Illicit drugs in driving: An investigation of fatally injured drivers, motorcycle riders and illicit drug traffic offences

Nearly one in five Australians who use illicit drugs report having driven in the previous 12 months whilst affected. This represents an important road safety issue as the use of commonly used illicit drugs such as marijuana amphetamines/methylamphetamines whilst driving is known to be associated with an increased risk of crashing, particularly fatal crashes. In Western Australia (WA) however, there is minimal current information on the prevalence and characteristics of illicit drug related crashes, traffic offences and associated driver risk factors to inform drug-driving countermeasures.

The purpose of the current project – which is being conducted as part of C-MARC’s annual baseline program of research for the Road Safety Council of WA - is to provide relevant stakeholders with an understanding of the prevalence and characteristics of illicit drug related crashes, traffic offences and involved drivers. This information will be used to support the development of educational; licensing; and enforcement countermeasures to better manage illicit drug related driving.

To address the aims and objectives of the project, toxicology data for fatally injured drivers and motorcycle riders were linked with WA Police crash records for fatally injured drivers for the period 2000 to 2012. WA Police also provided unit records for Section 64AC traffic offences (illicit drugs in oral fluids) for the period 2008 to 2012. All data was de-identified prior to being supplied to C-MARC for analysis and reporting.

The results will provide a comprehensive description of illicit drug related crashes and traffic offences over time and of the drivers/riders involved in these outcomes. In addition, the analysis will model the risk factors for fatally injured drivers/riders testing positive for an illicit drug and for repeat drug-driving offences.

It is expected that the full report will be available for downloading from the C-MARC webpage www.c-marc.curtin.edu.au during the first quarter of 2015. For further information please contact Peter Palamara on (08) 9266 2304, p.palamara@curtin.edu.au.
Epidemiology of Heavy Vehicle Crashes in Western Australia: 2001—2013

Heavy vehicle crashes contribute significantly to the burden of death and injury on Australian roads. Given the vast distances between localities, the unique road environment and the large population of registered articulated heavy vehicles in Western Australia (WA), safety in the transport industry is a critical issue. However, minimal research has been conducted over the past decade in WA investigating the trends in heavy vehicle crashes and the factors surrounding these crashes.

In order to address the lack of current research, an epidemiological study was recently undertaken by Dr Min Zhang, Professor Lynn Meuleners, Dr Kyle Chow and Mr Matt Govorko to 1) describe trends in articulated heavy vehicle crashes occurring in WA, 2) identify characteristics of the population at risk and 3) to identify vehicle type, temporal, environmental and behavioural factors related to these crashes. Data was obtained from January 1, 2001 to December 31, 2013 from the Integrated Road Information System (IRIS), which is maintained by Main Roads WA.

It was found that over the 13 year period 7964 articulated heavy vehicle crashes had occurred on WA roads, involving 8115 articulated heavy vehicles. In total, there were 2254 casualties as a result of articulated heavy vehicle crashes of which 224 were fatalities, 862 were hospitalisations and 1168 were injuries requiring medical attention but not hospitalisation.

In WA, there was an overall decreasing trend (p <0.01) in rates of articulated heavy vehicle crashes with 734 crashes per 10,000 registered articulated heavy vehicles reported in 2001 compared to 456 crashes per 10,000 registered articulated heavy vehicles in 2013. However, the rate of articulated heavy vehicle crashes was consistently higher than the rate of all vehicle crashes in WA throughout the study period.

The majority (62%) of articulated heavy vehicle crashes occurred in the metropolitan area, while the Southwest (23%) and Wheatbelt North (20%) regions recorded the largest number of rural crashes (See above right for the spatial distribution of articulated heavy vehicle crashes across the state using Geographic Information Systems).

However, when looking only at articulated heavy vehicle crashes resulting in a fatality or a hospitalisation, the majority occurred in rural areas (68% and 58% of all of the reported crashes respectively).

In both metropolitan and rural areas, the dominant crash type was multi-vehicle crashes. Furthermore, head on collisions made up the largest proportion of fatal crashes in both metropolitan (29%) and rural areas (44%). The highest proportion of fatalities (62%) occurred in the ≥100km/h speed zones.

The investigation found the majority of road users seriously injured were drivers (71%) followed by passengers (22%). Of the 224 fatalities, 26 (12%) were the driver of the articulated heavy vehicle whilst 120 (54%) were drivers of another vehicle. Of the 26 heavy vehicle drivers killed in a crash, 20 had a blood alcohol concentration (BAC) of 0, two had a BAC ≤0.05 and no driver recorded a BAC >0.05, whilst the BAC was unknown for four drivers. At the time of the crash, 35% of the heavy vehicle drivers killed were not wearing a seatbelt and the seatbelt status was unknown for 35%.

An important message that emerged from the investigation is that WA road authorities should continue to focus on the improvement of rural roads and prevention of articulated heavy vehicle crashes in these areas, since they account for a greater than expected number of fatal and hospitalisation crashes. Amongst other recommendations, it was suggested that emerging technologies such as GPS-based seatbelt monitoring systems should be investigated as a strategy to improve seat belt usage rates among articulated heavy vehicle drivers in WA.

This information on the trends and major contributions of articulated heavy vehicle crashes presented in the report is essential for informing policy development and preventive strategies that will be effective in reducing heavy vehicle crashes on WA roads.

The full report ‘The Epidemiology of Heavy Vehicle Crashes in Western Australia: 2001—2013’ will be available for downloading from the C-MARC webpage www.c-marc.curtin.edu.au during the first quarter of 2015.
Australasian Road Safety Research, Policing and Education Conference 2014

Two members of the C-MARC team, Professor Lynn Meuleners and Mr Peter Palamara, recently attended the three day Australasian Road Safety Research, Policing and Education Conference 2014 in Melbourne. Inspired by the Nelson Mandela quote ‘It always seems impossible until it’s done’, the conference considered issues related to how we can move Australasia towards zero deaths and serious injuries. The conference was well attended with over 400 people and attracted individuals from around the world including Indonesia, the United Kingdom and the United States of America.

At the conference, Peter gave a presentation entitled “An investigation of car versus pedestrian crashes at signalised intersections in the Perth Central Business District: Who’s running the Gauntlet?” that discussed the occurrence and characteristics of pedestrian crashes at signalised intersections in the Perth CBD. Peter discussed a number of countermeasures to reduce the impact of risky pedestrian behaviour, including the use of real-time information on ‘time to next green signal’ and the installation of count-down timers. The presentation was well received and generated thoughtful discussion.

A highlight of the event was Mr Iain Cameron, the Executive Director of the Office of Road Safety, being presented with the prestigious Australasian College of Road Safety (ACRS) Fellowship. The award of College Fellow first introduced in 1991, recognises “an individual for their outstanding commitment and effectiveness in their efforts to reduce road trauma” and is the highest honour one can receive from the Australasian road safety community. For over 15 years Iain has led the Office of Road Safety in WA and has been a great supporter of C-MARC since its establishment in 2008/09, as well as residing on C-MARC’s Board of Directors. Iain has been at the forefront of road safety management not only in WA—where he significantly contributed towards the implementation of the road safety strategy “Towards Zero” approach—but across Australasia and the Organisation for Economic and Co-operation Development (OECD). Not only is Iain an Independent Director on the WA Road Safety Council and the Australasian New Car Assessment Program, he also Chairs the Austroads Safety Taskforce and the OECD Working Group On Safe System Implementation. C-MARC wishes to congratulate Iain for his wonderful achievement!

For further news arising from the conference please visit http://acrs.org.au/

Evaluation of the State Black Spot Program in 2009-2010

Main Roads WA is currently evaluating all the Black Spot Programs from 2005 onwards. The latest Program to be evaluated by Professor Lynn Meuleners, Dr Min Chang and Ms Delia Hendrie was the effectiveness of the treatments implemented in 2009 to 2010.

One hundred and thirty nine hazardous locations were treated throughout Western Australia at a cost of $16.2 million (excluding maintenance and operating costs). These treated sites consisted of 96 metropolitan and 43 rural sites.

The results found that the State Program has been effective overall, reducing all reported crash frequencies by 21.6% and casualty crash frequencies by 17.4%. The estimated crash cost savings over the expected life of the treated sites were $59.1 million for all reported crashes. This resulted in an overall net cost savings to the community of $41.6 million after subtracting the capital costs of treating sites and maintenance and operating costs. The benefit cost ratio (BCR) across all treatment sites was 3.4. Evaluation of the program has identified treatment types that were highly successful, while others have not been shown to be successful. This could be due to insufficient number of sites having undergone the treatment, the relatively short post treatment crash exposure period (average 47 months) or the treatment may genuinely have had no effect on road safety.

The results provide Main Roads, WA and other road safety organisations with reliable, objective information for enhancing strategies for future road safety investment.
Professor Joanne Wood’s Visit to C-MARC

C-MARC was privileged to host a visit from Professor Joanne Wood from the School of Optometry and Vision Science, QUT, Brisbane on the 7th November, 2014. Prof Wood’s research focuses on the impact of visual impairment and ageing on functional outcomes, including understanding how visual impairment affects driving performance, on the factors affecting night-time pedestrian visibility and identifying risk factors for unsafe older drivers. Whilst visiting, Prof Wood presented to the C-MARC team an overview of studies concerned with vision and driving under day and night conditions. These included studies that assessed driving performance under night-time driving conditions to determine how the age and visual status of the driver impact on night-time driving ability, and to identify ways in which to improve the visibility, and hence safety, of vulnerable road users at night, including pedestrians and cyclists.

Upcoming Events

Event: 9th International Conference on Managing Fatigue
Date: Monday 23– Thursday 26 March 2015
Location: Perth, Western Australia
Venue: Esplanade Hotel Fremantle

C-MARC and the Perth based Australian Road Research Board (ARRB) are organising the 9th international fatigue conference to be held in Western Australia. The conference will cover issues related to research investigating fatigue management in transportation and other related industries and its subsequent translation into practise. The fatigue conference will attract professionals from a broad array of disciplines including road safety experts, occupational health and safety professionals, researchers, transportation staff, road authorities, military personnel, aviation experts and medical professionals, amongst others.

The Organising Committee is now calling for abstracts for oral and poster presentations. Abstract submissions open on 4 August 2014. Registration opens 25 August 2014. For additional information on the conference please visit: www.fatigueconference2015.com.au

Event: 7th Australasian Drug & Alcohol Strategy Conference
Date: 17—20 March 2015
Location: Brisbane, Queensland

The theme of the conference is Building Collaborative Partnerships - responding within and across borders. The conference will see a variety of policing jurisdictions, health service providers, policy analysts, academics and industry representatives come together to provide a forum in which to highlight and strengthen partnerships.

For further information please visit: www.adasc2015.com

C-MARC
Curtin University
Faculty of Health Sciences
7 Parker Place
Technology Place
Email: matthew.govorko@curtin.edu.au
Fax | +61 8 9266 2958
Web: www.c-marc.curtin.edu.au

C-MARC is a West Australian based independent multi-disciplinary road safety research centre established by the West Australian State Government’s Office of Road Safety in 2009.

The Centre represents a significant partnership between the Office of Road Safety, Curtin University and Monash University’s Accident Research Centre (MUARC).

C-MARC’s mission is “to be a Centre of excellence in road and other injury research and the translation of that research into policy and practice that will inform government, industry and the wider community.”