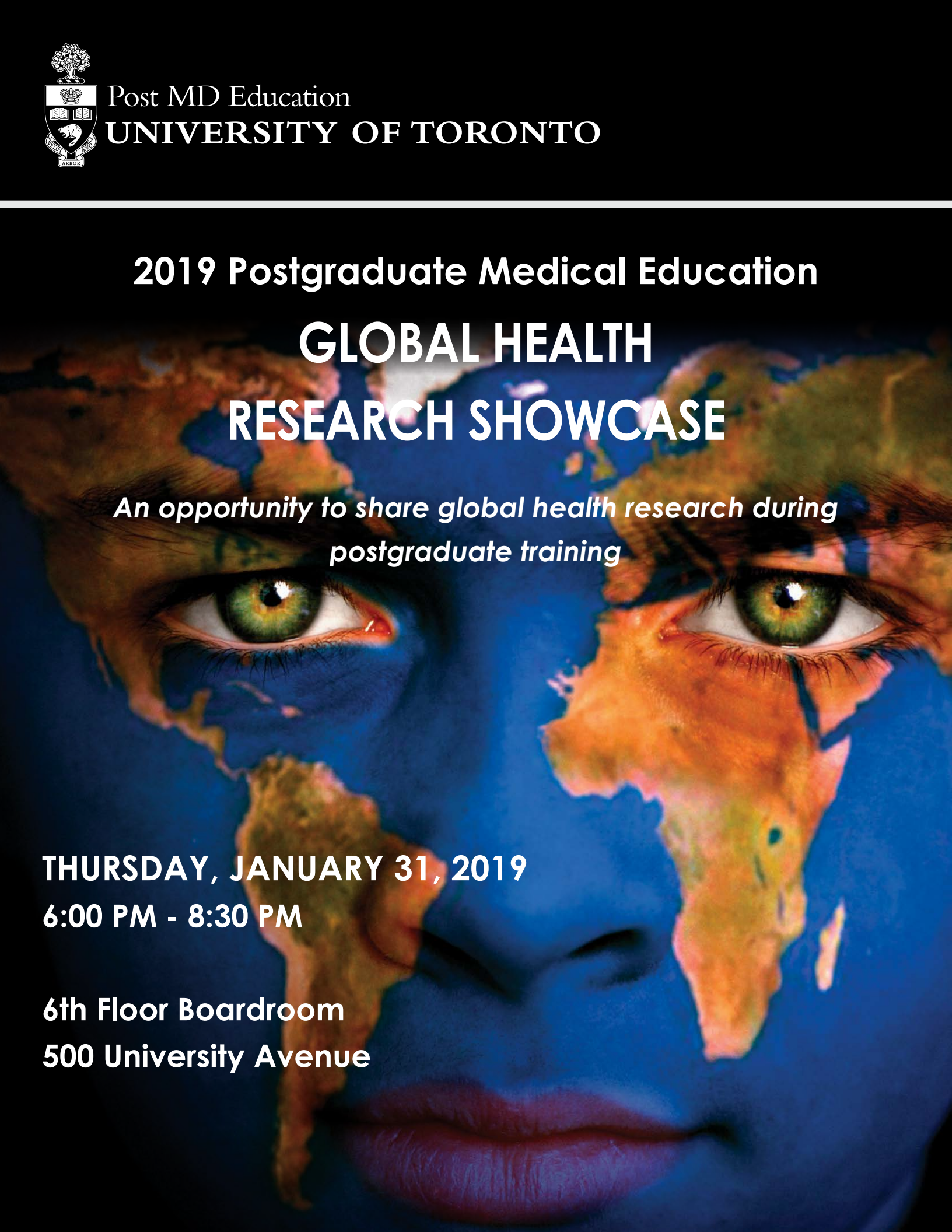
Post MD Education
UNIVERSITY OF TORONTO

## 2019 Postgraduate Medical Education

# GLOBAL HEALTH RESEARCH SHOWCASE

*An opportunity to share global health research during postgraduate training*



**THURSDAY, JANUARY 31, 2019**
**6:00 PM - 8:30 PM**

**6th Floor Boardroom**
**500 University Avenue**

# PROGRAM

6:15 pm *Welcome, moderated by Dr. Shambe Mutungi, PGY5 OBS/GYN and Dr. Paul Dolinar, PGY1 Family Medicine*

6:20 pm 1. Expressive flexibility in combat veterans with posttraumatic stress disorder and depression
Dr. Rebecca Rodin, PGY2 Internal Medicine

6:30 pm 2. Effect of an integrated neonatal care kit on cause-specific neonatal mortality in rural Pakistan
Dr. Jessica Duby, Fellow Neonatal-Perinatal Medicine

6:40 pm 3. Implementation of the Integrated Neonatal Care Kit to Reduce Neonatal Infection in Rural Pakistan: A Cost-Utility Analysis
Dr. Karen Chung, PGY3 Plastic Surgery

6:50 pm 4. A systematic review of clinical practice guidelines for the diagnosis and management of bronchiolitis
Dr. Gabriel Tse, PGY1 Pediatrics

7:00 pm BREAK

7:10 pm 5. "I thought that I had to be alive to repay my parents": Filial piety as a risk and protective factor for suicidal behaviour in a qualitative study of Chinese women
Dr. June Lam, PGY5 Psychiatry

7:20 pm 6. Cost of Hospitalization for Stroke in a Low-Middle Income Country: Hospital in the Philippines
Dr. Jose Danilo B. Diestro, Fellow Interventional Neuroradiology

7:30 pm 7. Emerging Suicide Trends in a tribal population in South India
Dr. Susmita Chandramouleeshwaran, Fellow Geriatric Psychiatry

7:40 pm *Discussion moderated by Dr. Shambe Mutungi and Dr. Paul Molinar*

*Closing comment and Thankyou! by Dr. Barry Pakes, Global Health Academic Lead, PGME*

8:30 pm END

# ABSTRACTS

## 1. Expressive flexibility in combat veterans with posttraumatic stress disorder and depression

Author 1. Rebecca Rodin, PGY2, Internal Medicine, University of Toronto
Author 2. George Bonanno, Professor, Department of Clinical Psychology, Columbia University, USA
Author 3. Charles Marmar, Chief of Psychiatry, New York University Langone Medical Center, USA
Author 4. Adam Brown, Department of Psychology, Sarah Lawrence College/New York University, USA

**Background**: Growing evidence suggests that flexibility in the expression and suppression of emotions following exposure to traumatic events supports successful adaptation. This was demonstrated in New York City university students exposed to the September 11th terrorist attacks and in bereaved adults, who recently lost a spouse. However, the protective effect of emotional flexibility has yet to be examined among individuals exposed to combat trauma.
**Purpose**: The present study aims to test whether lower levels of emotional flexibility are associated with posttraumatic stress disorder (PTSD) and depression in combat-exposed veterans.
**Methods**: Sixty Operation Enduring Freedom, Operation Iraqi Freedom combat veteran with and without PTSD were recruited. Participants completed self-report measures of depression, PTSD, and combat exposure. Participants also completed an emotional flexibility task in which they were asked to either enhance or suppress their expressions of emotion while viewing emotional images. Blind observers rated the expressiveness of the participants in response to the affective stimuli.
**Results**: Repeated measures ANOVA's showed that both PTSD and depression were associated with lower levels of emotional enhancement ability. A series of linear regressions demonstrated that both combat exposure and lower levels of emotional enhancement ability predicted PTSD and depression symptom severity. The ability to suppress emotional responses did not differ among individuals with and without PTSD or depression.
**Conclusion**: Deficits in emotional flexibility, particularly related to the ability to enhance emotional expression, significantly predict increased posttraumatic symptom severity among combat veterans. These findings shed light on previously unrecognized affective mechanisms underlying the pathogenesis of PTSD and depression and may help to inform future intervention.

## 2. Effect of an integrated neonatal care kit on cause-specific neonatal mortality in rural Pakistan

Authors 1.
Jessica Duby, Neonatal-Perinatal Medicine, PGY6
Lisa Pell, Centre for Global Child Health, The Hospital for Sick Children, Toronto, Ontario
Shabina Ariff, Aga Khan University, Karachi, Pakistan
Amira Khan, Centre for Global Child Health, The Hospital for Sick Children, Toronto, Ontario
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Shaun Morris*, Centre for Global Child Health, The Hospital for Sick Children, Toronto, Ontario
(*co - senior Authors)

**Background**: Pakistan has the highest neonatal mortality rate in the world. The burden is shouldered by families in rural regions with limited access to health care facilities. There is a need to engage families in the promotion of newborn health.
**Objective**: To determine the effect of delivering an integrated neonatal care kit to pregnant women in rural Pakistan on cause-specific neonatal mortality. The kit included low-cost interventions to prevent and identify infection, identify and refer low birthweight (LBW) neonates, and identify and manage hypothermia.
**Methods**: The study was a retrospective analysis of data collected in a cluster-randomized controlled trial in Rahimyar Khan, Pakistan. All neonatal deaths were eligible for verbal autopsy. Verbal autopsies were interpreted by two blinded pediatricians with a senior pediatrician adjudicating discrepancies. Cause-of-death was assigned based on a predefined algorithm. The primary outcome was cause-specific neonatal mortality.
**Results**: Of the 5233 live born neonates with a complete outcome, 147 neonates died. Verbal autopsies were performed on 57% of all deaths. The main causes of death were prematurity/LBW (38%), infection (21%) and intrapartum-related complications (20%). For each specific cause-of-death, there was no statistically significant difference in neonatal mor tality between int ervention and control groups (prematurity/LBW [RR] 0.72 [95% CI] 0.36–1.44, p=0.35; infection [RR] 0.84 [95% CI] 0.34-2.04, p=0.70; intrapartum-related complications [RR] 0.93 [95% CI] 0.36-2.38, p=0.88).
**Conclusion**: The distribution of causes-of-death in Rahimyar Khan, Pakistan is representative of the global landscape of neonatal mortality. Bundled interventions targeting neonatal infection and care of the small baby did not result in a statistically significant reduction in cause-specific mortality. However, the effect size may be clinically relevant for neonatal mortality due to infection and due to prematurity/LBW. Further research using a larger total sample size is justified.

## 3. Implementation of the Integrated Neonatal Care Kit to Reduce Neonatal Infection in Rural Pakistan: A Cost-Utility Analysis

Authors 1. Karen Chung, MD, PGY3, Institute of Health Policy Management and Evaluation (IHPME), University of Toronto, Canada
Fiona Muttalib, MD, FRCPC, IHPME, University of Toronto, Canada
Authors 2. Shaun K Morris, MD, Division of Infectious Diseases and
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Lisa G Pell, PhD, Centre for Global Child Health, Hospital for Sick Children, Toronto, Canada
Author 3. Beate Sander PhD, Toronto Health Economics and Technology Assessment (THETA) Collaborative,
University Health Network, Toronto, Canada

**Background**: Pakistan has the highest neonatal mortality rate in the world, with 46 neonatal deaths per 1,000 live births. A recent cluster randomized controlled trial (cRCT) estimated the effect of an integrated neonatal care kit (iNCK) compared to standard of care in Rahimyar Khan, Pakistan, on neonatal mortality.
**Objective**: We aimed to evaluate the cost-effectiveness of iNCK distribution compared to standard care from the healthcare payer perspective.
**Methods**: We performed a cost-utility analysis using a Markov model based on cRCT trial data and a comprehensive literature review. Pregnant mothers either received the iNCK or standard care and their infant was followed over a lifetime horizon. Given the scarce healthcare resources of developing countries, a conservative cost-effectiveness threshold (CET) of 1% GDP per capita was selected. Outcome measures were disability-adjusted life years (DALYs), costs and incremental net monetary benefit (INMB, at a CET of USD 15.50), discounted at 3%.
**Results**: Distribution of the iNCK resulted in lower expected DALYs (28.70 versus 29.54 years) at lower expected cost (USD 72.41 versus 86.11), translating to an INMB of USD 27 per iNCK distributed. This was sensitive to the baseline risk of infection, iNCK cost and the relative risk of infection associated with iNCK use. iNCK remained cost-effective if the associated relative risk of infection was below 0.83 and iNCK cost was less than USD 32.
**Conclusions**: The distribution of the iNCK dominated the current standard of care, i.e., is less costly and more effective, largely attributable to a reduction in neonatal infection.

## 4. "I thought that I had to be alive to repay my parents": Filial piety as a risk and protective factor for suicidal behaviour in a qualitative study of Chinese women

Author 1. June Lam, MD, PGY5 Psychiatry, University of Toronto
Author 2. Paul S. Links, MD, FRCPC, Department of Psychiatry and Behavioural Neurosciences, McMaster University
Author 3. Rahel Eynan, PhD, Lawson Health Research Institute, Western University
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Author 9. Pozi Liu, MD, Department of Psychiatry, Yuquan Hospital, Tsinghua University
Author 10. Juveria Zaheer, MD, FRCPC, Institute for Mental Health Policy Research, Centre for Addiction and Mental Health

**Background**: Filial piety involves the Confucius view that children always have a duty to be obedient, respectful, and provide financial and emotional care for their parents. Filial piety has been described as both a risk and a protective factor in depression and suicide. There have been no qualitative studies examining the role of filial piety in the suicidal behaviour of Chinese women.
**Objectives**: This study aims to explore the role of filial piety in the suicidal behaviour of Chinese women using qualitative research methodology.
**Methods**: Qualitative interviews were conducted with Chinese women (n=29) with a history of suicidal behaviour living in Beijing and the surrounding area. Filial piety data were extracted in a subanalysis in accordance with constructivist grounded theory.
**Results**: The women described family and filial piety factors that influenced their ability to fulfill family role obligations as daughters and mothers, including: 1) the rigidity of parental filial piety expectations, 2) their family environment, 3) the importance of filial piety as a personal value, 4) any punitive consequences of rebellion, and 5) how much filial piety was received. Depression led to functional impairment, reducing the women's ability to fulfill family role obligations and causing those obligations to feel more burdensome. The inability to fulfill family role obligations increased distress, which led to suicidal behaviour. Some women described how filial piety was protective for suicidal behaviour, but their increasing depression and distress overcame their filial duty. After suicidal behaviour, treatment improved depressive symptoms, distress, and functional impairment; and shifted the balance and weighting of family and filial piety factors so the women generally felt more able to fulfill family role obligations, thereby reducing distress and future suicidal behaviour.
**Conclusions**: Family and filial piety factors should be part of a suicide risk assessment in Chinese women with depression and suicidality. Special attention should be paid to recently changed factors that affect whether a woman feels able to fulfill family role obligations. After suicidal behaviour, these factors can be harnessed as part of recovery and to protect against future suicidal behaviour.

## 5. A systematic review of clinical practice guidelines for the diagnosis and management of bronchiolitis

Author 1. Gabriel Tse, PGY1, Paediatrics, University of Toronto
Author 2. Harry Campbell, Professor, Usher Institute of Population Health Sciences and Informatics, University of Edinburgh, UK

**Introduction**: Bronchiolitis is a leading cause of morbidity and mortality in children worldwide. Many treatment options are available, and various clinical practice guidelines (CPGs) have been developed to assist clinicians in management. The aim of this study is to appraisethese CPGs and compare their recommendations.
**Methods**: A systematic review of the literature identified relevant CPGs by searching MEDLINE, EMBASE, Global Health (CABI), Web of Science, as well as a manual search. Studies must have been published in English, been published within the last 20 years, and give recommendations on the management of bronchiolitis. The search was performed on 16 March 2016.
**Results**: A total of 11 relevant guidelines were included, five through electronic database searching and six through manual searching. Two guidelines were North American, three Australian, four European, one African, and one from Asia. 10 were produced by professional scientific organizations. The target population was infants and children with bronchiolitis.
**Conclusions**: According to the CPGs, diagnosis of bronchiolitis is primarily clinical. Management is largely supportive and includes adequate feeding, hydration, and oxygenation. Guidelines had conflicting recommendations for several treatments including the use of bronchodilators, hypertonic saline, adrenaline, corticosteroids, suctioning, and chest physiotherapy.

## 6. Cost of Hospitalization for Stroke in a Low-Middle Income Country: Findings from a Public Tertiary Hospital in the Philippines

Author 1. Jose Danilo Bengzon Diestro,M.D. Neurology/ Stroke/ Interventional Neuroradiology Fellow/ St. Michael's Hospital, University of Toronto
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Author 8. Jose Leonard Rivera Pascua,l M.D. Adult Neurology/ Stroke/Attending/Philippine General Hospital, University of the Philippines

**Introduction**: Determining the cost of hospitalization for acute stroke is important in the appropriate allocation of resources for public health facilities and in the cost effectiveness analysis of interventions.
**Objective**: The objective of this study was to determine the total cost of hospitalization for acute stroke in a tertiary public hospital in the Philippines and determine the factors influencing cost.
**Methods**: The study was a retrospective review of medical and billing records of the hospital. Adult patients admitted for acute stroke between June 2017 to October 2017 were included in the analysis. After the mean cost of stroke was determined, multivariable logistic regression analysis was done to determine demographic and clinical characteristics that were predictive of stroke cost.
**Results**: A total of 509 patient records were analyzed. The mean cost of stroke was 32,798.07 PHP (609.43 USD). Independent determinants of higher cost include stroke type (hemorrhagic stroke ($p=0.001$) and subarachnoid hemorrhage ($p=0.001$)), younger age ($p=0.001$), infection ($p<0.001$), length of hospital stay ($p<0.001$) and mechanical ventilation ($p=0.001$). The cost of hospitalization is higher than the fixed reimbursement rates provided by the National Health Insurance Program for all types of stroke except ischemic stroke.
**Conclusion**: The study provided current data on the cost of hospitalization for acute stroke in a public tertiary hospital in the Philippines. Stroke type, age, presence of infection, length of hospital stay, and need for mechanical ventilation were independent predictors of cost.

## 7. Emerging Suicide Trends in a tribal population in South India

Author 1. Susmita Chandramouleeshwaran, Geriatric Psychiatry Fellow, CAMH
Author 2. Mahantu Yalsangi, BDS, MPH, Public Health Coordinator,Association for Health Welfare In the Nilgiris (ASHWINI)
Author 3. Bhavna Sharma, MSW, Social Work Intern, ASHWINI

**Background**: We aimed to obtain information about completed suicides in the tribal communities served by ASHWINI (Association of Health Welfare in the Nilgiris), an NGO that runs a community health programme for about 300 hamlets spread over the Gudalur and Pandalur taluks of the district.
**Objective**: To study socio-demographic factors, incidence, causes of suicide in this tribal population in the Nilgiris, and to compare it with Indian data.
**Methods**: Data retrospectively collected from the records of a 20,000 strong tribal population, for the period April 2010-March 2016. Frequencies and descriptives were calculated using SPSS 20.0. A focus group discussion was held among community health animators serving the population to understand factors associated with individual suicides for the period April 2015-March 2016.
**Results**: There were 88 completed suicides in the study period. With a baseline population of 20,000, the annual incidence rate of suicides is 73/100,000. After cancer and stroke, suicide was the third highest cause of death in this population, and the highest cause of death in the age group 15-45 years. 60.2% of the suicides were in the age group 21-40 years. The average age at the time of death was 35.5 years, and the male: female ratio was 2.8 : 1. Alcohol consumption and dependence were significantly associated with completed suicides in this population.
**Discussion**: The national average incidence rate is 10.6/100,000.1 The incidence rate of suicides is seven times the national average. The mean age in Indian population is 25 years 2, and the male to female ratio is 1.78 : 1.3 The average age of suicide was 10 years higher than the national average, and the ratio of male to females was higher. These could be explained by the fact that alcoholdependence was strongly associated with completed suicides in this tribal population.

**References**

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3. National Crime Records Bureau. Accidental Deaths and Suicides in India 2007. Ministry of Home Affairs, Government of India; New Delhi 2009.

# *Thank you for learning with us . . .*

# *Special Thanks to . . .*

**PGME Global Health Resident Research Showcase Leadership Team**

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Dr. Paul Dolinar, Family Medicine

Judy Kopelow, PGME Global Health

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Dr. Barry Pakes, PGME Global Health

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*and the . . .*

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