

## Use of simulation to support role development for nurses and MBBS doctors in Nepal

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**Program/Project Purpose:** Context Nursing and medical education in Nepal is based on rote learning, and does not introduce skills of initiative and critical thinking until after the student is already in a work environment. Program/Project period 2011 to present. Why the program/project is in place, in one or two sentences: to model teaching techniques and promote adoption of best practices at all MBBS programs and nursing schools in Nepal. We teach a two- or three-day interactive class based on teamwork principals as in American Heart Association Advanced Cardiac Life Support, adapting the methods to Nepali learning style. Aim embed the training.

**Structure/Method/Design:** Program/Project Goals, Desired Outcomes teach situational awareness and flexible emergency response skills in clinical problem-solving, as well as rapid emergency response skills. Participants and Stakeholders: How were they selected, recruited? MBBS medical students about to graduate. Capacity Building / Sustainability: What is the plan, structure in place to encourage viability? To develop local expertise at every participating medical and nursing school by identifying leaders

**Outcome & Evaluation:** To date, what are the successes and outcomes achieved? We trained 2,130 nurses and doctors. About 800 of these in Kathmandu Valley were on site when the April 2015 earthquake struck. Monitoring & Evaluation Results (if conducted) student self-reporting of changed outlook in initiating and participating in resuscitation as well as preventing “failure to rescue” events.

**Going Forward:** What are the ongoing challenges? We do this on a shoestring budget and need to reach all MBBS schools due to geographical challenges. Are there any unmet goals? Yes. We wish to set up the system for all 21 MBBS programs to be able to offer this. How are/may future program activities change as a result? We hope to hold a national conference within Nepal focused on use of simulation learning.

**Funding:** Source of Funding – privately funded during the authorized leave of the principal faculty.

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## Evaluation of a visual aid toolkit for water, sanitation, and hygiene education in the Bateyes of La Romana, Dominican Republic

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**Project Purpose:** By promoting peer-to-peer learning, the Community Health Club (CHC) participatory health education model empowers vulnerable communities to increase health literacy and stimulate behavior change. The CHC model uses a set of drawings depicting day-to-day activities related to water, sanitation and hygiene (WASH) to spur discussions around health behaviors. In order for the visual aids to be effective, they must reflect local

contexts, customs, and practices. As such, we tested preexisting drawings from an earlier program in Western Dominican Republic for clarity and relevance to sugarcane production communities (*bateyes*) surrounding La Romana, Dominican Republic.

**Methods:** We selected 147 drawings from the preexisting WASH toolkit for testing. Over four days, a convenience sample of 112 respondents was taken from 8 communities identified by our in-country partner. Five teams of two medical students and a Spanish/Creole translator showed each respondent 10 drawings and asked a series of questions about each drawing. Qualitative analyses of the interview data were conducted to assess respondents' ability to understand the drawings. Population subsets were evaluated for associations between specific demographics and visual literacy.

**Outcomes & Evaluation:** Respondents included 88 women and 24 men ranging from 18 to 88 years of age with varying levels of education and areas of employment. Of the 112 respondents, only 7.1% of respondents could interpret actions or connotations for all 10 images they were shown. Younger and more educated respondents tended to more accurately observe and interpret images. 60 of the 147 drawings were identified for revision or exclusion from the tool kit, as fifty percent or more of the respondents were found to consistently misinterpret these images.

**Going Forward:** Survey results and feedback will guide visual aid revisions for greater cultural applicability and implementation in future CHCs. The interview data also suggests associations between age, education, and pictorial literacy. Future research projects should be conducted to support these associations. Finally, this study supports the foundation of CHCs using image-based educational models within La Romana bateyes.

**Funding:** None.

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## The effectiveness of a comprehensive four-week course in HIV medicine for postgraduate doctors at University of Nigeria

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**Program Purpose:** A critical shortage of well-prepared health care workers in resource-limited settings leads to major bottlenecks in implementing evidence-based interventions to improve health outcomes, particularly in HIV and TB. In 2012 the Center for Clinical Care Research Nigeria (CCCRN) in collaboration with University of Maryland Baltimore (UMB) signed a cooperative agreement with CDC to strengthen pre-service HIV training programs for postgraduate health care workers.

**Method:** UMB/CCCRN selected University of Nigeria (UNN) as the partner tertiary institution, and developed a comprehensive short course in HIV medicine for doctors-in-training that included clinical practicums. Multiple consensus building and curriculum

development meetings were held with university faculty, UMB, and CCCRN. The training capacity of facility and faculty were developed based on a needs assessment. UNN faculty and UMB/CCCRN faculty taught the course jointly. Evaluation methods including pre/post tests, OSCE's, evaluation forms, and logbooks were jointly developed. Course alumni were followed up at 6 and 18 months using online surveys and telephone interviews to assess how useful the course was to them at their current workplaces.

**Outcome and Evaluation:** The first course was piloted in 2013 with 30 postgraduate doctors and MPH students. The mean OSCE score was 51% and the mean post-test score was 75% with an improvement of 22% from the pre-test; a follow-up exam six months later showed a mean score of 74%. In regression analysis, pretest score was strongly associated with post-test score (0.56,  $p < 0.001$ ), and moderately associated with OSCE (0.28,  $p = 0.04$ ). Online surveys revealed trainees continued to use knowledge and skills gained from the course. The course was highly rated on immediate and follow up evaluations.

**Going Forward:** Practicum-based curricula offer a practical way to teach evidence-based medicine with long-lasting retention of skills and knowledge. Further efforts and funding needed to sustain and improve this innovative approach to strengthening HIV pre-service medical education.

**Funding:** PEPFAR.

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### **Increasing HCT uptake among pregnant women in Nigeria; Evaluating the TBA and PHC Integration (TAPI) Model intervention in Ebonyi State, Nigeria**

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**Program Purpose:** Effective prevention of mother to child transmission of HIV (PMTCT) efforts can drastically reduce paediatric HIV infection. Early identification of HIV-infected pregnant women through HIV counselling and testing (HCT) remain the most critical step. In Nigeria, only 3 million of the estimated 9.2 million pregnant women annually are reported to have received a HIV test. An estimated 65% of deliveries occur in non-formal healthcare setting by traditional birth attendants (TBA). Engaging these TBA is critical to achieving the 90-90-90 global vision for HIV prevention.

**Method:** Forty primary health centers (PHC) were prospectively randomized 1:1 to intervention group (IG) or control group (CG). Data on HCT among pregnant women was collected from the PHC over a six months period. Following HCT training, TBAs surrounding PHC randomized to IG initiated HCT for their patients whereas HCT training was not provided to TBAs surrounding PHC in CG. The primary outcomes measure was the proportion of pregnant women who received HCT in the two groups over a six months period using antenatal clinic registries.

**Outcome and Evaluation:** HCT increased among pregnant women in PHCs randomized to IG from 2501 to 5346 (53% increase) versus 1770 to 1892 (6.4% increase) in CG ( $P < 0.01$ ). In the IG, TBAs accounted for 53% of the HIV testing (3216/5346).

**Going Forward:** Significant increases in HCT can be achieved by engaging and training TBA especially in communities where a majority of prenatal care and deliveries occur outside of the formal healthcare facilities.

**Funding:** PEPFAR.

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### **Patent medicine vendors in Nigeria: Viable agents in bridging the health care workforce divide**

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**Program/Project Purpose:** Access to health facilities in Nigeria is limited with a health workforce ratio of 1.9: 1000. An estimated 60% of Nigerians seek care with Patent Medicine Vendors (PMVs) as first point of call. PMVs are readily available in many communities and provide affordable services and as such are highly patronized. This is critical in areas with low penetration of health facilities and/or with large migrant population. We evaluated the impact of using PMVs to increase case detection, treatment and support in a large community with an estimated population of 1,668,972 that includes transient nomadic Fulani, homeless/wandering children, prisoners and PLHIV.

**Structure/Method:** We identified 82 PMVs (2 each) from 41 communities in North-central Nigeria. These PMVs were trained on the identification and assessment of individuals with suspected TB using the modified Community TB Care module. A TB referral and assessment protocol was developed with the community and implemented from July 2014 through August 2015. Over the study period, a purposeful target was set to screen 5.7% of the target population (94,792).

**Outcome & Evaluation:** During the 12 months study period, 81,016 (85% of target) PMV patrons were screened for TB and 10,041 individuals with suspected TB were identified. A total of 9,099 AFB smear microscopy was completed, 71 sputum positive cases were identified and 68 commenced on treatment.

**Going Forward:** PMVs can be trained and used as part of the healthcare infrastructure to provide community based interventions such as TB screening and referral especially in resource-limited countries like Nigeria with a dearth of trained health care provider.

**Funding:** WHO STOP TB Partnership.

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### **A qualitative approach to understanding the impact of misuse and misdiagnosis: Monitoring use of the non-pneumatic antishock garment in Tanzania**

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