

community, is engaged in efforts to strengthen primary health care, strengthen health systems and increase health professional capacity, globally. The emergence of the Centre is the result of an extensive consultation process developed through annual Besroun Conferences (2012–2014).

Structure/Method/Design: The aim of the 4th annual Besroun Conference 2015 is to highlight the research priorities of the Besroun network based on the needs of its national and international partners. During the conference, participants will discuss ways to leverage its extensive network to generate evidence to support the Centre's goals. Conference participants will include Canadian academic leaders and family physicians, international partners and key stakeholders such as the World Bank Group, the Associations of Faculty of Medicine of Canada and the Canadian Coalition in Global Health Research.

Outcome & Evaluation: Since its inception, the Centre has provided a platform of mutual learning. It has created five working groups to share and advance the work of the Centre, and has begun disseminating its efforts through various means, such as workshops and publications. At the conference, the Besroun network will begin to develop the processes and outcomes of a mutually relevant research agenda, including metrics to measure and guide the progress of Besroun-related activities.

Going Forward: Through its research activities, the Centre will feed into key global partnerships and meet the challenges set forth by the Sustainable Development Goals and the Primary Health Care Performance Initiative.

Abstract #: 2.011_MDG

Neonatal resuscitation in low resource settings: Challenges to implementation at a district hospital level in Tanzania

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Background: Helping Babies Breathe (HBB) is an evidence-based protocol on neonatal resuscitation in resource-limited circumstances, which has been shown to reduce neonatal mortality when it is properly implemented. However, only one of seven hospitals studied was a district level hospital so further evaluation is needed to determine if there are enough resources to implement this protocol at rural district hospitals.

Methods: This study examines obstacles preventing implementation of HBB at Shirati Hospital, a resource-limited district hospital in the Mara region of Tanzania. Forty-eight first and second year nursing students attended the 2015 course, and provided feedback about whether they felt they could implement what they learned, and why. Nursing students were selected because they are often in charge of vaginal deliveries at Shirati Hospital. Their feedback provides a vital look into what may prevent implementation of this protocol.

Findings: Of the participants, 25% indicated that they did not have all of the resources to implement HBB at Shirati Hospital, with 14.5% of participants citing the lack of sufficient clean, dry cloths at deliveries. Furthermore, 12.5% of participants reported not

having enough bag valve masks in various sizes and 6.25% reported the lack of a drying rack. Clean water and soap were also cited as insufficient.

Interpretation: HBB has been shown to decrease the number of neonatal fatalities following training. However, our results shows that the availability of trained staff might not be sufficient to implement the training in resource limited settings. This emphasizes that programs designed to improve healthcare delivery in resource limited areas should be adequately evaluated at the district level facilities in addition to referral and specialized hospitals. Training workshops in low resource hospitals can be very valuable, but only if the hospital staff has access to the necessary resources to implement the teaching. If these resources are unavailable locally, it may be appropriate to provide sustainable access to these resources when offering a teaching workshop. HBB has shown promising results in the reduction of neonatal mortality in low resource areas, which would justify additional preparation and funding necessary for effective implementation of this protocol.

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Saving up for the future: HAART stock-outs as a contributor to treatment non-compliance among HIV-positive patients in Kumasi, Ghana

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Objectives: Shortages of highly active anti-retroviral therapy (HAART) have been reported as a significant barrier to HIV care in sub-Saharan Africa, but patient responses to medication stock-outs have not been fully described. The aim of this study was to examine the role of medication stock-outs in contributing to treatment non-compliance among a sample of HIV-positive patients already engaged in care at Komfo Anokye Teaching Hospital (KATH) in Kumasi, Ghana.

Methods: From June to August 2015, 57 patients participated in a one-time interview with a member of the research staff about both personal and structural barriers to treatment of HIV. Participants were recruited from the adult HIV clinic and antenatal clinics at KATH, and were included in the study if they were over 18 and currently on HAART. Medication records for each participant were reviewed and any medication changes documented for the past six months of treatment.

Findings: Nearly three-quarters of participants reported experiencing HAART stock-outs. Of those experiencing stock-outs, 43% reported drug defaults of greater than 2 days as a result of the stock-out, with an average length of default of 30 days. Of those who did not default during the stock-out period, 9% obtained HAART from a private pharmacy, 22% obtained drugs at another hospital and 52% reporting using medication they had saved up during the year or obtained from social contacts, what we refer to as "stockpiling." The frequency of changes to HAART regimens was also high: 84% of the sample reported at least one provider-initiated change to their treatment regimen in the past six months.

Interpretation: Stock-out rates were high for this large teaching hospital in Ghana, and treatment default due to lack of HAART supply was common. For those who did not default, there were high rates of stockpiling old medication or clinic-initiated changes to treatment regimen. Although we do not fully understand the risks of taking old, stockpiled medication, multiple changes in medication described in the study increases the risk for side effects and treatment non-compliance.

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Impact of smear-negative results on tuberculosis outcome in HIV co-infected patients at a teaching hospital in Ghana

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Background: Tuberculosis (TB) causes death in one of four HIV-infected patients globally. Among HIV-infected patients, negative acid-fast bacilli (AFB) smear TB has been associated with higher death rate compared to patients with smear-positive TB in Malawi. We hypothesized that smear-negative results may account for high TB mortality in HIV-infected patients in Ghana.

Methods: This retrospective study examined sputum smear-negative versus smear-positive pulmonary TB (PTB) patients seen at Korle-Bu Teaching Hospital Chest Clinic in Accra, Ghana from January 2010 to December 2014. Cases were sputum smear-negative TB patients with HIV and controls were sputum smear-positive TB patients with HIV. Inclusion criteria comprised diagnosis of TB and HIV within study period and age greater than 13 years. Patient characteristics were compared by Mann-Whitney Rank Sum Tests (continuous variables) and chi-square test (categorical variables). *P*-value < 0.05 was considered significant.

Findings: PTB smear status was abstracted from records of 668 subjects. Of these subjects, 246 (36.8%) had sputum AFB-positive PTB, and 422 (63.2%) had sputum AFB-negative PTB. Overall, 23.8% of the subjects died. Patients with smear-negative PTB had higher median age (*P*=0.029) and higher body weight (*P*=0.021) compared to smear-positive subjects. A greater proportion of smear-negative patients presented with PTB for the first time, while smear-positive patients were more likely to relapse or return after previous treatment default (*P*<0.001). Extra-pulmonary involvement or disseminated TB were more likely to present with negative smear (*P*<0.001). There was no difference in treatment outcome between patients with smear-negative and smear-positive status in our study (*P*=0.684).

Interpretation: This study demonstrates high mortality for both smear-negative and smear-positive patients. However, unlike the Malawi study, smear status did not appear to influence treatment outcome. The high frequency of disseminated TB in smear-negative patients suggests that a high index of clinical judgment and other tests are needed for early diagnosis and treatment. Additional

analysis is planned to understand the impact of HIV treatment on TB treatment outcome and whether that influenced the lack of association of smear results and outcomes.

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Toward the implementation of universal health coverage: Introducing the partners in health's-universal health coverage matrix

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Background: Universal Health Coverage (UHC) is part of the Sustainable Development Goals. Yet, with inadequate staff, weak supply chains and crumbling infrastructure the systems in the world's poorest countries are not designed to deliver on the promise of UHC. We present a novel way to look at UHC from the perspective of morbidity and population.

Methods: In 2002, with a grant from the Global Fund to Fight AIDS, TB and Malaria in Partners in Health and Zanmi Lasante in Haiti leveraged vertical funding for HIV to develop a platform to deliver primary health care as well as HIV services. In 2008, as part of the WHO project, "Positive Synergies between Health Systems and Global Health Initiatives" we tested the assumption that the right system could deliver on HIV targets and increase primary care utilization. This work of health systems strengthening has culminated in the development the Partners In Health Universal Health Coverage (PIH-UHC) matrix that 1) maps universal health coverage targets based on the burden of disease and the population of the clinic, 2) links targets with the staffing, supply chain and infrastructure needed to achieve UHC. Between 2014–2015, the PIH-UHC matrix has been used to align the health care sector reform in Lesotho. We have worked with the Ministry of Health using national norms as well as demographic and health survey (DHS) data to set targets for each clinic.

Findings: Since October 2014, 70 primary care clinics in Lesotho have been analyzed with the PIH-UHC matrix. Based on population and burden of disease, staffing, supply chain and infrastructure were oriented to achieve universal coverage targets (such as 100% facility based delivery). The preliminary analysis of the data from these 70 facilities shows more than 3-fold increase in utilization of services in the outpatient, antenatal, HIV and TB clinics. Facility based delivery has also nearly tripled in several facilities. This work has significant implications for the re-establishment health delivery in post-Ebola West Africa and as increase financing toward UHC is considered.

Interpretation: If a system is designed to link the burden of disease to the staffing, infrastructure and supply chain needed to attend to the population served by a primary health clinic, it is possible to drive utilization of services toward the achievement of universal health coverage.