

study number 1, “Studded and studless tires in fatal wintertime road accidents” was based on accident data analysis. The study 2, “The socio-economical consequences of Ice grip approval” was based on literature analysis. The study 3, “The winter tyre type effects on the grip and wear of packed snow and ice” was a field test study.

#### Results

- In Finland, 12% of the traffic exposure of passenger cars and vans in winter is driven by studless winter tires. If everyone in Finland would use studded tires, we would have one deadly accident per year less.
- There is no ice grip demands for the winter tires used in Finland. If such demand will be deployed today, there will be 0.5 million € yearly societal savings per year. If the use of studless tires increase as planned, the effects of ice grip approval will be multifold.
- Studded tires have an external safety effect, they make ice more rough. According to tests in test field, 50% of studded tires ensured good friction conditions for all kind of winter tires.

**Conclusions** Use of studded tires offer still remarkable traffic safety benefits in winter time. Because there seem to be need to decrease the proportion of studded tires in large cities (studded tires may promote air quality problems), it's still important to understand, how we can minimise the negative traffic safety effects of this decrease. By deploying ice grip demands, we can be assured, that the approved studless tires meet the winter traffic demands. It's also important to remember, that if the proportion of studded tires will fall below 50%, there is high risk for increasing slipperiness.

#### 396 ACCEPTANCE AND IMPACTS OF A REAL TIME REINDEER WARNING SERVICE

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**Background** About 4000 reindeer die each year in traffic, causing significant costs. This study investigated the acceptability of a real-time reindeer warning service and its potential impacts on driver behaviour, foresight and traffic safety.

**Methods** Professional heavy goods vehicle drivers participating in the field test on two main roads in Northern Finland received real time warnings based on sightings of reindeer on or near the road. The information was provided by the same group of drivers and a group of reindeer herders.

The warning system was a simple smart phone application and was designed to be easy to use. When a driver saw reindeer near the road, he touched a circle on the screen of a smart phone installed in their vehicle, sending the warning to all nearby drivers using the application. The warnings were in effect within an area of radius 500 m from the initial warning for the following 2–4 hours.

**Results** The impacts of the service were evaluated by driver questionnaires and interviews. The drivers were interviewed twice, after about 6 and 12 months use of the service. 23 drivers

participated in the interviews. In addition, also driving companies, reindeer herders and other stakeholders and experts were interviewed. The majority of drivers assessed the service useful. They especially liked the possibility to foresee unexpected situations. Drivers valued service simplicity. It was estimated that, if installed in every vehicle, the service could lead to a decrease in reindeer accidents by 9.7–17.8%, corresponding to a reduction of 395–725 accidents annually. Regarding all injury accidents in the area, the service was estimated to cause a reduction of 0.76–1.52% corresponding to 2–4 injury accidents annually.

**Conclusions** The service worked well and was well received by its users. The results of the trial were promising.

#### 397 SNOWMOBILE-RELATED INJURIES IN U.S. EMERGENCY DEPARTMENTS 2001–2013

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**Background** Snowmobiling is a popular form of winter recreation, but adverse events can lead to significant injury. Our objective was to determine the demographics and risk factors for snowmobile-related injuries seen in Emergency Departments (EDs).

**Methods** ED visits related to snowmobile operation were identified in the National Electronic Injury Surveillance System (NEISS) database, which collects information from a national probability sample of U.S. hospitals. Descriptive and statistical analyses were performed.

**Results** From 2002–2013, 1,944 snowmobile-related injuries were identified in the NEISS database. This corresponds to a national estimate of 135,032 snowmobile-related ED visits during the study period. There was a trend of decreasing injuries over time with a national estimate of 12,862 in 2002 and 9,270 in 2013 (average decrease of 499 per year, 95% CI: 89.9–907.7). Most commonly injured were 19–29 year olds, accounting for 30% of the total; 19% were paediatric patients. About three-fourths were male. The most common mechanisms of injury involved falling off (22%), striking a stationary object (16%), and rolling the vehicle (13%). Mechanisms that had the greatest admission rates included events involving a drop-off (50%), ejections (25%) and motorised vehicle collisions (22%). Helmets were reported as being used in 11.4%. Patients wearing a helmet had a 63% reduced odds of requiring inpatient admission compared to those without ( $p = 0.03$ ). Speed was reported in only 7% of cases. A higher proportion of those operating at speeds estimated  $\geq 35$  mph were admitted (24%) as compared to those with lower speeds (15%).

**Conclusions** Snowmobilers without helmets were more likely to require hospital admission. Snowmobilers should be especially wary of terrain changes, other vehicles in the area, and being ejected, as these mechanisms had injuries requiring higher rates of inpatient treatment.

## PITCHING SESSIONS AND POSTERS

Pitching Sessions Monday 19.9.2016

## Child and Adolescent Safety

Post Mon 1.1

398 **ASSESSING THE UTILITY OF A SAFETY AND PEACE PROMOTION INTERVENTION FOR EARLY CHILDHOOD (ECD) CENTRES IN A LOW-INCOME COMMUNITY IN SOUTH AFRICA**

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**Background** This study describes the implementation and evaluation of a safety and peace promotion intervention for children attending Early Childhood Development (ECD) centres in a low-income community in South Africa. The intervention comprised of teacher training to administer lessons on poisoning, burn, traffic safety and peacemaking skills to the children.

**Methods** Ten teachers working in four ECD centres in informal settlement received training to deliver lessons to 80 children aged 4–6 years, over the course of a ten week period. Assessments were conducted to study the implementation process of the lessons. Child assessments and teacher and parent reports of child behaviour assessments were collected prior to the intervention and after the 10 week period.

**Results** Although teachers were generally receptive to the intervention and thought that the content was appropriate, several concerns were raised which have implications for intervention delivery and utility. These concerns centred on language of instruction, the need to involve parents, teacher capacity, structure of lesson plans, intervention flexibility, and disclosures of child abuse.

**Conclusions** These findings suggest that interventions in ECD centres in low-income settings may have potential for improving child safety and social and emotional learning. However, teachers require appropriate training and support for interventions to be sustainable.

399 **PAEDIATRIC INJURY PREVENTION: ADDRESSING INJURY PREVENTION THROUGH A COORDINATED APPROACH**

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**Background** Over 60,000 children are seen at Children's Hospital Los Angeles (CHLA) annually with most presenting with preventable injuries. Extending the efforts to address injury prevention through utilisation of undergraduate, graduate and medical school students is the approach of CHLA's Injury Prevention Program (IPP). In an effort to increase the number of paediatric injury prevention specialists, CHLA launched the inaugural class of Paediatric Injury Prevention Scholars (PIPS) in 2011.

**Methods** CHLA's IPP recruited from local universities/research institutions. Selection methods were established to pool the

highest quality candidate included submission of application, writing samples, interviews and reference letters.

PIPS program was established in response to the growing needs to address injury prevention in a under resourced situation. CHLA utilised a trauma database shared within LA County to track patient injury and treatment. Adjusting for cyclic patterns and seasonal effects, gap analysis provided baseline data indicating areas for improvement. Our findings highlight the need for increased injury prevention and expansion of resources to address gaps in outreach, education and research.

**Results** The established PIPS curriculum provides learning opportunities to expand programming capacity, to create interest in injury prevention and to provide training opportunities. The PIPS engage in injury prevention outreach through organising and facilitating educational booths in the hospital and in the community. In addition, students learn to create culturally sensitive materials used for injury prevention education. PIPS are encouraged to discover novel areas of research, to develop strategies to promote injury prevention as a public health issue, and to apply research methods to create evidence-based recommendations. Since the inaugural class of 2011, CHLA has graduated 4 classes of PIPS cohorts.

**Conclusions** PIPS program provides a successful vehicle for expanding CHLA's IPP. The PIPS Program has been refined since the inaugural class to include streamlining the program curriculum to advance the development of future scholars who are committed to pursuing excellence in injury prevention through research, advocacy and education. This program allowed for IPPs around the country to have an effective program to produce injury prevention scholars and raise awareness in the field. Additionally, PIPS have enhanced programmatic function and abilities to increase community outreach and engagement of CHLA's IPP by 700% during their tenure. PIPS have also contributed greatly to our research reach through manuscript submission on topics including acute care outcomes studies, systematic reviews, and sports injury(concussion) studies.

While the PIPS Program has served as a model for programs who anticipate staff/personnel shortages, they also afford existing staff potential for leadership development, mentorship and training. PIPS provide programmatic ability to build capacity to provide sustainable and beneficial projects and expand reach outside in the community in several of trauma's service lines (disaster preparedness and injury prevention).

400 **POISON PREVENTION PRACTICES AND MEDICALLY ATTENDED POISONING IN YOUNG CHILDREN: MULTICENTRE CASE-CONTROL STUDY**

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**Background** Childhood poisonings are common, placing a substantial burden on health services. Education and provision of cupboard/drawer locks improves poison prevention practices but it is unclear if this reduces poisoning risk. This study quantifies associations between poison prevention practices and medically attended poisonings in 0–4 year olds.

**Methods** Multicentre case-control study conducted at hospitals, minor injury units and family practices from four study centres in