

objective of this study is to improve hand hygiene compliance among doctors and nurses in a rural hospital in Rwanda using the World Health Organization's (WHO) "Five Moments for Hand Hygiene" and modified hand hygiene educational tools.

**Methods:** The study was a cross-sectional, quasi-experimental design divided into four phases: (1) Preparedness and hospital administration onboarding, (2) baseline evaluation, (3) intervention, and (4) follow-up evaluation. The intervention involved education, introduction of alcohol-based hand rub, and hand hygiene reminders. Hand hygiene evaluations were done using WHO's direct observation technique.

**Results:** Overall, hand hygiene compliance improved from 34.1% at baseline to 68.9% post intervention ( $p < 0.001$ ). There was one sink for 29 patient rooms, and 100% of hand hygiene opportunities used alcohol-based hand rub. Hand hygiene was significantly higher among doctors (69.3%) compared to nurses (31.3%) ( $p < 0.001$ ). The only measure of hand hygiene compliance that did not improve was "after body fluid exposure," which as 51.7% before intervention and 52.8% after intervention ( $p > 0.05$ ).

**Conclusion:** Hand hygiene campaigns using WHO methods in sub-Saharan Africa have almost exclusively been implemented in large, referral hospitals. This study shows that slightly modified WHO tools for improving hand hygiene can also be successfully executed in low-income, rural hospitals in sub-Saharan Africa.

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### Lessons learned in alumni networking with the Afya Bora Consortium

*R. Cherutich<sup>1</sup>, K.N. Hosey<sup>2</sup>; <sup>1</sup>Kenyatta National Hospital, Nairobi, Kenya, <sup>2</sup>University of Washington School of Nursing, Seattle, WA, USA*

**Program/Project Purpose:** The Afya Bora Consortium in Global Health Leadership is a highly successful health professional training program now in its 5<sup>th</sup> year with over 80 alumni spanning 5 countries. Yet, mechanisms for alumni communication and collaboration are still being explored. To address this, the Afya Bora Consortium offered alumni funding opportunities to come up with innovative strategies to engage, communicate with and promote each other to ensure continued investment, interest and support from alumni. This project aimed at developing alumni networking opportunities and continued professional development at the annual Afya Bora meeting.

**Structure/Method/Design:** This project assessed through surveys the perceived benefit of adding additional networking opportunities and varied learning styles to the annual Afya Bora meeting, including the addition of a professional poster session. Descriptive statistics and qualitative research methods were utilized based on the Plan, Do, Study, Act (PDSA) model. The study population were those in attendance at the annual Afya Bora meeting in Gaborone, Botswana in July 2015, including new and outgoing fellows, alumni, working group members, site mentors and global health leaders.

**Outcome and Evaluation:** Those in attendance at the Afya Bora annual meeting were satisfied with the posters of the alumni, working group and site mentors and they responded to surveys that the meeting increased their knowledge of the Afya Bora Consortium and the work the alumni and fellows were completing (89.3%). The delegates who attended the poster sessions also thought that it was a useful way to network (80.4%). Overall, the delegates completely agreed that including a poster session was a valuable addition to this final meeting.

**Going Forward:** Annual meetings for the Afya Bora Consortium could include poster sessions based on the satisfaction of attendees, and future programs should also include more networking opportunities so that fellows, alumni and leaders in the region will have the opportunity to share and engage in south-south collaboration even after the fellowship is completed.

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### Establishment of the GeneXpert Laboratory in Imo State, Nigeria

*M. Mukiibi<sup>1</sup>, I.A. Olajide<sup>1</sup>, I.O. Okoyeocha<sup>1</sup>, A. Mpamugo<sup>1</sup>, E.A.C. Onu<sup>1</sup>, A. Peters<sup>1</sup>, F.C. Anolue<sup>2</sup>, A. Olutola<sup>1</sup>, A. Nwandu<sup>3</sup>; <sup>1</sup>Centre for Clinical Care & Clinical Research Nigeria, <sup>2</sup>Imo State University Teaching Hospital Nigeria, <sup>3</sup>University of Maryland School of Medicine-Institute of Human Virology Baltimore, MD, USA*

**Program/Project Purpose:** In 2014, the Centre for Clinical Care and Clinical Research (CCCRN), through the Centres for Disease Control (CDC) set-up a diagnostic centre for MTB/RIF assays in one of its supported sites, the Imo State University Teaching Hospital (IMSUTH). The goal was to ensure a fast and accurate diagnosis of MTB and ultimately, its treatment and control. The centre was established with the six building blocks of the Health System Strengthening strategy in mind.

**Structure/Method/Design:** A stepwise approach was followed in the establishment of the center. Advocacy meetings were held with Imo State government and other partners to secure a location and sign a memorandum of understanding in which a staffing plan was laid out with the IMSUTH. A sustainability plan was developed and implemented, with eventual transitioning of the centre to the Government of Nigeria (GoN) in mind. CCCRN then conducted an assessment to determine the infrastructural needs of the centre and trained the laboratory personnel to manage the centre. Following an assessment to determine the infrastructural needs of the centre, an infrastructural upgrade commenced with the identified building being rehabilitated, the GeneXpert device installed and back-up power systems provided. A supply chain management system was instituted at the centre, with a Logistical Management Information System (LMIS) being set up. Quality Management System strategies were set up at the centre to ensure quality of laboratory results.

**Outcome & Evaluation:** Subsequently, the diagnostic centre became a regional reference centre for MTB/RIF assays that

nearby laboratories referred samples to for analysis. These achievements were met with some challenges however, with insecurity and infrastructural challenges being most prominent. The lack of involvement in an EQA program by the diagnostic centre and the poor terrain between referring laboratories and the diagnostic centre also posed another challenge. The nonexistence of a national policy and legislation on GenXpert was also a challenge.

**Going Forward:** Our experience demonstrates that establishing a successful MTB/RIF Assay centre requires government buy-in and commitment to the cause to ensure sustainability.

**Funding:** Centre for Disease Control & Prevention.

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### Investing in Nigerian HRH development through innovative in service training mechanisms: Partnership for Medical Education and Training (PMET)

*E.A.C. Onu<sup>1</sup>, V.A. Enejoh<sup>1</sup>, T. Madubuko<sup>1</sup>, A. Olutola<sup>1</sup>, A. Nwandu<sup>2</sup>; <sup>1</sup>Centre for Clinical Care & Clinical Research Nigeria, <sup>2</sup>University of Maryland School of Medicine-Institute of Human Virology Baltimore, MD, USA*

**Program/Project Purpose:** Gaps exist in knowledge and clinical skills of health care workers in the management of emerging infectious diseases like HIV, Malaria and hemorrhagic fever. Previously, these gaps are addressed through in service trainings conducted by consultants and in expensive venues mostly funded by donors. In September 2012, we institutionalized these trainings within existing Government owned tertiary institutions aimed at establishing sustainable regional training hubs that support HCWs in the catchment areas with skills that meet identified gaps.

**Structure/Method/Design:** Eight training institutions were strategically identified. Selection was based on 1. Presence of experienced and trainable faculty in at least 3 core clinical departments. 2. Identification of an adequate training space/environment for at least 25 trainees. 3. Presence of a functional Infectious Disease Clinic to serve for practicum sessions. Institutional buy-in was sought as an important step towards ownership. Facilities were equipped with required training tools while training and retraining of the faculty were conducted in both the core content and training methodologies. Training needs were determined for HIV training courses such as Prevention of Mother to Child Transmission of HIV, Paediatric Anti-Retroviral Therapy, TB/HIV co management and Adult Anti-Retroviral Therapy.

**Outcome and Evaluation:** Through the award, 91 Master Trainers in the training institutions have been trained and added to the National pool of trainers. In the two years of the project, 2,177 HCWs were trained in 119 training encounters at less than 20% of the usual cost of conducting trainings. Three of the training institutions have developed plans for corporate registration of training institutes to provide both HIV and Non HIV trainings, in addition to other subjects of interest such as research.

**Going Forward:** Training programs should be institutionalized to reduce cost associated with in-service training of human resources.

Health institutions are moving towards significant ownership and responsibility over the capacity gaps of health care workers in their catchment areas.

**Funding:** PEPFAR through CDC.

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### Investing in the Future of Nigeria's Health Work Force: strengthening human resources for health through sustainable pre service HIV/AIDS training systems at nursing, midwifery & health technology training schools in SE Nigeria: a case study

*T. Madubuko<sup>1</sup>, E. Onu<sup>1</sup>, A. Olutola<sup>1</sup>, A. Nwandu<sup>1,2</sup>; <sup>1</sup>Center for Clinical Care and Clinical Research Nigeria, Abuja, Nigeria, <sup>2</sup>University of Maryland School of Medicine*

**Background:** Center for Clinical Care and Clinical Research Nigeria (CCCRN), in collaboration with local teaching institutions in Nigeria, sought to more closely align USG-funded HIV/AIDS efforts with the national programs through a program called Partnership for Medical Education and Training (PMET). The goal was to enhance capacity at the pre service training level in the management of HIV disease, by revising the HIV training curriculum to emphasize role specific core competencies that in turn ensure “practice ready” graduates.

**Methods:** Multiple advocacy and consensus building meetings for all stakeholders were held, followed by a comprehensive training needs assessment of five schools of nursing and 4 schools of midwifery, 3 schools of health technology in the South East of Nigeria. Pre service faculty were assessed for teaching/mentoring, knowledge and skills to identify capacity gaps as well as presence or absence of ongoing HIV related education for faculty and students using structured questionnaires and key informant interviews. The required infrastructure for effective implementation of these trainings in the institutions was also assessed.

**Findings:** This resulted in the following interventions - Curriculum review, Training of Trainers for faculty, refurbishing of the identified training halls and libraries, provision of teaching and training materials and books. The completed documents from the curriculum review of the nurses and community health officers were formally submitted to the respective regulatory bodies for adoption/authorization and provisional concurrence for their implementation was also sought. A total of 37 faculty received training to implement the new curriculum, 28 participants trained on training of trainers on managerial competence for health care providers and a total of 3,108 undergraduate students from the 12 institutions benefitted from the revised curriculum between 2013 to 2014. Pre and post test results indicated a significant increase in knowledge. Regular quarterly technical assistance visits to the institutions further helped to strengthen the programme.

**Interpretation:** Strengthening pre-service education in nursing/midwifery and health technology schools helps to provide a “practice ready” workforce that can assist in bringing the HIV/AIDS pandemic under control. The success of the program can be attributed to collaborative and participatory nature of the process with clear understanding and cooperation by all stakeholders.