

Going Forward: Ongoing challenges: The project has only minor challenges thanks to great supports from TNHD and local health workers. Scaling-up to other provinces that do not have a computerized HMIS would be a challenge in the future. The project does not anticipate a

Funding: IDRC Canada.

Abstract #: 02ITIS021

Distant peer-tutoring of clinical skills, using tablets with instructional videos and Skype: A pilot study in the UK and Malaysia

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Program/Project Purpose: One way to help solve the problem of a lack of funding and trained educators in developing countries is to harness new developments in technology such as mobile health and online learning. This study aimed to assess the feasibility and impact of using specially designed low-cost Android tablets to deliver video tutorials and remote online peer-tutoring for clinical skills between two countries, the UK and Malaysia.

Structure/Method/Design: Nine junior medical students from Malaysia were paired with five senior medical students from the UK, who played the role of peer-tutors. Medical students from NUMED, Malaysia, volunteered to participate in response to an email advertising the scheme that was sent through the medical school administration to all students who were in the lowest quartile of their year group based on first year clinical examination scores. Students from NUMED were selected on a first-response basis and paired randomly and assigned a peer-tutor. Students from Malaysia were given a low-cost Android tablet from which they could access instructional video tutorials. At the end of each week, the peer-tutors would observe their peer-learners as they performed a clinical examination. Tutors would then provide individual feedback using a videoconferencing tool. Outcomes were assessed using Observed Structured Clinical Examination (OSCE) scores, post-study questionnaires and semi-structured interviews with participants. To ensure project sustainability, students who received a tablet paid a nominal fee.

Outcomes & Evaluation: Peer-learners reported an increased confidence in clinical examination of 8.4 (± 1.0) on a 10-point scale and all nine said they would recommend the scheme to their peers. Both peer-tutors and peer-learners were able to establish a strong rapport over video, rating it as 8.4 (± 0.6) and 8.4 (± 0.9) respectively. Peer-learners' rated the sound and video quality of the tablet as 7.0 (± 1.1) but were less satisfied with the screen resolution of the tablet, rating this as 4.0 (± 1.5).

Going Forward: This program illustrates the potential benefits to healthcare professionals in dramatically different locations provided by our frugal innovation in the realm of video tutoring and telemedicine. With improvements to the hardware and refinements to the pro

Funding: We received funding from Newcastle University, UK.

Abstract #: 02ITIS022

Performance monitoring and accountability 2020: Using mobile phone technology to monitor progress towards family planning 2020

Abstract opted out of publication.

Abstract #: 02ITIS023

Data sharing for neglected tropical disease drug discovery: Creating a framework for reducing redundancy and improving global collaboration

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Program/Project Purpose: Context. With the ever widening interest in drug discovery for neglected tropical diseases, increasing numbers of academic and industrial research teams are performing medicinal chemistry optimization of potential new drug agents. One risk of this expansion is the duplication of effort caused by compartmentalized prosecution of research projects that are unknowingly focused on pursuing highly similar research directions. The root cause of this issue is the common practice of doing drug discovery research with high levels of confidentiality, a "best practice" that is typical in the for-profit pharmaceutical industry, where developing and protecting intellectual property (IP) is paramount. A new way of thinking about sharing and protecting research data for NTDs is needed. Project Period. January 2014-onward (indefinite). Why the program/project is in place. The development of a secure data sharing portal could strongly enhance and accelerate NTD drug discovery efforts worldwide, both by reducing redundancy and by engaging smaller, resource-constricted organizations who are performing drug discovery research. Aim. To establish, populate, and operate a new data sharing portal that supports drug discovery for neglected tropical diseases.

Structure/Method/Design: Desired Outcomes. We intend to develop a self-sustaining, collaborative data sharing portal that captures chemical structure and biological screening data and that enables the collaborative and informed progression of NTD drug discovery projects, while balancing researchers' desire for information protection (confidentiality). Participants: The recruitment of participants in the program has been primarily by word of mouth, utilizing social media platforms, professional scientific networks, research seminars and posters, and an opinion piece published in PLOS-Neglected Tropical Diseases (DOI: 10.1371/journal.pntd.000286). Sustainability: Viability will be dictated by: (1) Engagement. We plan to have r portal teleconference meetings to discuss recent deposits and ongoing projects. In addition, we aspire to make available unique research resources for participating members in order to incentivize active participation. (2) Funding: we will seek funding from other organizations (NIH, BMGF) in order to further operate the portal.

Outcomes & Evaluation: Successes We have secured \$25,000 in funding via crowdfunding and established the database. We have also identified large tranches of data for deposit and shared, and have engaged other academic NTD drug discovery groups Monitoring. None conducted.

Going Forward: Ongoing challenges? The primary challenge has been to recruit participants who will deposit data into the portal and agree to deposit new data on an ongoing basis. Are there any unmet goals? No How are/may future program activities change as a result? N/A

Funding: The pilot phase of this project has been funded by a crowdfunding campaign (\$25,000):

Abstract #: 02ITIS024

An assessment of data quality in Haiti's multi-site electronic medical record system

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Background: The World Health Organization has identified health information systems as a "building block" for health systems

strengthening in low resource settings. Investments in electronic medical record (EMR) systems offer promise for improved information for patient and public health program management. Strong data quality (DQ) is a precursor to strong data use. Routine DQ assessment (DQA) within EMR systems can be resource-intensive when using typical methods of audit and chart review. Automated database queries on the completeness, accuracy and timeliness of data offer an efficient alternative. This DQA focuses on Haiti's national EMR - iSanté - a system deployed in 119 health care facilities and containing longitudinal data for more than 400,000 patients.

Methods: This mixed-methods evaluation focused on data related to HIV care and treatment. We first used a qualitative Delphi process to identify DQ priorities among local HIV experts, followed by a quantitative DQA on these priority data elements. The quantitative DQA examined 13 indicators of completeness, accuracy and timeliness of data using retrospective data from HIV patients, collected during more than 3.5 million encounters from 2005– June 2013. We described levels of DQ for each indicator over time, and examined the consistency of within-site performance. Using generalized linear models (GLM) with logit link and binomial errors for each of the 13 DQ indicators, we examined associations between DQ results and site and system characteristics, such as facility type, urban vs. rural location, and number of iSanté system users.

Findings: Ninety-five sites using the iSanté data system were included in the evaluation. On average, completeness was high for demographic data but low for clinical data, accuracy of age data was low, and timeliness of data entry was low. For most indicators, DQ tended to improve over time, both overall and within specific sites. DQ was highly variable across sites, and sites which performed strongly in some indicators performed weakly in others. In adjusted analyses, site and system factors with generally favorable and statistically significant associations with DQ indicators were University hospital type, private sector governance, presence of more advanced IT infrastructure, greater site experience, greater maturity of the iSanté system, having more overall system users but fewer new users.

Interpretation: The heterogeneity in performance on various priority DQ indicators across sites indicates that excellent DQ is achievable in Haiti, but that many sites have much work to do to improve their DQ performance. A dynamic, interactive “data quality dashboard” within iSanté could bring transparency and motivate improvement. Further investment in the IT infrastructure supporting iSanté, including assuring stable power supply, and in on-going training for new users, is also warranted.

Fundings: Health Resources and Services Administration (#U91HA0680); US Centers for Disease Control and Prevention (#5U2GGH000549-03).

Abstract #: 02ITIS025

An analysis of drug stock-outs in rural Western Kenya and subsequent patient impact

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Background: The objective of this study was to first understand root causes of drug stock-outs at primary community level clinics in Western Kenya, and second, to understand the impact on patient health and health-seeking behaviors as a result of stock-outs.

Methods: Data collection took place at 4 different rural dispensaries located in Western Province, Kenya. Data on the types of drugs most commonly out of stock, along with frequency of stock-outs was

collected using existing dispensary records for the 3 prior fiscal quarters. Data for patients was collected from randomly selected patients visiting the selected dispensary on a given day. Participants: 20 adult patients of both genders were interviewed from each dispensary with the use of a pre-written questionnaire. Interviews were carried out with the assistance of a translator in either Swahili or Maragoli. Participants were excluded if they were younger than 18. Data regarding drug stock-outs was analyzed using Microsoft Excel to determine length of stock-out, frequency of stock-out, and types of drugs most frequently out of stock. For patient information, data was summarized and categorized to determine how often patients could recall experiencing a drug stock-out, what drug was out of stock, and whether patients sought alternative treatment. Data was analyzed using a t-distribution due to limited sample size. Informed consent was received from participants only if they agreed after an explanation of the study. Approval was given by the University of Toronto ethics board.

Findings: 13 out of 16 essential medicines were found to have been out of stock at least once during the 3 fiscal quarters analyzed. Prevalence of stock-outs ranged from 16% to 77%. Primary causes for drug stock-outs were found to include poor inventory management, delays in order submission, inaccurate order quantities, and unfulfilled orders. Regarding patient impact, it was found that while drug stock-outs do not heavily impact patient health-seeking behaviors, it affected the ability of patients to access treatment. In most cases, when dispensaries did not have the available drugs, patients were advised to go to a chemist to purchase the medication instead. Many patients went without treatment, or purchased a partial portion instead due to their financial situation.

Interpretation: Based on the results, it is clear that drug-stock outs continue to be a pervasive problem at the dispensary level in Western Kenya. This is of significant concern, as it creates financial barriers to healthcare for patients. Lack of treatment, or inappropriate treatment, may result in poor patient health outcomes, as well as future problems regarding drug resistance if patients do not receive full doses. Further analysis should be undertaken to determine this.

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Abstract #: 02ITIS026

Mixed methods characterization of safety incidents involving children in family practice to inform improvement

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Background: 26% of UK child deaths have identifiable failures in healthcare. Despite children accounting for 40% of family practice doctors' workload, little is known about the safety of care in the community setting. Incident report data can offer insights into the nature and underlying causes of unsafe care. This study aimed to characterize pediatric safety incidents in family practice reported to a national (England and Wales) reporting system.