

learning loss in computer skills. The trainings appear to particularly effective for Nurses, who had the highest mean change scores ($p < 0.001$) in comparison with other cadres in all models.

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Abstract #: 2.020_HHR

The Fifth Child – A Data Informed Community Engagement Strategy to Improve Defaulter Tracing on Immunizations

J. O’Keeffe¹, N. Kozuki², J. Landegger³; ¹The International Rescue Committee, New York, New York, USA, ²Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA, ³The International Rescue Committee, New York, USA

Program/Project Purpose: Access to health care is low in rural Northern Uganda, and low rates of vaccination reflect this issue of access. Only 49% of children are fully vaccinated in this area by 23 months of age. The International Rescue Committee, in coordination with the Ugandan Ministry of Health, evaluated an mHealth application and community engagement strategy entitled CommCare+ to identify immunization defaulters and re-enter them into the vaccine schedule.

Structure/Method/Design: Control and intervention areas were selected for implementation of CommCare+, and the intervention area received the intervention from August 2015 until April 2016. At the end of the intervention period, a two-stage cluster survey was conducted in two arms using proportional-to-size and simple random sampling. Caretakers of children aged 12–23 months were interviewed about their children’s vaccination status and barriers to vaccination. Additional data were collected from government-issued vaccination cards to determine vaccination status. A total of 683 children were included in analysis.

Outcome & Evaluation: Children in the control group were significantly more likely to have missed one or more vaccinations than children in the intervention group (51.7% vs. 39.6%, $p = 0.001$). However there was no significant difference in coverage of the DPT3 vaccine ($p = 0.78$) or other individual vaccines. Regarding barriers to coverage, caretakers in both groups cited problems at the clinic as the biggest barrier to vaccination (26.1% vs. 27.3%, $p = 0.10$). In each group, less than half of the caretakers of children who had missed on or more vaccinations were aware that their child was missing a vaccination (43.5% vs. 30.4%, $p = 0.06$).

Going Forward: The evaluation showed that children who were part of the Commcare+ approach were significantly less likely to have defaulted on at least one vaccination. The absence of a difference in individual vaccine coverage between the groups indicates that defaulting is not tied to one particular vaccine, but that coverage is spotty across the vaccine schedule. Caretaker knowledge of vaccination status appears to be a large barrier to complete vaccination as do problems encountered at the clinic. The findings support rollout of Commcare+ at a larger scale with close monitoring of measurable outcomes.

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Blended Learning on Family Planning Policy Requirements: Key Findings and Implications from a Mixed Methods Study

S. Obkubo¹, R. Limaye², N. Ahmed¹, A. Ballard¹; ¹Johns Hopkins Center for Communication Programs, Baltimore, USA, ²Johns Hopkins Bloomberg School of Public Health, Baltimore, MD, USA

Background: To address unmet needs for family planning and advance women’s rights, U.S. federal foreign aid recipients must ensure compliance with the family planning legislative and policy requirements. Because many health providers work in rural and remote settings, blended learning, which combines in-person and online experiences, is a promising approach for strengthening their compliance knowledge. However, there has been no systematic study of the relationship between various learning approaches and their impact on learning outcomes within this context.

Methods: We conducted a mixed methods study to examine the effect of blended learning that included three components (online course, in-person training, and conference call) on the retention and application of family planning compliance knowledge. Learners were grouped into five categories—those who took: 1) the online course only once, 2) the online course more than once, 3) the online course plus the in-person training, 4) the online course plus the conference call, and 5) the online course, in-person training and the conference call. A total of 660 learners from 44 countries completed the online survey, of which 26 respondents participated in an in-depth interview. Study participants were asked about their knowledge of family planning compliance, use of knowledge gained, and suggestions to improve their learning experiences.

Findings: Knowledge retention was higher in the group that utilized all three learning approaches compared to the online course plus the conference call group ($p < 0.05$). Learners who took the online course multiple times tended to retain knowledge better than respondents who took it only once, although this result was not statistically significant. Learners who had opportunities to attend the in-person training and/or the conference call were more likely to report that they had used the knowledge gained compared with those who took only the online course ($p < 0.001$). Knowledge use was higher in the group that took the online course multiple times compared to the group that only took it once ($p < 0.05$).

Interpretation: Blended learning having all three learning approaches resulted in the highest gains in knowledge and the highest level of knowledge use, suggesting that global health agencies continue using blended learning in their family planning compliance training.

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Global Health - The Lessons of Ebola: Two Universities Join to Teach an International Audience Via an Inter-professional Massive Open Online Course (MOOC)

J. Olsen¹, K. Marconi², D. Donahue³; ¹University of Maryland School of Social Work, Baltimore, MD, USA, ²University of Maryland, Baltimore, Baltimore, USA, ³University of Maryland University College, Washington, DC, USA

Program/Project Purpose: Global health is a collaborative field; one that requires diverse professionals to address the clinical, biological, social, environmental, and political factors that contribute to the health of communities and nations. The interprofessional nature of global health education presents a distinct challenge, namely ensuring that students learn to collaborate with other professionals to address complex global health needs. While much work has been done to define the field of global health and discipline-specific competencies, less has been done in the area of interdisciplinary or interprofessional global health education.

Broadly, the educational concept of global health teams is often difficult for students to envision. However, framing the concept through the lens of a specific health issue offers cogent examples from which broader global health team based frameworks can be identified.

Structure/Method/Design: Two universities that are part of a state public university system collaborated to deliver an interprofessional, teamed based global health course drawing on the lessons of the Ebola epidemic. This on-line, six-week MOOC models the broad team approach both in the breadth of faculty discipline and experience – from law, to medicine, to management – to the more than 800 students from over 100 countries representing every area of health care, research, management, training, and the globe. The presentations, readings, and videos are drawn from disciplines representing the breath of the global health field. Student discussion questions, written interactions, and presentations encourage a common forum to share diverse health, geography, cultural and education experiences.

Outcome & Evaluation: Using Ebola as a global health example, faculty and students discuss the team interplay among medical (patient care), social (burial practices), environmental (disease spread), legal (quarantines and travel), managerial (structuring local responses), and psychological (loss, not touching family members) to name a few. These examples Using are interwoven into the six course modules:

- o Perspectives on Global Health/ National & International Approaches
- o Women & Children's Health
- o Infectious Disease Epidemiology
- o Global Health Law and Ethics
- o Mass Violence and Civil Unrest
- o Management of Global Health Service

Going Forward: Students take the course without cost, and if they complete knowledge assessments and discussions are awarded a certificate of participation.

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Abstract #: 2.023_HHR

Improving and Sustaining ICT Skills of Health Researchers in Kenya Through a Three-Tiered Approach of Online Learning, Hands-On Workshops, and Personalized Mentoring

A. Osoti¹, J. Kinuthia², M. Chung³, E. Opiyo⁴, R. Oboko⁴, C. Chepken⁴, S. Fueller³, D. Masuda³, M. Dunbar³, D. Masys³; ¹University of Washington, Seattle, WA, USA, ²KNH, Nairobi, Kenya, ³University of Washington, Seattle, USA, ⁴University of Nairobi, Nairobi, Kenya

Background: Despite the recent growth in health informatics, the use of information, communication and technology (ICT) by health researchers in resource-limited settings has been slow and inequitable. Further, many local institutions that have excellent ICT capacity do not routinely provide such services to the health researchers. Innovative delivery of ICT skills to health researchers may improve the quality and impact of research outcomes.

Methods: This is an implementation science study conducted at the University of Nairobi (UoN) School of Computing and Information Science (SCI) in Nairobi, Kenya. In this Fogarty-funded program performed in collaboration with the University of Washington, Kenyan health researchers interested in ICT were invited for three tiers of training involving an online module open to hundreds of students nationally, a face-to-face workshop at UoN SCI for 30 students, and one-on-one mentoring for 10 students. Participants who successfully completed each stage were competitively selected for the subsequent tier. The online module comprised 6-8 weeks of weekly recorded lectures accompanied by quizzes and a discussion board. Five day face-to-face workshops took place at UoN SCI. In the mentoring tier, students were selected based on their workshop proposal score and assigned one mentor to guide them through their ICT based research projects, writing of manuscripts and abstracts for conference presentations.

Findings: Between January 2015 and October 2016, the following courses were conducted in Kenya: Geographical Information System (GIS) for Health Researchers, Principles and Practice of Research (PPR) Data Management and Collection, and Research Management and Communication Tools. Overall, 978 applicants applied for the online tier of these three courses. Of these, 673 (69%) were accepted and participated, 559 (83%) completed, and 369 (66%) passed. Of the 222 students who had passed the first online tier, about half (122) were invited to the second workshop tier, and nearly all (119) participated. Of the two completed mentored programs, 17 were selected and successfully mentored.

Interpretation: There is great interest in ICT for health researchers in resource-constrained settings. Structured multi-tier training is highly acceptable and effectively reaches more health care researchers while offering more in-depth training for those with greater research experience and skills. International partnerships increase educational experience and build capacity in resource-constrained settings.

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The Impact of a Triage System Designed to Reduce Waiting Time and Prioritize Care for High-Risk Obstetric Patients in a Ghanaian Regional Hospital

M. Owen¹, D. Goodman², E. Pfeiffer³, R. Ramaswamy⁴, A. Olufolabi², C. Tetteh⁵, E. Srofenyoh³; ¹Wake Forest School of Medicine, Winston Salem, USA, ²Duke University School of Medicine, Durham, USA, ³Kybele, Inc., Winston Salem, USA, ⁴UNC Chapel Hill, Durham, NC, USA, ⁵Ridge Regional Hospital, Accra, Ghana

Program/Project Purpose: Delay in receiving care in hospitals contributes to maternal and newborn mortality in low resource