Outcomes & Evaluation: Knowledge of Rb genetics significantly increased post-workshop (ANOVA, Tukey post-hoc, $p < 0.05$). The greatest increase in score was found in questions related to recent discoveries in Rb genetics. Post-workshop feedback surveys were generally positive, with participants indicating that they found the lecture material useful and relevant to their practices, and role-play an informative experience. Knowledge of Rb genetics one year post-workshop was not significantly different from the pre- or post-workshop results (ANOVA, $p > 0.05$), suggesting that knowledge retention of Rb genetics requires more frequent reinforcement.
Going Forward: Future research will include further analysis of the one-year knowledge retention test to pinpoint what aspects of Rb genetics are not being retained in the target population. This information will be used to refine the content of the Rb genetics workshop. More frequent implementation of the Rb genetics workshop, for example at each annual KNRbS meeting, will be considered.
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Improving nursing and midwifery clinical education by developing local faculty mentoring capacity in Malawi

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Program/Project Purpose: Nurse Midwife Technicians (NMTs) play a critical role in Malawi's health workforce, particularly in the staffing of rural health facilities. In 2010, I-TECH conducted a needs assessment of Christian Health Association of Malawi (CHAM) colleges that train NMTs. A key finding was that NMT clinical instruction suffered due to inadequate supervision and support, and deficiencies in faculty clinical teaching abilities. In an attempt to address these gaps, I-TECH, in 2011, established a faculty mentoring program to strengthen faculty clinical teaching skills and address system issues that hinder the delivery of effective clinical teaching.
Structure/Method/Design: The program goal is to facilitate an environment for improved clinical teaching at CHAM colleges. Over three years, the program has evolved from relying on expatriate mentors to exclusively using faculty based at each college. Local mentors were selected through nominations from college administrations; records from previous mentoring rounds were referenced during selection. Mentors work side-by-side with tutors, clinical instructors, and staff at practicum sites to help address gaps in clinical teaching skills. Mentors documented progress through use of tools developed to assess mentee progress, administrative buy-in, and systemic challenges. In 2014, joint supportive supervision visits, facilitated by Ministry of Health, CHAM, Nurses and Midwives Council of Malawi, I-TECH, and technical expert representatives, were introduced to improve overall quality.
Outcomes & Evaluation: Initial analysis showed that systems and resource limitations have been significant barriers to successful programmatic uptake. Ongoing limitations include mentor attrition due to faculty transfers, resignations, and mentors' desire to work with projects that offer better remuneration. Additionally, mentors are challenged by lack of support from college administrators and balancing mentoring responsibilities with current workloads. Programmatic successes have been mixed. Some college administrators showed exceptional support, including by allocating college funds to the program. Three colleges have an active mentoring program, with 10 trained mentors and 22 mentees; the remaining five have 18 mentors, but have not yet commenced implementation. The pilot evaluation showed that both mentees and mentors stated the program was helpful, but requested more frequent support from mentors and the supervisory team, respectively.
Going Forward: Ongoing interventions are required to increase the potential for success and long-term sustainability. Additional hands-on support to mentors and college administrators will be provided during quarterly joint supportive supervision visits, check-ins that focus on addressing issues identified during visits, and more frequent contact by email and phone. I-TECH will additionally train more mentors to address faculty mentor attrition across CHAM's network.
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Teach the teacher: Faculty development in Haiti

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Program/Project Purpose: A current priority of the Haitian medical establishment is to increase human resources for health via expanded medical and nursing training programs. Needs assessments have demonstrated a shortage of faculty with experience in program supervision and education. The Teach the Teacher (T3) program is a joint project between the University of Mirebalais Hospital (UMH) and the NGO Physicians for Haiti aimed at providing faculty development opportunities for medical and nursing faculty at UMH, and through this improving the quality of education for resident physician and nurses at the institution.
Structure/Method/Design: The T3 program combines small group teaching on topics in adult education and faculty development with direct observation of participants while they provide education to their trainees. To date, participants have been any UHM faculty (medical or nursing) who were free to participate within periodic week-long training sessions — we have had 5 such sessions over the first year (from September 2013 through September 2014) with an average of 16.75 participants per session. Long-term, the hope is that UHM faculty with particular interest in medical education will take on the role of running the T3 program, shifting non-Haitian roles to supportive ones. We also aim to scale up the program should it prove successful, rolling it out to other Haitian residency and nursing training locations in turn.
Outcomes & Evaluation: We have monitoring and evaluation data from the initial 5 sessions that demonstrate favorable short-term outcomes via anonymous pre/post knowledge testing and participant feedback forms. For those lectures with pre/post quizzes, 5 out of 6 topics demonstrated improvements in knowledge after teaching. Feedback from participants has also been consistently positive, with a broad consensus that these sessions are pertinent and important to their work in education.
Going Forward: The biggest challenge for the T3 program is ensuring value, both directly for the faculty participants, and on a programmatic level by showing that our efforts are leading to actual change in participant abilities. Our monitoring to date has been on an anonymous, program-level basis — this precludes long-term evaluation of participants. Our next

step in the program's evolution will therefore be to have targeted UHM faculty join the program and to track their progress, following both what educational sessions they attend as well as how their performance on a range of educational activities changes over time. This will provide us with discrete data allowing for improved program evaluation and refinement. Other challenges include increasing the interactivity of educational sessions — modeling what we teach — and better bridging the language gap between teachers and participants.

Funding: There is no specific funding for this project.

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Reciprocal learning: Learning from global health programs to improve domestic health outcomes and global health pedagogy

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Program/Project Purpose: Despite national success of the CDC's Breast & Cervical Cancer Early Detection program, only one third of Texas counties housed BCCS providers in 2010, and less than 1% of eligible women received mammograms through this federal-state initiative. Thus, North Texas reports suboptimal mammography rates, especially among rural communities. Drawing from international health programs in lower-capacity rural areas, we developed a decentralized regional delivery model that addresses barriers to breast cancer screening and patient navigation in rural Texas. The program has also created pedagogical opportunities for undergraduates to conduct real-world comparative health systems analysis.

Structure/Method/Design: Using international health literature and other sources, we developed a county-specific Readiness Assessment Tool that determined county capacity for completing Breast Cancer outreach and navigation processes. To facilitate clinical navigation, we implemented a computer-based application documenting clinical patient flow across the breast screening continuum in counties. Among 74,000 screen eligible, low-income women in 17 rural, underserved counties, we have, to date, screened and navigated over 14,500. Approximately 80% of symptomatic and 90% of asymptomatic patients reported incomes < 200% FPL. Over 86% of asymptomatic and 96% of symptomatic women lacked insurance. 48% of patients self-identified as Hispanic. Using Glasgow's RE-AIM model, we are 1) assessing county capacity to implement program components and 2) monitoring county process and outcome measures, providing appropriate booster trainings. We will also interview program staff and work with undergraduates to design curriculum comparing rural delivery models in high-, medium, and low-income settings.

Outcomes & Evaluation: Early data indicates the program effectively links vulnerable women to care. No-show rates for screening mammograms was 6%. Clinical resolution time averaged 19 days; 21 days for symptomatic women (BCCS standard = 60 days). As of August 2014, the program had diagnosed 283 cancers, diagnosing ~80% of these early stage (Texas average = 60%). However, heterogeneity in rural infrastructure and breast cancer screening capacity — e.g. number of mammography units; provider distance — hamper consistent expansion of decentralized navigation and delivery programs.

Going Forward: Significant barriers to implementing 'comprehensive' national or international programs may require supplemental programmatic or infrastructural support to succeed. States and donors must create reimbursement mechanisms that include screening services to offset funding gaps, local provider liquidity, and capacity constraints. Results to date suggest adapting appropriate international delivery models domestically can maintain/improve key quality markers among vulnerable populations. Preliminary qualitative findings suggest significant pedagogical opportunity inherent in including students in the implementation and evaluation of such programs. With undergraduate education increasingly engaging in experiential learning that explores connections between local and global, this project's design offers students a unique environment in which to conduct comparative health systems analysis. Increasingly globalized health systems and workforces demand such comparative global learning experiences.

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Global health preparation and reentry modules: An innovative, interactive, online, open-access, modular curriculum for global health rotations and projects

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Program/Project Purpose: A study published in 2013 showed that 55% of Emergency Medicine (EM) residency programs were involved in global health projects, the majority being resident electives (68%). A cross-institutional survey reported that 86% of EM residents voiced interest in participating in a global health rotation and that the majority of residents ranked EM programs with global health rotations higher than those without them. These findings are mirrored in other specialties as well. Global health rotations place trainees in high risk situations with regard to ethics, cultural sensitivity, and personal safety. It is important that academic institutions provide proper guidance and education to prepare trainees for safe and effective global health rotations. Many sources such as the CDC Global Health website and the book International EM: A Guide for Clinicians in Resource-Limited Settings (EMRA 2013) provide information about global health rotations, however none of these resources provides a timeline-based schedule for preparation. In addition, none of these resources provides an online interactive environment for participation, or an evaluation tool that residency program directors and medical school deans can track electronically.

Structure/Method/Design: We are creating a series of interactive modules that will prepare learners including medical students, resident physicians, and fellows to safely and effectively participate in global health rotations and projects. This series of timeline-based and interactive preparatory modules spans early preparation to readjustment on return. The curriculum will be a resource that all academic institutions can utilize; additionally the curriculum will be open-access, permitting faculty, other international practitioners, and the general public to use them as well. To our knowledge, the timeline-based and interactive structure of these modules makes them the first of their kind. The modules have been written by a team of global health experts including faculty and fellows, with contribution from residents and medical students. Upon finalization of the site design, American College of Emergency Physicians (ACEP) Information Technology will implement the design and hosting using the ACEP electronic Continuing Medical Education (eCME) system.