

Program Purpose: Despite the huge burden of psychopathology, mental health services in Botswana are hampered by limited resources and clinical capacity. There are 11 psychiatrists for a population of 2.3 million people. The University of Botswana School of Medicine (UBSOM), established in 2009, has committed to training students to be skilled in psychiatric care. With funding support from the Medical Education Partnership Initiative (MEPI), the psychiatry department undertook several steps to develop contextually relevant mental health training. These steps, as well as initial metrics of success, are outlined.

Structure/Method/Design: Establishment of an undergraduate curriculum involved strong partnerships with other academic institutions. When UBSOM was founded, there were no psychiatrists on faculty and no psychiatry curriculum. With support from mental health educators at medical schools in the USA and UK, UBSOM developed context-specific problem-based learning resources. One key obstacle to implementing a psychiatry clerkship was the fragmented mental health system: the main psychiatric hospital is located 75 km from UBSOM's main campus. External funding (MEPI) allowed introduction of several high-tech innovations to address these challenges. All students received tablet computers and Wi-Fi Internet access and teleconferencing equipment was installed to facilitate learning across campuses. The new department sought to develop a curriculum focused on integrating evidence-based knowledge and reality-based best practice, framing psychiatry training within an evolving paradigm of what is feasible and preferable in the context of a limited drug formulary and constrained human resources for mental health. Implicit to the mental health training had been an understanding that often highly effective therapy can be delivered with limited laboratory resources and first world drugs.

Outcomes & Evaluation: In the first three years, 2012–2015, the psychiatry clerkship has successfully trained 116 medical students. A nascent program of research, including pilot studies evaluating stigma and HIV psychopathology, and in partnership with US-based investigators, demonstrates the department's maturing ambitions. Leveraging the experience of partner-institutions and employing innovative learning solutions, UBSOM has made substantial progress in preparing a new generation of doctors to provide mental health care in Botswana. Next steps include developing a post-graduate psychiatry pathway and building mental health research capacity.

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How do international health electives impact medical students in their long term career paths?

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Program/Project Purpose: The New York University School of Medicine (NYUSOM) has been engaging medical students in global health across their years in medical school through its International Health Program (IHP) since 2002. All students in good academic standing are supported to participate in culturally

meaningful and socially relevant research in any location that meets US State Department safe travel advisories. Students can also participate in self-funded clinical rotations. The program aims to increase the cultural competency of medical graduates as they enter the workforce to serve an increasingly diverse patient population. Our assumption was that IHP participants would have increased cultural competency, increased engagement with underserved populations, and increased incorporation of global health in their career paths.

Structure/Method/Design: To understand the impact of this program we conducted a simple cross-sectional cohort study of graduates of the program from 2002 to 2012. Survey questions included demographic data as well as subjective impact of the IHP program on their residency and career choices.

Outcome & Evaluation: We received 49 responses out of 213 surveys distributed by email to past participants of the IHP. Analysis of the data showed that international experiences later in medical school, rather than earlier, had a higher impact on career plans (mean of 2.70 verses mean of 2.00). Moreover, electives with both research and clinical components positively impacted career plans. Clinical rotations appeared to have slightly more impact on cultural competency than research rotations (mean of 3.82 verses mean of 3.39). Students who had not studied abroad previously (n = 24) reported that IHP had a greater impact on cultural competence, commitment to global health, and commitment to caring for the under-served than those who had previously studied abroad (n = 24).

Going Forward: International health experiences for medical students appear to have a significant impact on career paths as well as improving cultural competency. These findings can potentially benefit human resources for health by increasing US graduates long-term engagement in global public health and for working with underserved populations. We feel there is also strong argument for supporting first time international experiences for medical students.

Funding: Office of Student Affairs at the NYU School of Medicine.

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Community Health Clubs for Water, Sanitation and Hygiene (WASH) improvement in Rural Burkina Faso

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Purpose: Only 6.7% of Burkina Faso's people have access to improved sanitation. Risk for food, vector or waterborne disease is high: diarrhea, malaria, and helminths remain preventable causes of mortality and poverty. In December 2014 we piloted Community Health Clubs for WASH behavior change in a village of 2000. The aims of this project are to: 1. Improve WASH-related knowledge and behaviors; 2. Prevent WASH-related diseases; 3. Create enduring community-based social structures with capacity to sustain health gains and nurture sustainable development.

Design: A knowledge and practices survey of 70 randomly selected family compounds was conducted before project implementation. Village leaders identified candidate facilitators from the community. We trained 19 facilitators in a picture-based WASH curriculum

starting with germ theory and progressing to hand washing, water safety, human waste management, and vector control. Facilitators recruited 9 health clubs with over 650 members. Nearly 100% of club members completed the 22-week program, documented by membership cards recording attendance and WASH practices. The household survey will be repeated in December 2015. This evaluation was approved by the UT Health Science Center Institutional Review Board (HSC20140088e).

Outcomes: Survey respondents were mostly female (57%), had not attended school (70%), and had a median age of 51. Most (67%) obtained drinking water from protected communal hand-pumps. Although 81% did not treat water, 10% of those drinking river water used crude filters. 83% did not own a latrine. Asked to identify 5 key opportunities for hand washing, 45% could provide no answer, while 2% provided ≥ 3 correct answers. Only 7% reported hand-washing after defecation. Appropriate tests will analyze knowledge; drinking water, defecation and hand washing behaviors; and diarrhea incidence after the intervention. Regressions will describe WASH knowledge and behavior predictors.

Going Forward: We demonstrate feasibility of implementing a low-cost, participatory education program with high retention rates to prevent WASH-related illnesses in rural Burkina Faso. This approach could also defend against other health threats in West Africa, including Ebola. Next year 2 villages will join the program and outcomes will be measured using household inventories (behavioral observation tool) and household registers monitoring morbidity and mortality. Club and non-Club villages will eventually be compared.

Funding: US Fulbright Scholar Award; Global Health Program of the Center for Medical Humanities & Ethics of the UT Health Science Center San Antonio.

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The Marshall Wolf Haiti Medical Education Fellowship: An innovative faculty development opportunity

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Program/Project Purpose: The purpose of the one-year Marshall Wolf Medical Education Fellowship is to develop promising Haitian physicians as effective leaders in medical education. This program aligns with EqualHealth's (EQ) vision of a Haitian medical education system that is high-quality, Haitian-led, and filled with opportunity. It also draws upon the resources of the Brigham and Women's Hospital (BWH), with its long record of innovation and leadership in medical education and global health.

Structure/Method/Design: In August 2015, two Haitian physicians were selected as EQ's inaugural fellows via a competitive

process. Their employing hospitals in Haiti agreed to their participation in a yearlong fellowship that includes a three-month, Boston-based curriculum, and guaranteed them the support necessary to implement new education programs upon return. The Boston-based curriculum includes: a weekly series of didactic sessions on the principles of effective teaching; participation in regular BWH and Harvard Medical School educational activities, such as teaching conference presentations and rounds with master educators; and assorted professional development opportunities at other Harvard institutions. For the remaining nine months, the fellows return to their Haitian teaching hospitals to serve as clinician educators, during which they co-teach courses taught by visiting teachers at their site and receive ongoing mentorship and leadership training from EQ staff.

Outcome & Evaluation: The Fellowship is being evaluated using pre/post testing, scoring of videotaped teaching sessions by blinded reviewers, self-assessment questionnaires, regular feedback interviews, and other modalities. Initial feedback from the fellows has been strongly positive overall, with teaching conferences, Harvard Business School classes, and observed teaching experiences receiving special mention. Among the challenges faced thus far have been the language barrier; the logistics of moving the fellows between multiple teaching sites; and the creation of sufficient opportunities for the fellows to practice teaching within the Boston curriculum.

Going Forward: The Fellowship is an innovative professional development opportunity for Haitian clinician educators, an intensive learning experience drawing on five Harvard institutions and involving close partnership with Haiti-based teaching hospitals. The Fellowship represents a new model of partnership for development of global medical education systems.

Funding: The Fellowship is funded via private donations to EQ.

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Towards a transportable, validated and culturally sensitive metric of work capacity for use in subsistence agricultural workforce health assessment in Democratic Republic of Congo

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Background: This project is associated with Gates Foundation's Grand-Challenges-Explorations Program "Labor Saving Strategies and Innovations for Women Smallholder Farmers". One element of the study used exercise tolerance step-tests to measure participants' aerobic capacity as a proxy metric for "work capacity" (to perform subsistence labor). The study populations were located Democratic Republic of Congo.

Methods: The step-test is an attractive method for measuring work capacity because remoteness of study locations dictated minimal equipment requirements. Harvard and Queens College (QC) step tests were considered because each is calibrated to VO₂max, yielding a physiological metric of cardio-vascular fitness. Each is, however, oriented towards subjects of substantive athletic capability. When QC step-test was administered at site Idjwi, a non-trivial