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Background: Low- and middle-income countries carry nearly 80% of the burden of death from cardio vascular related diseases, with hypertension being one of the major pathogenic factors. Prior studies in rural Ghana among adults aged ≥ 35 found a surprisingly high prevalence of hypertension (50.9%). On the other hand, common risk factors such as high Body Mass Index (BMI), smoking, alcohol, and lack of physical activity historically have a low prevalence in this population. To better understand the disease burden of hypertension in rural Ghana, this study sought to estimate the point prevalence of hypertension in all adults and assess the association of classic risk factors in this population.

Methods: A cross-sectional survey was conducted on 845 adults aged ≥ 18 in the Barekese sub-district. Socio-demographic characteristics, modifiable and non-modifiable risk factors, blood pressure and anthropometric measurements were collected after informed consent during community-wide health screenings using standardized protocols. A multiple linear regression analysis (p -value < 0.05) was performed.

Findings: A total of 196 male and 649 female community members aged ≥ 18 with a median age of 42 (IQR 29–58) participated. The point-prevalence of isolated systolic hypertension/prehypertension and diastolic hypertension/prehypertension in the study population was 30.64%/39.19% and 21.61%/34.09%, respectively. Only 18.07% of the participants had a prior diagnosis of hypertension. A total of 85 (10.14%) participants were found to be obese ($BMI \geq 30$ kg/m²), and 224 (26.7%) were overweight ($25 \leq BMI < 30$ kg/m²). Risk factors such as age, family history of hypertension, and BMI were positively correlated with increased blood pressure among both sexes.

Interpretation: The burden of hypertension among adults in rural Ghana is high, and approximately one-third of all participating adults were found to be pre-hypertensive. A multiple regression analysis confirmed positive correlations between increased blood pressure and most risk factors. However the relatively low prevalence of overweight and obese participants in this population raises more questions than it does answers. This study did not address diet, which is a limitation. The findings indicate there is a great need for increased health education and routine screenings among this population in order to more effectively identify individuals at risk.

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Shared clinical learning in a Mozambican clinic: results of a needs and opportunity assessment of Mozambican and US medical trainees collaborating in an outpatient clinic

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Background: A growing number of US medical trainees take part in international health experiences, predominantly in low- and

middle-income countries (LMIC). Educational research on these experiences has focused on the educational objectives and outcomes of US trainees; with relatively little emphasis on the goals and expectations of host institutions and trainees.

Methods: The University of Pittsburgh Medical Center (UPMC) and the Catholic University of Mozambique (UCM) have partnered to create a shared clinical learning experience, where US residents serve as preceptors for Mozambican medical students in an urban outpatient clinic. An educational needs assessment survey was distributed to fifth and sixth year medical students from UCM and visiting internal medicine residents from UPMC following a 2–8 week ambulatory rotation at the São Lucas Clinic in Beira, Mozambique. Survey questions focused on trainees' preferred learning styles, expectations regarding the experience, and prioritization of medical competencies. The survey was administered in written Portuguese and English in Spring 2015, following the rotation.

Findings: Surveys were completed by 19/20 Mozambican students (95%) and 5/5 (100%) US residents. Both groups preferred case-based teaching. Mozambican students preferred longer teaching sessions than US residents (60 vs 30 minutes). Both groups identified history taking, physical examination skills, and formulation of differential diagnosis as the most important competencies for the rotation. Mozambican students and US residents identified similar topics to learn from each other – selecting infectious diseases and dermatology as the top competencies that US residents could learn from Mozambican students, whereas management of non-communicable diseases, interpretation of electrocardiograms, ultrasounds and laboratory data were each selected as top competencies that Mozambican students could learn from US residents.

Interpretation: Mozambican medical students and US residents prefer similar learning styles and have parallel views on knowledge and skills they can learn from each other. Both groups prioritize clinical competencies not otherwise emphasized in their curriculum: local infectious diseases for US residents and chronic disease management and test interpretation for Mozambican students. These findings suggest that shared clinical learning experiences in LMIC countries have the potential to benefit hosting and visiting students if the learning needs of both groups are identified and prioritized.

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Quality of blood pressure control in hypertensive patients attending the Kigali University Teaching Hospital (CHUK)

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Background: Hypertension is a significant health problem in Rwanda. Most Rwandans have access to treatment, but medication adherence and health literacy have never been assessed. We investigated the features of treated hypertensive patients with uncontrolled blood pressure.

Methods: We prospectively enrolled consecutive adults visiting the outpatient department between July 1st 2011 and March 31st 2012 who had a known diagnosis of hypertension, were on treatment, and had a recorded blood pressure above 140/90 in the past 3 months. We assessed awareness of hypertension with the question “Has a doctor ever told you that you have high blood pressure and it has to be controlled with medications?”

Findings: 150 patients with hypertension were enrolled, including 56% women and 44% men, mean age of 52.75 ± 6.08 years. 42 patients (28%) were diabetic, 23 (15.3%) had elevated total cholesterol, and 36 (24%) were current or former smokers. Obesity was recorded in 34 patients (22.7%), and the mean BMI was 26.24 ± 1.8 . 51 subjects (34%) had hypertension for more than 5 years, and the mean duration since diagnosis was 8.5 ± 0.7 . The mean number of antihypertensive drugs used was 1.84 ± 0.7 . 32 subjects (21.3%) had well-controlled blood pressure. LVH was present in 36% of subjects. Chronic renal failure was documented in 18%, albuminuria in 33.3%, half of whom were diabetic. Clinical diagnosis of stroke was made in 23 patients (15.3%). Almost half of the subjects (48%) had proper information about arterial hypertension. 35.3% stated that they tried to comply with both pharmacological treatment and lifestyle modifications. Independent predictors of poor control were diabetes (OR=3.367; 95% CI 1.103-10.287), smoking (OR=6.145; 1.390-27.154), and poor adherence to treatment (OR=0.066; 0.025-0.177).

Interpretation: A majority of our patients are not aware that they have hypertension, despite taking medication to control it. Poor adherence to treatment is likely a result of this lack of knowledge. Independent predictors of poor BP control were diabetes, smoking and poor compliance with treatment. We found significant end-organ damage from uncontrolled hypertension, suggesting that increased patient education could have a major impact on morbidity and mortality.

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Wound care knowledge assessment and infection rates for surgical patients in the Central Plateau of Haiti

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Background: Increasing access to surgery globally has become a public health priority. However, concerns for high surgical site infection (SSI) rates exist given the limitations in protecting sterility in low-resource settings. The purpose of this study was to evaluate attitudes towards a postoperative wound care instructional video and its effect on rates of wound dehiscence and SSI during surgical volunteerism trips to the Central Plateau in Haiti.

Methods: This prospective survey-based study took place at Hospital Sainte Therese in Hinche, Haiti. Participants included patients who received surgery and watched an instructional video on how to clean and care for their surgical site. A 10-minute survey was administered at two time points: once prior to discharge after viewing the video and another in post-operative follow-up clinic. Questions prior to discharge assessed comprehension of the video

and anticipated ability to practice appropriate wound care. Questions in follow-up clinic assessed ability to follow the instructions and barriers encountered. Quantitative data was analyzed with SAS and described as means, ranges, and percentages.

Findings: 47 participants (88.4% male, average age 46.8, SD = ± 24.3) completed the survey prior to discharge. 94% of patients identified the correct time they needed to boil water and wash their hands prior to wound care, and 91% understood the importance of having clean hands when changing bandages. Only 17% could identify the correct procedure for drying the wound. 30 patients completed the survey in post-operative clinic. 90% said they followed directions everyday, and 100% found the instructions to be “very helpful.” After introducing the video in 2013, wound dehiscence rates decreased from 5.4% in 2012 to 2.7%, and SSI rates decreased from 2.7% to 1.3%. This year, rates were 0% and 3.8%, respectively.

Interpretation: Trending our wound care data has demonstrated that SSI’s have been a smaller problem than originally anticipated, especially when compared to infection rates of 2-5% in the United States. By adding the knowledge assessment, we learned that the majority of patients understood the instructions and found the video to be helpful, and there may be an association with a reduction in wound complications.

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The political prioritization of preterm birth: a policy analysis using a prioritization framework

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Background: Preterm birth is the leading cause of death in newborns and children under five years. Despite its high mortality rate, prematurity has received less attention and resources than other diseases of less or comparable burden. In the period of transition from the United Nations Millennium Development Goals to the Sustainable Development Goals, it is critical to assess how global health leadership prioritizes prematurity alongside other causes of childhood mortality.

Methods: This qualitative policy analysis used key informant interviews of individuals selected for their expertise in newborn health using a purposive sampling strategy, which gave way to snowball sampling. We conducted 15 semi-structured interviews with key informants in-person or by phone and Skype over a 10-week period from May 2015 to July 2015. Interviews were coded using the Shiffman-Smith framework for political priority to guide analysis. The data from the interviews were triangulated with relevant literature on preterm birth agenda setting to ground findings in existing evidence.

Findings: Our findings reveal preterm birth has been inadequately prioritized in relation to its burden. We identified four key barriers to the prioritization of prematurity: (1) lack of data on the economic impacts of prematurity, (2) internal dispute around implementation strategies and how to prioritize scaling-up existing interventions, (3)