

patients can benefit from the administrative, logistical and emotional support offered by the SW team. We propose this as a successful, low-cost program, which can easily be replicated at other hospitals to improve service delivery for admitted patients.

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### **Barriers and Facilitators of the Referral System of the Community-based Newborn Care Initiative in Ethiopia: An Audit of 546 Cases**

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**Background:** About 82,000 newborns still die every year in Ethiopia mainly due to sepsis, asphyxia and prematurity. To curb this situation, the Government of Ethiopia (GoE) implemented community based newborn care (CBNC). The strategy trained health extension workers (HEWs) at the health posts level to manage local infections, birth asphyxia, and prematurity and identify and refer cases of neonatal sepsis (i.e., very severe disease [VSD]) to health centers (or higher level facilities) after providing a pre-referral dose of antibiotics. When referral was not possible, then the HEWs were instructed to treat the VSD cases. To inform the CBNC program, this study examines the factors (i.e., barriers and facilitators) influencing 1) HEWs to refer VSD cases to health centers; and 2) compliance of caretakers to the referrals made by the HEWs.

**Methods:** JSI supported CBNC implementation in 2,924 health posts in 122 districts covering about 18 million people. The required sample size for the study was 540 VSD cases (expecting 23% of VSD cases will be referred,  $\pm 5\%$  precision, 95% confidence interval, and design effect set at 2.0). To obtain the sample, 140 health posts in the JSI supported areas that reported four or more VSD cases during July 2015–June 2016 were visited and the caretakers of 546 VSD cases interviewed (response rate was 94%). Multivariate logistics regression was used to assess whether age, education, and wealth of the caretakers; distance from health facility, antenatal care, institutional delivery, postnatal care, use of referral slip, advice on transportation, and facilitating ambulance use were independent factors influencing referrals.

**Findings:** About 23% (n=125) of the VSD cases were referred by the HEWs to the health centers of which 72% (n=90) of the caretakers complied. Receiving postnatal care was the only statistically significant ( $p < 0.05$ ) independent predictor. It was associated with 72% higher likelihood of cases being referred and 4.4 times more likelihood for the caretakers to comply with it.

**Interpretation:** Since a large segment of the VSD cases are managed by the HEWs, ensuring the quality of the services provided is imperative. Increasing the coverage of postnatal care will likely improve the performance of the CBNC referral system.

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### **RE-AIMing Program Design and Implementation: A Preliminary Process Evaluation of a Workforce Development Program**

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**Program/Project Purpose:** Recent outbreaks and emerging public health concerns have underscored the critical need for global workforce development. The Improving Public Health Management for Action (IMPACT) Program, developed by the Centers for Disease Control and Prevention (CDC), aims to improve public health management capacity in low-to-middle income countries. Partnering with Ministries of Health (MOHs), the two-year fellowship trains entry-level professionals through didactic instruction, field-based assignments, and structured mentorship and supervision. In 2016, pilot programs began in Bangladesh and Kenya.

**Structure/Method/Design:** The principal goals of the program are to build a cadre of highly-skilled public health managers and increase the effectiveness of public health systems to improve health outcomes. The program also aims to establish country ownership and engagement through stakeholder involvement (e.g., steering committee) and program contextualization.

To assess program goals, IMPACT is conducting a mixed-methods process and outcome evaluation utilizing the Reach, Efficacy/Effectiveness, Adoption, Implementation, Maintenance (RE-AIM) Evaluation Framework. Health promotion programs traditionally utilize RE-AIM to assess the individual and institutional impact concurrently. Although workforce development programs rarely use RE-AIM, it provides a multi-layered framework that allows for examination of the structural and political factors affecting the program and its sustainability.

**Outcome & Evaluation:** To date, IMPACT has completed the preliminary process evaluation. In terms of Reach, IMPACT's applicants and selected fellows were from diverse districts and backgrounds. Evaluation results thus far demonstrate course Effectiveness; participants report knowledge gain, and observations of fellows indicate increased competency.

MOH and stakeholder engagement in IMPACT's design, contextualization and implementation showed success in Adoption; each country modified the program design and provided country-specific examples. During Implementation, IMPACT courses were taught by a diverse group of instructors from CDC, the MOHs, local universities, and nongovernmental organizations. Instructor observational analysis revealed fidelity to IMPACT's learning objectives and teaching methods.

Further analysis will continue on all the aspects of RE-AIM as the program progresses.

**Going Forward:** The process evaluation found that adherence to project timelines was challenging. Security issues, inadequate time estimates for government processes, and difficulties in international coordination were the main causes of delays. IMPACT will adjust future timelines for new programs. Despite delayed activities, overall, the process evaluation indicates progress towards programmatic goals.

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### Leadership and Communication for EMTs in India: Bringing Calm to the Chaos

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**Program/Project Purpose:** Emergency medical technicians (EMTs) in low and middle income countries with relatively nascent emergency medical services and pre-hospital care systems face unique challenges. In India, the highly dense population draws large crowds to field calls, and the unfamiliarity with EMTs and pre-hospital medical care often leads to chaotic scenes that interfere with patient care. These calls require skilled crowd control and clear communication with the patient, family, and bystanders. Further, most EMT care in India is directed by physicians at a centralized call center, yet EMT-to-physician communication varies in quality due to disorganized structure and incomplete content during consultations and handoff, compromising patient care and safety.

**Structure/Method/Design:** The author is conducting a needs assessment for leadership and communication skills for EMTs in India. The assessment runs from September 2016 to October 2016 via interviews with EMTs and administration, attendance of ambulance ride-alongs, and a survey interview of EMTs on field runs. A formal two-day training course on leadership and communication for basic EMTs in India is being developed based on this assessment and will be piloted in January 2017. It will address aspects of communication between the EMT and their patients, the emergency response consulting physicians, the hospital physicians, and the local press. Further, it will break down areas of leadership indispensable to a strong EMT, including empathy, professionalism, altruism, technical skill, and crowd control. The EMTs have little-to-no exposure to such “soft skills,” so the course will be designed in conjunction with our Indian colleagues, to be delivered in a culturally sensitive manner in order to be well received. After revising the final content of the course, a formal train-the-trainers course will follow in April 2017, which will lead to the dissemination of the course nation-wide to their 20,000 EMTs.

**Outcome & Evaluation:** As this program is still under development, the final presentation is anticipated to reflect the results from the needs assessment, review research on leadership education for paramedics, and include the outcomes from the pilot and the final curriculum developed.

**Going Forward:** This course will be the first of its kind to be widely distributed in India and will become the standard course for paramedic leadership and communication training.

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### Crossing Boundaries: Health, Illness, and Palliative Care for a Rapidly Aging Population in China

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**Background:** As a result of rapid economic development, better basic health care and the “One-Child Policy”, China will face a rapidly growing aging population. It is estimated that the percentage of people aged 65 and older will grow exponentially from 9% in 2010 to 25% by 2030. However, the traditional care model, where the sons take care of their parents, will no longer be sustainable given the country’s “inverted pyramid” population profile. Currently, China lacks the foundation, structure, laws, finance, and number of professional caregivers, in both government and private sectors, to meet the increasing demand for elderly care.

**Methods:** This project looks at the current state of elderly care, identifies problems in the system, and proposes grassroots strategies to mediate the potential burden. A literature review on the burden of non-communicable diseases in China was conducted. Systematic surveys on common practices in medical ethical situations, such as patient informed consent in oncology, were obtained and analyzed. Primary interviews of patients, family members, healthcare providers of Modern Allopathic Medicine and Traditional Chinese Medicine, government experts on health system design and implementation were conducted during a field trip. The end product of the research is a documentary film which follows how a family navigates through the long-term care of an elderly patient with late-stage cancer.

**Findings:** The burden of non-communicable diseases, especially lung cancer, is rapidly increasing in both rural and urban settings in both genders in China over the last 5 years. Patients’ view on cancer may not match the scientific understanding of the diseases due to cultural interpretations of disease and health state, skepticism on the existing healthcare system, and misinformation on disease, treatment and outcomes of various cancers.

Traditional Chinese Medicine can also serve as a niche for both preventive care and palliative care in China. The majority of patients and doctors believe there’s insufficient integration of the two system to provide holistic care for patients with chronic diseases.

**Interpretation:** Research results serve as evidence for developing culturally appropriate frameworks and initiating grassroots movement to encourage the generation of the “single child” to discuss with their parents, and recognize challenges and expectations in caring for the future elderly population.

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### Methodological Comparisons in Assessing Neurosurgical Capacity in Uganda

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