants were identified using multi-stage sampling, data collected through a self-administered semi structured questionnaire, and analyzed using SPSS version 20.
Findings: Participants with good knowledge were 92(28.6%), 104 (32.3%), had satisfactory knowledge and 126(39.1%) had poor knowledge. About 299(92.9%) have heard about cervical cancer, the most frequent source of information being media 168(52.2%), by family, neighbors and friends 106(32.9%), health workers

102(31.7%), teachers 75(23.3%), and few reported other sources. However only 31(9.6%) had screened for cervical cancer. I have not just decided was the most reported reason for not attending cervical cancer screening 114 (30.4%), I am healthy 81 (21.6%), I'm not informed 49 (13.0%), It may be painful 42 (11.2%), while 89 (23.7%) reported other reason.
Interpretation: Lack of proper knowledge about cervical cancer contribute to low screening uptake. Promotion to increase awareness about cervical cancer screening through radio, TV, social media bonanza and clubs would be of great importance. Although a lot have been done by the government and other stakeholders regarding screening, the campaigns should not only focus on women at the community but also on university students as they are at increased risk of multiple sexual partners, and most have early onset of sexual activity below the 18 year.
Source of funding (if none, enter "None"): CUGH

SAT_04.06
Hepatitis Rates, Crime Rates, and Death Rates within the Appalachian Counties of Tennessee (2007-2016)

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Background: In Appalachian Tennessee, 31/52 (60%) counties are identified by the CDC as being on the list of the top 220 counties vulnerable to the rapid dissemination of HIV/HCV among people who inject drugs. Besides an increase in infectious diseases associated with illicit drug use, many jurisdictions have also seen an increase in crime and death rates. The aim of this study explore the relationship between different indicators for illicit drug use in Appalachian Tennessee.
Methods: Due to the lack of HIV data publicly available, hepatitis B was selected as it another common blood-borne pathogen associated with illicit drug use. Data for hepatitis B and C cases along with crime rates and death rates were obtained from different state of Tennessee websites at the county level for 2007-2016. Data was standardized per 100,000 at county level for analysis. In addition, prescription rates per 100 people were also obtained for 2012-2016.
Findings: The overall mean number of hepatitis B cases was 7.54 (95% CI: 6.66-8.41), hepatitis C cases was 4.14 (95% CI: 3.48-4.81), crime rate was 299.23 (95% CI: 281.54-316.96), and death rate was 20.28 (95% CI: 19.78-20.78). One-way ANOVA analysis demonstrated a significant difference between the means for the various years for each variable. Positive Pearson correlation rates were obtained between each variable pair. Rates ranged from crime rate and hepatitis C at 0.68 (p-value: 0.03) to Death rate and hepatitis B at 0.96 (p-value <0.0001). Graphs for all variables demonstrated an upward trend. Of note, opioid prescription rate was negatively correlated with each variable, but was only significantly significant when compared to death rate (-0.999; p-value <0.0001).
Interpretation: These results indicate how illicit drug use behavior has spilled over into multiple sectors paving the way for disease outbreaks. Public health and law enforcement need to realize the linkage between these variables and work together to identify people who are arrested for crimes related to illicit drug use and get them medical help for potentially associated diseases. More research needs to be done to identify underlying behaviors associated with illicit drug use.
Source of funding (if none, enter "None"): LMU Intramural Funding

SAT_04.07
Title: Tuberculosis Infection Control in Kilimanjaro Region: A Health Care System Perspective

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Background: Tuberculosis (TB) is one of the top 10 causes of death worldwide and ranks among the top five causes of death in Tanzania. Tanzania's national policy on TB management follows the World Health Organization (WHO) and other international guidelines for infection control, diagnostic measures, and healthcare worker (HCW) safety. However, within the Kilimanjaro Region of Tanzania, various implementation failures of national policy persist in the management of TB in both clinical and community settings. The burden of TB is augmented by the increasing quantity of relapses and Multi-Drug Resistant TB patients along with gaps in reaching specific target populations, such as immunocompromised groups. The combination of the growing burden of TB and ineffective isolation measures puts HCWs at risk for occupational TB.

Methods: A descriptive transverse study was conducted in June 2018 within the Kilimanjaro Region of Tanzania. The study analyzed TB policy implementation through literature review and stakeholder perspectives. The primary stakeholders on this issue include international organizations, national and local government, HCWs, community members, and patients. Stakeholders were identified and interviewed due to their investment in and influence on TB management.
Findings: TB management is a complex and multi-layered process, including prevention, diagnosis, and treatment stages. Resultantly, the issue must be examined through the healthcare systems, political-economic, and epidemiological perspectives. Implementation failures in TB management are caused by policy shortcomings, including low suspicion index, stigmatization, inadequate protocols for specific target populations, ineffective diagnostic procedures, inadequate infection control, compromised HCW safety and decentralized community-based care.
Interpretation: The primary goal of our policy recommendations is to improve the prevention of TB transmission in healthcare facilities and communities. We propose policy changes that increase public awareness, provide proper HCW education, centralize community-based care, control infection within hospital facilities, and increase the availability of TB screening. Implementing these recommendations will require collaboration between various levels of healthcare, including policy changes at the national level and execution at the facility and community levels. Ultimately, our policy recommendations aim to reduce the burden of TB in the Kilimanjaro region from all perspectives.
Source of funding (if none, enter "None"): None.

SAT_04.08

Nutritional Analysis Among School-aged Children in a Remote Himalayan Community: Assessing Deficiencies and Identifying Barriers to Improvement

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Background: The India Spiti Health Project is a partnership established in 2007 between Munsel-ling Boarding School, which is operated by a local NGO, and the University of British Columbia's Global Health Initiative. Munsel-ling is located in a remote high-altitude valley in the Indian Himalayas. Heavy snowfall leaves the school with no road access for portions of the year, limiting access to fresh food. Weather conditions and soil quality are also a barrier to agriculture, impacting production in many months of the year. Annual health screens have identified a significant prevalence of anemia (94%, 2017), stunting (12.5%, 2018) and clinical signs of micronutrient deficiency (19%, 2018). This project was initiated in July of 2018 at Munsel-ling school to assess student dietary intake. It follows up on a nutritional analysis conducted in 2009, which identified several deficits in macro- and micronutrients.
Methods: A comprehensive nutrition analysis of the diet of Munsel-ling school students was conducted to identify dietary inadequacies contributing to health screen findings. Ingredient weights, wet volumes of meal components, and student serving sizes were measured for each of the three daily meals for seven consecutive days. A tailored nutrition analysis tool was created using Microsoft Excel and data from the 2017 India Food Composition Tables and Canada Nutrient File. Macro- and micronutrient values were then compared with the DRI values for ages 4-13 to perform nutritional analysis.
Findings: Preliminary analysis indicates that caloric intake is inadequate (61.8% of EAR) and student diets are carbohydrate dense (70% of total calories). Micronutrient deficiencies include folate (54.5% of DRI), B12 (3.5% of DRI), retinol (9.4% of DRI), calcium (10.3% of DRI), and potassium (29.3% of DRI). Amino acid profile will also be assessed prior to development of recommendations.
Interpretation: Preliminary findings point to significant macro- and micronutrient deficiencies and carbohydrate loading, which can lead to a variety of issues related to hormone, immune and overall health and development. Project recommendations used to guide food purchasing decisions will need to consider local barriers to dietary improvement identified through consultation, including budget, food access, local agriculture and cultural factors. This assessment and accompanying recommendations may also be used to advocate for funding to improve student diet.
Source of funding (if none, enter "None"): None

SAT_05.01

Using GIS Spatial Mapping to Enumerate the Risk of Loss-to-Follow up for Cervical Cancer Treatment in Western Kenya

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Background: Cervical cancer is the second most common cancer in women worldwide and the most common cancer among women in Western Kenya. A major barrier to accessing screening and treatment services for cervical cancer in this region is poor health literacy especially for women as well as inability to access healthcare due to distance and cost. This project uses both quantitative and qualitative measures to address how we can utilize visual data from GIS spatial mapping tools to examine the association between treatment rates and sociodemographic characteristics that function as risk factors for loss-to-follow-up. The maps are used as a reference and tool for community health workers and health administrators to ensure that their referral services are targeting the populations at greatest risk for loss-to-follow-up.
Methods: A survey was created that can be used by community health volunteers to gather sociodemographic data and GPS coordinates of women who had previously attended a community screening event. Using ArcGIS tools, specific villages were within Migori County were mapped with population characteristics and spatial locations of various resources such as hospitals/clinics providing cryotherapy treatment. Further mapping was conducted to visually display data such as distance to the nearest treatment site, women's access to counseling services, occupation, and frequency of outreach by community health volunteers. Volunteers were trained on how to effectively collect GPS coordinates and sociodemographic data for women who live in the most rural areas. The spatial maps were then presented to stakeholders including the County Health Management Team in order to ensure their accuracy. This also provided a space for discussion of how community health volunteers can continue the practice of mapping traditional health data to ensure more targeted outreach.
Findings: To date, the maps are reliably used by the Reproductive Health Director as well as community health volunteers to inform them of areas where women are less likely to access treatment. However, we hope to integrate data collection services into community screening events to ensure the sustainability of the creation of these dynamic spatial maps.
Interpretation: Ongoing challenges include the need to update the maps which requires constant funding in order to collect the data.
Source of funding (if none, enter "None"): DukeEngage McKinsey & Company

SAT_05.02

Exploring mental health services among climate victims in a cyclone affected area of coastal Bangladesh

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Background: Bangladesh, one of the most densely populated countries in the world has been ranked 6th on the 2015 Long Term Climate Risk Index. Every year it is afflicted with various climatic disasters including floods, hurricanes and cyclones. Apart from the obvious devastation of lives and property, there is a huge increase in clinical diseases when these disasters occur. Mental health of affected persons after these disasters is a topic that is often neglected, yet it needs to be addressed. To understand this issue further, we conducted this study in a cyclone affected village in rural Bangladesh.
Methods: We conducted an exploratory qualitative study of mental health services in a cyclone affected village in rural Bangladesh named Koira in Satkhira district. Social mapping, Key informant interviews with different stakeholders and in-depth interviews with affected people were done to identify health care service centres, activities of government institutions, Non-Governmental Organizations (NGOs), local volunteers, informal health care providers and other available resources related to mental health care. Qualitative data were managed by NVivo software.
Findings: We found that cyclones had numerous psychological impacts on the population including Post Traumatic Stress Disorder, generalized anxiety and depression. Children and women were seen to be more vulnerable. The government and NGOs had no specific action plans or initiatives to address these issues. There was a visible gap in finding effective ways to provide affected people with the required proper psycho social services.

Interpretation: Resilient, responsive and self-sustaining health systems for this vulnerable population are required. Implementation of effective mental health programs and strong mental health policies remain a challenge in Bangladesh where there is a cultural fatalistic acceptance of mental health issues.
Source of funding (if none, enter "None"): None

SAT_05.03

Rabies related Knowledge, Attitudes, and Practices (KAP) in India: A Narrative Review of Literature

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Background: Reports indicate that more than 2 million animal bites occur annually in India alone-accounting for 36% of rabies deaths worldwide. There are multiple customs, traditions, myths and misconceptions linked with the management of animal bites which might influence treatment seeking behavior. It is in this context, the purpose of this narrative review was to assess knowledge, attitudes, and practices (KAP) in relation to rabies and its prevention in India.
Methods: Electronic databases were searched using combinations of relevant keywords. Articles were included if they met the following criteria: (1) original research article published between 2008 and 2017, (2) study carried out in India, (3) written in the English language, and (4) quantitative research. Articles not meeting the above criteria or from other databases or from grey literature were excluded. Two reviewers independently assessed whether the article should be included or excluded from this review.
Findings: A total of 30 articles were included in this narrative review. Study samples predominantly included general population. Majority of the participants in the studies had heard about the disease of rabies. However, there was a lack of awareness in the population about rabies prevention and control measures. Results indicated that false beliefs and inappropriate treatment practices were common. Many people falsely believed in the efficacy of unproven and unscientific traditional practices that have been found to be ineffective in preventing and controlling rabies such as application of *haldi* (turmeric), *chuna* (lime), *mirch* (chilies) etc. In addition, up-to-date knowledge was found to be deficient even in some health professionals.
Interpretation: There is an ardent need for science-based educational interventions regarding transmission, prevention, and control of rabies in the community particularly in rural areas of India. Such educational interventions can be implemented through *gram panchayats*, places of worship (*mandir, masjid, gurudwara* etc.), schools, colleges and community centers. There is also an unmet need with regard to training of health professionals on latest advances with rabies management. Besides education interventions, policy efforts to control stray dogs from loitering in the streets and neighborhoods should be instituted.
Source of funding (if none, enter "None"): None

SAT_05.05

Listening to the Voice of the Community: A Qualitative Investigation of Infant Sleep Practices in International Low-Resource Communities

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Background: The Dominican Republic (DR), Haiti, and Kenya are low-to-middle income countries with persistently high infant mortality rates. Sudden Infant Death Syndrome (SIDS) contributes significantly to infant mortality in high income countries, however, there is limited to no data about the impact and awareness of SIDS in low-resource countries.
This study explores infant sleep practices, caregiver knowledge, and risk factors associated with SIDS in low-resource countries. This data will inform the development of broader surveys of infant sleep practices in these settings, providing a foundation for the introduction and adaptation of educational resources and interventions such as the “baby box,” a tool first used in Finland to address issues of infant mortality and unsafe sleep practices.
Methods: Data was collected via individual interviews on infant sleep practices and brief surveys of known SIDS risk factors. Caregivers of infants aged 2 years or younger were recruited at hospitals in Limuru, Kenya; Port-au-Prince, Haiti; and several cities in the DR. Interviews were conducted in local languages and translated into English, as needed. Recorded interviews were transcribed and themes were identified from the resultant data. The prevalence of reported SIDS risk factors was also calculated.

Findings: 95 interviews were conducted at 7 hospitals across the 3 sites (DR n=51, Haiti n=20, Kenya n=24). In terms of SIDS risk factors, findings demonstrated high rates of co-sleeping; 51% of Dominican parents, 85% of Haitian parents, and 100% of Kenyan parents interviewed reported sleeping in the same bed as their infants. In addition, the majority of parents in all settings reported putting their infants to sleep in prone or side lying positions. Qualitatively, several themes emerged around infant sleep, including the importance of breastfeeding, the belief that supine sleeping is unsafe for infants, and stories of sudden and/or unexplained infant death.
Interpretation: All study communities reported behaviors associated with increased SIDS risk, including co-sleeping and side sleeping. The qualitative data identified themes that will be further addressed in a large-scale survey of infant sleep practices in these settings. This investigation will also assess opinions of interventional resources such as baby boxes/baskets.
Source of funding (if none, enter "None"): EVMS Summer Scholars Program, EVMS Division of Global Health

SAT_05.06
Symptoms of Vesico-Vagina Fistula in Underserved Mothers in Rural Eastern Nigeria.

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Background: Vesico-vagina fistula (VVF) is a disability experienced by women after childbirth characterized by an abnormal opening between the vagina and bladder resulting in uncontrollable continuous leaking of urine through the vagina. Nigeria is among the highest VVF prevalence countries in the world with over 400,00 cases. This study explored factors associated with VVF among underserved women, in three low-income rural communities in eastern, Nigeria.
Methods: Data were collected anonymously from women who brought their children to a maternal and child medical clinic activity by visiting international physicians and surgeons in three underserved rural villages in two Nigerian eastern states. Participants were ~108 mothers of 319 children brought to the clinics. “Symptoms of VVF” (SVVF) were defined as inability to hold urine in the bladder (constant urinary incontinence). Proportions of mothers with SVVF were compared by maternal age, education level, age of first pregnancy and delivery and number of births to identify factors associated with VVF.
Findings: Of the 50 mothers surveyed, aged 19-50 years, 9 (18%; 95% confidence interval [CI]=8.6%-31.4%) reported SVVF. SVVF was more common in women with greater than five pregnancies (5/12 [41.7%]) than in women with less pregnancies (4/38 [10.5%]; *P*=.027), and much less common in women who were aged >18 years at their first pregnancy (2/30 [6.7%]) or had at least a secondary school education (2/35 [5.7%]) than among other women (7/20 [35.0%], *P*=.015; 7/15 [46.7%], *P*=.002, respectively). When stratified by whether women reported more than five pregnancies or age at first pregnancy greater than 18 years, secondary school graduation continued to have a protective effect of almost 80% (adjusted relative risks=.19, 95%CI=0.04-0.95; *P*=.02 and .20, 95%CI=0.05-0.74; *P*=.011, respectively).
Interpretation: Data from this small exploration suggest that SVVF prevalence in these very underserved communities may be higher than reported nationally (4.1 per 1,000) and are associated with low educational attainment, even when controlled for early and more numerous pregnancies. More data are needed on SVVF in underserved Nigerian populations. Policies to protect Nigerian girls from early childbearing and school discontinuation, and to provide definitive treatment to women with VVF in underserved areas should be implemented.
Source of funding (if none, enter "None"): None

SAT_05.07
Migration and sexual health risks among urban migrants in Accra, Ghana

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Background: Though intra-country migration in Ghana has become increasingly common in recent years, research has not focused on the gendered dynamics related to the sexual health of males and female migrants. Migration from rural to urban areas is often associated with a number of sexual health risks and has been found to be a key driver of the HIV epidemic in other settings. Our research provides new evidence of gendered social factors related to possible increased risk to sexual health among migrants in Ghana.
Methods: A qualitative study using semi-structured interviews among migrant market workers (n=20) and market leaders (n=4) working in Agbogbloshie Market in Accra, Ghana was completed in summer 2018. Participants were purposively sampled for an equal gender balance and a wide range of ages. Interview domains included: expectations of migration, current working and living conditions, family planning, sexual health, and self-reported

health status. Interviews were audio recorded and transcribed for content analysis. Qualitative data were analyzed using a combination of inductive and deductive coding.
Findings: Urban migrants in Accra expressed strong hope for better lives prior to migration. After migration, many respondents reported risky sexual behaviors such as low condom use and coerced or transactional sex. Younger migrant women were particularly vulnerable to sexual assault and transactional sex. Furthermore, while several respondents reported accessing care through hospitals or clinics, many reported accessing care through the pharmacy or clinics that do not accept the national health insurance.
Interpretation: Findings from this research point to the complexity of sexual health risks among migrants in Agbogbloshie Market. Ongoing risk behaviors do not indicate low knowledge, but rather highlight the fragmented support networks and conflicting information targeted for migrants. Far away from their families and friends, migrants may exhibit higher risk taking behavior, have little understanding of health services available, hold insecure and physically demanding employment, and live in unsafe conditions leading to increased exposure to health risks. Further research to explore the increased vulnerability of migrants in this setting and long term implications of sexual health risks in this population is needed.
Source of funding (if none, enter "None"): None- internal research funds.

SAT_05.09
Barriers to Primary Care Utilization in the Hispanic Community of Hampton Roads, Virginia

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Background: The Hispanic population in Virginia faces significant disparities in health opportunities, including access to primary care. The Eastern Virginia Medical School (EVMS) Medical Spanish Service Learning Initiative partners with Hispanic community stakeholders in Hampton Roads, VA to formally assess health care needs. Preliminary study results identified language, cost, and insurance status as barriers to care in the Hispanic community. Aim: To analyze Hispanic community health assessment data to determine which barrier to care most influences primary care utilization.
Methods: A needs assessment was administered through convenience sampling at community health fairs in Hampton Roads, VA from Dec 2016 - July 2018. 148 primary Spanish-speakers between the ages of 18- 90 years living in Hampton Roads were individually interviewed in their preferred language. Multivariate logistic regression analysis demonstrated the contributions of language, cost of care, and insurance status to two outcomes: use of primary care provider and use of preventive services.
Findings: Of 148 participants, 95% speak Spanish most of the time, 63% reported forgoing medical care in the last year due to cost, and 85% were uninsured at the time of the survey. Of these three factors, only insurance status was significantly associated with use of primary care services (use of PCP: OR = 9.5, 95% CI (3.23, 27.99), p <0.001; use of preventive services: OR = 7.6, 95% CI (2.35, 24.70), p = 0.001).
Interpretation: Primary language and cost of care were not significantly associated with primary care utilization among Hispanic community members in this study. However, insured participants were 9.5 times more likely to see a primary care physician and 7.6 times more likely to seek preventive services. Primary language spoken was also significantly associated with insurance status, suggesting an indirect association with access to care. Although limited by sample size and convenience sampling, the study results prompt the EVMS Medical Spanish Initiative to broaden its scope of partnership with organizations with ACA eligibility and recruitment expertise, and immigration services.
Source of funding (if none, enter "None"): EVMS Summer Scholars and Division of Global Health

SAT_05.10
Identifying Barriers to Accessing Healthcare for the Indigenous Tharu Population in Dang, Nepal

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Background: The Terai (lowlands) of Nepal is a low-resource region where the population largely depends on agriculture for employment and income. Members of the indigenous Tharu ethnic group inhabiting the lowland district of Dang, Nepal face unique health issues including having a high prevalence of hemoglobinopathies such as sickle cell disease (SCD). A recent effort to make SCD detection and management more accessible revealed that health care resources are often inaccessible for individuals suffering from SCD. The purpose of this follow-up qualitative study was to identify themes relating to the local Tharu population’s perception of barriers to health-care access. Long term goals include using these findings to improve health-care access and developing a comprehensive SCD-care plan for the region.

Methods: A total of 167 participants were enrolled in 28 focus groups on community health care needs in May 2017. Inclusion criteria included Tharu ethnicity and age older than 7. Community members were recruited through randomized phone invitations and word-of-mouth, and recruitment was conducted by a local non-profit Nepalese organization that works closely with the Tharu population in Dang. The interviews were conducted in Nepali and Tharu (the local dialect) with the assistance of members of the non-profit organization, recorded, and later translated into English. All interviews were semi-structured with open-ended questions, allowing participants to guide conversation.
Findings: Analysis from the focus group discussions revealed three major themes related to barriers in healthcare access: 1) inadequate local resources; 2) the financial burdens of care; and 3) the need for greater health education in the region. Numerous sub-themes within each major theme were identified, such as the limited spectrum of care available at local health posts, the inability to afford the cost of travel to health services, and the general lack of knowledge about health.
Interpretation: The specific themes identified can help guide future projects in the region and support advocacy efforts to inform national health policies on sickle cell detection and management. Focusing on addressing the identified barriers to accessing healthcare is fundamental in developing a sustainable, accessible, and comprehensive SCD-care plan as well as improving the overall health of community members.
Source of funding (if none, enter "None"): None

SAT_06.01
The Correlates of Interpersonal Violence in Migori County, Kenya: Toward a Community-Led Model of Change

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Background: The Lwala Community Alliance (LCA) is a community-led not-for-profit innovator operating in Migori County, Kenya. Tthe organization has involved community leaders and stakeholders in strategies to develop culturally acceptable health programming, including free sanitary pads to schoolgirls, community health workers (CHW) who support new mothers and their children for the first five years of life, and traditional birth attendants who support pregnant women. LCA has prioritized women's and children's health, resulting in a 64% reduction in child deaths since 2011 and a skilled delivery rate of 97% (vs. 53% nationally). Despite improvements, barriers to the health and well-being of women remain.
Methods: In 2018, LCA partnered with the Vanderbilt Institute for Global Health (VIGH) to conduct a representative household survey exploring health and social service needs within LCA's catchment area. A total of 1,094 (98%) households elected to participate. Questions on interpersonal violence (IPV) were directed towards women to better understand the social norms and personal experiences women in this community have, which sub-populations are at greatest risk, and if experiences are associated with depression.
Findings: Of participants, 56.4% reported experiencing some form of IPV, with 50.4% reporting having been hit, punched, or slapped; 9.4% reporting being forced into sexual activity; and 8.9% reporting having been threatened with a weapon. Women in polygamous marriages were twice as likely to report IPV (OR 2.1, p=0.001). Education (>6 years) resulted in a 48% reduction of IPV (OR 0.52, p=0.001) as did witnessing IPV during girlhood (OR 0.59, p=0.006). Women who reported IPV were 1.3 times more likely to screen positive for major depression on the PHQ9 (p=0.038), while women reporting feeling safe in their current relationships were less likely to screen positive for major depression (OR 0.56, p=0.002).
Interpretation: This survey provided an opportunity to investigate social, emotional, economic, health, and educational correlates with IPV in rural Kenya. We hope to improve understanding about IPV towards women in Migori County to inform service delivery and direct community resources. We plan to employ further qualitative research to determine the feasibility of engaging CHWs as potential agents of change against IPV.
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SAT_06.02
Assessing Safety Culture in Pediatric Hospital Units in Guatemala: A Mixed Method Pre-Implementation Analysis

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Background: Patient safety is a critical health system component aimed at the prevention medical errors, complications, and poor clinical outcomes. The need to improve patient safety and quality is increasingly recognized as a prime component of healthcare delivery in low- and middle- income countries (LMICs). This study aimed to understand barriers and facilitators towards building a strong patient safety program in Guatemala. Using the Consolidated Framework for Implementation Research (CFIR), a pre-implementation analysis assessed barriers and facilitators to adoption of safety programs in the Pediatric Department of Roosevelt Hospital, Guatemala's largest tertiary public hospital.
Methods: A mixed-methods pre-implementation analysis was conducted across 12 pediatric units in Roosevelt Hospital, Guatemala. Key stakeholders (n=82) comprised of physicians, nurses, and clinical and non-clinical support were identified for participation. After verbal consent, participants completed a semi-structured individual interview, EBPAS-36 (Evidenced Based Practice Attitudes Scale-36) survey, de novo patient safety survey, and SCORE (Safety, Communication, Operational Reliability, and Engagement) survey. These tools were used to measure attitudes towards the adoption of evidence-based practices and implementation of a patient safety program. Interviews and surveys were conducted in Spanish. Following transcription and translation, qualitative data was analyzed via NVivo v.12 using consensual methods and cross-cultural adaptation. Quantitative data was analyzed using ANOVA to compare the differences in group means across particular domains. Triangulation of data identified intersections between qualitative content analysis and quantitative survey data. This study received exemption from Duke University IRB approval.
Findings: Primary challenges in the implementation of patient safety programs in each unit include an inadequate training in patient safety, strained health system resources, a lack of patient safety culture development, and a hierarchical structure between health professionals. Positive attitudes towards evidence-based practice were indicated as well as an openness to improving patient safety and communication by hospital staff.
Interpretation: This mixed methods study demonstrated several barriers and facilitators to the implementation of patient safety programs in Guatemala, including both internal and external factors. A thorough understanding of these barriers and facilitators may improve adoption of tools to improve patient safety in Guatemala.
Source of funding (if none, enter "None"): NIH R03, Duke Global Health Institute, Duke Center for Latin American and Caribbean Studies

SAT_06.03
Successful Implementation of Isoniazid Preventive Therapy at a Pediatric HIV Clinic in Tanzania

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Background: In accordance with international guidance for tuberculosis (TB) prevention, the Tanzanian Ministry of Health recommends isoniazid preventive therapy (IPT) for persons living with HIV, including children ages 12 months and older. Concerns about tolerability, adherence, and potential treatment of undiagnosed TB with isoniazid monotherapy, have limited uptake of IPT globally, and particularly among children, in whom diagnostic confirmation is challenging. Therefore, we assessed IPT implementation and adherence, and TB diagnoses to determine the feasibility of pediatric IPT rollout in Tanzania.
Methods: HIV-infected children between ages 1-15 receiving care at the DarDar Pediatric Program in Dar es Salaam were eligible for enrollment. Enrolled patients were prescribed a 6-month regimen of daily isoniazid. IPT was integrated into routine patient care and isoniazid dispensed with the patient's antiretroviral therapy (ART) every 1-3 months. IPT adherence was determined by pill counts, appointment attendance, and IPT completion within a 10-month period. Patients underwent TB symptom screening at every visit. Verbal consent and assent were obtained from caretakers and children respectively. Approval was obtained from the Tanzanian National Institute for Medical Research and the institutional review boards of Muhimbili University of Health and Allied Sciences and Dartmouth College.
Findings: We enrolled 66 children between July and December 2017. No patients declined IPT. Most participants were female (65.1%) and the median age was 11 (interquartile range [IQR] 8, 13). Forty-nine participants (74.2%) completed IPT within 10 months. Among the remaining 17, eight had IPT discontinued by their provider due to adverse drug reactions (10.6%) or lack of home supervision (1.5%); nine patients (13.6%) lacked documentation of completion. Of those who completed IPT, the average monthly adherence was 98.0% (IQR 93.0%, 100%). No patients were diagnosed with TB while taking IPT or during a median of 4 months of follow-up.

Interpretation: This study demonstrates high adherence and treatment completion rates can be achieved when IPT is integrated into routine, facility-based pediatric HIV care. Improved record-keeping may yield even higher completion rates. IPT was generally well tolerated and no cases of TB were detected. IPT for children living with HIV is feasible and should be implemented throughout Tanzania.
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SAT_06.04

Using Stakeholder Engagement and the RE-AIM Framework to Design an Implementation Strategy for a Diabetes Prevention Intervention in the Caribbean

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Background: Diabetes prevention interventions often have inadequate uptake and are difficult to sustain when translated from one context to another – limiting proven interventions from reaching populations with rising diabetes rates, such as those in the Caribbean. The objective of this study is to describe the process, using stakeholder engagement and an established implementation science framework, of developing an implementation strategy for an evidence-based diabetes prevention intervention targeting Caribbean-descent populations.
Methods: Lifestyle Intervention with Metformin Escalation (LIME) is a hybrid I effectiveness-implementation, diabetes prevention trial, targeting high-risk Caribbean/Caribbean-descent individuals with pre-diabetes in six clinical sites: New York (2 sites), Puerto Rico, US Virgin Islands, Barbados and Trinidad. LIME was launched in May 2018 and supports healthy lifestyle modification through a series of culturally-adapted workshops, followed by escalation to Metformin therapy if needed. We used the RE-AIM framework (*R*each, *E*ffectiveness, *A*doption, *I*mplementation, *M*aintenance) for intervention planning: RE-AIM components were addressed in three parallel engagement processes – 1. With implementers: during site-specific capacity strengthening training sessions (two virtual meetings per site); 2. With regional stakeholders: policy, community and academic leaders (four virtual meetings); 3. With stakeholders and local diabetes/nutrition professionals (three virtual meetings). Intervention components were identified to overcome barriers to RE-AIM domains.
Findings: Intervention components were added, based on stakeholder and implementer input, to increase/improve 4 out 5 RE-AIM components. *Reach*: use of testimonial videos to increase engagement of men; clinic- and community-based synchronous messaging about study importance; tailoring of workshop content to make it culturally-appropriate, relevant and sensitive to the region. *Adoption*: early engagement of clinic providers/administrators/front-line staff; concurrent engagement of multi-level staff to promote team-building; facilitating interactions across sites. *Implementation*: use of point-of-care machines (improves efficiency, feasibility, cost); retention of participants through engagement of family members and holding workshops at different times of day. *Maintenance:* incorporating workshops into clinic organizational structure; provider education on evidence-based recommendations for Metformin prescribing; data collection for cost-effectiveness analysis.
Interpretation: Engaging stakeholders and implementers in intervention planning is critical to overcome implementation barriers that have previously hindered the successful translation of evidence-based interventions from one setting to another. Using established implementation science frameworks ensures critical determinants of intervention success are addressed.
Source of funding (if none, enter "None"): NIH/NIMHD U54MD010711 NIH/NHLBI K12HL138037

SAT_06.05

Changes in Respiratory Status Among Newborns Managed with An Innovative, Ultra-Low-Cost, Bubble Continuous Positive Airway Pressure Package with a Novel Blender in Maharashtra, India.

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Background: Prematurity and pneumonia are commonly associated with acute respiratory failure. Many newborns with these conditions risk death due to limited access to advanced respiratory support. Bubble continuous positive airway pressure (bCPAP) is effective in addressing impending newborn respiratory failure, however high cost and the need for uninterrupted electricity are barriers to scale. This study reports on a novel bCPAP package with a fixed blender, designed to overcome these barriers, called Every Second Matters for Babies – Newborn and Infant Respiratory Bundle (ESM-NIRB).

Methods: The ESM-NIRB package was deployed across four hospitals in India in May, 2017. Diagnostic indications, hourly respiratory severity scores (RSS) and respiratory rates (RR), pulse oximetry, clinical outcomes and adverse events were recorded for each enrolled newborn/infant. RSS and RR at the time of placement on an ESM-NIRB device were compared to 6 hours after initiation, with a paired t-test, for newborns with initial RSS between 4 and 8, who were managed with the device for at least 6 hours.
Findings: Eight pediatricians, 40 nurses, and 12 post-graduate residents were trained on the package. From May 2017 to July 2018, 92 newborns were placed on an ESM-NIRB bCPAP device. Forty-nine (53.3%) of the 92 were premature births. Seventy-seven (83.7%) survived to discharge. Indications for bCPAP included hyaline membrane disease/respiratory distress syndrome (41.3%), unspecified respiratory distress (28.3%), transient tachypnea of the newborn (12%), sepsis (7.6%), birth asphyxia (4.3%), meconium aspiration syndrome (3.3%), and pneumonia (3.3%).
50 newborns were managed with an ESM-NIRB device for at least 6 hours. Among the 41 (44.6%) newborns that had initial and 6 hour RSS data recorded, the RSS decreased an average 1.27 points [95% CI 0.86, 1.68]. Among 33 (35.9%) newborns with initial and 6 hour RR recorded data, RR decreased an average 8.52 breaths per minute [95% CI 5.75, 11.28].
No deaths or severe adverse events attributed to an ESM-NRB device were reported.
Interpretation: A bCPAP package with a novel blender that does not require pressurized air was associated with improved respiratory status in newborns. Further research is needed to improve the device, and optimize provider performance.
Source of funding (if none, enter "None"): None

SAT_06.06
Baselining core surgical World Development Indicators to assess Surgical System Preparedness: A Step Toward National Surgical, Obstetrics, and Anesthesia Planning in Colombia

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Background: An estimated 5 billion people worldwide lack access to timely, safe, and affordable surgical care. Six core surgical World Development Indicators (WDIs) are used to assess and inform surgical access along surgical system targets - preparedness, delivery, and cost. The Latin American Indicator Research Collaboratory (LAIRC), an entity employing a LMIC/HIC partnership framework, has established WDI data collection processes at the grassroots level in two Colombian cities (Medellín and Cali) starting in 2017. A top-down, systematic process for WDI collection, however, is yet to be defined in Colombia and may be crucial to developing a National Surgical, Obstetrics, and Anesthesia Plan (NSOAP). With an extension of intra-national partnerships, the LAIRC's third Colombian GSRU (Global Surgery Research Unit) in Bogotá, approaches baselining national surgical system preparedness data via analysis and interpretation of indicators 1 & 2.
Methods: Scaling of national level data was conducted through an interdisciplinary partnership formed between Universidad de los Andes, Fundación Santa Fe de Bogotá, and Rutgers University. By utilizing a top-down approach novel to the LAIRC, the MOH and existing governmental databases (i.e., SISPRO) were queried for pre-existing Indicators 1 and 2 data. Analysis and interpretation was fit to definitions of Indicator 1 and 2 (Indicator 1 - proportion of population with 2 hour access to a facility capable of emergent and essential surgical care; and Indicator 2 - density of surgeons, anesthesiologists, and obstetricians (SAO) per 100,000 population) to assess national surgical system preparedness.
Findings: MOH data reveals 307 institutions capable of emergent and essential surgical care. SAO density for surgical specialties was calculated as 14.65 per 100,000 people (2030 Global Target: 20 per 100,000 people). Based on geo-spatial considerations, this is the first report that links surgical system preparedness to geographic and socioeconomic disparities, reinforcing inter-sector governmental reports of *two Colombias* with significant rural and urban maldistribution.
Interpretation: A top-down indicator data collection represents intra-national, multi-modal assessing and informing of surgical system preparedness in Colombia. Supported by the MOH transparency, the Bogotá GSRU was able to analyze and interpret national data for implementation of Information Management - one of five key components of the LCoGS NSOAP framework.
Source of funding (if none, enter "None"): None

SAT_06.07
Challenges in Building Local Capacity for a US-based Academic Global Health Program

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Background: As an academic global health program with operations in nearly 20 countries, BIPAI provides technical assistance to its network of locally-led NGOs in the countries where it has sustained presence.
Methods: The technical assistance supports operationalizing: (1) systems, policies and procedures for operations, (2) effective lines and methods of communication, (3) capacity building for grant writing and philanthropy and (4) building an engaged and effective board of directors.
Findings: Early attempts to align policies and procedures across the network have become more difficult as program geographies expand to new continents with different systems of settling labor and financial disputes. Basic guiding principles have to be adapted to comply with local law and context.
Communication is critical within any organization and between partners working towards a common goal. The local context of communication varies significantly between continents, countries and even organizations. Respecting local custom, while encouraging more open and proactive communication is an area of continuous improvement within the BIPAI network. Professional development and critical communication exercises have helped make this shift.
Building capacity for securing corporate and individual philanthropic support has been particularly challenging. In sub-Saharan Africa, there is a need to educate those with capacity to give on the importance of reinvesting in the well-being of their communities. Despite the technical and highly precise nature of global health grants, these skills are more quickly developed as the applicants come from a scientific or clinical background.
An engaged and effective board of directors can propel the financial sustainability, operational efficiency and reputation of an organization. Conversely, an ineffective board can lead to stagnation and ultimately ineffectiveness. The most effective and engaged board include a cross-section of leaders from industry, healthcare and the local community. Engaged board members can be advocates and change leaders.
Interpretation: BIPAI and Texas Children's Global Health are currently developing a curriculum for local organizational capacity building based on twenty years of experience. The tools will include online lectures and resources, in-person trainings and exercises and frequent consultative conversations on key development issues.
Source of funding (if none, enter "None"): Funding provided by BIPAI and Texas Children's Hospital.

SAT_06.08
Assessing Trainee and Student Interests in Global Health : Input from the 2018 CUGH Global Health Conference

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Background: The Trainee Advisory Committee (TAC) serves as an advocacy body for trainees within CUGH, representing the voice and perspective of trainees within the various committees and activities of CUGH. TAC members fulfill a two year commitment, and assume various responsibilities within CUGH including participation in TAC internal activities such as engaging with 70+ campus representatives (a sub-group of TAC), planning on student advocacy matters in global health, and fulfilling an advisory role within various CUGH committees and subcommittees. Following CUGH conferences, the TAC conducts a survey to assess trainee backgrounds, priorities and appreciation of the conference experience. Providing meaningful data, the survey is an opportunity for both TAC and CUGH to adapt to an ever evolving audience and global health field.
Methods: Following the 9th Annual CUGH Conference that took place in New York City from March 16th to 18th,2018 the survey was conducted through Google Forms and filled by 110 participants (majority aged between 20-29 years (65.66%), identifying as female (81.37%), and from the United States (65.59%) and Canada (6.45%)). The survey's results were contrasted to previous years' surveys to identify shifting trainee trends and priorities.
Findings: The survey's findings suggest that (1) compared to previous years, research-oriented activities is now the dominant conference motive, whether to present a global health project or to attend research-focused sessions; (2) participants are overwhelmingly of female gender, corroborating the finding that women's health issues are now a top priority for advocacy and session topics, alongside health equity/disparity; (3) there is increasing diversity in the academic discipline of trainees, and public health has for the first time surpassed medicine as the main field of study of respondents.

Interpretation: Following these findings, global health organizations like CUGH are invited to be mindful of this demographic trend within global health, providing opportunities to empower the global health career of a broader range of disciplines, with a special consideration for women and researchers. In addition, these findings will inform the design of TAC's Trainee-Led Satellite Session at the next Annual Conference. Finally, they will also serve to guide TAC's priorities and ongoing commitment to promote advocacy amongst students and trainees, namely through its Campus Representatives project.
Source of funding (if none, enter "None"): None.

SAT_06.09
Comparing Mortality of Surgical Interventions Conducted in High- and Low-Income Countries

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Background: Surgery provides a cost-effective, definitive solution to several causes of morbidity and mortality worldwide, however, there remains debate regarding the quality of surgical interventions in resource-poor settings. While it has been assumed that in the face of decreased resources, surgery would be plagued with higher peri-operative mortality and complication rates, some argue that surgery can be safely performed in developing countries without greater adverse outcomes than in developed countries. A literature review was conducted to compare mortality rates between surgical procedures conducted in high-income countries and those conducted in low-income countries. By evaluating the safety of surgical care in developing countries, the goal of this review was to further inform efforts to increase and improve surgical efforts worldwide.
Methods: Fifteen articles were identified from advanced searches in OVID Medline and related articles. Search was conducted using keywords "surgical mortality", "developed countries", and "developing countries", and articles that reported mortality rates within a 30-day peri-operative period of were selected, excluding conflict settings. Sample size, study type, setting, procedure type, and mortality rates were extracted from each article. Mortality rates were compared between high-income and low-income countries and stratified by type of supporting institution.
Findings: Countries with lower incomes showed overall higher mortality rates, however, considerable variation was found among geographical areas and procedure type. Nine out of 15 articles demonstrated comparable mortality rates in low-income countries to those in high-income countries (less than 3.5% peri-operative mortality). Notably, four articles reported surgical outcomes at ex-patriate or foreign-funded surgical sites in lower-income countries, which were markedly lower than those reported by regionally funded hospitals and comparable to surgical mortality rates in the Netherlands (less than 0.8% peri-operative mortality). These sites each employed strict protocols, standards and quality improvement efforts, such as surgical safety checklists, data analysis, and training programs, which contribute to their success at maintaining low operative mortality.
Interpretation: Safe surgical care can feasibly be provided in resource-poor settings. Although limitations in resources and infrastructure remain significant obstacles to the provision of surgery in resource-poor settings, the implementation of quality improvement protocols will be paramount to reducing surgical mortality in global health.
Source of funding (if none, enter "None"): None

SAT_06.10
Evaluation of a Malnutrition Outreach Education Program Conducted by Soft Power Health in Rural Uganda

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Background: Malnutrition is the attributable cause for almost 50% of all deaths of children younger than 5 worldwide with the burden disproportionate in rural areas. Operating in the village of Kyabirwa, located in the Jinja district of Uganda, Soft Power Health (SPH) began providing nutritional education in 2013 to nearby villages in an effort to address this burden of malnutrition through prevention.
Methods: SPH conducts nutritional interventions in the form of interactive lectures in communities throughout Jinja district. We reviewed responses from pre-intervention surveys conducted in villages from May 2015 to September 2017 and from follow-up surveys conducted in those same villages approximately one year after education. The survey tested for knowledge pertaining to the causes and symptoms of malnutrition in addition to an understanding of food groups (proteins, carbohydrates, fats, and vitamins). We sought to evaluate the effectiveness of these outreaches by assessing for long-term understanding of key concepts.
Findings: Matched surveys for 445 individuals belonging to 25 villages were analyzed retrospectively for the percentage of respondents answering each question correctly pre- and post-intervention. Prior to the educational outreach in their respective village, only 2% of subjects correctly identified the causes of malnutrition compared to

26% of subjects one year after education. At baseline, 89% of those surveyed could name symptoms of malnutrition and 76% correctly indicated that infants under 6 months should only receive breast milk. Post-intervention, the percentage of correct responses to the above questions rose to 98%. Finally, 38% of subjects correctly matched three foods with their respective food groups at baseline as compared to 89% during follow-up. A descriptive analysis of the most common foods given to children pre- and post-intervention was also completed.
Interpretation: SPH malnutrition outreaches are effective in educating rural villagers about the causes and signs of childhood malnutrition along with what constitutes proper nutrition for children and infants. Knowledge gained from these interventions is retained for at least one year post-intervention. Modifications to the current program could inquire into food sources and include a screen for food insecurity. Further analysis is needed to explore whether nutritional knowledge results in decreased childhood morbidity and mortality attributable to malnutrition within the region served by SPH.
Source of funding (if none, enter "None"): Mount Sinai