Epidemiology

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944 FALLS RELATED INJURIES IN BANGLADESH: EXPERIENCES FROM A COMMUNITY-BASED SURVEILLANCE SYSTEM

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Background Injuries have become a major public health concern in Bangladesh due to epidemiological transition. Falls among children is one of the leading cause of childhood morbidity in Bangladesh. Falls among adults has great impacts on our economy as falls is a major cause of permanent and long-term disability. However, falls among whole population has not yet been studied. In this study, we aimed at exploring the distribution and determinants of falls among all age groups.
Methods A community-based active surveillance system covering around 150,000 population was developed in three unions (lowest administrative infrastructure) of a sub-district of Sirajgonj district, Bangladesh in 2005. Every year, four rounds of data are being collected from the each and every households of the surveillance areas by the trained surveillance data collectors. One year data (July 2009 to June 2010) generated from this surveillance system was analysed for this study.
Findings Rate of non-fatal falls was higher among children (<18 years) than adults (405.24 and 304.60 per 100,000 population per year respectively). Falls from the same level (67.1%) was significantly higher that falls from height (32.9%) and slipping or tripping was the main mechanism for falls from the same level. Most of the falls occurred in the sport areas (18.9%) followed by street (17.2%). Accidental falls was the main mechanism for falls from height (32.6%). For falls from height, trees were identified as the most common place (40.7%) whereas height of the most of the incidents were less than 1 metre. Most of the falls occurred in the yards (34.6%). Mean days for school loss among the injured students were 13.39 $\pm$ 14.15 while workday loss among injured person was 12.65 $\pm$ 14.54. Among the productive age groups, most of the injured persons were the main income earners of the family.
Conclusion Considering the extent of falls in Bangladesh, the issue needs to be addressed on priority basis. Findings of this study could be a knowledgebase for developing an evidence-based intervention to address the issue.

945 ACCURACY OF SHORT-TERM FORECASTING OF OCCURRENCE OF MOTORCYCLE INJURY USING TIME SERIES ANALYSIS

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Background Disease forecasting is useful for effective planning of prevention and control program. Time series analysis is one of quantitative methods applied in disease forecasting. Motorcycle injury was a major problem in Thailand. It was reported each year 54000–61000 cases and cases, including 3000–4000 deaths. Most of severe injury case under 15 years old was 5,000–6,000 and 200 died annually. Objective of the study is to compare accuracy between the Exponential Smoothing (ES) and Autoregressive Integrated Moving Average (ARIMA) Models for short-term forecasting of motorcycle injury, in order to estimates of the magnitude of problems, and prepare resources for injury prevention and control.
Methods Monthly data of motorcycle injury numbers from 2006–2014 were collected from Thailand National Injury Surveillance System. Two forecasting methods with the criterion of minimum Mean absolute error (MAE) and Mean Absolute Percent Error (MAPE) based on 2006–2010 data. The selected ES and ARIMA models then were applied for forecasting number of injury in 2011–2014. MAE and MAPE of one-, two-, three-, and four-month forecasting were compared between the two models. P value from paired t-test was calculated for each comparison.
Results The result showed that, in terms of forecasting accuracy, Exponential Smoothing (Simple Seasonal) model performed better than ARIMA (1,0,0) (1,1,1) model. MAPE of the forecasts from ES at one-, two-, three-, and four-month were 2.7%, 6.1%,7.5% and 7.9% respectively, while those from ARIMA methods were 3.0%, 6.4%, 7.8% and 8.3% respectively.
Conclusions We suggested that the Exponential Smoothing (Simple seasonal) should be used as a tool to provide affordable and reliable short-term forecast of motorcycle accident.

946 PERIL IN PARADISE: AN EPIDEMIOLOGICAL ANALYSIS OF INJURIES IN TROPICAL NORTH QUEENSLAND, AUSTRALIA

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Background Tropical North Queensland is a popular national and international tourist destination in Queensland, Australia. Approximately 2000000 tourists visit the region annually; there are approximately 150000 residents. Tourists and residents participate in activities like bushwalking in the surrounding rainforests, swimming/snorkelling/diving in the Great Barrier Reef, and a range of adventure sports. Consequently, exposure to a range of venomous creatures and other risky situations is higher than usual. Cairns Hospital is the main public hospital in the region; the annual throughput of the Emergency Department (ED) is 60000 presentations. The purpose of this study was to investigate the epidemiological characteristics of the injuries treated at Cairns Hospital ED over a 4 yr period.
Methods Data were obtained regarding all injury presentations at the Cairns Hospital Emergency Department over 4 yrs (1st Jan 2010–31st Dec 2013). Descriptive analyses were completed to determine the epidemiological characteristics of these injury presentations (via SPSS).
Results There were 55,475 injury episodes treated at the Cairns Hospital ED over the study period, comprising 25.73% of all presentations to the ED. Injury was the leading cause for ED presentation over the 4 yr period. The proportion of injury presentations did not vary significantly over time. 15%of injury episodes involved tourists (3.6% interstate, 3.7% international, 7.5% from elsewhere in Queensland). Interstate tourists and tourists from elsewhere in Queensland were significantly more likely to be hospitalised as a consequence of their injury than residents of North Queensland (29% vs 22%; $p < 0.001$), and international tourists were less likely to require hospitalisation (17%). Every year from