

**Going Forward:** While the turn-around-time was within the national guidelines for cervical cancer screening, our results demonstrate a significant number of patients do not complete these important preventative interventions. As cervical cancer screening and prevention i

**Funding:** The Albany Medical College Nalin Grant provided funding for this project.

**Abstract #:** 02ITIS007

### Enhancing global health through the compilation of a glossary of medical terminology in a local Ghanaian language (Twi)

P. Donkor, E. Fordjour, G. Plange-Rhule, N. Tagoe, B. Barnie; Kwame Nkrumah University of Science and Technology, Kumasi, GH

**Program/Project Purpose:** The need for confidentiality is vital to developing trust as part of the doctor-patient relationship. This is not always possible where interpreters are used to translate for clinicians/patients due to language barrier. Bridging this barrier without the use of interpreters will ensure effective communication and quality care. Twi is the commonest of the local languages in Ghana but not all nationals speak it. However, in the setting of this study Twi is used widely as a means of communication. The number of non-Twi speaking Ghanaian medical students, and foreign students from the West African sub-region studying medicine at KNUST, as well as international students on short term visits continues to increase. Increasing numbers of international clinical research collaborators also visit Ghanaian medical schools and teaching hospitals for varying periods of time. The purpose of this project was to assist non-speakers of Twi to communicate with patients without always requiring an interpreter.

**Structure/Method/Design:** This is a pilot study. Face to face Interviews, led by a professor of Twi (EAF) were conducted with 24 purposively sampled doctors and nurses at the Komfo Anokye Teaching Hospital, Kumasi, Ghana over a 2-month period in 2014. The interviewees worked in the major Medical disciplines of Internal Medicine, Surgery, Paediatrics, Obstetrics/Gynaecology, and Dentistry. Common words or phrases used by patients in the consulting room were identified and compiled into a draft document. This was then independently reviewed by a Twi language expert. It was subjected to further review by a second set of physicians who are native Twi speakers and also fluent in English.

**Outcomes & Evaluation:** A glossary of medical terms in both Twi and English has been compiled. Sections include words, phrases, and body parts. Common expressions have also been captured. Words and phrases have been further grouped based on the specialty where they are most often used. This booklet will assist Ghanaian clinicians and students who do not speak the Twi language communicate better with patients. It will also help bridge the language barrier for foreign students, clinicians, and research collaborators. It will further facilitate international collaboration in health research, and thus global health. Evaluation will be conducted after 12 months to determine the usefulness of the glossary, and the need for a similar exercise to be carried out for other local Ghanaian languages.

**Funding:** NIH Award 1R24TW008899 Ghana Emergency Medicine Collaborative.

**Abstract #:** 02ITIS008

### Global health delivery science: Applying the care delivery value framework to a community based HIV/AIDS initiative in Togo, West Africa

K. Fiori<sup>1</sup>, J. Schechter<sup>1</sup>, S. Houndeno<sup>2</sup>; <sup>1</sup>Hope Through Health, New York, NY/US, <sup>2</sup>Hope Through Health, Kara, Togo

**Program/Project Purpose:** The global health delivery gap refers to an inability to provide existing medical discoveries to the individuals who need them. Resolving such inequity may represent medicine's most important duty. The new field of "global health delivery science" aims to address such gaps. An approach in this new field utilizes the care delivery value chain (CDVC) framework to assess patient care activities. CDVC analysis facilitates identification of inefficiencies and gaps in provision of care across a continuum. There is limited published data describing the application of the CDVC framework to programs aimed at resource poor or pediatric populations.

**Structure/Method/Design:** Objectives 1) Construct CDVC assessment for HIV/AIDS services available in Kara, Togo 2) Initiate quality improvement plan based on findings of CDVC assessment In collaboration with local staff, the author conducted a CDVC assessment at a community-based clinic serving 1,700 individuals living with HIV/AIDS, including 154 children. In preparation for field discussions, the author prepared CDVC templates and training materials to present to clinic staff. Over the course of three weeks, multiple semi-structured interviews were conducted with 11 local staff members to gather detailed information about existing HIV/AIDS services, including pediatric care. The researcher compiled the results of these interviews into a draft CDVC framework and quality improvement (QI) plan. The QI plan was launched and progress was tracked over six months.

**Outcomes & Evaluation:** A CDVC framework for HIV/AIDS services in the Kara region was drafted and reviewed by key staff members. The CDVC framework identified activities currently available for discrete stages within a cycle of care including: Prevention & Screening, Diagnosing & Staging, Pre-antiretroviral & Psychosocial Management, Antiretroviral Initiation, Continuous Disease Management, Management of Complications. Within these care continuum areas, twenty eight specific gaps in service delivery were identified, including three distinct pediatric issues, and were integrated into a strategic QI plan. Within three months seven identified gaps were resolved, and six months into the initiative 25 out of 28 delivery gaps were being addressed. Significant gaps in transitions between care stages were elucidated including gaps in pediatric care delivery, areas that would likely not have been identified through traditional assessment methods. Multiple areas of overlapping services by external providers highlighted inefficiencies in the overall delivery system and can inform future programmatic decisions.

**Going Forward:** The CDVC framework was an invaluable tool for examining both existing care and gaps in delivery over the full cycle of HIV/AIDS care, especially for vulnerable populations. The application of CDVC assessment to guide quality improvement initiatives afford

**Funding:** None.

**Abstract #:** 02ITIS009

### Improving access to life-saving medicines through mobile community health supply chain management

S. Hodsdon<sup>1</sup>, R. Luk<sup>2</sup>; <sup>1</sup>Dimagi, Inc., Cambridge, MA/US, <sup>2</sup>Dimagi, Cambridge, MA/US

**Program/Project Purpose:** CommTrack is an open source tool for organizations in low-resource settings to better manage goods and materials - from community health workers providing iron supplements for pregnant mothers, to distributing ready-to-use-therapeutic-foods, or ensuring health clinics have adequate supplies of essential medicines such as ARVs. These scenarios, each very different from one another, all require knowledge about "How much do I order? When should I expect a shipment and how to ration until it arrives? Why are my losses so high?" Designed in close collaboration with partners including John

Snow Inc, IntraHealth, and Ministries of Health, the CommTrack technology has been tested, refined, and scaled through real-world deployments in Tanzania (ILSGateway), Ghana (Early Warning System), and Malawi (cStock), and is being rapidly scaled to other countries in Africa and Asia. In this presentation, we will discuss the design of an intervention, baseline, and evaluation that leveraged an early version of CommTrack, called cStock. As part of JSI's Enhanced Management Approach in Malawi, cStock aims to promote the use of data to inform decision-making and increase the availability of medicines for community health programs. cStock serves as a simple mobile reporting and resupply system that improves communication between frontline health workers (FHWs) and their resupply points. It also provides visibility of real time FHW logistics data at multiple levels of the MOH, including stock out rates, current stock status, and alerts to enable supply chain managers' responsiveness to needs on the ground. cStock is used on FHWs' own basic feature phones to report data monthly via SMS on a toll free line, which then calculates resupply quantities for each FHW and escalates the quantities directly to health centers via SMS to prepare the products. Health centers then alert FHWs when stock is ready for collection. All data is displayed on a web-accessible dashboard with real time reports that show stock levels, reporting rates, and alerts for central and district level managers. CommTrack's cStock deployment was implemented in parallel with a comprehensive research effort to assess the tool's impact on supply chain performance. Results from the 2013 midline assessment demonstrate improvements in the program's product availability, data visibility, use of data, teamwork between districts and supervisors, and transport of goods. During the baseline assessment, 62% of FHWs had the four tracer drugs in stock, contrast to 27% at baseline. FHWs also experienced 14% fewer stockouts of life-saving products than non-intervention groups. cStock is also attributed with increasing general reporting rates, with more than 80% of FHWs reporting logistics data to cStock every month, versus 43% at baseline. The results are a compelling example of how a last-mile supply chain intervention was able to affect and improve the availability of life-saving commodities in Malawi.

**Funding:** No funding listed.

**Abstract #:** 02ITIS010

### Pharmaceutical supply chain management through implementation of a hospital Pharmacy Computerized Inventory Program (PCIP) in Haiti

M. Holm, M. Rudis, J. Wilson; Mayo Clinic, Rochester, MN/US

**Program/Project Purpose:** Following the January 2010 earthquake in Haiti, St. Luke Hospital, an 220 bed adult medical hospital, was quickly established to care for the influx of patients with trauma-related injuries, cholera and other maladies. With our Haitian colleagues, we implemented a new Pharmacy Computerized Inventory Program (PCIP) to improve and monitor medication utilization as well as facilitate sustainable patient care activities in this Haitian hospital.

**Structure/Method/Design:** A needs assessment of PCIP requirements was performed by our institution's pharmacists together with the Haitian facility's medical director. Needs included real-time data assessment of medication usage in three settings (ED/ICU, Inpatient/Ambulatory Care, and Pediatrics); simplicity and sustainability by local hospital personnel; and accommodation for further service expansion. We partnered with a software company tailoring web application tools and developed a PCIP that accomplished all identified needs. A plan for implementation of the PCIP was developed, and included on-site and remote education of end-users. We

then measured the number of transactions in PCIP during a wash-in period and after a predefined period of utilization.

**Outcomes & Evaluation:** A web-based PCIP was programmed in Haitian Creole and English. It encompassed all phases of the medication use process including drug ordering, filling the drug requests, distribution and dispensing of the medications in multiple settings; inventory of currently shelved medications and graphic charting of 'real-time' medication usage. The Haitian pharmacy and nursing staff were successfully trained by three pharmacists from our institution. Medication utilization improved over the course of the implementation of the PCIP system. Medication transactions increased with a mean transactions per month for the initiation and establishment periods were 219.6 (42.9) and 359.5 (42.9),  $p=0.055$ , respectively. The mean logins per day for the initiation and establishment periods were 24.3 (0.8) and 31.5 (0.8),  $p < 0.0001$ , respectively.

**Going Forward:** An efficient and cost-sensitive PCIP can be effectively implemented within a functional Haitian field hospital that improves drug inventory management and further allows for sustainable medication delivery with a simple, easy to use web-based program.

**Funding:** None.

**Abstract #:** 02ITIS011

### HealthTrax: A new tool to identify and navigate dirt roads for health outreach work in Southern Zambia

M. Hong<sup>1</sup>, E. Bendavid<sup>2</sup>, K. Mehta<sup>3</sup>; <sup>1</sup>Stanford University, Mountain View, CA/US, <sup>2</sup>Stanford University School of Medicine, Stanford, CA/US, <sup>3</sup>University of California, San Francisco, Palo Alto, CA/US

**Program/Project Purpose:** Often in rural sub-Saharan Africa, health workers are faced with challenges navigating the dirt roads to rural villages. They cannot reliably access these roads due to flooding or obstructions. Despite the important role of accessible dirt road maps, few tools are available for health workers who face these challenges. In health clinics, health planning often takes place with a rough, hand drawn map.

**Structure/Method/Design:** The development of this tool relies on data gathered for a longitudinal field trial. The field trial evaluated Riders for Health, a social enterprise organization which maintains health transport fleets in 7 African countries. Eight districts in the Southern Province of Zambia were randomly assigned to either the Riders model or to usual maintenance as provided by the Ministry of Health. The results of this trial have been previously reported. Approximately 1/3 of the fleet (80 motorcycles and 30 vehicles) were given global positioning devices (GPS) to track the roads they used to deliver basic health care between September 2011 and March 2014. The following method was used to identify the roads: 1. All GPS points were overlaid on the "Roads" map in ArcMap. 2. The road segments that coincide with GPS points (within 200m) were selected to be the roads that health worker used. 3. When GPS points did not fall in any road segments, the road were created by digitizing based on ESRI basemap and Google Earth imagery.

**Outcomes & Evaluation:** 800,000 GPS points were logged to an Astrata database containing the location (longitude and latitude) and date, time, and license plate over the 2.5 year period. Of these 10988 km were roads used by motorcycles and 8194 km were used by vehicles. An online tool called HealthTrax was developed containing the 227 health facilities in the Southern Province of Zambia, roads from these health facilities to rural areas, and separations for roads used by motorcycles and vehicles. In addition, the tool was built to identify a health worker's position in relation to those roads, aiding in navigation. This format can be updated in real-time. The tool was