Berger's HIV Stigma Scale), recent trauma (abridged USAID/HPI MSM Violence Screening Tool), and childhood trauma (abridged CECA). Depression, alcohol use, and other substance use were rated using validated categories of increasing severity (e.g., WHO risk zones I-IV for AUDIT) and summary scores were created for sexual and HIV stigma. Recent and childhood trauma were combined into a binary indicator of any past trauma or abuse. Spearman correlation and Wilcoxon rank sum tests were used to identify associations.

Findings: Forty-two percent of participants had moderate to severe depressive symptoms, 45% engaged in hazardous or harmful drinking behaviour, and 60% had moderate to severe abuse of other substances. Median sexual and HIV stigma scores were 11 (IQR 6-17, range 0-33) and 25 (IQR 23-29, range 11-44, seropositive exclusive), respectively. There was a positive correlation between depression category and alcohol use category (rho=0.33, p=0.0004), and a weaker positive correlation between depression category and other substance use category (rho=0.22, p=0.0165). Alcohol use category and substance use category had a strong positive correlation (rho=0.39, $p < 0.0001$). Sexual stigma was positively correlated with depression (rho=0.49, $p < 0.0001$), alcohol use (rho=0.39, $p < 0.0001$), and other substance use (rho=0.29, p=0.0023). HIV status and HIV-related stigma (among seropositives) were not correlated with any of the measures. Depression category was higher among men with a history of trauma or abuse (median 2.5 vs 1, $p < 0.0001$). Similar associations were found between trauma and alcohol use (median 1.5 vs 1, p= 0.0501), other substance use (median 3 vs. 2, p=0.0041), and sexual stigma (median 12.5 vs. 5.5, $p < 0.0001$). Trauma was not associated with HIV status or HIV-related stigma.

Interpretation: This population of Kenyan MSM reported moderate-to-high levels of depression and of alcohol and substance abuse, and low-to-moderate levels of sexual stigma. These mental health conditions and social factors are highly inter-correlated and are exacerbated by experience of trauma or abuse. Comprehensive mental health services are needed in this population to address these issues.

Funding: Provided by a Thomas Francis, Jr. Fellowship (AS) and by NIMH 1R34MH099946-01 (PI Graham).

Abstract #: *01NCD034*

The health cost of misdiagnosis among obstetric providers in the Philippines

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Background: There is interest in examining the pervasiveness of misdiagnosis in clinical carearound the world, which is stimulating a shift in how quality deficiencies are conceptualized. While diagnostic process can potentially be studied prospectively, real clinical settings makes this a substantial practical challenge, starting with resource constraints, case mix variation, clinical uncertainty, and challenges in measuring clinician cognitive thought processes. We used a case simulation measure, the Clinical Performance and Value (CPV®) vignettes, to quantify the quality of care among obstetric providers (midwives and physicians) in an urban setting of the Philippines (Quezon City). Obstetric complications remain a major source of mortality and morbidity in the Philippines. We asked three questions: 1. What is the prevalence of misdiagnosis? 2. What are the predictors of misdiagnosis, and 3. What are the clinical outcomes associated with misdiagnosis?

Methods: We had provider rosters from 77 birthing facilities in Quezon City. A random sample of providers from the facilities was obtained. A total of 103 providers completed each of 3 maternal vignettes (CPV® vignettes) between Jan-April 2014. The three variants of maternal case vignettes included cephalopelvic disproportion (CPD), post-partum hemorrhage (PPH), and pre-eclempsia (Pre-ec). In order to link provider clinical decision making data to patients, we examined the medical charts of providers who took the vignettes. Of the 70 patients that were linked to providers, 37 were classified as complications (defined by the presence of at least one obstetric complication as reported in the medical chart). Complications include cases with any of the following: fever, abnormal vaginal discharge, excessive bleeding, urinary incontinence, blood transfusion, perineal tears, high BP, jaundice, pallor, and prolonged labor. We examined whether providers who misdiagnosed on the vignette were more likely to have had a patient complication under their care.

Findings: The prevalence of misdiagnosis in this study group was notably high: 25.2% CPD, 33% PPH, 31% Pre-ec. Older providers had a slightly lower rate of misdiagnosis. Providers who misdiagnosed on the vignettes were more likely (p=0.041) to have patients with a complication (any any of the following: fever, abnormal vaginal discharge, excessive bleeding, urinary incontinence, blood transfusion, perineal tears, high BP, jaundice, pallor, and prolonged labor) than providers who did not misdiagnose.

Interpretation: Diagnosis is arguably the most important early task a clinician performs as he or she determines the subsequent course of evaluation and treatment. The implications for the patient are significant as they may translate into significant morbidity and possibly mortality. Investments in improving provider decision-making skills may be necessary.

Funding: University of Washington grant.

Abstract #: *01NCD035*

Strategies for prevention and control of rheumatic fever and rheumatic heart disease in Sub-Saharan Africa: a preliminary cost-effectiveness analysis

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Background: While mortality from acute rheumatic fever (ARF) and its sequel rheumatic heart disease (RHD) appear to be declining at the global level, these conditions remain the most common cause of heart disease in children and adolescents in low- and middle-income countries. Several interventions across the natural history of ARF/RHD are effective, including primary and secondary prevention as well as heart valve surgery. We developed a cost-effectiveness analysis model to assess the most important tradeoffs among various public health interventions that should be considered in scaling up programs in highly endemic, resource-constrained settings such as sub-Saharan Africa.

Methods: We developed a decision tree to analyze five different combinations of primary and secondary prevention with or without scale-up of surgical services, and we compared these to doing nothing. We modeled the natural history of ARF and RHD as a time-dependent Markov process with health states reflecting first and recurrent episodes of ARF, ARF remission, RHD (including severe heart failure and stroke as sequelae), and mortality from ARF/RHD. We used transition probabilities and intervention effectiveness data from previously published studies. To calibrate our model, we used South African life tables and published medical and surgical costs from a population-based intervention in Cuba. We took the healthcare system perspective in our costs, and we measured outcomes as disability-adjusted life-years (DALYs), incorporating disability weights from the Global Burden of

Disease 2010 studies. For our surgical intervention scenarios, we assumed a scale up in coverage from 10% to 90% and included the cost of building a national cardiac surgery center. All costs and outcomes were discounted at 3 percent yearly and compared to undiscounted costs and outcomes. We also conducted sensitivity/uncertainty analyses.
Findings: In the base case, an approach combining primary and secondary prevention of ARF/RHD dominated all other approaches. Adding on scale-up of surgical services resulted in an incremental cost-effectiveness ratio of US$ 305/DALY (US$ 886/DALY discounted). On performing sensitivity analysis, the results were most sensitive to changes in the incidence of ARF.
Interpretation: This preliminary analysis suggests that population-based combined primary and secondary prevention strategies for ARF/RHD may be the most cost-effective approach in endemic settings despite higher operational costs. Scale-up of surgical services may be cost-effective in some settings such as lower-middle and upper-middle income countries, although absolute public sector budget constraints might preclude such investments. Future work will include gathering country-specific epidemiologic and cost estimates to inform local priorities around ARF/RHD.
Funding: none.
Abstract #: *01NCD036*

Methodology and process for assessing feasibility of introducing pediatric hematology/oncology services in a resource-limited setting: Experience in Sub-Saharan Africa

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Program/Project Purpose: As mentioned in recent articles, there has been a significant increase in the incidence of cancer in Sub-Saharan Africa, (SSA), however there is poor access to pediatric hematology-oncology (PHO) care. Consequently, a great need exists to build capacity in the local healthcare infrastructure and workforce to meet this evolving need. Since its inception in 2008, the Texas Children's Global Hematology-Oncology Programs of Excellence (Texas Children's Global HOPE) has aimed to increase overall survival and quality of life for children with cancer and blood disorders and to build sustainable health professional capacity in pediatric hematology-oncology care and treatment.
Structure/Method/Design: Our program recognized the importance of partnering with local stakeholders to conduct a thorough assessment of the current capacity to better inform a jointly developed vision and strategies to achieve the aims. We developed a systematic methodology and detailed electronic database for conducting site assessments and performing strategic planning. This assessment approach has been successfully utilized in both international and domestic sites to determine the unique needs of their pediatric hematology-oncology programs and the environments in which they operate. This process identifies and assesses current country level and institution specific clinical, education, research and administrative operations and resources, identifies gaps and needs for improvement and proposes solutions to advance PHO care at a level of excellence the partners jointly agreed to attain., A detailed implementation plan is then developed for program improvement including timelines and budgets. This methodology has been utilized upon request by local governments interested in improving PHO care and in partnership with existing NGOs operating in-country to provide program sustainability.
Outcomes & Evaluation: This methodology has been utilized in 3 SSA countries. Outcomes include completed country-wide assessments with sustainable intervention plans built into agreements with local governments. M&E plans are created for each project at implementation and data gathered via web-based tools.
Going Forward: Throughout these projects, challenges include working with local governments, building strong partnerships, and securing funding for implementation of the plans. Each project progresses according to the unique political, socio-economic and cultural aspect.
Funding: Funding has been generously provided by Texas Children's Hospital and the AbbVie Foundation.
Abstract #: *01NCD037*

Outreach in Armenia: chronic disease awareness, prevention and management

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Program/Project Purpose: According to the World Health Organization 2014 report, prevalence of unmanaged, undiagnosed and untreated chronic disease accounts for 92% of all non-communicable disease related mortality in Armenia. The Armenia Global Health Program (AGHP) set out to address chronic disease health though education and outreach by designing and implementing a project, in five different regions of Armenia, to provide education and information on prevention, treatment and management of chronic diseases such as Cardiovascular Disease (CVD), Diabetes Mellitus Type 2 (T2D) and breast cancer to the general population and health care providers.
Structure/Method/Design: The projects were conducted in a health fair and health education seminars format. Free health fairs were organized in local clinics in five rural and urban regions of Armenia, as per the Ministry of Health of Armenia (MOH) recommendations. Health fairs consisted of booths that provided blood glucose testing, blood pressure checks and breast cancer screenings. Participants were also provided a validated T2D risk assessment and materials on CVD, cholesterol, nutrition, Body Mass Index, exercise information and early detection of breast cancer. Seminar portions consisted of three, one-hour seminars divided into two groups: population and primary care providers. Population seminars addressed CVD and T2D by providing awareness and tools to manage and prevent these chronic diseases and associated secondary complications. Provider seminars addressed T2D, in accordance with current International Diabetes Foundation standards, by providing information and tools on diagnosis, treatment and secondary complications. This project was conducted by AGHP at the University of Utah, in collaboration with Yerevan State Medical University (YSMU), Armenian American Wellness Center (AAWC) and the MOH. The project has been a success since 2013 and continues to grow exponentially; particularly with the clinics and attendees. Materials created and used were evaluated, translated and verified by AGHP with the help of YSMU.
Outcomes & Evaluation: Health fairs and chronic disease education are new ideas in Armenia. The health fairs and seminars were very well-received, with over 650 participants attending the health fairs and seminars. Throughout the five health fairs, 344 glucose, 271 blood pressure and approximately 150 breast cancer screenings were performed. The population and providers who attended the health fair