

was not seen in the data analyzed. We believe this is due to, in part, the small sample size ( $n = 27$ ). Other confounding factors may have included clinical differences among the patients such as history of prior transplant, differences in induction therapy, infections within the six month period before renal transplantation, and number of rejections post-transplant. The lack of significant change between C3 and C4 complement levels pre- and post-transplant suggests that immunosuppressive therapy, which targets B and T cells, has no effect on complement.

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**Abstract #:** 1.002\_TEC

### Building human capacity for optimal use of an electronic medical record system in Kenya: Results of a pilot evaluation of two elearning modules

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**Background:** From 2012–15, the Kenyan Ministry of Health, its funders, and partners supported implementation of electronic medical record systems (EMRs) in more than 600 public-sector health facilities. Successful, sustained use of EMR data depends upon knowledge and skills of front-line health care workers to use such systems. High turnover of health workers and new EMR system features result in an ongoing need for and access to EMR training. In response to this need, the International Training and Education Center for Health (I-TECH) developed and piloted two interactive eLearning modules covering EMR data quality and using EMR data for decision-making.

**Method:** I-TECH disseminated two asynchronous, offline modules to 6 facilities in Western Kenya via EMR system workstations. Facility management and on-site EMR mentors were oriented to the initiative; mentors supported other health workers to complete the modules. After 3 weeks, I-TECH collected questionnaires and conducted qualitative interviews on technical challenges when using the modules, relevance of the content, recommendations for dissemination, and suggestions for future topics.

**Results:** Thirty seven health workers participated in small-group qualitative interviews and 28 completed questionnaires. Key findings include:

- Participants were highly motivated to complete the modules and obtain a certificate.
- Modules took longer than expected to complete; 75% of respondents described the time required to complete each module as adequate.
- Over 60% of participants strongly agreed that their motivation to action and confidence to use EMR data and improve data quality increased.

- Over half of those interviewed recommended informal learning groups to discuss the modules.
- Over 50% of participants indicated that content, organization, and navigation of the modules was good.

Recommendations include:

- Provide certificates or continuing education credits for learners who pass the post-test;
- Integrate content on using EMR systems and clinical best practices
- Strengthen the role of facility management in the orientations to the modules.

**Discussion and Conclusion:** Facility staff were motivated to use EMR eLearning modules and apply what they learned. Participants found the content relevant to their jobs and cited an interest in additional scenarios and modules. Self-paced eLearning modules are a viable solution for standardizing sustainable training on EMR systems.

**Abstract #:** 1.003\_TEC

### Establishing a process for the use of hydroxyurea in pediatric sickle cell patients in Angola

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**Program and Project Abstracts:** Texas Children's Cancer and Hematology Centers and Baylor College of Medicine International Pediatric Aids Initiative (BIPAI) has partnered with Chevron to assist in the treatment of patients with Sickle Cell Disease (SCD) in Angola. The program called the Angolan Sickle Cell Initiative (ASCI), received a generous donation of the medication hydroxyurea (Hydrea®) from AmeriCares in partnership with Bristol-Myers Squibb. Hydroxyurea has been proven to be an important and effective treatment for individuals with SCD; it can minimize many of the significant symptoms patients develop, reduce the incidence of strokes, a major complication in patients with SCD, and can improve overall quality of life. Unfortunately, it is only available in the private healthcare sector and not yet available to the majority of the children affected by SCD treated in the public healthcare system.

**Structure/Method/Design:** The goal of this project was 1- to develop a process for storing, dispensing, and tracking hydroxyurea that complies with local legislation and donor requirements, 2- to ensure maintenance of supply chain integrity, 3- to track distribution and usage of hydroxyurea down to the patient level, and 4- to create a Standard Operating Procedure (SOP) adapted to this middle-income country that mirrors other SOPs at Texas Children's Hospital in order to provide a consistent standard of care.

**Outcome & Evaluation:** We successfully implemented an electronic procedure for tracking, storing, handling, and dispensing hydroxyurea in Angola. We also designed a paper version that can be used as a back-up tracking method during power outages. We

educated our local team on how to utilize the SOP and monitoring protocol and have seen great success with this to date. We have been able to monitor patients' adherence to the medication and have observed positive clinical results.

**Going Forward:** With the success in our pilot clinic, we hope to continue to expand the use of hydroxyurea to additional clinics in Angola, which will impact and improve the quality of life of more patients living with SDC in Angola.

**Funding:** This project was funded by Chevron and the medication was donated by AmeriCares in partnership with Bristol-Meyers Squibb.

**Abstract #:** 1.004\_TEC

### Mobile health innovations for low-resource settings: Experiences from a mental health community screening project in rural India

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**Project Purpose:** This presentation shares Medic Mobile's (MM) experiences from an innovative mHealth project with community mental health workers (CMHWs) in partnership with the MINDS Foundation in India.

Low and middle-income countries (LMICs) bear over 75% of the global burden of mental illness (WHO). In India, there are nearly 70 million mental illness patients (NIMHANS). Limited government spending has resulted in a severe shortage of mental health facilities, particularly in rural areas, and a deep-seated stigma towards mental illness further hinders patients from seeking and accessing care.

**Method:** MM and MINDS launched a pilot in December 2014 to conduct community mental health screening in rural Gujarat. MM's SIM application allows users to collect data through custom forms on any mobile phone. For this pilot, the SIM application was designed as a mental health assessment tool, allowing CMHWs to identify suspect patients and refer them to hospitals for treatment. During the pilot, several important lessons emerged:

The challenges associated with mental illness are different from other diseases. Adopting a human-centered design approach allowed us to understand the stigma associated with the illness in rural India, and the needs of our end users - CMHWs who handle sensitive cases with utmost discretion.

Mental health survey design requires careful analysis, particularly given the social stigma. MINDS designed a survey to fit the sensitive cultural context of rural India, and MM ensured that it was technology-friendly.

Training is important for the adoption of any new technology, particularly for users with low technology literacy. Our training focused on teaching CMHWs the basic uses of a mobile phone and its specific use in a mental health context.

**Outcome & Evaluation:** Between December 2014 and June 2015, 1,300 individuals were surveyed across 8 villages in Gujarat. Of these, 287 individuals were identified as suspect patients suffering from mental, neurological or substance use disorders, and were referred to hospitals for treatment.

**Going Forward:** Well-designed mHealth tools have tremendous potential to strengthen care coordination for mental illness, particularly in LMICs, and should be further leveraged by practitioners and researchers to address the challenges of mental healthcare.

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**Abstract #:** 1.005\_TEC

### Proposal for a consortium to study anti-cancer properties of west African medicinal herbs

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**Program/Project Purpose:** Traditional herbal medicines are widely used in West Africa for a large range of disease conditions, including cancer. However, there is little information about their therapeutic efficacy and active constituents. Many academic centers in Nigeria and elsewhere in West Africa are interested in studying the biological activity of these medicinal herbs, but their technological and human resources are limited and compromised by electrical power problems. We are in the process of developing a consortium of academic centers in Nigeria joining forces with the University of Illinois at Chicago (UIC) to more effectively study the anti-cancer activity of Nigerian traditional medical herbs.

**Structure/Method/Design:** Four sites in the South of Nigeria have joined forces to develop this consortium covering the southwest (University of Lagos), and three different sites in the southeast (Universities of Uyo, Calabar, and Nsukka). Medicinal plants specific for each area will be selected on the basis of their use in cancer patients and collected to produce extracts locally. These extracts will be sent to UIC for high-throughput analysis of their anti-proliferative and pro-apoptotic effects on human cell lines representing four major West African malignancies, cancers of the breast, prostate, liver, and uterine cervix. Once activity has been detected, these extracts will be fractionated in Nigeria and these will be sent to UIC to identify those fractions that contain the major activity.

**Outcome & Evaluation:** The major objective of this effort is identification of medicinal herbs with potential in vivo anti-cancer activity for further study in animal models and human trials. Importantly, possible adverse effects (stimulation of proliferation or inhibition of apoptosis) will be assessed as well to rule out potential negative implications of use of these herbs in cancer patients.