

Summary of road safety among Indigenous peoples

Introduction

There were around 1,600 road deaths in Australia in 2007 [1] and over 30,000 serious injuries in 2005-06 [2]. This means that approximately every 22 minutes someone is killed or seriously injured on Australia's roads. The government estimates that the cost of road crashes is around \$18 billion per year [3]. This includes hospital and medical costs and working hours lost.

In Australia from 2001 to 2006, Indigenous people had a higher rate of injury and death from road accidents than non-Indigenous people [4].

Impact of road injury

Road injury affects the community in many different ways. Apart from the direct physical effects of road injury (deaths and injuries), there are also the psychological effects of a road accident, such as grief and depression, as families try to cope with the death or disability of a family member [5].

Other consequences of road injuries:

- lost working time
- medical costs
- reduced quality of life
- legal costs
- workplace disruption
- long-term care
- vehicle repairs
- travel delays [5]

Contents

Introduction.....	1
Impact of road injury	1
Mortality	2
Hospitalisation	3
Factors contributing to road injury	3
Human factors	3
Environmental factors	3
Vehicle factors.....	4
Risk factors after the crash.....	4
Prevention and management in Indigenous road safety	4
Safe system principles	5
Policies and strategies.....	5
National Road Safety Strategy 2001-2010	5
Indigenous road safety forum.....	6
Concluding comments	6
References	7

More detailed information about road safety in Indigenous people can be found at:

http://www.healthinfolnet.ecu.edu.au/road_review

Not a lot of research has been done in the area of Indigenous road safety until quite recently. Just how many Indigenous people are affected by road injuries has been hard to determine, for two main reasons:

- road crashes involving Indigenous people are not always reported
- information on a person's Indigenous status is not always collected

Usually, unless a person is identified as being Indigenous, they are automatically classified as non-Indigenous. This means that Indigenous people are not always properly identified, which leads to a lower number of Indigenous people counted in road crashes than actually are involved. It is possible that identification of Indigenous status may be better in remote areas than in urban areas [6].

Western Australia, South Australia, the Northern Territory and Queensland are the only four states where reporting of Indigenous status is believed to be fairly accurate [4]. However, for the reasons given above, the actual numbers could be up to 30% higher than the numbers reported. The numbers used in this section are as published, not altered to account for this possible under-reporting.

Mortality

The leading causes of death from transport injury for Indigenous people are:

- motor-vehicle crashes including car, motorcycle, and pickup trucks and vans
- incidents involving pedestrians (see Table 1)

Table 2. Age-specific death rates* for motor-vehicle crashes and pedestrian deaths, by Indigenous status, and rate ratios,** for WA, SA, NT and Qld 2001-02 to 2005-06

Age group (years)	Motor-vehicle crashes			Pedestrian incidents		
	Indigenous rate	Non-Indigenous rate	Rate ratio	Indigenous rate	Non-Indigenous rate	Rate ratio
0-4	7.8	2.9	2.7	6.7	0.7	9.6
5-14	5.8	4.7	1.2	4.4	1.8	2.4
15-24	93.1	60.1	1.6	19.7	5.3	3.7
25-34	70.8	108.6	0.7	31.5	3.6	8.8
35-44	82.7	24.1	3.4	74.7	2.8	26.7
45-54	56.9	39	1.5	57	2.9	19.7
55-64	57.7	22.1	2.6	33	4	8.3
65+	37.3	12.9	2.9	20.8	3.7	5.6
All ages	25.3	13.4	1.9	14.5	1.9	7.6

Source: [4]

* Rates are per 100,000 population

** The 'rate ratio' is the Indigenous rate divided by the non-Indigenous rate

Table 1. Numbers of Indigenous and non-Indigenous deaths from transport injuries for WA, SA, NT and Qld (2001-02 to 2005-06)

Cause of injury	Indigenous		Non-Indigenous	
	Number	%	Number	%
Land transport	337	96.8	3215	91.1
Motor-vehicle crashes	204	58.6	2531	71.7
Pedestrians	117	33.6	408	11.6
Other land transport*	5	1.4	274	7.7
Unspecified	11	3.2	117	3.3
Other** transport	-	-	198	5.7
All transport	348	100	3530	100

Source: [4]

* Small counts were omitted from original source so some columns may not add up

** Other transport includes water and air transport

Motor vehicle crashes

Greater proportions of Indigenous people (26%) than non-Indigenous people (9%) die from crashes where only one vehicle is involved (such as roll-overs) [4].

Pedestrians

For every non-Indigenous pedestrian who is killed there will be at least 9 Indigenous pedestrians who die. The numbers are higher for Indigenous pedestrians in every age group particularly those aged 35 to 54 years (see Table 2).

Crash statistics collected over 20 years show that pedestrian deaths and single vehicle crashes have continued to cause the greatest number of Indigenous deaths relating to road transport [4, 7-11].

Hospitalisation

The most recent information published on Indigenous people sent to hospital because of transport accidents is from 2001-02 to 2005-06 [4]. The information is collected only from WA, SA, the NT and Qld because these are the only states where Indigenous status is properly identified. Sixty percent of the Indigenous population of Australia and 38% of the total Australian population live in these states.

The data show that 4,938 Indigenous people were hospitalised during this period due to land transport injuries (3,338 males and 1600 females). Thirty five of these people died while in hospital (0.7%). Indigenous people who were sent to hospital were mostly:

- car occupants
- pedestrians
- pedal cyclists

For Indigenous people in car accidents, passengers were more often seriously injured or killed than drivers. By contrast, non-Indigenous drivers were more often injured or killed than passengers.

Factors contributing to road injury

Possible reasons for the difference in number of road injuries between Indigenous and non-Indigenous people are as follows:

- higher proportion of Indigenous than non-Indigenous people live in remote or rural areas where over half of all fatal road crashes occur [3]
- Indigenous people have the following travel needs that are different from non-Indigenous people:
 - to attend funerals and to be with family at critical times
 - to return to country to support those who live there and to care for the land
 - to support family, including extended family, sometimes in far-flung areas [12]

These commitments often require travelling long distances during times of stress, to places where roads are rough and hard on vehicles. Due to the high cost of travel, large numbers of people often travel together in older vehicles not suited to rough roads or to carrying many people at once [12].

The following sections describe the factors that may lead to road injury, grouped according to whether they are human, environmental or vehicle factors. A separate section summarises factors that may play a part after the crash (post-crash factors).

Human factors

The main human factors involved in road crashes include:

- non-compliance with road laws
 - drink driving
 - not wearing seatbelts or restraints
 - overcrowding and illegal seating within vehicles
- speed
- carelessness about general road safety rules/practices
 - drunk pedestrians [13]

For Indigenous drivers, in particular, the main human factors involved are:

- alcohol - particularly in single-vehicle roll-overs and pedestrian deaths
- not using protective devices such as helmets and seatbelts [13] (studies show that Indigenous children were often injured in crashes because of not wearing a seatbelt) [14, 7]
- unlicensed driving

Environmental factors

The following environmental factors relate particularly to rural and remote areas of Australia:

- greater distances travelled (and therefore a greater risk of being involved in a road crash)
- higher speed limits
- poor condition of the roads
- few transport services (like buses)
- a big range of types and conditions of vehicles
- in the case of a crash, longer waiting times for medical support to arrive on the scene and less access to medical treatment and rehabilitation [7, 12, 15]
- greater risk of crashing into livestock and wildlife [16]
- less police checking of speed limits, alcohol use and seatbelt wearing [5]

Table 3. Land transport deaths of Indigenous people by remoteness area of residence (cases): NT, WA, SA and Qld, 2001-02

Area of residence	Male	Female	% Indigenous cases per remoteness area
Major cities	35	13	3%
Inner regional	22	7	3%
Outer regional	18	22	6%
Remote	35	24	25%
Very remote	114	43	64%
Total	227	116	9%

Source: [4]

Vehicle factors

Vehicle-related crashes are those that have been caused (or partly caused) by the poor condition of the vehicle. There is no evidence that vehicle-related factors cause more Indigenous road crashes than non-Indigenous road crashes, but vehicles in poor condition are certainly more involved in crashes in rural and remote Australia than in urban areas [13, 7]. It has been suggested that people of lower socioeconomic status (on lower incomes or unemployed) are more likely to have cars that are older and in poor condition [13, 12].

Risk factors after the crash

When crashes occur in rural and remote areas, emergency responses (ambulance and police) are slower because of the large distances [16]. As well, Indigenous people in rural areas are less likely to use mainstream health care services even when they are available [13]. This may be due to:

- the high cost
- no health or ambulance insurance cover
- long distance to a hospital
- lack of transport
- difficulty in taking time off work
- traditional values and a lack of culturally-appropriate services
- the need for referrals
- not enough information about the benefits of medical care, or
- cultural reasons

Prevention and management in Indigenous road safety

The development of programs and projects to help prevent road crashes and injuries depend on a very good understanding of the factors contributing to road injuries. In an effort to improve Indigenous road safety, various governments have attempted to improve:

- general road safety
- community resources
- licensing and alcohol programs
- restraint wearing
- vehicle purchasing [9]

Most community-based Indigenous road safety programs that have been created, aim to educate people about:

the terrible effect that alcohol can have in causing road crashes

the importance of using seatbelts and child restraints

the dangers of riding in the back of trucks (in the NT and WA it is illegal to ride in the back of all utility vehicles, even those fitted with a roll-cage, but other states and territories do not have the same laws).

In the past, most Indigenous road safety programs have not been designed by Indigenous people [13]. Now, however, it is understood that the best road safety programs for Indigenous Australians are those that are led by a community-based road safety educator and involve consultation with Indigenous people, group work and 'hands-on' learning [9].

Since 2000, several states have developed road safety programs and resources that are aimed at the Indigenous population, most of which have been developed using advice from Aboriginal community members.

Examples include:

- 'Keep our kids safe: buckle them up' poster and brochures from Transport SA (2000);
- 'Corrugations to highways' Aboriginal road safety video (2002) developed by the National Aboriginal Road Safety Video Project Team, shot in remote communities in WA, SA and the NT;
- 'Bring the mob home safely' (2003) by the NSW Roads and Traffic Authority. This kit contains a range of resources targeting drink driving, seat belts, overcrowding, speeding, pedestrian and bicycle safety;
- 'Back of trucks' campaign (2003) by the NT Department of

Planning and Infrastructure, targeted remote Aboriginal communities and included radio announcements in English, Murrinh Patha and Djambarrpuyngu, as well as posters, bumper stickers and visits to communities.

For detailed information on these resources, please see the HealthInfoNet road safety promotion resources page

Although a greater proportion of road crashes occur in rural areas, not many road safety policies and interventions have been designed specifically for rural and remote populations and problems [16]. The main reasons for this are:

- the rural population is so spread out and problems in urban areas are not the same as those in rural areas
- the cost of doing research and running programs in rural areas is a lot higher than in urban areas [16]

One of the few studies looking at rural and remote road safety was done in 2003. It aimed to find out what causes serious road rural crashes in northern Queensland. The Rural and Remote Road Safety Research Program was a joint program between the Centre for Accident Research and Road Safety - Queensland (CARRS-Q) and the Rural Health Research Unit (RHRU) at James Cook University. This program developed recommendations to improve rural and remote road safety in four main areas:

1. human factors - such as recommendations for drivers and motorcyclists and specific recommendations for Indigenous people
2. environmental factors - such as recommendations for speed limits and emergency services
3. data collection - more is needed
4. educational programs [17]

Safe system principles

Human, environmental, and vehicle factors (discussed above) all have an impact on road safety so that approaches to improving road safety should include all three factors [3].

The Safe System is a 'complete' approach to improving road safety by looking at the overall management of the system rather than the separate parts. This requires cooperation between groups such as transport agencies, urban planners, environmental agencies, industry and regional development organisations [3].

The Safe System approach promotes a better understanding of how all the different parts of the road system work together:

- road users
- vehicles
- roads and roadsides
- travel speeds

Linking different activities from all areas of road safety will hopefully result in fewer deaths and injuries [18]. Road users still need to be responsible for their own safety under the Safe Systems approach - no matter how good a road is, crashes will still happen if the users do not follow the rules. But if people are aware of the risks associated with road travel they are able to make better decisions about their own behaviour.

Australia's approach to road safety improvement is based on the theory of the Safe System. However, there is still much to be done to make the Safe System a part of regular practice [3].

Policies and strategies

Road safety strategies and policies are mostly run by states, territories and local governments, which conduct their own road safety programs.

The Federal Government is responsible for:

- funding major road programs
- the treatment of black spots (places with frequent accidents)
- deciding on safety standards for new vehicles
- research
- collection and analysis of national road crash statistics
- being responsible for the sharing of ideas and information among groups involved in road safety [19]

National Road Safety Strategy 2001-2010

In November 2000, Australia adopted the *National Road Safety Strategy 2001-2010*. This strategy provides a plan for all levels of government (federal, state/territory and local governments) and other organisations involved in road safety to work together [5]. The main aim of the strategy is to reduce the annual number of road deaths by 40%, from 9.3 per 100,000 people in 1999 to no more than 5.6 in 2010.

The Australian Transport Safety Bureau develops Road Safety Action Plans every two years. These Action Plans have specific targets that can be measured, and will help to achieve the objectives of the *National Road Safety Strategy 2001-2010* [5]. For example, one target is to add centre lines to major undivided rural roads, another is to increase random drug testing. The action plans are reviewed at the end of each two-year period.

The *National Road Safety Action Plan: 2009 and 2010* is the final two-year plan to come out of the 2001-2010 strategy. The plan:

- identifies what it expects will be the main issues affecting road trauma levels in the near future
- sets out the most important areas for action in 2009 and 2010

- discusses issues and actions that will provide the starting point for long-term improvements in road safety
- discusses the possibility that the 2010 target for reducing road deaths (from 9.3 to 5.6 per 100,000 in 2010) will not be achieved [3]

The *National Road Safety Strategy 2001-2010* recognises road safety for Indigenous people as a particular concern [20].

Indigenous road safety forum

The Federal Department of Infrastructure, Transport, Regional Development and Local Government, with assistance from the states and territories, holds an Indigenous road safety forum once every two years. The Forum aims to improve on ideas and programs in Indigenous road safety. People attending this forum are from organisations that play an important role in Indigenous road safety, from federal, state and territory transport, health, safety, police, and sport and cultural affairs agencies.

The 4th Indigenous Road Safety Forum, in Cairns, Queensland, in October 2008, provided an opportunity for people to share ideas and experiences, and to help communities introduce practical solutions to Indigenous road safety problems.

The forum included these topics:

- progress in Indigenous road safety
- sharing Indigenous road safety information on the Australian Indigenous HealthInfoNet
- improving the collection of road safety statistics
- communicating with communities
- Indigenous road safety in rural areas
- licensing

This forum, as with previous forums, noted that although national data on Indigenous road safety is not very accurate or complete, the numbers suggest that the rate of Indigenous road deaths is much higher than the non-Indigenous rate.

The forum included workshops on:

- statistics
- registration and licensing
- drink driving and drink walking
- incorporating Indigenous road safety into the national road safety strategy beyond 2010
- involving Indigenous people in the communities

The thoughts and ideas that came out of these workshops will be considered by the Indigenous Road Safety Working Group. The same Working Group will also check on whether recommendations from the forum are put into practice.

There have been no published recommendations from the forum, however a progress report on the recommendations from the 3rd Indigenous Road Safety Forum held in Broome in 2006 is available.

- http://www.infrastructure.gov.au/roads/safety/indigenous_road_safety/files/Report_2006_recommendations.pdf

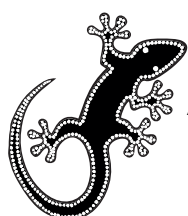
Concluding comments

Reducing the number of road injuries in the Indigenous community requires prevention and management programs. To be successful, these programs need strong leadership and a good working relationship between different areas and levels of government. The transportation sector (who are directly responsible for road safety) will need to work closely with the police, local government, the health sector and other relevant groups.

In addition, the Indigenous community will need to play a key role in developing and running programs and projects to improve Indigenous road safety.

References

1. Department of Infrastructure Transport Regional Development and Local Government (2008) *Road deaths Australia: 2007 statistical summary*. Canberra: Australian Government
2. Harrison JE, Berry JG (2008) *Serious injury due to transport accidents, Australia, 2005–06*. Adelaide: Research Centre for Injury Studies
3. Australian Transport Council (2008) *National road safety action plan 2009 and 2010*. Canberra: Australian Transport Council
4. Harrison JE, Berry JG (2008) *Injury of Aboriginal and Torres Strait Islander people due to transport, 2001-02 to 2005-06*. Canberra: Australian Institute of Health and Welfare
5. Australian Transport Safety Bureau (2004) Road safety in Australia: a publication commemorating World Health Day 2004: Indigenous people. In: *Road safety in Australia: a publication commemorating World Health Day 2004*. Canberra: Australian Transport Safety Bureau: 228-233
6. Australian Institute of Health and Welfare (2007) *Rural, regional and remote health: a study on mortality (2nd edition)*. Canberra: Australian Institute of Health and Welfare
7. Centre for Accident Research and Road Safety - Queensland (CARRS-Q) (2006) *Rural and remote road safety research project: five year crash and area profile of North Queensland*. Brisbane: Centre for Accident Research and Road Safety - Queensland (CARRS-Q)
8. Berry JG, Nearmy DM, Harrison JE (2007) *Injury of Aboriginal and Torres Strait Islander people due to transport, 1999-00 to 2003-04*. Canberra: Australian Institute of Health and Welfare
9. Styles TO, Edmonston C (2006) *Australian Indigenous road safety: 2005 update*. Canberra: Australian Transport Safety Bureau
10. Cercarelli L (1999) *Road crash hospitalisations and deaths in Western Australia involving Aboriginal and non-Aboriginal people, 1988 to 1996*. Perth: Department of Public Health, The University of Western Australia
11. Lehoczy S, Isaacs J, Grayson N, Hargreaves J (2002) *Hospital statistics: Aboriginal and Torres Strait Islander Australians, 1999-2000*. Canberra: Australian Bureau of Statistics and Australian Institute of Health and Welfare
12. Helps YLM, Moller J, Kowanko I, Harrison JE, O'Donnell K, de Crespigny C (2008) *Aboriginal people travelling well: issues of safety, transport and health*. Canberra: Department of Infrastructure, Transport, Regional Development and Local Government
13. Macaulay J, Thomas R, Mabbot N, Styles T, Edmonston C, Sheehan M, Schonfeld C (2003) *Australian Indigenous road safety: contract report*. Vermont South, Victoria: ARRB Transport Research
14. Tiong FCK (1997) *Involvement of South Australian Aboriginal people in road traffic crashes 1989-1996*. Adelaide: Transport South Australia
15. Harrison J, Miller E, Weeramanthri T, Wakerman J, Barnes T (2001) *Information sources for injury prevention among Indigenous Australians: status and prospects for improvements*. Canberra: Australian Institute of Health and Welfare
16. Centre for Accident Research and Road Safety - Queensland (CARRS-Q) (2008) *Rural and remote road safety research program: major recommendations*. Brisbane: Centre for Accident Research and Road Safety - Queensland (CARRS-Q)
17. Vicroads arrive alive (2008) *Arrive alive: towards a safe system*. Retrieved 4 Mar 2008 from http://www.arrivealive.vic.gov.au/about/towards_a_safe_system/towards_a_safe_system.html
18. Australian Transport Safety Bureau (2004) *Summary of outcomes from 2004 Indigenous Road Safety Forum*. Retrieved from http://www.infrastructure.gov.au/roads/safety/indigenous_road_safety/summary_indig_forum.aspx
19. Australian Transport Council (2000) *National Road Safety Strategy 2001-2010*. Canberra: Australian Transport Council
20. Thomson N, ed. (2003) *The health of Indigenous Australians*. South Melbourne: Oxford University Press



Australian Indigenous HealthInfoNet

The Australian Indigenous HealthInfoNet is an innovative Internet resource that contributes to 'closing the gap' in health between Indigenous and other Australians by informing practice and policy in Indigenous health.

Two concepts underpin the HealthInfoNet's work. The first is evidence-informed decision-making, whereby practitioners and policy-makers have access to the best available research and other information. This concept is linked with that of translational research (TR), which involves making research and other information available in a form that has immediate, practical utility. Implementation of these two concepts involves synthesis, exchange and ethical application of knowledge through ongoing interaction with key stakeholders.

The HealthInfoNet's work in TR at a population-health level, in which it is at the forefront internationally, addresses the knowledge needs of a wide range of potential users, including policy-makers, health service providers, program managers, clinicians, Indigenous health workers, and other health professionals. The HealthInfoNet also provides easy-to-read and summarised material for students and the general community.

The HealthInfoNet encourages and supports information-sharing among practitioners, policy-makers and others working to improve Indigenous health – its free on line yarning places enable people across the country to share information, knowledge and experience. The HealthInfoNet is funded mainly by the Australian Department of Health and Ageing. Its award-winning web resource (www.healthinfo.net.ecu.edu.au) is free and available to everyone.

Director	Professor Neil Thomson
Address	Australian Indigenous HealthInfoNet Edith Cowan University 2 Bradford Street Mount Lawley, WA 6050
Telephone	(08) 9370 6336
Facsimile	(08) 9370 6022
Email	healthinfo.net@ecu.edu.au
Web	www.healthinfo.net.ecu.edu.au



FEATURED ARTWORK

Kangaroo warning
road sign, NT, Australia

by Ocean Photography

© Australian Indigenous HealthInfoNet 2013



This product, excluding the Australian Indigenous HealthInfoNet logo, artwork, and any material owned by a third party or protected by a trademark, has been released under a Creative Commons BY-NC-ND 3.0 (CC BY-NC-ND 3.0) licence. Excluded material owned by third parties may include, for example, design and layout, images obtained under licence from third parties and signatures.

CORE FUNDING



Australian Government
Department of Health and Ageing

