involved in motor vehicle and motorcycle trauma. Delayed presentation and a low rate of ambulance delivery indicate a lack of options for trauma care and poor infrastructure for coordinated care from field to hospital. The point of care perioperative data collection tool utilized by anesthesia personnel can provide detailed information that guides interventions for the development of a trauma system within a country in East Africa. Future directions will include utilizing this tool in more rural hospitals to define where interventions in the trauma care pre-referral hospital transfer are needed.

Funding: GE Foundation.

Abstract #: 01ITIS022

Implementation of an electronic medical record for HIV programs in resource-limited settings: A Nigerian case study

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Program/Project Purpose: Nigeria's HIV treatment scale-up has stressed pre-existing inadequacies in the paper-based health information system (HIS). A 2013 nationwide Quality of Care exercise reported a 21% completion rate for HIV clients' medical charts. Poor documentation limits the integrity and impact of clinical decision-making, and compromises the quality of services delivered. The Institute of Human Virology Nigeria is a large local NGO that supports healthcare facilities (HCFs) to provide HIV services. We piloted an EMR system at public HCFs in North-Central Nigeria to improve documentation, data reporting and ultimately, patient care.

Structure/Method/Design: Between May 2011 and December 2012, a 5-member core team of engineers and programming staff piloted the Open MRS EMR in 23 of 629 public HCFs in Nasarawa State. We selected 13 Primary Healthcare Centers (PHCs), 8 secondary and 2 tertiary HCFs according to results of baseline assessments for telecommunications/electricity coverage and Human Resource capacity. HCFs with ≥500 HIV-positive clients enrolled were prioritized. Agreements were signed with facility ART Coordinators, and Medical Records heads were designated EMR Focal Persons. Computers, Local Area Networks and internet modems were provided, and site-level pre-implementation training was conducted for each HCF.

Outcomes & Evaluation: A total of 254 HCF staff were trained on basic computer use, EMR and minimal maintenance. The majority (94%) of HCF staff had never used an EMR. Only 1 HCF lacked telecommunications coverage; 10 (43.5%) HCFs met criteria for ≥180 minutes of daily power supply- only 2 (20%) were PHCs. At the end of the pilot, 17 (73.9%) HCFs switched to EMR, but for data reporting only. These HCFs reported elimination of missing/incomplete client records, and also met HIS reporting standards for timeliness and completeness. EMR implementation in this resource-limited setting was successful in terms of data storage/reporting. Challenges included inconsistent internet coverage, HCF staff resistance (citing increased workload and turf intrusion), distrust of technology and concerns about impersonal provider-client interactions.

Going Forward: Inconsistent internet/power supply were major implementation barriers, in addition to HCF staff resistance, stemming largely from low IT capacity and EMR inexperience. Scale-up phase adjustments include facility-organized stepdown trainings and provision.

Funding: US Government PEPFAR grant to Institute of Human Virology-Nigeria.

Abstract #: 01ITIS023

The diaspora health network: A new mechanism of mobilizing foreign US-based health professionals for international health

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Program/Project Purpose: It is estimated that 265,000 physicians of foreign origin are practicing in the US, 129,000 of whom come from low and low-middle income countries. Much of the focus on physician migration has been on the impact of their absence on the health systems of their home countries. However, emerging research suggests that an important subset of immigrant health professionals contribute or desire to contribute to building and strengthening home country health systems. While information on priorities and relevant volunteer opportunities could facilitate targeting of efforts, there is no single space where immigrant health professionals can be mobilized and provided with said content.

Structure/Method/Design: The Diaspora Health Network was founded by students and faculty at the Johns Hopkins Bloomberg School of Public Health (JHSPH) to provide an online resource for health professionals seeking to effect positive change in the health systems of their home countries. An interactive online portal was built with country-specific "engagement gateways" which included health data, up-to-date commentary, and volunteer opportunities from a pilot set of 5 countries. The portal also features a series of case examples of diaspora-led sustainable health interventions, a blog, and a forum to support community building amongst diaspora. Opportunities where diaspora can make significant contributions are being actively sourced from global health organizations and partners and vetted for capacity and potential for long-term impact. Online and in-person marketing approaches are being employed to reach unengaged health professionals.

Outcomes & Evaluation: Initial outreach collaborations have been planned or carried out successfully with US medical associations, diaspora associations (such as the Association of Nigerian Physicians in the Americas), USMLE test prep companies, and JHSPH. Country pages for Nigeria, Mexico, Zimbabwe, India, and Nepal have been created and are being circulated. Programs have been implemented to locate and vet opportunities in partnership with international health organizations and grassroots movements alike.

Going Forward: Continued intensive outreach will be carried out for both health professionals and trainees, while opportunities will continue to be added to the site. High-impact practical content is being written and collated to create a "manual of engagement" for diaspora to ensure that their contributions encourage sustainability and are of high quality. Finally, in-person gatherings are planned to provide more opportunities for networking and international health practice preparation.

Funding: None.

Abstract #: 01ITIS024

Using low cost android tablets and instructional videos to teach clinical skills to medical students in Kenya

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Program/Project Purpose: The lack of properly trained health care professionals in resource-limited settings has become a key constraint to the targeted completion of the UN's Millennium Development Goals. At the same time, the use of low-cost technological devices to disseminate educational information across the developing world is becoming increasingly common. The purpose of this study was to assess the feasibility and impact of using a low-cost Android tablet called connecTAB, to deliver clinical skills training to third-year medical students in Kenya via demonstrational videos.

Structure/Method/Design: The tablet was designed and manufactured specifically for areas with low bandwidth and was extremely low cost ($50 per tablet). Instructional video tutorials demonstrating clinical examination techniques of the cardiovascular and abdominal examination were pre-loaded onto the tablet. 51 3rd year medical students from Maseno University, Kenya, were subjects in the study. Students volunteered to participate in the program in response to an email solicitation from the school's administration sent to the entire student body. Students were informed that participation was voluntary and that they would be required to complete a pre and post-study questionnaire, as well as a pre and post-study clinical assessment. Students were also notified that they would be randomly allocated to either the intervention group or the control group. 25 students were assigned to the intervention group and 26 to the control group. At the start of the study, students from both groups completed an Observed Structured Clinical Examination (OSCE) of a cardiovascular and abdominal examination. Students who were allocated to the intervention group then received the connecTAB, whereas students in the control group did not. After a period of three weeks students from both groups completed a post-study OSCE for both the cardiovascular and abdominal evaluations and at the conclusion of the study students in both the control and intervention group received a connecTAB. To ensure the project remains sustainable students paid a nominal fee for the tablet.

Outcomes & Evaluation: There were significant improvements in score for both cardiovascular and abdominal examinations (p < 0.001), within the group who received the connecTAB when compared to the control group.

Going Forward: The potential of the connecTAB program, utilizing affordable technology equipped with open access videos, should be explored further in different contexts such as post-graduate training of doctors, and with populations such as nurses and community healthcare workers. It would also be useful to assess the long term retention of clinical skills. If connecTAB proves effective in these other environments, then it may well be worth scaling up the project to other resource-deficient parts of the world.

Funding: The project received an unrestricted grant from The Ujenzi Charitable Foundation.

Abstract #: *01ITIS025*

International comparison of smartphone use by resident physicians

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Background: In the US, clinical use of smartphones has increased dramatically over the last decade. Little is known about current patterns of use and use internationally. Residents are often early adapters of technology. The purpose of our study was to better understand the use of smartphones by residents in two partnering international sites and compare with use in our own clinical sites.

Methods: Our survey was designed to capture demographics and smartphone ownership, as well as patterns, perceived barriers and benefits of use. The survey was piloted in fall 2013 and after IRB approval was distributed in spring 2014 to a convenience sample of residents in the US (at the University of Utah and Brigham and Women's Hospital, Boston, MA), Universidad de Antioquia in Medellin, Colombia, and Hainan Medical University in Hainan, China. Participation in the survey was voluntary. Chi-Square and Kruskal-Wallis tests were performed to identify significant differences between groups.

Findings: A total of 444 residents responded to the survey, 273 (61%) from the two US sites, 35 (8%) from Colombia and 136 (31%) from China. The majority of respondents owned a smartphone (90% of Chinese, 94% of Colombians, 97% of Americans). Fewer Chinese residents used smartphones in the clinical setting (81%), when compared to Colombians (97%) and US residents (98%). In addition, reported amount of use was significantly less in the Chinese sites (p < 0.0001). In the US and Colombian sites, the top three smartphone uses reported were e-mail, internet access and texting between team members; whereas in the Chinese site the most frequent uses were internet access, calendar and medication formularies. The least used function in all three countries was physician order entry. Overall, use of smartphone functions was significantly different between countries (p < 0.0001). The overwhelming majority of respondents reported they felt smartphone use improved clinical care (94% in the US sites, 97% in both the Colombian and Chinese sites). Prior education in smartphone use was low in all countries (19% in US, 14% in Colombia and 17% in China). Significantly more respondents in Colombia and China desired additional training opportunities (88% in Colombia, 86% in China, 51% in US).

Interpretation: We describe the utilization of smartphones at two US institutions and partnering international sites in Colombia and China. While smartphones are ubiquitous in clinical care, use varies by country. Interestingly, despite differences in use almost all respondents feel that smartphones improve clinical care. Also, international respondents requested more learning opportunities. Our results are limited by the convenience sample and survey design. Despite these limitations, the high rates of smartphone use and interest in smartphone education described in this study suggest a high demand for smartphone education.

Funding: No external funding source.

Abstract #: *01ITIS026*

Facility mapping: A tool for effective planning for MNCH services

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Background: Improving outcomes in maternal, newborn and child health (MNCH) depends substantially on improving the