

### Cardiovascular risk profile of HIV patients accessing routine care at a teaching hospital in Ghana

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**Background:** Life expectancy of HIV infected patients has dramatically improved with HAART. Cardiovascular disease is emerging as a major cause of morbidity and mortality. Timely management of CVD risk factors should be the standard of care. We sought to determine the CVD risk profile of HIV patients attending HIV clinic at the Medical Unit of the Komfo Anokye Teaching Hospital (KATH).

**Methods:** In this cross sectional study 345 HIV infected patients aged 16 years and above who presented for routine HIV clinic visit at the Medical Unit of KATH and 161 healthy HIV negative individuals who consented were recruited. Data was collected using a questionnaire; electrocardiography, anthropometric and blood pressure measurements were conducted under standard conditions. Blood samples were obtained for the determination of plasma glucose, CD4 and lipid levels. Data analysis was performed using STATA version 11.

**Findings:** A total of 345 HIV patients were enrolled into the study with 249 (72%) as females. This comprised 172 HIV treatment-naïve patients (113 females; mean age 40.9 ± 10.6 years) and 173 HIV treatment-experienced patients (136 females; mean age 41.7 ± 9.6 years, range). The prevalence of diabetes and hypercholesterolemia was significantly higher among HIV positive patients than HIV negative participants (5% v 0.6%,  $p=0.047$  and 29% v 15.4%,  $p=0.002$  respectively). Low HDL-C was the most common CVD risk among HIV positive patients although it was significantly higher in the HIV negative group compared to HIV positive patients (66.7% v 53.2%,  $p=0.007$ ). HIV-1 was the commonest sub-type.

**Interpretation:** Hypertension, diabetes mellitus, dyslipidemia and abdominal obesity are prevalent amongst Ghanaian HIV positive patients accessing HIV care. They ranged from as low as 2% smoking prevalence and as high as 53.2% low HDL-C. There was a strong association between HIV infection and the prevalence of diabetes mellitus. Most patients had a low risk of a major CVD event in the next 10 years based on the low Framingham Risk Score (FRS) and there was no association between CVD risk factors and the HIV subtypes. Common ECG abnormalities included bi-atrial enlargement, low voltages and bundle branch blocks.

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### Maternal barriers and facilitators to implementing recommended nutrition practices in two urban communities in Mumbai, India: a qualitative study

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**Background:** Childhood malnutrition has been a longstanding crisis in Mumbai, India where despite rigorous governmental and non-profit efforts, chronic malnutrition and underweight rates for children under five are 47% and 36% respectively. Several studies suggest that maternal caregiving practices directly impact a child's growth during the first two years of life. In 2004, India adopted and implemented the IYCF (Infant and Young Child Feeding) guidelines to improve child nutrition, yet across India, there is poor adherence to IYCF recommended practices. This study is an in depth qualitative assessment of maternal barriers and facilitators to implementing recommended nutrition practices in two Mumbai slum sites, within the context of an existing IYCF-based education intervention by the Foundation for Mother and Child Health, India.

**Methods:** The population was purposively sampled to represent varying household demographics including maternal age, maternal education, average family income, average family size, and number of children. The data were collected through 33 in depth qualitative interviews with mothers (27) or paternal grandmothers (6) of children aged 0-2 years, and 12 ethnographic observations: (6 participant observations in health clinics and 6 in-home observations of child feeding practices). Transcripts were translated and transcribed, and analyzed along with typed field notes using qualitative analysis procedures and NVivo software.

**Results and Conclusion:** A complex interaction of barriers and facilitators produces specific behaviors of mothers, which could better inform existing education-based interventions. Key barriers to implementing recommended nutrition practices included: poor hospital and/or family support when caring for an infant, low maternal self efficacy when seeking advice or making decisions, conflicting information from many sources, and lack of knowledge, experience or agency in performing certain actions. Specific facilitators enabling implementation of recommendations were: maternal desire for a healthy and intelligent child, family and organizational support, positive infant response in complementary feeding, mother's self-efficacy in caring for her child's nutritional requirement and overall health, and family support.

**Interpretation:** Overall, child nutrition interventions need to provide more family oriented education, improve alignment with existing healthcare infrastructures, and focus on maternal empowerment and support.

**Funding:** Fulbright-Nehru Fellowship, US Department of State.

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### Building sustainable programs from brigades: development and implementation of a student-led global health program at the University of Florida

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**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.

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### **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.

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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