

system data from registries, qualitative interviews, focus groups and flow mapping between post-partum (CPP), high-risk child clinic (CCR), and HIV clinic (TARV).

Findings: Poor linkage between CPP and CCR (55%), slow turn-around time of PCR results (6–8 weeks), and low rates of ART initiation in HIV+ infants (24%) were crucial shortcomings identified in the system. Obstacles to optimal care, as elucidated by interviews and focus groups, included long wait times, stigma, acceptability, and poor male involvement.

Going Forward/Interpretation: After identifying key weaknesses in the cascade, a targeted intervention was designed. First, to strengthen linkage between CPP and CCR, a patient tracking system was introduced. Infant forms are filled at the first CPP visit, and nurses review these forms daily to identify any infants remaining in CPP over 4 weeks of age. Mothers of infants whose charts remain in CPP over a month are contacted and referred to CCR, where PCR testing occurs. Secondly, to reduce the likelihood that infants will become lost in transition between services and to improve retention once ART is initiated, HIV services were integrated within CCR, thus eliminating a separate referral to TARV. This integration allows both mother and baby to receive HIV care in CCR for several months, where they are already linked to care and known by staff. Both components utilize community health workers (*activistas*) to accompany, track, and seek out lost infants using SMS, phone calls, and home visits. This intervention is being piloted at six health centers using a stepped-wedge design, and will conclude in early 2017.

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Demographic and mortality analysis of hospitalized children at a referral hospital in Addis Ababa, Ethiopia

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Background: Global childhood mortality rates remain high. Millennium Development Goal 4 focused efforts on reducing rates by two-thirds between 1990 and 2015. In Ethiopia, child mortality rates dropped 69% from 1990 to 2013, however it is estimated that 196,000 Ethiopian children die each year. There is limited information about pediatric hospital admissions in Ethiopia. Our aims were to examine the temporal relationship of mortality to admission, describe the demographics, and identify cause mortality of children admitted to the Zewditu Memorial Hospital (ZMH).

Methods: A four-year retrospective review of pediatric admissions was conducted at the pediatric emergency room and pediatric hospital ward at ZMH in Addis Ababa, Ethiopia. Admission entries from 2011–2014 of children age 29 days–14 years were reviewed. Age, gender, admission date, disease classification, discharge status and date were obtained. Chi-square analysis was used to compare patient gender and a descriptive analysis was

used for age, mortality, early mortality (death occurring within 2 days of admission), and cause mortality.

Findings: A total of 6,866 patient entries were reviewed. The proportion of admissions younger than age 5 was 0.75 (95%CI 0.74–0.76). Overall mortality was 0.042 (95%CI, 0.04–0.05). The proportion of recorded deaths occurring within 2 days of admission was 0.44 (95%CI 0.43–0.45). The proportion of male admissions was significantly higher than female admissions in all age groups (Males 57.5%, Females 42.5%, $p < 0.0001$, 95%CI 0.56–0.59). The main causes of mortality were pneumonia (25.3%), severe acute malnutrition (22.2%), HIV/AIDS-related complications (5.6%), spina bifida (4.9%), and hydrocephalus (4.5%).

Interpretation: Our study revealed a lower mortality rate than previously reported in Ethiopia. Despite this, 44% of pediatric hospital mortality occurred early during hospitalization, higher than reported at other Ethiopian hospitals. This adds further evidence that systematic efforts should be dedicated to improve pediatric emergency care. Admissions included 58% male patients, similar to other reports in Ethiopia implying that this may be a nation-wide phenomenon. The observed disparity may be due to societal factors regarding care-seeking behaviors or male predilection for respiratory illness warranting further investigation. Cause mortality patterns were similar to reports in analogous settings.

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Advancing a science of sustaining health in Madagascar

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Program/Project Purpose: PIVOT is a new global health NGO implementing a health system strengthening initiative in Ifanadiana,

Madagascar, through innovative partnerships that include the Madagascar Ministry of Health, Centre ValBio, Partners In Health, Brigham and Women's Hospital, and academic institutions. PIVOT aims to create a model health district in Madagascar by advancing an adaptive, bottom-up approach that recognizes that human health is the product of systems of healthcare delivery and systems of disease, including socioeconomic and environmental determinants. In a biodiversity hotspot that ranks among the world's poorest countries, this effort offers a unique opportunity to evaluate the next phase of development targets, as the MDGs shift to the more expansive Sustainable Development Goals.

Structure/Method/Design: The effort aims to create a novel platform for integrating healthcare delivery with research at all levels of the health system within a government district. Based on a logical framework, a large set of performance indicators were derived from program objectives, and structured according to the WHO building blocks of health system strengthening (HSS). The programs are developed on a foundation of data including: 1) a baseline survey of 1520 households (modified Demographic and Health Survey), and 2) a dashboard of real-time M&E performance indicators.

Outcome & Evaluation: PIVOT has been strengthening the HSS building blocks through the implementation of key programs at four government health centers and the district hospital. These programs include implementation of maternal/child health protocols (IMCI, SONU), elimination of point-of-service payments, infection control, and emergency care. Baseline data found particularly high rates of under-five mortality (140/1000) and a lifetime maternal mortality rate of 1/14. Time-series analysis of health center utilization data indicates that the pharmacy reimbursement system, which eliminated most point-of-service payments, has quadrupled health center utilization.

Going Forward: A longitudinal cohort study will begin in 2016 to revisit households from the baseline, and measure changes in many health indicators, such as under-five mortality rate, by 2021. These data will allow for mathematical models to be constructed that estimate the effectiveness of the healthcare system in breaking cycles of poverty and disease.

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Fostering an understanding of global nursing through international exchange

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Program Project/Purpose: With over 13 million nurses worldwide in all aspects of health services, they make up the largest

part of the healthcare workers around the world. Furthermore, nurses tend to be the routine provider of primary care in rural and urban settings within low-income countries as well as filling in primary care gaps where there are shortages in more developed nations (DeCola et al., 2012). As their scope within the global healthcare system is prolific, they have the potential to lead the world towards the Sustainable Development Goals and health and wellness for all. Global connections must be made within nursing in order to foster understanding, development, and increase the nursing standard of practice worldwide.

Structure/Method/Design: Student exchange programs are one way to develop connections and understanding in global nursing. The Johns Hopkins University School of Nursing offers several opportunities throughout the year for visiting students as well as its own students working abroad. These programs strive to expand the perspective of nursing students in order for them to view nursing within a global context as well as foster innovative ideas for problem solving.

Outcome/ Evaluation: This project serves as a way to analyze such exchanges for common themes, such as leadership, cultural competency, and application to practice among the nursing students who were able to participate in the exchange experience.

Going Forward: Analyzing these interactions helps us understand the benefits of global nursing experiences, how the experience changes the students' practice, as well as sheds light on how to structure future exchanges to maximize the understanding of nursing within a global context.

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The most powerful tool can be the simplest technology: ten years later, utilizing the physical exam in the Indian Himalayan Mountains

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Program/Project Purpose: Spiti Valley, located in the rural, high-altitude mountains of northern India, is inaccessible for approximately seven months of the year. Medically underserved, in 2006, the project commenced through an exciting partnership with Munsel-ling Boarding School. Starting in 2007, annual physical exams and permanent health records were initiated, and ultimately aided in: identifying important health concerns, planning future interventions, and providing a baseline from which the success of these interventions could be assessed.

Structure/Method/Design: Amid advancements in medical technology, the power of the physical exam can easily be overlooked. Time spent with each student not only enabled identification of common health concerns, but provided a unique opportunity to foster a warm and trusting relationship, fundamental to the success of any global health project. Over subsequent years, numerous interventions were executed, guided by the results of the exams and focused on the social determinants of health. High prevalence of infectious diseases prompted projects directed towards improving