(p=0.009), comprised more males (p=0.05), died faster (<=6 hours; p=0.03), and were less likely to present during the day (p=0.05). The sole significant predictor of death within 6 hours was symptom duration less than 4 hours (4-48hrs vs. < 4hours: OR=0.21, 95% CI=0.08-0.54, p=0.0014; >48 hours vs.

Interpretation: The mortality burden of trauma and sepsis in the TASH-ED is high, and mortality patterns differ between these groups. As emergency medicine develops as a specialty in Ethiopia, reduced mortality among these otherwise young, previously well patients could occur through targeted trauma prevention advocacy and the development of context-specific ED clinical care protocols. The generalizability of these study findings are limited by being a single-center study but hold great importance for informed improvements in ED care at Tikur Anbessa Hospital and likely approximate overall early ED mortality patterns in similarly-resourced ED settings in Ethiopia and other African countries.

Abstract #: 02NCD007

The road safety experiences and perspectives among technology sector employees of a US multinational corporation in urban India

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Background: There is urgent need for a multi-sectoral response to reduce the dangerously high road traffic injury and fatality rates in India. The purpose of this study was to understand the road use experiences and perceptions of road safety and hazards among employees of major multi-national corporation (MNC) in India to inform a globally enacted and locally-relevant employee road safety platform.

Methods: Self-report surveys and focus group interviews were used to elicit the road safety perceptions, attitudes and behaviors of employees in MNC's offices in Bangalore and Pune. A convenience sample of employees was recruited through an office-wide email solicitation. Eligible participants: used a roadway to commute to work, were at least 18 years old, and were proficient in written and spoken English. Approval was secured through the University of Pennsylvania Institutional Review Board and participants provided written informed consent. Six focus group interviews (lasting 1.5 hours) took place at 4 different MNC offices during daytime working hours. A research team member used a focus group guide to elicit participants' perspectives about traveling on roads in their city of residence, perception of road safety and hazards, experiences with road traffic injury, and opinions about programs that would enhance their self-efficacy as a road user. Study team members coded focus groups transcripts to develop categories and themes that describe interview content. Focus group findings were interpreted within the context of the demographic, vehicular and road use features, and road safety behaviors, identified in descriptive analysis of survey data.

Findings: Seventy-five employees (34 in Bangalore and 41 in Pune) participated in six focus groups. The demographic and road use variables for both cities were comparable. The majority of participants were 31-40 years of age, male, and used both personal 4-wheel and 2-wheel vehicles in daily road use. Participants considered daily road use to be a dangerous and stressful experience. Roadway danger was attributed to vehicle mix, non-adherence to traffic laws, and local transportation infrastructure unequipped for the rate of population and commercial growth. Comparing interview and survey data uncovered a mismatch between employee knowledge of safety strategies and self-reported road safety attitudes and behaviors.

Interpretation: Although the findings of this research cannot be generalized beyond MNC employees in Bangalore and Pune, this study illuminates an important public health role for MNCs with workforces in high-risk road traffic environments. MNC employers should target locally relevant policies and safety interventions which acknowledge features of the local road traffic environment like poor infrastructure and unenforced traffic law, as part of corporate health promotion platforms developed to decrease road traffic injury among employees.

Abstract #: 02NCD008

Differing rates of severe flame and electrical injury in severely burned children from mexico and the united states

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Background: While scald burns are the most common burn in children in the United States (US), we hypothesized that flame and electrical injuries, were more highly represented in patients from Mexico and would carry increased morbidity. The Shriners Hospital for Northern California (SHNC) receives transfers of pediatric burn patients from Mexico, and provides an opportunity to assess the etiology of burns in children from separate countries in a common environment.

Methods: Retrospective data was reviewed on children ages 0-21 years with burns involving total body surface area of burn injury (TBSA) of 20% or greater, admitted to SHNC from 2006-2014. Children admitted locally classified as being from the US. Patients from Mexico were transferred from Mexico. Outcomes included mortality, TBSA, mechanism of injury, length of hospital stay (LOS), ventilator dependent time (VDT), number of operations required, and need for blood component resuscitation. Analysis was completed using R-statistical package (www.r-project.org). All values are represented as mean± standard deviation. Statistical significance was set for at p < 0.05. The study was approved by the institutional review board of the Shriners Hospital of Northern California.

Findings: Over the period reviewed, 382 patients met entry criteria, of which 66% were transferred from Mexico and 34% were from the U.S. Mean TBSA (36±19% vs. 34±23%, p=0.4) and incidence of inhalation injury (21% vs. 16%, p=0.29) did not differ between Mexican and U.S. children. There was also no difference in overall LOS (p=0.33), VDT (p=0.78), number of operations (p=0.18), or the amount of blood (p=0.9) or FFP (p=0.4) transfused. Compared to U.S. children, Mexican children had a significantly higher incidence of flame injuries (62% vs 49%, p=0.001) and accounted for a significantly higher incidence of electrical injuries (6.7% vs. 0%, p=0.0001). Patients from either country with flame or electrical burns had significantly higher TBSA (p=< 0.0001) and fresh frozen plasma in the ICU (p=0.001) compared to patients with scald burn injuries. Intraoperative transfusion needs

were greater for blood (p < 0.0001) and FFP (p=0.0001) for children with electrical and flame injuries compared to scald injuries.
Interpretation: Electrical and flame burns are a significant source of injury among children in Mexico, and these burns carry increased morbidity. Future prevention efforts should address these mechanisms, and assess specifically in what regions these burns are most evident and whether specific interventions could be targeted to these environments and populations.
Funding: No additional funding to report.
Abstract #: 02NCD009

Epidemiology and analysis of common behavioral patterns of motorbike accidents with head trauma at a government hospital in Phnom Penh (Cambodia)

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Background: Motorbike accidents are a major cause of head trauma in Cambodia, likely due to the increasing use of motorbikes, bad road conditions, non-regulated traffic laws, and a low rate of helmet use amongst motorbike drivers. The aim of this study was to investigate common causative factors and behavioral patterns of motorcyclists with head trauma.
Methods: In this cross-sectional study, we analyzed 180 motorbike-related head trauma cases admitted to the Department of Neurosurgery at Preah Kossamak Hospital in Phnom Penh, Cambodia from October 2013 to August 2014. Age, sex, time of injury, mechanism of injury, helmet usage, alcohol involvement, diagnosis, and Glasgow Outcome Scale (GOS) were collected and analyzed. Pearson's Chi-square-test of significance and frequency tables were used. The study was approved by the Institutional Review Board at the New York University, New York, New York.
Findings: The male to female ratio was 5:1. The age ranged from 16-60 with a predominant peak at 19-26 years. Most accidents occurred on Sunday (25%) followed by Monday (17%). A high percentage of accidents occurred at night (59%). The most common mechanism was collision with another motorbike (42%), followed by a fall from motorbike (25%). 45 % of patients admitted to alcohol intake. Significantly more male patients (51 %) then female patients (13 %) admitted to alcohol involvement at the time of accident (p=0.0005). Interestingly, there was no connection between alcohol involvement and helmet usage. Only 7% of the patients reported wearing a helmet, and males were twice as more likely than females to wear a helmet (8% vs. 4%). The most common diagnosis was concussion (37% of patients), followed by brain contusion (29%). Skull fracture (27%) was the most common fracture, followed closely by facial fracture (23%). Of the 62 patients who completed the follow-up questionnaire, 10 % reported a GOS under 4 (severe injury with permanent need for help). 3 patients died.
Interpretation: The scope of study is limited to head trauma patients admitted to a single neurosurgical department. Therefore our data does not reflect the actual helmet usage rate on the street. Nevertheless, the rate of helmet usage in our patient population is significantly less than the previously published street rates in Cambodia. Assuming that accident rates between helmeted and unhelmeted motorcycles drivers are equal, we can surmise that drivers wearing a helmet at the time of an accident are less likely to present to our department. The high percentage of alcohol use while driving and the low rate of helmet use calls for educational programs to raise awareness for road safety and change the behavior of the drivers. Furthermore, a stricter enforcement of helmet laws is recommended.
Funding: World Federation of Neurosurgical Societies and the Korean American Medical Association.
Abstract #: 02NCD010

Report on the feasibility of implementing hemoglobin A1c in the WHO STEPwise approach to surveillance (STEPS)

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Background: Over 80% of diabetes deaths occur in low- and middle-income countries. To better track and respond to this growing problem, the World Health Organization STEPwise Approach (STEPS) collects risk factor data throughout the developing world on diabetes and other non-communicable diseases. Currently diabetes risk is measured by fasting blood glucose (FBG) levels. This indicator, while inexpensive, requires two visits for every participant, one in which they are instructed to fast for 12 hours and a second where the blood samples are obtained. In the context of rural, developing settings, this leads to a more time-intensive and therefore more costly data collection process. Hemoglobin A1c (HbA1c) was assessed as a potential alternative to FBG for measuring diabetes risk. HbA1c reflects time-averaged glucose levels over the preceding month and therefore does not require fasting or a preliminary visit. Implementation could save WHO resources and might also improve the quality of data; non-compliant fasting among sampled populations is thought to falsely elevate diabetes risk measured by FBG.
Methods: A literature search was conducted to determine the feasibility of HbA1c implementation in global surveillance. Specifically, two particular qualities were assessed: the validity of HbA1c in disparate global populations and the availability of suitably accurate battery-powered point-of-care analyzers. For the former, a search algorithm was used to unearth geographically heterogeneous factors that influence HbA1c levels (namely ethnicity and anemia). A mathematical model was then used to predict the degree to which this would skew global prevalence rankings for raised plasma glucose. For the latter, all literature assessing the quality of modern battery-powered HbA1c devices was collected. From this, precision and accuracy were assessed and compared to National Glycohemoglobin Standardization Program criteria.
Findings: Both the validity of HbA1c in the context of global surveillance and the availability of suitable devices proved insufficient. Of the many non-glycemic factors found to influence HbA1c, iron deficiency anemia (IDA) presents the greatest barrier to its application as a global indicator. In South Asia, IDA would elevate national average HbA1c values by 0.32 ± 0.07 A1c and generate false positives in 8.6 ± 2.0 % of the population. In terms of available devices, battery-powered A1c analyzers were found all to vary in bias by more than 0.3 A1c between two randomly selected manufacturing lots.
Interpretation: Both the impact of hematologic diseases like anemia and the lot-to-lot variability in modern devices could introduce unacceptable error into cross-country comparison of diabetes prevalence.