

**Program/Project Purpose:** University of Florida (UF) students began conducting annual one-week medical outreach trips abroad in 1998, with up to two-thirds of UF College of Medicine (COM) students participating in a trip. Though a Local/Global Health Equity Track and student-initiated clinical and research electives exist, the COM global health (GH) program lacks an overarching curriculum. To expand the focus of student GH engagement, a working group composed of students and faculty collaborated to create a new, comprehensive GH program based on long-term partnerships.

**Structure/Method/Design:** Engaging students in development of new curriculum seeks to ease the transition from longstanding brigade trips to a more responsible and sustainable GH education program. Senior medical students previously participating in GH outreach trips and affiliated faculty conducted a SWOT analysis of current programming and resources. An initial group of four students and one faculty member expanded to approximately 20 stakeholders, which met three times to complete the analysis. Priorities and immediate action items were identified for students to address with faculty support.

**Outcome & Evaluation:** Five priorities were identified—To establish: 1) a Planning Group composed of students, faculty, and administration to engage current stakeholders; 2) an inventory of potential partners on the UF undergraduate campus; 3) an inventory of potential partners outside UF potentially supporting a larger-scale program; 4) a finance group supporting programs; and 5) a curriculum track addressing an interdisciplinary GH program's needs. The desired outcome is to shift the focus from the current unsustainable short-term trips to more culturally competent and longer-term projects for interested students. A Planning Group is established and immediate action items have been developed for each of the other four priorities.

**Going Forward:** UF COM has a rich tradition of student-initiated service engagement. Fostering such enthusiasm to better meet UF principles of engagement requires a transition to improving organization and support for a more unified, sustainable GH program. Involving interested students in program design encourages participation and acceptance for improved offerings while best serving the needs of local partners.

**Funding:** UF Division of Infectious Diseases and Global Medicine, Office of Global Medical Education Programs, and student fundraising.

**Abstract #:** 1.014\_NEP

### **Application of medical student research objectives in an international medical elective: voluntary medical male circumcision in Swaziland**

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**Background:** Educational objectives for medical student international electives are essential. Learning research methodology and

engaging in research projects focus students during their travels and reinforce curriculum goals. Our project focuses on the use of an international database by medical students to produce clinically significant findings impacting international health policy. We examined the adverse event rate in voluntary medical male circumcision, a procedure demonstrated to reduce HIV transmission by over 60%. Voluntary medical male circumcision is nearly 40 times more cost-effective than antiretroviral medications. Academic research during student international electives augments career value of rotations for students.

**Methods:** The Luke Commission provides mobile health outreach to rural Swaziland, including HIV testing and prevention. They perform more than 100 voluntary medical male circumcisions each week. The Luke Commission maintains a database demonstrating program productivity and effectiveness. Information collected from 1500 Swazi males during the first six months of 2014 was de-identified and analyzed after approval by the Wright State University School of Medicine IRB.

**Findings:** During this time period, 34 adverse events—including bleeding, infection, and wound dehiscence—occurred in 31/1500 patients. The overall adverse event rate for the procedure was 2.3%. Boys <12 years old had adverse events in 22/1022 circumcisions (2.2%) and patients ≥13 incurred 11/478 (2.3%; p=0.66). Patients ≤29 kg body weight had 19/662 (2.9%) and patients ≥30 kg had 13/838 (1.6%; p=0.40). There were no adverse events reported in 75 HIV-positive patients. There were more wound dehiscesces during the summer months, 10/333 (3.0%) versus 10/630 (1.6%) in fall and 0/517 (0%; p=0.001) in winter.

**Interpretation:** Aid organization databases provide a source of information that can be readily accessed by medical students for research during international medical electives. The relationship between aid organizations, medical students, and patient populations is a collectively beneficial one. Global health research has many complexities, but through careful planning and cultural awareness, medical students can contribute by publishing research that brings attention to global health issues and improves policies while having a significant positive effect on their own educational experience.

**Funding:** None.

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### **Perceptions and adherence to the World Health Organization surgical safety checklist in Cuenca, Ecuador 1 Year post-educational intervention**

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**Background:** Surgical safety is an emerging global health priority. The World Health Organization's Surgical Safety Checklist has been shown to be effective in reducing adverse surgical outcomes in this context. A 2014 study of Canadian hospitals failed to replicate these findings; authors' commentary attributed the results to poor Checklist adherence amongst hospital staff. In 2014, our group investigated Checklist implementation at 2 hospitals in Cuenca, Ecuador that had recently integrated the Checklist into surgical workflow. Surgical observations and questionnaires to hospital staff

revealed suboptimal adherence. Investigators developed a multi-tiered intervention program that included pamphlets, lecturers, and posters of the Checklist for the OR; the impact of these interventions on adherence has not been described. We hypothesized: 1) Interventions will improve Checklist adherence; and 2) Adherence is associated with positive perceptions about the Checklist and use of the Educational Interventions.

**Methods:** Between 06/2014 and 08/2014, a serial cross sectional study design was implemented at two hospitals. Surgical observations measured verbal confirmation of the WHO Checklist's 19 steps by the appropriate surgical staff in their prescribed order ("pre-anesthesia", "pre-incision", "pre-exit from the OR"). Questionnaires were administered to surgeons, anesthesiologists, and nurses. Questionnaires assessed perceptions of the Checklist, interventions, and surgical safety. Responses were compared among surgical staff position and hospital site using ANOVA, T-test, and Chi-squared analyses.

**Findings:** 45 surgeries were observed. Adherence to "pre-incision" Checklist items decreased significantly from 2014 to 2015 ( $P = 0.026$ ). The questionnaire response rate was 93%, with a total of 91 questionnaires administered. On a 1–10 scale, the mean rating of Checklist effectiveness was high, at 9.01 ( $SD = 1.54$ ). There was no association between adherence and Checklist perceptions or educational intervention use. Perceived unavailability of hard copies of the Checklist, lack of time and motivation to complete the Checklist were frequently identified barriers to adherence.

**Interpretations:** While educational interventions are still widely used amongst surgical staff, introducing these interventions did not result in better adherence. In this population, future training programs that prioritize making the Checklist widely accessible may improve adherence and surgical team communication.

**Funding:** University of Pittsburgh Dean's Summer Research Program.

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### Health outcomes of low birth weight infants following implementation of a community-based health surveillance intervention: an interim analysis.

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**Program/Project Purpose:** Low birth weight (LBW) < 2500g affects 8 million children annually and is reported in 43% of births in Gujarat, India. LBW infants are at high risk of poor growth and cognitive development, suffer from chronic diseases, and experience 20-fold higher mortality. This study aimed to determine the impact of a community-based participatory health surveillance intervention on growth outcomes and survival of LBW children in rural Gujarat.

**Structure/Method/Design:** This prospective cohort study took place at Mota Fofalia Pediatric Center (MFPC) in Gujarat, India. 1) A pre-intervention assessment of growth status was done in LBW infants born between 06/2012–04/2014. 2) In 06/2014, a health surveillance intervention was implemented for all LBW infants born at MFPC. Trained community health workers

performed pre-discharge counseling and post-discharge follow-up household visits with a standardized health assessment checklist and anthropometric measurements based on WHO recommended schedules. Children were referred to MFPC for clinical or nutritional danger signs. Outcomes included growth change and mortality in LBW children over time.

### Outcome & Evaluation:

- 1) 113 LBW children were included for pre-intervention assessment: 56% female, mean birth weight 2170g (600g–2450g), median age at follow-up 18 mo (1–28 mo) and mortality of 8 (16%). Among 95 live children, 63/95 (66%) were moderately malnourished and 28/95 (29%) were severely malnourished with weight-for-age z-scores of less than -2 SD and -3 SD, respectively (-5.59 to 0.91).
- 2) 433 LBW children were discharged from MFPC: 56% female and mean birth weight 2180g (660–2500g). Three children had incomplete birth data and 135 patients were lost to follow up. The median age at follow up was 24 days (range 2–399 days) with mortality of 9 (3%),  $p < 0.05$ . Among those who were successfully followed up, 115/286 (40%) of children were moderately malnourished and 58/286 (20%) were severely malnourished (-7.2 to 2.14).

**Going Forward:** This interim analysis showed that implementation of a structured discharge procedure combined with a community-based health surveillance intervention designed for trained community health workers was associated with improved growth outcomes and survival in LBW infants. Further evaluation of appropriate referral methods and health outcomes is needed.

**Funding:** University of Utah – Shakti Krupa Charitable Trust partnership program (9).

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### Salt Reduction Strategy for Tobago (SRS-TAB) "Salt Smart Tobago"

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**Background:** Hypertension is a leading cause of morbidity and mortality worldwide and in CARICOM (Caribbean Community and Common Market) countries. This field experience will provide a multi-disciplinary team of students with an opportunity to work in collaboration with officials from a local health authority in the island of Tobago to initiate a dietary salt consumption reduction program. The field experience will comprise of two primary components: (1) an education component involving patient health promotion and education and working with local food establishments and other stakeholders to educate about and promote low salt food options, and (2) a data collection component to assess hypertension awareness. This summer field experience will be a pilot project of a larger endeavor by health officials in Tobago to reduce dietary salt consumption in Tobago to less than 5g per day per person by 2020, as recommended by the Pan American Health Organization (PAHO).