

consistently recorded. The total number of adult and pediatric traumas, road traffic accidents (RTAs) and injuries due to violence were tabulated from each logbook. A time-limited observational trauma registry was created and all trauma patients presenting to three tertiary referral centers during one 8 – 12 hour period were recorded.

**Findings:** Logbooks were obtained from ten healthcare facilities with a median of 100 beds (range 40-300) All logbooks recorded patient name, age, date and hometown. A high degree of variability was observed in the amount of detail recorded for mechanism of injury, presenting symptoms, diagnosis, ER course and disposition. There was a median of 39 (range 20-114) trauma cases in one week. Pediatric trauma represented 4.4 – 42.4% of cases. Of the 8 facilities reporting mechanism, RTAs and violence represented a median of 22.6% (10.0 – 31.6%) and 9.4% (5.0 – 33.3%) of cases, respectively. Thirty-nine trauma patients were recorded in the abbreviated trauma registry. Modes of transportation to the ER included motorcycle (51.3%), car (17.9%), and foot (12.8%) with a median time from injury to presentation of 60 minutes (range 15-1170).

**Interpretation:** ER logbooks in Haiti began the injury surveillance process and could be useful tools with enhanced standardization. Although limited by sample size, an attempt to collect additional information in our registry such as vital signs and injury severity was unsuccessful due to a lack of protocolized trauma care and diagnostic modalities in Haitian ERs. Implementing a trauma registry, or augmenting existing ER logbooks to capture more data, can aid in further characterization of the trauma burden, identification of gaps in care and promotion of prevention strategies.

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### Treatment-seeking behavior and obstacles to compliance in diabetic patients of Southern India

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**Background:** Diabetes mellitus type II is major public health challenge in India. Anticipatory improvements in diabetes diagnosis and management must be made to accommodate the 65.1 million current diabetics and 31.9 million undiagnosed diabetics. We hypothesized that diabetes management may be influenced by subtle socio-ecological factors that can be targets for intervention. We evaluated the local treatment-seeking behaviors of diabetics focusing on the root causes of culture-specific barriers to treatment compliance.

**Methods:** A cross-sectional survey was administered in the local language (Kannada) to 204 self-identified type II diabetic adults aged 18 to 79 years at rural and urban clinical care settings in Mangalore, India. Fasting blood glucose level was measured in all participants prior to the survey. Participants that met the ADA goal (70-130 mg/dl) were considered “at target” for their management. Survey questionnaire included sociodemographic characteristics, treatment-seeking behavior (diagnosis of diabetes, healthcare provider contact, self care behaviors, access to information), and perceptions of obstacles (cost, access to care, quality of care, diet, emotional support). Statistical analysis was done using the statistical software IBM SPSS (version 22). Written informed consent was obtained from all

participants. This study was approved by IRB at both Nitte University and Wake Forest School of Medicine.

**Findings:** Out of 204 participants surveyed (mean age 55.0 years): 120 (59%) and 84 (41%) were male and female, respectively. In this study, only 77 participants were considered at target (37.7%). Predictors of at target status included age (OR 1.06, 95% CI 1.02-1.11) and rural living area (OR 1.92, 92% CI 1.02-3.60). Participants were commonly diagnosed with symptoms of diabetes (44.6%). Participants demonstrated frequent health care provider contact (51% in last one month, 74.5% in last three months). Accidental or purposeful deviation from the recommended medications or treatment plan was reported by 18.7% and 12.8%, respectively. From the whole sample, 111 participants (54.4%) were capable of receiving SMS messages by phone and 79 of them (71.1%) were willing to receive messages about diabetes. The most frequently self-reported obstacles to diabetes management were: medication costs (49.3%), treatment costs (46.6%), diabetic diet (33.8%), lack of relief on current treatment (17.4%), and transportation to appointments (16.7%).

**Interpretation:** Though most diabetics have frequent encounters with healthcare providers and report compliant behaviors, the majority do not meet recommended diabetes management guidelines. Screening of at-risk populations, targeted SMS campaigns, or diabetes-specific training for healthcare providers may improve clinical outcomes. Addressing cost and diet barriers will improve patient quality of life, but a larger study may indicate other impactful areas for intervention and their effects on diabetes control.

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### Effects of intimate partner violence on child maltreatment among women in Colombia

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**Program/Project Purpose:** 37% of Colombian women report being victims of physical abuse and 42% report physically punishing their children. We need to gather more information about the clustering of Intimate Partner Violence (IPV) and Child Maltreatment (CM) so as to establish a cause-and-effect relationship, especially in developing countries where the specific cultural and socioeconomic context might play an important role. Determining if IPV has a mediating effect on CM would help us identify at-risk populations so as to implement more appropriate interventions.

**Structure/Method/Design:** Our data was gathered from the Colombian Demographic Health Survey (DHS) 2010, which sampled over 41,000 women and over 37,000 households across 6 regions and 16 sub-regions in the country, distributed proportionately between urban and rural zones. To be included in our study, the respondent had to be a woman of reproductive age (15-49yo), currently living with her child (1-17yo) and partner, must be responsible for disciplining her child. The number of women who met the above listed criteria was 17,879. The analysis of the variables provided us with an odds ratio which allows us to determine any existing mediating effects that IPV may have between the mother's background (independent variables such as education level, age and wealth index) and our outcome (child maltreatment as physical punishment of child).

**Outcomes & Evaluation:** The study found that risk factors for CM are the presence physical and psychological abuse during the mother's childhood, being Afro-Colombian, a lower education level, a lower wealth index are all risk factors that would increase the likelihood of CM. Physical and psychological IPV are mediating variables which strongly increase the risk of CM; however, the effect of sexual IPV was not statistically significant. Protective factors are increased age and being Native Colombian.

**Going Forward:** This study only considers child maltreatment from the perspective of physical punishment, without considering psychological or emotional forms of punishment. Other factors, like employment status, should be taken into account due to possible confounding effects. Further analysis should include these factors into the final outcome. In Colombia, prevention strategies and effective interventions designed to decrease the incidence of CM should target Afro-Colombian women and populations with low education levels and wealth indices. By offering care and support to women who are victims of physical and psychological IPV in developing countries would not only decrease the disease burden caused by IPV but also diminish their risk of perpetrating violent acts toward their children.

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### Evaluation of a community health worker intervention to improve adherence to therapy for non-communicable disease in Chiapas, Mexico

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**Background:** Noncommunicable diseases such as diabetes and hypertension are leading causes of morbidity and mortality in Mexico. Community health workers are potentially effective in the care of these patients, but data regarding their effectiveness in the developing world are severely lacking. Our study aims to assess improvements in hemoglobin a1c, blood pressure, and adherence to therapy among diabetic and hypertensive patients after a community health worker intervention in rural Mexico.

**Methods:** *Compañeros en Salud* is a non-governmental organization operating in Chiapas, Mexico, and planned to introduce community health workers as an adjunct to routine care by a physician at every-three-month intervals in four rural communities. All adult patients on daily therapy for type 2 diabetes mellitus or hypertension were approached for verbal consent. Data collection utilized an observational stepped-wedge design, taking advantage of the programmatic plans of *Compañeros en Salud*. At baseline and every three months, just prior to implementation of community health workers in a new community, study investigators assessed adherence to medication, hemoglobin a1c, and systolic blood pressure among all study participants. The study was approved by the Partners Human Research Committee and by the Ethics board of Tecnológico de Monterrey Medical School.

**Findings:** 121 diabetic and / or hypertensive patients were enrolled during baseline data collection. At baseline, the range of average hemoglobin a1c in the four study communities ranged from 8.7% to 11.5%. Average baseline systolic blood pressure ranged from 132

mmHg to 149mmHg. Adherence to daily therapy was defined as self-report of taking medications in all of the preceding 5 days (5-day recall). Average baseline adherence to therapy by 5-day recall ranged from 41% to 82% across communities. Hypertensive patients who were adherent using 5-day recall had significantly improved systolic blood pressure as compared to those reporting non-adherence (difference in means 14mmHg,  $p < 0.01$ ). At this time, community health workers have been introduced to three of four communities. The stepped-wedge design will allow for within-and-between-community comparisons of all endpoints. Preliminary results will be available February 2015, after community health workers have been operating in all communities for at least 3 months.

**Interpretation:** There is room for improvement in adherence to therapy and measures of disease control among patients with non-communicable disease in rural Chiapas receiving routine care by a physician, and community health workers may serve as a useful adjunct. Though there are no validated measures in this setting for measurement of adherence to therapy, 5-day recall correlates well with disease control. Through thoughtful collaboration, a high-quality evaluation of a programmatic implementation of a community health worker intervention is possible even in challenging rural settings naïve to medical research.

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### Creating and implementing low literacy cancer education materials: bridging the gap in sub-Saharan Africa

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**Program/Project Purpose:** Global Oncology (GO) is a non-profit community of professionals and student volunteers helping global partners alleviate suffering through providing the highest quality cancer care. In January 2013, GO established a partnership with Queen Elizabeth Central Hospital (QECH) in Blantyre, Malawi. In June 2013, GO initiated the development of cancer educational materials for QECH's low-literate patient population, in collaboration with THE MEME Design in Cambridge, MA. The materials were completed in May 2014 and piloted in Malawi and Rwanda in June-September 2014. Through this project, GO aims to improve psychosocial support services and patient adherence in resource-limited settings.

**Structure/Method/Design:** Cancer care providers at QECH identified a need for educational materials for their low-literate patient population. In order to develop a clinically relevant and culturally appropriate product, GO is working with MEME, QECH, Partners In Health (PIH) in Rwanda, and has consulted with experts throughout Boston and sub-Saharan Africa. In addition to developing the materials, GO and its partners are investigating ways to integrate the booklets into clinical protocols as a platform to better engage patients and families in the treatment process.