

**Conclusions** The New Zealand Government has now increased the age that children must use a child restraint to age 7 years. Acceptance of the benefits of booster seats has grown; The Safe-kids Campaign was also awarded the Traffic Institute of New Zealand (TRAFINZ) leadership award in 2011, which recognises innovation and excellence in contributing to the safety of people on our roads.

### 368 TRENDS OF ROAD TRAFFIC CRASHES IN THE UAE: STRATEGIES FOR CONTROL AND PREVENTION

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**Background** High rates of serious road traffic crashes (RTCs) have been reported in several Arabian Gulf countries, including the United Arab Emirates (UAE), in recent years. In 2013, in a population of approximately 9.2 million, 7734 people were seriously injured and 651 (7.8%) died from road traffic injuries (RTI). Hence, the problem constitutes a major concern for public health in the UAE. The study aims to determine the trends of RTI in the UAE, to identify the causal factors of the problem and to review the most cost effective measures to mitigate their impact. Other objectives include estimating the future forecasts of RTI and assessing the economic burden of the problem on the population.

**Methods** Data from official UAE sources were used for the analysis. To identify RTI trends of morbidity and mortality during 2000–2013, time's series analysis was used. To forecast RTI fatalities in the UAE, regression analysis was used. Analysis of variance (ANOVA) was used to estimate overall and individual significance of regression parameters. To quantify the economic burden of RTI in the UAE, the Human Capital (HC) approach was used to estimate the direct and indirect economic losses from RTI during 2013. For pain, grief and suffering (PGS) willingness to pay value estimates (WTP) were derived worldwide and adjusted for the UAE.

**Results** The rates of RTC in the UAE were found declining on constant basis. Likewise, trends of morbidity and mortality and future forecasts from RTI were also declining. Paradoxically, however, the severity of RTI was constantly increasing. The total cost of RTIs in the UAE varied between AED 22–23 billion during 2013, representing 1–2% of its GDP for that year (US\$ 401 billion).

**Conclusions** Speeding, vehicles' mix, the competency of young drivers, the standard of medical care for victims at the roadside and the efficiency of traffic regulations and measures, are suspected for the paradoxical patterns, but the precise reasons remain to be determined. The study provides a useful base for establishing priorities for future roadway traffic safety interventions in the UAE.

### 369 CIVIL SOCIETY SUPPORTING GOVERNMENT IMPLEMENTATION OF CHILD RESTRAINT STANDARDS IN RUSSIA

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**Background** In 2014, the Eurasian Economic Community (EvRaZes) Customs Union, approved technical regulations requiring the sale, manufacture and importation of child restraints which conform with UNECE technical regulation 44.04. However, the domestication of these technical regulations has been slowed.

**Description of the problem** Children are dying on Russian roads. In 2014, 9302 car crashes involved children, and of those, 551 resulted in the death of children. Russia lacks child restraint policies which would mandate the sale, manufacture and use of child restraints which conform with international safety standards. In 2015, the Russian Red Cross conducted a poll showing that more than 96% of parents support using safe child restraints. A subsequent market survey showed that about 80% of child restraints sold in the Russian Federation, do not comply with the UNECE R44/04 requirements.

**Results** The adoption and implementation of UNECE R44/04 in Russia requires significant political will. Administrative and technical codes must be revised by a number of key ministries and government agencies. Following the poll and market survey findings, the Russian Red Cross worked with the relevant ministries and key government entities, including Presidential Commission on Human Rights, and media to call for the strengthening of child restraint policies in Russia and domestication of EvRaZes technical regulations. In August 2015, First Deputy Prime Minister of Russia, Igor Shuvalov, ordered all relevant government agencies and ministries to implement the standards.

**Conclusions** The Russian Red Cross effectively used their research findings to partner with the government and speed up the implementation of safe child restraints.

### 370 SCHOOL TRANSPORT IN URUGUAY

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**Background (issue/problem)** The Act for the creation of the National Road Safety Agency (UNASEV) and another act related to traffic provisions were passed in 2007. Although this represented some progress in Road Safety, children's needs were not taken into account. Fundación Gonzalo Rodríguez (FGR), organisation focused on Child Road Safety, was concerned about this fact. Aware that safety conditions were below acceptable levels, the FGR promoted research on private and School Transport equipment.

Results showed that seats in use were unstable, did not have headrests or seat belts, and retrofitting was impossible.

These findings generated alliances with different organisations in order to develop a feasible technical proposal to promote a change that considered the safety needs of children as vulnerable road users.

**Description of the problem**

Together with a renowned car manufacturer and a child seat manufacturer, a feasible proposal was presented including tax benefits. Said proposal was presented with the support of the School Transport Union, UNASEV, the Deputies Chamber of Transport, the Ministry of Economy and Finance and the President of the Republic, Dr. Tabaré Vázquez.

**Results (effects/changes)** The whole School Transport fleet in Montevideo (Uruguay) was replaced.

The use of height-adjustable, three-point seat belts became mandatory, as well as Child Restraint Systems for children under 3 years of age.

The campaign “Back to School Safely” is carried out annually highlighting the importance of appropriate safety elements for children and their correct use.

**Conclusions** Although work carried out so far has been praised in different occasions and has raised awareness among adults, there still much to do especially regarding enforcement.

In 2015, the FGR started a study on School Transport regulation and market in ten different countries. Results are expected to provide a clear picture of the steps to follow by each country to have regulations and fleets that reduce the number of fatalities and injured among children in road crashes involving School Transport.

### 371 PREDICTION OF ROAD TRAFFIC CRASHES (RTC) IN SRI LANKA FROM 2015 TO 2025

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**Background** Under the sustainable development goals (SDG), Sri Lanka is planning to halve the road traffic deaths and injuries by 2030. The main obstacle for achieving this goals is lack of accurate data. Road traffic crashes (RTC) are largely under-reported in Sri Lanka after 2003. Therefore, we conducted this study to estimate the number of under-reported RTCs, and predict the number of actual crashes and injuries up to 2030 using data from 1977 to 2014.

**Methods** We extracted RTC data for 1977 to 2014 from an interim report on RTCs of a Parliamentary Select Committee and from the official web site of the Sri Lanka Police. We analysed extracted data using Microsoft Excel and R. We calculated crash, injury, and fatality rates per 100,000 population and carried out the prediction using ‘forecast’ package in R.

**Results** Between 1977 and 2003, total crash rate increased from 109.7 to 310.7, minor injuries increased from 44.2 to 61.4, grievous injuries increased from 6.0 to 18.0, and deaths increased from 5.8 to 10.6 per 100,000 population. From 2003 to 2014, total crash rate decreased from 310.7 to 165.6, minor injuries decreased from 61.4 to 59.7 and damage only crashes decrease from 187.1 to 64.2 per 100,000 population. According to the analysis, this was a false reduction, and 334,328 damage only crashes and 18,683 minor injury crashes have been under-reported between 2003 and 2014. However, fatalities and grievous injury crashes were not under-reported. Accordingly, by 2025, total crashes will increase to 480.7, damage only crashes will increase to 339.7, minor injuries will increase to 71.8, and grievous injuries will increase to 30.4 per 100,000 population. fatality rate will not increase in similar intensity.

**Conclusion** Under-reporting of RTCs is masking its rapid increase in Sri Lanka. To achieve SDG on RTCs, Sri Lankan policy makers have to take this under-reporting in to consideration and might use this prediction to allocate funds and resources for prevention of RTCs.

### 372 THE IMPACT OF ROAD SAFETY CAMPAIGN ON MOTOR CYCLE RELATED ROAD TRAFFIC INJURIES IN NAIVASHA, KENYA

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**Background** Kenya was identified as one of the ten priority countries in the WHO led UN Decade of Action for Road Safety (2011–2020) that aimed at reducing global road crash injuries and mortality by at least 50%, through a systematic road safety campaign by 2020. The Road safety campaign in 10-countries or RS-10 as the campaign was known, targeted ten worst hit countries that together accounted for about 50% of global road crash fatalities.

The Kenyan project dubbed Road Safety Kenya (RS-K) identified the highway towns of Thika and Naivasha as the 5-year pilot implementation sites. The project started in the year 2010, and one of the interventions was the campaign to promote the wearing of helmets by motor cycle (MC) riders and their passengers. Helmets have been shown to reduce mortality and severity of head injuries among MC riders.

The objective of this study was to assess the impact of road safety campaign targeting MC riders since the year 2010 in Naivasha, Kenya.

**Methods** Cross sectional observational study in which MC road safety compliance as evident in use of protective helmets by rider and passengers, use of reflective clothing by rider and passenger as well as the use of daytime riding lights was directly observed by the roadside.

**Results** A total of 9280 motor cycles were observed from the 6 study centres during the 7-day data collection period. Of these only 18% (1752) complied with all the three road safety measures of wearing helmet by passenger and rider, reflective jacket and one pillion passenger at any single time. Helmet compliance was 42% (3,850) among the riders and only 9% (402) passengers wore helmet while riding. Males were twice likely to wear helmets than the female counterparts. Luminous clothing were widely used by riders (76.2%) while only 349 (3.8%) rode with the headlight on at daytime.

**Conclusion** Despite the road safety campaign conducted in Naivasha between 2010 and 2014, the compliance with road safety measures among motor cycle riders remain low particularly among the passengers. It is probable that passengers were poorly targeted in this campaign due to logistical challenges or simply that the strategies that have been successful elsewhere are not applicable in this environment.

It should be useful to establish from a hospital and mortuary based research if females have a higher percentage of mortality and severe head injuries due to poorer compliance with helmet use.