

CARRRS

Centre for Accident Research and Road Safety - Queensland (CARRS-Q)

RURAL & REMOTE



ROAD SAFETY PROGRAM

Monograph 4

Rural and Remote Road Safety Research Program

Major Recommendations





The Centre for Accident Research and Road Safety – Queensland (CARRS-Q) was established in 1996 as a joint venture initiative of the Motor Accident Insurance Commission (MAIC) and Queensland University of Technology (QUT).

The Centre was created to address the enormous human, economic and social costs resulting from road crashes. It has expanded its research scope to include the broader area of injury prevention with a particular interest in youth and risk-taking behaviours. Its charter is to identify, assess and initiate innovative priority-driven research and teaching programs leading to the development and implementation of strategies to improve safety on our roads, in our workplaces and in our communities.

The Centre aims to strengthen and broaden research and intervention development in the areas of vulnerable road users, illegal and high-risk behaviours, the human behaviour and technology interface, school and community-based road safety education and workplace safety.

As one of the few nationally recognised, university-based research centres of its kind in Australia, CARRS-Q is an important player in the international pursuit of road safety. Its visionary approach, quality standards and innovative outcomes make it an award-winning centre for road safety and accident prevention research and education.



Monograph 4

Rural and Remote Road Safety Research Program

Major Recommendations

RURAL & REMOTE



ROAD SAFETY PROGRAM

Published by
CARRS-Q
Queensland University of Technology
Beams Road, Carseldine Q 4034
Australia
Phone +61 7 3138 4589
Fax +61 7 3138 4907
Email carrsq@qut.edu.au
Website www.carrsq.qut.edu.au

July 2008

Centre for Accident Research & Road Safety - Queensland (CARRS-Q)

Document Retrieval Information

Document no.	CARRS-Q Monograph Series - Monograph 4
Date	July 2008
Pages	8
ISBN	978-0-9751596-6-8
Title	Rural and Remote Road Safety Program - Major Recommendations
Published by	Centre for Accident Research & Road Safety - Queensland, (CARRS-Q) Queensland University of Technology Beams Road Carseldine Q 4034 Australia

Contributing Authors

Chief Investigators	Mary Sheehan Victor Siskind Richard Turner Craig Veitch
Other Contributors	Teresa O'Connor Dale Steinhardt Ross Blackman Colin Edmonston Gayle Sticher
Editor	Dale Steinhardt

Notes

1. CARRS-Q research and activity reports are disseminated in the interests of information exchange.
2. The views expressed are those of the author(s) and do not necessarily represent those of the Centre for Accident Research & Road Safety - Queensland.

This document should be cited as:

Sheehan, M., Siskind, V., Turner, R., Veitch, C., O'Connor, T., Steinhardt, D., Blackman, R., Edmonston, C., Sticher, G. (2008). *Rural and Remote Road Safety Program - Major Recommendations*. (CARRS-Q Monograph 5). Brisbane, Australia: QUT, CARRS-Q

Reproduction of this page is authorised.

Introduction and Background

Concern and action for rural road safety is relatively new in Australia in comparison to the field of traffic safety as a whole. In 2003, a program of research was begun by the Centre for Accident Research and Road Safety - Queensland (CARRS-Q) and the Rural Health Research Unit (RHRU) at James Cook University to investigate factors contributing to serious rural road crashes in the North Queensland region.

This project was funded by the Motor Accident Insurance Commission, the Premier's Department, Main Roads Department, Queensland Transport, QFleet, Queensland Rail, Queensland Ambulance Service, Department of Natural Resources and Queensland Police Service. Additional funding was provided by NRMA Insurance for a PhD scholarship. In-kind support was provided through the four hospitals used for data collection namely Cairns Base Hospital, The Townsville Hospital, Mount Isa Hospital and Atherton Hospital.

Austrroads through ARRB provided the funding to develop the background literature and crash data base for the major study.

Program Components

The major recommendations presented in this document draw on the findings and recommendations of a number of research reports completed as part of the rural and remote road safety program of research. Where relevant they also draw on *Australia's Rural Road Safety Action Plan (1996)*.

The reports include:

- *Road Safety in Rural and Remote Areas of Australia, 2005 (Austroads Publication)* (Tziotis, M., Mabbott, N., Edmonston, C., Sheehan, M., & Dwyer, J.)

This report provided a review of the national and international literature and Australian crash data to 2003 that was attributed to rural and remote road safety. A key concern of this report that has implications for its findings and recommendations was the major inconsistencies in defining "rural and remote" areas found in data and reported studies across all state jurisdictions. This definitional ambiguity meant that findings and research studies should be carefully examined to determine their definitional base. It was found that annually across Australia about 1,000 people are killed on roads considered to be in rural and remote areas, while approximately a further 26,000 people are injured. The literature reviewed found that those at most risk were young male drivers, truck drivers, pedestrians and those living in these areas, particularly Indigenous Australians. Key behavioural factors associated with increased crash risk included motorists driving while under the influence of alcohol and other drugs, speeding, fatigue and failure to wear seat belts or helmets. Road factors also found to contribute to crashes included roads with poor surfaces, roads with unsealed shoulders, roads with poor delineation and roadside hazards.

The study also confirmed the importance of the need to respond rapidly to the occurrence of crashes and to treat those injured quickly.

The report identified behavioural, environmental and ITS interventions, and improved medical practices and trauma management services which could reduce the incidence and severity of crashes in these areas.

- Rural and Remote Road Safety Research Project: Five year crash and area profile of North Queensland (January 1st 1998 – December 31st 2002) (CARRS-Q, 2006);

This report profiles the socio demographic and transport statistics of the rural North Queensland study area for the Rural and Remote Road Safety Project. Presented are the findings from the first stage of the project which include: (i) regional profiles and comparisons within North Queensland; and (ii) an overview of road traffic crashes in the area during the five-year period preceding the study (January 1st 1998 to December 31st 2002). Population statistics were obtained from the Australian Bureau of Statistics, and road traffic crash data extracted from Queensland Transport's road crash database. The report also includes demographic information about the Indigenous population in North Queensland.

- Recommendations from an international workshop on rural and remote road safety-October 2007. (CARRS-Q unpublished report)

This international symposium was convened in Brisbane to showcase and critique the preliminary findings of the Rural & Remote Road Safety project and to bring together a wide range of international, national and local stakeholders to inform recommendations.

International delegates were Ray Krammes (United States, Federal Highway Administration - FHWA), Paul Gutoskie (Transport Canada) and Torsten Bergh (Swedish National Road Administration). Local and national representation was present from the Motor Accident Insurance Commission (MAIC), Australian Transport Safety Bureau (ATSB), Queensland Police Service Forensic Crash Unit, Queensland Trauma Committee, Queensland Ambulance Service, Queensland Transport, QFleet, Telstra and Queensland members of parliament. The key speakers all presented in regards to the problems, solutions, innovations and outcomes of their own jurisdictions.

- the Rural and Remote Road Safety Study: Final Report (CARRS-Q, 2008);

The primary aim of the project was to:

“Identify human factors related to the occurrence of serious traffic incidents in rural and remote areas of Australia, and to the trauma suffered by persons as a result of these incidents, using a sample drawn from a rural and remote area in north Queensland.”

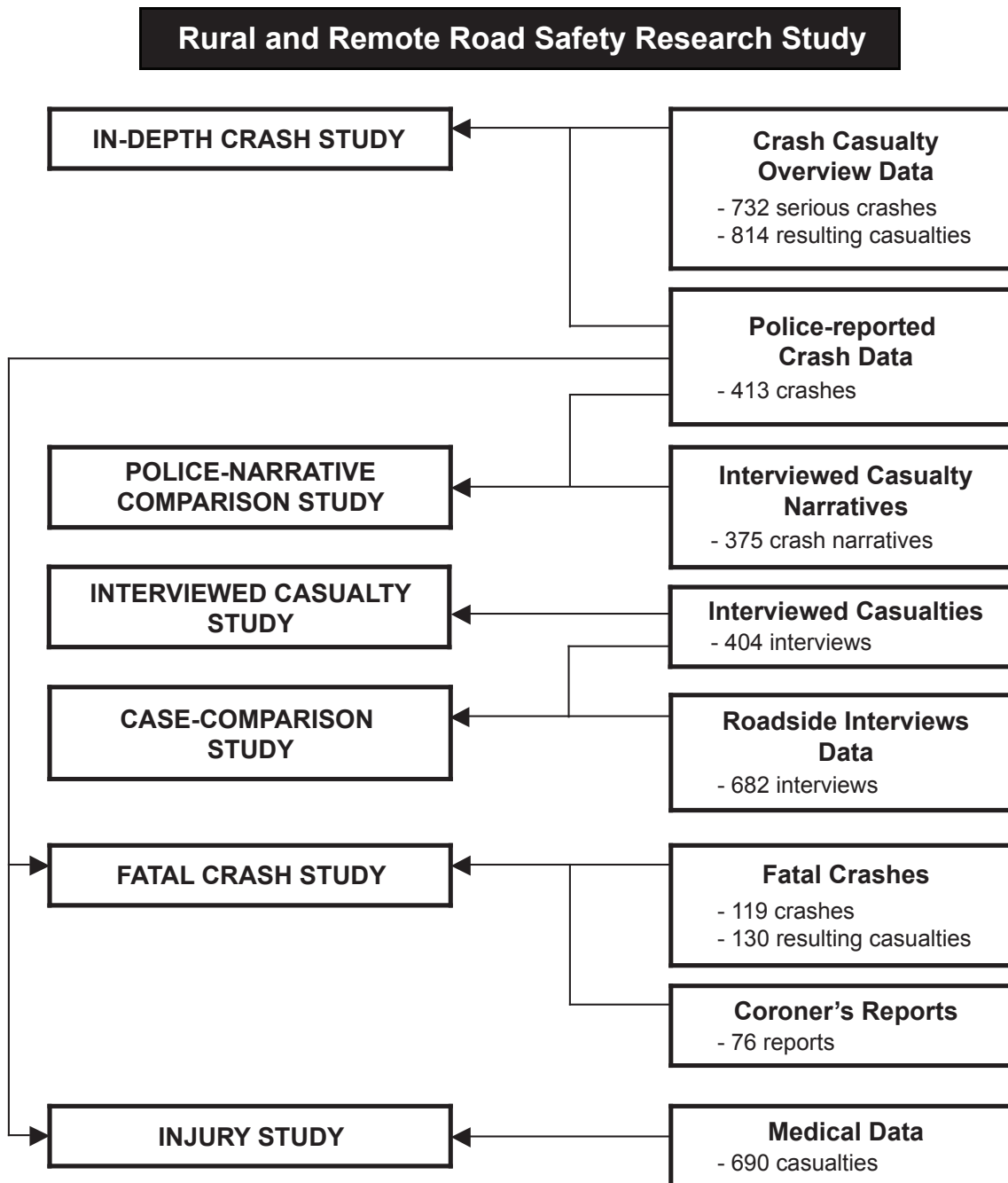
The study region encompassed the Australian Bureau of Statistics (ABS) statistical divisions of Northern Queensland, Far North Queensland and North West Queensland, excluding the urban areas around Cairns, Townsville and Thuringowa.

The data and analyses presented in this report are centred on serious crashes, as defined by a resulting hospitalisation for 24 hours or more and/or a fatality. A total of 732 crashes meeting this criteria within the north Queensland region between the 1st of March, 2004 and 30th June, 2007 were included in the study.

Interviews were conducted with 404 of these serious injury cases to provide an in-depth investigation of the characteristics and circumstances of the crashes. A further linked case-comparison study of hospitalised patients with a sample of non-crash-involved drivers was also undertaken.

Additional data was sourced from coroner's reports, the Queensland Transport road crash database, the Queensland Ambulance Service and study hospitals in the region.

The various components of the study are outlined in the following figure.



Conclusions

Firstly, single vehicle crashes accounted for more than three quarters of all serious crashes examined in the study.

Contrary to community belief, it is local people being injured on local roads - over 80% of interviewed casualties were local North Queensland residents.

Motorcyclists in particular were overrepresented in the sample, constituting one third of all serious transport-related casualties. Approximately half of these casualties arose from offroad motorcycle crashes, which are not currently reported in official crash statistics.

As reported in previous research, males accounted for the majority of the injury burden (76% of all casualties). Importantly, males aged 30 to 50 years contributed as much as the highly targeted group of young males.

With regard to time of day, the peak time for crashes was the afternoon period (2-6pm), particularly on weekends.

From a causal perspective, it was found that rural road trauma was often the product of behavioural as opposed to, though sometimes in association with, environmental or vehicle factors.

There are some high risk sites that could be identified as carrying clusters of crashes.

Driving or riding too fast for the conditions (not necessarily faster than the posted speed limit) was a major contributor to both the incidence and severity of crashes.

The sample reported both high levels of alcohol consumption and drink driving. Patients who had been booked for a drink driving offence in the past five years were significantly more likely to report a drink driving instance in the month preceding the crash. Moreover, 30% of all fatal crashes involved alcohol.

More than one third of all patients interviewed reported being distracted leading up to the crash. Events both inside and external to the vehicle were equally as likely to act as distractions.

Seatbelt compliance has a major impact on casualty severity in serious crashes. In police-reported single vehicle crashes, those fatally injured were three times more likely to have been listed as not wearing a seatbelt.

Given the vastness of the study area, emergency response times enabled efficient retrieval of casualties after notification. Most fatal road crash injuries appeared to be unsurvivable at the outset.

[For a more detailed analysis of findings and a comprehensive review of all conclusions and recommendations please refer to the main report].

Major recommendations to improve rural and remote road safety

Male drivers and riders

- Male drivers and riders should continue to be the focus of interventions, given their very high representation among rural and remote road crash fatalities and serious injuries.
- The group of males aged between 30 and 50 years comprised the largest number of casualties and must be targeted for change if there is to be a meaningful improvement in rural and remote road safety.

Motorcyclists

- Single vehicle motorcycle crashes constitute over 80% of serious, on-road rural motorcycle crashes and need particular attention in development of policy and infrastructure.
- The motorcycle safety consultation process currently being undertaken by Queensland Transport (via the “Motorbike Safety in Queensland - Consultation Paper”) is strongly endorsed. As part of this process, particular attention needs to be given to initiatives designed to reduce rural and single vehicle motorcycle crashes.
- The safety of off-road riders is a serious problem that falls outside the direct responsibility of either Transport or Health departments. Responsibility for this issue needs to be attributed to develop appropriate policy, regulations and countermeasures.

Road safety for Indigenous people

- Continued resourcing and expansion of the *The Queensland Aboriginal Peoples and Torres Strait Islander Peoples Driver Licensing Program* to meet the needs of remote and Indigenous communities with significantly lower licence ownership levels.
- Increased attention needs to focus on the contribution of geographic disadvantage (remoteness) factors to remote and Indigenous road trauma.

Road environment

- Speed is the 'final common pathway' in determining the severity of rural and remote crashes and rural speed limits should be reduced to 90km/hr for sealed off-highway roads and 80km/hr for all unsealed roads as recommended in the Austroads review and in line with the current Tasmanian government trial.
- The Department of Main Roads should monitor rural crash clusters and where appropriate work with local authorities to conduct relevant audits and take mitigating action.
- The international experts at the workshop reviewed the data and identified the need to focus particular attention on road design management for dangerous curves. They also indicated the need to maximise the use of audio-tactile linemarking (audible lines) and rumble strips to alert drivers to dangerous conditions and behaviours.

Trauma costs

- In accordance with Queensland Health priorities, recognition should be given to the substantial financial costs associated with acute management of trauma resulting from serious rural and remote crashes.
- Efforts should be made to develop a comprehensive, regionally specific costing formula for road trauma that incorporates the pre-hospital, hospital and post-hospital phases of care. This would inform health resource allocation and facilitate the evaluation of interventions.
- The commitment of funds to the development of preventive strategies to reduce rural and remote crashes should take into account the potential cost savings associated with trauma.
- A dedicated study of the rehabilitation needs and associated personal and healthcare costs arising from rural and remote road crashes should be undertaken.

Emergency services

- While the study has demonstrated considerable efficiency in the response and retrieval systems of rural and remote North Queensland, relevant Intelligent Transport Systems technologies (such as vehicle alarm systems) to improve crash notification should be both developed and evaluated.

Enforcement

- Alcohol and speed enforcement programs should target the period between 2 and 6pm because of the high numbers of crashes in the afternoon period throughout the rural region.

Drink driving

- Courtesy buses should be advocated and schemes such as the *Skipper* project promoted as local drink driving countermeasures in line with the very high levels of community support for these measures identified in the hospital study.
- Programs should be developed to target the high levels of alcohol consumption identified in rural and remote areas and related involvement in crashes.
- Referrals to drink driving rehabilitation programs should be mandated for recidivist offenders.

Data requirements

- Rural and remote road crashes should receive the same quality of attention as urban crashes. As such, it is strongly recommended that increased resources be committed to enable dedicated Forensic Crash Units to investigate rural and remote fatal and serious injury crashes.
- Transport department records of rural and remote crashes should record the crash location using the national ARIA area classifications used by health departments as a means to better identify rural crashes.
- Rural and remote crashes tend to be unnoticed except in relatively infrequent rural reviews. They should receive the same level of attention and this could be achieved if fatalities and fatal crashes were coded by the ARIA classification system and included in regular crash reporting.
- Health, Transport and Police agencies should collect a common, minimal set of data relating to road crashes and injuries, including presentations to small rural and remote health facilities.

Media and community education programmes

- Interventions seeking to highlight the human contribution to crashes should be prioritised. Driver distraction, alcohol and inappropriate speed for the road conditions are key examples of such behaviours.
- Promotion of basic safety behaviours such as the use of seatbelts and helmets should be given a renewed focus.
- Knowledge, attitude and behavioural factors that have been identified for the hospital Brief Intervention Trial should be considered in developing safety campaigns for rural and remote people. For example challenging the myth of the dangerous 'other' or 'non-local' driver.
- Special Educational initiatives should be developed and disseminated on the different and particular tasks and hazards involved in rural and remote driving. For example the material used by Main Roads, the Australian Defence Force and local initiatives.

References

Centre for Accident Research and Road Safety - Queensland. (2006). *Rural and Remote Road Safety Research Project: Five Year Crash and Area Profile of North Queensland* (Monograph 3). CARRS-Q: Brisbane.

Sheehan, M., Siskind, V., Turner, R., Veitch, C., O'Connor, T., Steinhardt, D., Blackman, R., Edmonston, C., & Sticher, G. (2008). *Rural and Remote Road Safety Research Project: Final Report* (Monograph 4). CARRS-Q: Brisbane.

Tziotis, M., Mabbott, N., Edmonston, C., Sheehan, M., & Dwyer, J. (2005). *Road Safety in Rural and Remote areas of Australia* (No. AP-R273/05). Austroads: Sydney.

RURAL & REMOTE



ROAD SAFETY PROGRAM



For further information contact:

CARRS-Q
Queensland University of Technology
Beams Road Carseldine Q 4034 AUSTRALIA

Phone +61 7 3138 4589
Fax +61 7 3138 4907
Email carrsq@qut.edu.au
Website www.carrsq.qut.edu.au

ISBN 978-0-9751596-6-8