

attitude, and practices at a District Hospital in Shirati, Tanzania. Medical students from Touro University—California were trained as instructors for HBB curriculum. During phase 1, students designed pre- and post-surveys to measure whether the training sessions could improve knowledge and attitudes about HBB interventions. Pre-surveys were administered just prior to the training sessions, and post surveys were administered at the end of the training sessions. Participants included hospital labor & delivery staff. A total of 112 sets of surveys were completed during 4 training sessions. In addition, baseline data of birth outcomes were collected from delivery log books. Phase 2 of data collection will take place June 2015, and the new data will determine whether trainings effectively improved practices. Additional trainings will also be conducted at this time.

Outcomes & Evaluation: Results indicate that the trainings were effective, and scores reflecting knowledge and attitudes were improved in the post-surveys. Practices will be evaluated during phase 2.

Going Forward: The goal of this study was to determine if the training of District Hospital's labor and delivery staff improves knowledge and attitudes. Results show that HBB can be implemented effectively in this setting. An ongoing challenge for this program includes language barriers. Although staff could speak English, comprehension levels varied, and some participants had difficulty understanding both the presentation and the survey questions. In future trainings, surveys should be re-written using basic sentence structure, and word choice should be considered.

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Abstract #: 01ETC032

The global alliance on health and pollution: An innovative approach to mitigating the impacts of toxic pollution on human health

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Program/Project Purpose: Data from the World Health Organization and Blacksmith Institute's Toxic Sites Identification Program indicate that pollution from contaminated air (indoor and outdoor), water and soil is the largest cause of death in the world, with nearly 9 million deaths in 2012. The overwhelming majority—94%—of the burden of disease from pollution falls on low- and middle-income countries, the countries least equipped to deal with the problem. Recently more than 30 country governments, donor agencies, and international organizations have joined the new Global Alliance for Health and Pollution (GAHP) to assist low- and middle-income countries clean up toxic sites, prevent re-contamination and guard against future pollution.

Structure/Method/Design: GAHP members are creating a unified front to tackle the various pollution challenges that countries face, starting with putting toxic pollution on the international agenda. Since its inception in 2012, GAHP has had significant impact. Data collection in 40 countries, research, and awareness raising efforts have resulted in the inclusion of toxic pollution in the draft post-2015 Sustainable Development Goals. Several countries have requested support from GAHP, and are embarking on strategic planning processes to tackle pollution nationally. Successful GAHP pilot projects, often using South-South cooperation, have improved local capacity to take action, and resulted in measurable improvements to the health of local communities. Several new technical tools, guidance documents and successful case studies on a variety of different pollution issues are freely accessible to government agencies. GAHP's developing

country members are sharing their experiences and shaping GAHP's strategy and activities.

Outcomes & Evaluation: However, bringing so many groups together has highlighted the enormous challenges to mitigating pollution on a global scale. There is a general lack of awareness of the health impacts of pollution. This is compounded by misconceptions about the main sources of pollution, cost of clean up, and the idea that pollution is an inevitable cost of economic development. The environmental agenda has become fragmented, with pollution challenges separated into issues such as outdoor air pollution, chemicals and food safety. This has kept pollution as a whole from being prioritized in the development agenda, and as a result there is insufficient technical, financial and human resources to address the issue.

Going Forward: The ultimate objective is to assist countries in identifying and managing all pollution streams with the goal of improving public health. A 5-year strategy will help bring attention and resources to this issue including research on the cost of inaction and elucidating the environmental burden of disease. The campaign will help spur countries to request assistance from the international community, as well as convince donors to invest in pollution mitigation.

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Assessing partnership linkages for health workforce and research capacity building in Kenya; Lessons learned

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Program/Project Purpose: Strategic partnerships across key stakeholders are critical to effectively roll out large scale health system interventions. Leveraging existing networks to develop stronger connections between partners can lead to more effective programs. The Medical Education Partnership Initiative (MEPI) focuses on supporting North-South collaborations to improve the quality and quantity of healthcare worker training, increase retention of health care worker, and support locally relevant research in Sub-Saharan Africa since 2010. The University of Nairobi (UoN) Partnerships for Innovative Medical Education Kenya (PRIME-K) program started with two international partners, the University of Maryland-Baltimore and the University of Washington. These two international partners supported program implementation by building institutional capacity through benchmarks for decentralized training, introducing e-learning platforms, improving research administration, support and mentorship, enhancing monitoring and evaluation, increasing innovative training and strengthening libraries. PRIME-K also had strong in-country partnerships with the Ministries of Health and Higher Education that were critical for the initial implementation of decentralized training and research in health facilities across Kenya.

Structure/Method/Design: In years four and five of PRIME-K, the Monitoring and Evaluation team developed a network map from these initial partnerships and, using snowball sampling method, conducted key informant interviews and qualitative analysis of strategic partnership documents. This approach allowed the M&E team to evaluate all of the significant linkages that have been formed since the beginning of PRIME-K and assess their impact.

Outcomes & Evaluation: Over 30 linkages have been developed between partnering stakeholders. With the infusion of resources, PRIME-K created 16 new direct partnerships to UoN. UoN's involvement in MEPI led to over 20 cross collaborations with 11 other universities in Sub-Saharan Africa, 3 Kenyan universities, 5 government entities in health and education, 6 independent

organizations and several new grants and awards. Each of these linkages have contributed to improving and increasing training, and locally relevant research. Drawing on PRIME-K's experience, there are four key lessons from these MEPI-enabled partnerships: establishing strong foundations can lead to new collaborations; infusing existing partnerships with resources enables innovative and sustainable solutions to long term problems; connecting new partners with different strengths can expand their scope of impact; and providing opportunities to search for local solutions within Kenya and Sub-Saharan Africa strengthens South-South collaborations.

Going Forward: Partnerships have been integral to meeting the goals of MEPI in Kenya by enhancing quality of trainings and expanding medical education and research opportunities. The lessons learned from PRIME-K's partnerships are important to future large scale collaborative interventions addressing health system needs in low resource settings.

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Palliative care education and training workshop for caregivers of patients with cancer in Ghana

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Program/Project Purpose: In Ghana, where there are no hospices, few nursing homes and hospitals are filled to capacity, family caregivers are the linchpin of chronic care delivery, yet despite this responsibility, they receive minimal training and support. This 8-week study assessed the needs of caregivers of cancer patients and provided training in an identified area of need to equip the caregivers for their role.

Structure/Method/Design: Needs assessment questionnaires were administered to 60 caregivers accompanying their patients at the Radiotherapy Department of the Korle Bu Teaching Hospital in Accra to assess barriers to caregiving. To be eligible for the study, the participant had to self-identify as a caregiver for a patient with cancer. The caregivers identified many areas of difficulty [e.g. Dealing with Patient Pain (62%); Personal Emotional Support (62%)], however the training module created focused only on Patient Signs and Symptoms to Manage since 88% and 85% of caregivers reported having no or little knowledge of treatment side effects and symptoms to watch for respectively. 26 caregivers were enrolled in the training session, conducted during the patient's treatment appointment. A pre-training, immediate post-training and two-week post-training assessment were conducted.

Outcomes & Evaluation: Training improved knowledge, retained at 2 weeks after training. A Friedman Test and Post hoc analysis with Wilcoxon signed-rank tests were conducted with a Bonferroni correction applied, resulting in a significance level of $p < 0.017$. Median (IQR) score for the pre-training assessment, immediate post-training assessment and 2-week post-training assessment were 5 (4 to 6.75), 10 (9 to 10.75) and 10 (9.25 to 10.75), respectively. The maximum possible score was 11. There was a statistically significant difference between the pre-training assessment score and the immediate post-training assessment score ($Z = -4.274$, $p = .000$) as well as between the pre-training assessment score and the 2-week post-training assessment score ($Z = -4.035$, $p = .000$). 100% of caregivers reported the training to be very useful. Family caregivers are willing to participate in training; gain and retain new knowledge; rate utility very high.

Going Forward: 43% of caregivers would prefer not to attend training at the expense of leaving the patient alone during their appointment. Transportation cost must be covered to ensure caregiver attendance on a separate occasion. Impact of training on patient outcome should be measured in future studies. Results from the needs assessment may be used to formulate ways to alleviate the burden on caregivers. Other modules may be designed to address perceived knowledge gaps. Currently, a palliative care team at Mount Sinai is working to partner with an organization in Accra to further training.

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Master of family medicine distance learning program in Laos

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Program/Project Purpose: In 2006 the Laos Ministry of Health and University of Health Sciences [UHS] partnered with Boston University Global Health Collaborative to design and implement a model of primary care retraining with the goal of enhancing the quality of generalist physicians in disadvantaged communities in Laos.

Structure/Method/Design: In March 2010, we implemented the Master in Family Medicine training program at the Luang Prabang Provincial Hospital (LPPH). The first cohort was comprised of five physicians who were working in remote district hospitals surrounding LPPH. In this distance training model, physicians followed a cycle of training in LPPH for three months, and then returned to work in their district for three months with cycles repeated for three years.

Outcomes & Evaluation: We sought to assess the program and areas for improvement. Quantitative data was obtained through self-assessment questionnaires administered to the trainees and to non-trained physicians' peers. 360-degree evaluations were administered to medical colleagues, supervisors, and patients. A one-tailed T test was used for statistical comparison between the trained and untrained physicians. Descriptive statistics were used to analyze 360-degree evaluation data. Analysis of questionnaires shows significantly higher self-assessment scores of trained physicians in the treatment of 19 common illnesses. Importantly, trainee's scores were significantly higher for normal, assisted and operative vaginal delivery. The 360-degree evaluation supports these findings, showing > 80% of evaluators 'completely agree' with the following statements: trainees are able to care for more types of diseases since training, are better at caring for common diseases, are more appropriate in prescribing antibiotics, and are more appropriate in prescribing other medications. Qualitative interviews were conducted with trainees, instructors at LPPH and UHS key stakeholders and analyzed using nVIVO software, further confirming the findings of the quantitative data. Grounded theory analysis revealed a number of important themes that identified changes in practice such as enhanced computer skills and clinical skills, especially in maternal-child health. Qualitative analysis also revealed specific facilitators to the program, such as the distance model, emphasis on self-directed learning and practical skills including community and public health. Qualitative analysis also identified a powerful model of spread, where trainees actively sought to disseminate their learned knowledge and skills to a variety of local