The study will be completed early in 2010. Funding: Swann Insurance (Australia).

Motorcycle Helmet Use and Risk Factors for Helmet Non-use Among Motorcyclists in China. A roadside observational study of 4,852 motorcyclists was conducted, 98% of whom agreed to be interviewed at 18 randomly selected sites in Guigang China, in 2002. The aim of the study was to determine the prevalence, quality and correct usage of motorcycle helmet, and secondly, to identify factors associated with these outcomes in China. Just over half (56%) of the motorcyclists wore helmets and two thirds of these helmets were substandard. The findings of the study will be used to develop intervention strategies to promote proper helmet use and reduce motorcycle injuries.

Motorcycle Helmet Use in Vietnam: Prevalence, Barriers to Use and Policy Implications. The aim of this study was to: estimate the prevalence of helmet use in motorcycle riders in the Hai Duong province of Vietnam; examine current policies aimed at reducing motorcycle injuries and promoting motorcycle helmet use in Vietnam; identify barriers to helmet use; and study the prevalence of risky behaviours among motorcycle drivers. A cross-sectional on-site observational survey design has been implemented in order to estimate the prevalence of helmet use based on a random sample of the road hierarchy. The estimates have been obtained adjusting for the time of day, day of week and the season (summer, winter).

Researchers from the George Institute have also conducted a number of Cochrane systematic reviews relating to motorcycle safety. The purpose is to review and synthesise evidence for interventions designed to reduce motorcycle injury and summarise the estimated reductions in risk of death and injury achieved by these interventions. Reviews conducted to date include: **helmets for preventing injury in motorcycle riders (published), motorcycle rider training for preventing road traffic crashes (under review), and motorcycle helmet legislation for preventing injuries in motorcyclists (under revision).**

The George Institute has also been recently contracted by VicRoads to undertake the evaluation of a large-scale trial of an on-road assisted ride program for newly licensed motorcycle riders.

Recent publications:

1. Hung DV, Stevenson M, Ivers R. Barriers to, and factors associated, with observed motorcycle helmet use in Vietnam. Accident Analysis and Prevention 2008;40(4):1627-1633.
2. Hung DV, Stevenson M, Ivers R. Motorcycle helmets in Vietnam: ownership, quality, purchase price and affordability. Traffic Injury Prevention 2008, 9:135–143.
3. Liu BC, Ivers R, Norton R, Boufous S, Blows S, Lo SK. Helmets for preventing injury in motorcycle riders [Review update]. Cochrane Database of Systematic Reviews 2008, Issue 1.
4. Li G, Li L, Cai Q, Ivers R. Knowledge, attitude and practice of helmet wearing of motorcycle drivers in Shantou and Chaozhou. Chinese Journal of Disease Control and Prevention, 2007, 11 (4):372-375.
5. Hung DV, Stevenson M, Ivers R. Prevalence of Helmet Use among motorcycle riders in Vietnam. Injury Prevention 2006; 12: 409-413 (IF=1.844,).
6. Ivers RQ. Exempting adult motorcyclists from wearing helmets increases death from motorcycle accidents. [Invited commentary]. Evidence Based Healthcare and Public Health, 8:265-7, 2004.

A Survey of Motorcycle Safety Programs Across Australasia

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Abstract

The continued growth in popularity of motorcycling has been accompanied by an increase in the number of motorcyclists killed and injured. While the effectiveness of motorcycle licensing and training has been examined, little is known about the many smaller motorcycle safety programs. This paper describes current motorcycle safety programs in Australia and New Zealand. Programs were defined by the six factors identified as major contributors to the over-representation of motorcycles in serious crashes (inexperience or lack of recent experience, driver failure to see motorcyclists, vulnerability to injury, road surface and environmental hazards, risk taking and instability and braking difficulties) and by their organisation, type of delivery and likely effectiveness. Very few small-scale programs had been evaluated. Many statewide programs had only limited or no process evaluation and very few had an outcome evaluation. Recommendations are made for current and future programs for delivery by road safety stakeholders, clubs and other local organisations.

Introduction

Australia and New Zealand, in common with other developing countries, continue to experience a boom in the sales and use of motorcycles. In both countries there was about a 50% increase in the number of registered motorcycles between 2003 and 2008 [1, 2]. The growth in popularity of motorcycling has been accompanied by increases in the number of motorcycle riders and their passengers killed per year, from 188 in 2003 to

245 in 2008 in Australia [3] and from 28 in 2003 to 41 in 2007 in New Zealand [4]. Given the overall increase in motorcycling and associated road trauma, it is therefore of interest to examine what types of motorcycle safety programs have been implemented.

Motorcycle safety programs and systems in Australia and New Zealand range from statewide licensing and training systems administered by government licensing and transport agencies to smaller safety programs and interventions run by local communities and rider groups. Although there has been an increased focus on motorcycle safety by State and Local government agencies in some jurisdictions, with safety strategies and strategic plans being developed in several states [5, 6], overall there has been little formal research undertaken in Australia to assess the effectiveness of motorcycle programs, particularly smaller programs. As a result of this lack of research, safety initiatives directed toward improving motorcycle safety often rely on overseas data, anecdotal evidence or outdated information [7]. Training and testing requirements are set out by the state licensing authority, however, practitioners of motorcycle training often rely on their experience and anecdotal evidence to design and deliver training and safety programs. It is therefore unknown whether these safety activities are fully addressing the underlying issues inherent in improving the safety of motorcyclists.

This paper summarises material presented in a report to the NRMA – ACT Road Safety Trust [8]. The reader is encouraged to consult that document to obtain fuller details of the research.

Method

Motorcycle safety programs were identified through a number of processes. Electronic publications database searches were undertaken as well as Internet searches (including websites of organisations that may have sponsored recent research) and reviewing motorcycle interest magazines. Contact was made with a wide range of stakeholders including road safety agencies, Police, motorcycle rider trainers, and motorcycle rider groups to identify programs that have been implemented.

Motorcycle clubs were contacted via email. A flyer containing project information which asked clubs to "tell us about your motorcycle safety activities…" was sent to all clubs listed in the Australian 'Motorcycle Trader' magazine web version. Although this list did not cover every club in Australia and New Zealand, the email included information which encouraged clubs to pass the flyer onto other clubs, groups and individuals involved in motorcycle riding and motorcycle safety.

One hundred and twenty five local, statewide and national motorcycle programs were examined. This sample provided an opportunity to analyse the type of programs available. State licensing and training systems were excluded because they have been reviewed earlier [7], but individual innovative training programs, such as post licence training, are addressed.

Programs of this nature consisted of 6% of all programs examined. The examination involved categorising programs into topics defined by the six factors which have been identified as contributing to the over-representation of motorcycles in serious crashes: vulnerability to injury; inexperience or lack of recent experience; driver failure to see motorcycles; instability and braking difficulties; road surface and environmental hazards; and risk taking [9].

An examination of program mode was also undertaken. Programs were categorised by their organisation and type of delivery. Other supporting information about motorcycle programs was collected and included the following: time of implementation/duration of program; participating agencies; source/ contact; benefits and issues with the program; and program relevance to the road environment and motorcyclists who receive the message.

Results and Discussion

The research identified 125 motorcycle safety programs in Australia and New Zealand. There were similar proportions of local (48%) and statewide (44%) programs, however, only 8% were national. These categories were defined by the reach of the program (to the target audience), not by the status of the organisation that implemented or funded the program. Some state government funded agency programs may have been classified as local programs due to their scope, for example, being a small community intervention. It is acknowledged that the percentage of local programs may be underestimated in the survey because they are often run for shorter time periods and are not as well known as statewide programs. Only 4% of the programs examined had an outcome evaluation and 1.6% had a process evaluation. The programs that had been evaluated ranged from refresher training for returning riders to road improvements and most were developed or funded by road safety agencies.

Across the Australian states, the percentage of programs from each jurisdiction roughly mirrored the percentage of registered motorcycles in that jurisdiction (calculated from [1]), with the largest representations being from New South Wales, Victoria and Queensland (see Table 1). Compared to their contribution to the Australian fleet, there were relatively few programs from South Australia and Western Australia and relatively more from the Australian Capital Territory.

Table 1. Percentage of programs identified from each jurisdiction and percentage of Australia's registered motorcycles.

Jurisdiction	Percentage of programs identified registered motorcycles	Percentage of Australia's
New South Wales	29.6	26.1
Victoria	20.8	24.0
Queensland	21.6	24.6
South Australia	0.8	7.0
Western Australia	0.8	13.6
Tasmania	0.0	2.2
Northern Territory	2.4	0.9
Australian Capital Territory	8.8	1.8
Australia-wide	6.4	
New Zealand	8.8	

Topics addressed

There were 72 programs that focused on a single topic, and 53 that addressed a range of topics. Table 2 presents the number of programs which target each of the six motorcycle crash contributors. The overall priority particular topics received changed somewhat in relation to whether the program was specific to one topic or addressed a mixture of topics. Inexperience or lack of recent experience was the topic most often addressed by single topic programs. Few programs solely addressed risk taking such as drink riding. Less than 1% of programs specifically targeted instability and braking difficulties. Information about vulnerability to injury is included more often in mixed programs than any other topic. Risk taking is addressed more often in mixed than single topic programs, and information about drivers' failure to see motorcyclists is less commonly addressed in mixed programs. State programs appeared to be more likely than national or local programs to focus on driver failure to see motorcyclists, whereas local programs were more likely to address road surface and environmental hazards.

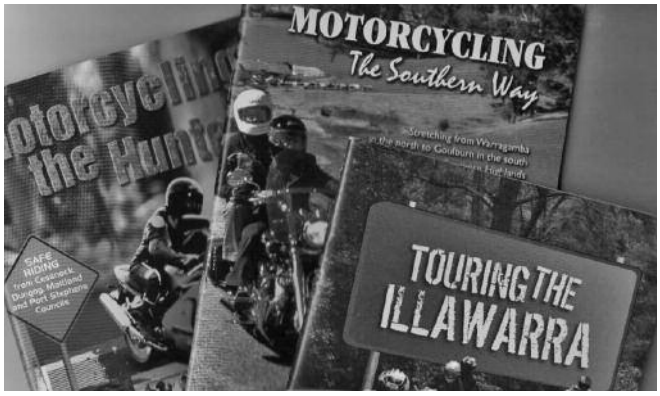
The delivery media were categorised into advertising or educational material (including brochures, websites and ride guides), training courses, events (including awareness days, rallies and workshops), road environment changes (including improvements to signage and auditing), mixed (where a range of delivery media were used) and other (which included enforcement, research and changes to licensing systems). Many programs aim to convey a single message but use a mixture of delivery modes to disseminate the message. Other programs find a means for delivering motorcycle safety messages and combine a number of topics into one form of delivery. Of the programs that addressed a mixture of topics, 35% used printed material (in one or two forms of delivery) for example, a ride guide brochure or internet education. The other 65% used a wider range of delivery methods and included an intervention method beyond written material, for example, hazard signs, awareness days, displays, local Police involvement and media advertising. Table 3 summarises delivery media for programs across the six topic areas and more detail is provided in the sections that follow.

Table 2: Number of single topic and mixed programs including each motorcycle safety topic

Topic	Number of single topic programs				Number of mixed programs	Total programs
	Overall	National	State	Local		
Inexperience or lack of recent experience	26	4	16	6	15	41
Driver failure to see motorcyclists	18	0	16	2	8	26
Vulnerability to injury	11	2	4	5	17	28
Road surface and environmental hazards	12	0	2	10	9	20
Risk taking	4	0	1	3	11	15
Instability and braking difficulties	1	0	1	0	8	9

Programs addressing inexperience or lack of recent experience

The most common approaches to address inexperience or lack of recent experience in riders are licensing and testing, training and enforcement. With regard to smaller, more innovative activities, often public education programs utilising advertising campaigns are run by state agencies in support of new licensing and enforcement initiatives. Training courses specific for novice riders as well as post licence training are another common activity to address this issue. Increasingly, training is being tailored to accommodate returning riders and mature age riders. This is particularly important given that older riders are the fastest growing rider group among serious crashes. However, only 11% of programs which address inexperience or lack of recent experience were courses specifically for returning riders. While information about such programs in the ACT and New Zealand was provided, it is acknowledged that similar programs are available in other jurisdictions..



and hazard perception, rather than advanced or racing skills. Given the increasing popularity of scooters, not only do education programs need to further incorporate safe scooter riding in their content, but the degree to which the current motorcycle training and licensing systems address scooter riding needs to be reconsidered.

Table 3. Number of programs delivered by particular media for each of the motorcycle safety topics

Topic	Advertising or educational material	Training course	Event	Strategic document	Road env change	Mixture	Other
Inexperience or lack of recent experience	8	13					5
Driver failure to see motorcyclists	17		1				
Vulnerability to injury	6		1		1	1	2
Road surface and environmental hazards	1		1		9		1
Risk taking	2						2
Instability and braking difficulties	1						

Ride Guides are one type of publication which provide motorcycle safety advice specific to particular routes. While these guides often cover a range of topics aimed at preventing crashes, reducing injury severity and improving treatment if a crash does occur, the advice is focused on the rider and the environment in which they are riding and so play a role in addressing the issue of inexperience with a particular route. Many ride guides are a form of tourist promotion, often providing maps and other information about the local area and take the form of brochures, booklets and articles in magazines. Ride guides therefore have the potential to reach many riders. More recently, some more sophisticated ride guides have become available on DVD or can be viewed on YouTube. Examples of ride guides include: 'The Great Ocean Road Ride'; 'Motorcycling the Hunter' and 'Motorcycling the Southern Way'.

Although this issue is well represented by programs in Australia and New Zealand (relative to other topics), a number of recommendations can be made to further address inexperience and lack of recent experience. These include promoting refresher courses for returning riders that address basic skills

Programs addressing driver failure to see motorcycles

Most of the programs that address the issue of drivers' failure to see motorcycles are run by state government road safety agencies and include television advertisements (e.g. in Victoria) or a mixture consists of printed slogans on buses, other outdoor advertising and radio (e.g. in NSW). General awareness campaigns also use a variety of delivery modes, with program types including day rides, awareness weeks, awareness sessions, messages on the back of registration labels and, again, television and radio.

Television advertisements are particularly suited to this area of motorcycle safety as they have a wide reach in the community. This medium has the ability to reach 'other road users' as well as motorcyclists themselves. Other advantages of television advertisements include the following:

- Children and teenagers who do not yet operate a vehicle on road, but who are pedestrians and may operate a road vehicle in the future, also receive the safety message. The message then has potential to become part of society's safety culture.
- Television advertisements also have the ability to portray

realistic situations with sound, vision and motion. This has potential to provide a higher impact message than other modes of delivery.
- Although this form of delivery is associated with high monetary costs, it reaches a large number of people.

Although this issue is also well represented by specific programs relative to other issues, this topic could be better addressed in mixed programs. A large emphasis should be placed on hazard perception skills and encouraging motorcycles to position themselves on the road where other users can see them rather than in a position where drivers do not expect motorcyclists to be. This information should be delivered in conjunction with programs targeting public awareness of motorcycles. Both conspicuity (e.g. wearing bright and reflective clothing in order to be seen) and motorcyclist perception of hazards (e.g. not riding in the line, or shadow of a sign) are important issues to be addressed.

Programs addressing vulnerability to injury

Vulnerability to injury is one motorcycle safety factor where programs can target all three areas, road user, vehicle and the environment, to improve this problem. The delivery of these types of programs is often in the form of internet information, brochures and magazine advertisements and there have been a small number of television advertisements. All programs addressing this issue examined in this research were government run programs.

Given the high rate of helmet use by on-road motorcyclists, there has been little emphasis on helmets in safety programs. The research, however, did identify an innovative helmet trade-in project. Wearing of protective clothing is promoted by road safety agencies. Examples of this include the Victorian TAC website which displays a photograph of a motorcycle rider with protective clothing only on one half of his body, and describes the injuries a person would receive without protective clothing. A joint RTA-MAA NSW public education campaign in 2002-03 showed pictures of a cow riding a motorcycle with the slogan 'Dress safely unless you have skin like leather'. This appeared in a range of venues, including the back of buses, however, little information is provided to Australian riders regarding the likely level of protection provided by different brands and types of protective clothing and Australian manufacturers and importers are not subject to any mandatory standards in relation to protective clothing except for helmets. For these reasons, a star rating scheme for motorcycle protective clothing has been proposed to provide consumers with access to information about some of the key safety characteristics of protective clothing, which they may then use in making purchasing decisions [10].

A number of recommendations are made for road safety stakeholders to address the issue of vulnerability to injury, these include:
- linking to, or adaptation of protective clothing promotional campaigns;
- the promotion of the need for development and provision of information on what constitutes effective protective clothing; and
- the promotion of the need for protective clothing to scooter riders.

More widespread uptake of the following programs by motorcycle clubs and other local organisations is recommended:
- 'what to do post crash' courses, including securing the scene and motorcycle specific first aid courses;
- encourage the appointment of a first aid officer (as well as ride leader and tail end person) on group riders; and
- the promotion of protective clothing or establishment of protective clothing requirements for club rides.

Programs addressing road surface and environmental hazards

As with instability and braking difficulties, road surface and environmental hazards are issues not generally tackled by small programs, rather they are primarily run by local and state government road engineering departments. These departments are responsible for design, and oversee the building and maintenance of most road systems. Private contractors also design, build and sometimes maintain roads in areas of residential or industrial developments, however, they must meet specifications set out by government regulation. The number of initiatives undertaken by government agencies is often limited by financial constraints. Re-engineering and re-building intersections is one way of addressing the safety issues for many situations, however, this can be very costly.

The initial design of roads and road systems can play a very important role in this safety area. Design regulations have the ability to affect all new roads, though maintenance programs generally target specific sites only. The re-engineering of problematic intersections sometimes occurs only when a problem has already arisen for motorcyclists. The VicRoads 'Motorcycle Blackspot Program' targeted loss-of-control crashes, intersection crashes and long routes with high numbers of motorcycle crashes and was successful in reducing motorcycle casualty crashes by 38% at the first 51 sites treated [11].

Local councils and state road agencies operate road hazard reporting programs for all road users and these are sometimes promoted to motorcyclists. Several motorcycle organisations operate motorcycle-specific hazard reporting systems and particular programs to identify high risk intersections and roundabouts have been developed by state and local government and local organisations in some rural areas.

Occasionally programs are implemented that do not require a large engineering or re-engineering effort, rather, they are small interventions that alter the road surface or surrounds in some way. There is potential for these types of programs to be effective particularly considering their relatively low costs.

However, some of these programs have not been tested before, and some can potentially have a negative effect on safety.

Given the issue of road surface and environmental hazards cannot be directly addressed by community programs, it is recommended that motorcycle clubs and other local organisations encourage reporting of hazardous locations and areas requiring treatments to the relevant authority. Recommended programs for road safety stakeholders to reduce road surface and environmental hazards include the following:

- educate road managers on motorcycle-friendly road design and maintenance practices
- identify and treat motorcycle blackspots
- establish and promote a road hazard reporting line
- undertake motorcycle-oriented road safety audits

Programs addressing risk taking

Of the programs that address risk taking, alcohol use along with excessive speed are areas addressed more often than issues such as drug use, un-helmeted riding or other risk taking behaviours such as deliberately not following the road rules.

Most initiatives addressing risk taking among motorcyclists are supported by State Government agencies and run in association with local groups. Although only a small number of programs specifically addressing risk taking were identified, almost half of these utilise local police enforcement measures combined with awareness information to tackle this issue. These were generally targeted at known, specific motorcycle routes. Given that almost half of risk taking programs utilise local resources, are undertaken in shorter time frames, are of smaller scope and less well known, a larger proportion may exist than what is reported in these results. However, the results show overall, even when taking mixed programs into consideration, the issue of risk taking is addressed less than any other topic, second only to instability and braking difficulties. Further, while local programs have many advantages, they do not have as wide a reach as larger initiatives.

Another form of innovative program was undertaken by the TAC and included the use of the free breathalysers located at many clubs and facilities at the Grand Prix venue in Victoria. The Queensland Police Service conduct a variety of enforcement initiatives aimed at improving the safety of motorcyclists. A number of specifically targeted enforcement operations have been undertaken in the South East Queensland region along designated popular motorcycle routes.

About half of the risk taking programs identified were advertising campaigns. The RTA and the Motor Accident Authority (MAA) and in consultation with the Motorcycle Council of NSW conducted an extensive motorcycle safety public education campaign targeting a number of topics which included marketing such as posters containing the message 'Drinking and riding don't mix'. A number of forms of delivery were used increasing the exposure of motorcyclist and other road users to the message.

Few programs target non-use of helmets. This may be due to the high compliance with helmet wearing in Australia. There is, however, information available which promotes the use of helmets. Most often this information is in the form of internet recourse through state government road safety agencies.

Since this issue requires more attention, the following programs are recommended for road safety stakeholders to reduce risk taking:

- linking to, or adaptation of drink riding campaigns undertaken by government agencies;
- enforcement activities to detect unlicensed and unregistered vehicles; and
- randomly scheduled, sustainable enforcement on popular motorcycle routes.

Recommended programs for motorcycle clubs and other local organisations include:

- setting alcohol guidelines for club rides;
- incorporating measures to minimise fatigue on club rides; and
- drink riding promotional material in hotels and other venues frequented by riders.

Programs addressing instability and braking difficulties

Some of the approaches to the issue of instability and braking difficulties, such as improving vehicle design, need to be addressed by manufacturers and are outside the scope of smaller programs. Nevertheless, pre-licence and some post-licence training attempt to cover some issues of instability and braking difficulties. Often, the skills required to address these issues are not covered in depth. Those courses that focus on hazard perception and those which bring attention to the limitations of motorcycles in terms of stability and braking, and provide practical countermeasures are useful programs. Those courses which provide advanced training without addressing these components are likely to advance overconfidence in their students without providing them a balance of skills and defensive riding/ hazard perception techniques. Most motorcycle education and training programs are designed for traditional motorcycles, rather than scooters and mopeds, and the specific instability and braking issues of these vehicles are generally not addressed. There are very few programs which actively provide accurate information and promote the purchase of safer designed motorcycles. Some rallies and rides also address braking issues.

Given there are currently few programs which target the issue of instability and braking, it is recommended that the following type of programs be developed:

- hazard perception and emergency braking programs (these should be included in motorcycle training)
- programs promoting purchase of motorcycles with better braking technology (such as ABS or linked braking systems) where it is available
- programs promoting better motorcycle maintenance.

Limitations of existing programs

In collecting and examining motorcycle safety programs from across Australia and New Zealand, a range of limitations of existing programs were identified. Many current initiatives lack collaboration between state road safety agencies, local community groups and rider groups. Collaboration increases the potential for success with greater sharing of information to ensure more accurate messages are disseminated. Collaboration also provides a greater opportunity to build rapport between motorcycle riders and those who design and implement motorcycle safety programs.

Programs run in local communities can be a very effective method to address local safety issues. Initiatives run by state and federal agencies generally do not adapt the message and delivery of a program to suit a local issue. This makes local programs very important to improving motorcycle safety. However, local community run programs do not have as many resources as state and federal programs and therefore, some of these local programs do not appear to be well coordinated. Although their safety message is often accurate and relevant to a local problem, the program may not be delivered in such a way that the safety message effectively reaches the target group. Sometimes, inaccurate information is produced, and when this does occur, there are fewer checks and balances made before the message is delivered.

Two limitations of statewide programs delivered by Government agencies were identified. Some programs have inadequate consultation with rider groups that can result in a lack of acceptance of materials and programs that are developed. Delivery of material, or the message, is sometimes undertaken by a method that appears to be cheapest but may not reach the target audience. For example, sending brochures to registered owners of motorcycles when it is new licence holders that are the target.

Conclusions and Recommendations

Most of the programs examined in this research had only limited (or no) process evaluation available and very few had an outcome evaluation, making it very difficult to identify which programs have been beneficial. This is an unfortunate characteristic shared by larger-scale motorcycle safety programs both in Australasia and internationally [7].

While unequivocal conclusions cannot be drawn regarding what programs are beneficial, it is recommended that structured guidance material or guidance packages be developed and made available for use by all groups or organisations developing future motorcycle safety initiatives. The key components of these packages should be as follows:

- The packages would provide accurate motorcycle safety facts.
- Road safety authorities in each jurisdiction should be the organisations that distribute the packages as official government guidance material.
- The packages should include information which would guide designers in their thinking about the possible wider effects of the program, the possible negative and positive implications of implementation at the design stage and the wider effects once the program is in operation.
- The packages should provide advice on the best ways to deliver the information and run the program.
- The packages should encourage collaboration and consultation with other groups and government organisations in order that
  - organisations know what others are doing;
  - programs do not compete with each other; and
  - the overarching road safety government bodies can better identify areas in need, areas which already have programs in place and can allocate safety resources more efficiently and effectively.
- Packages should provide material in a way such that groups can choose what might best work for them in terms of the specific motorcycle issues to their area and the practicalities of implementing a successful program in that area.
- The guidance packages should address each of factors that have been identified as contributing to the over-representation of motorcycles in serious crashes [8].

To facilitate dissemination and acceptance of programs, there is a need to ensure that materials are developed in consultation with representatives of motorcycle organisations.

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References

1. ABS Motor Vehicle Census. 31 March 2008. ABS Catalogue 9309.0. Canberra: Australian Bureau of Statistics, 2009.
2. The New Zealand Vehicle Fleet. Fleet Statistics 2008. Wellington: Ministry of Transport, 2009.
3. Road Deaths Australia 2008. Statistical Summary. Road Safety Infrastructure and Surface Transport Policy, Department of Infrastructure, Transport, Regional, Development and Local Government, Canberra, 2009.
4. Motorcyclists. Crash Statistics for the Year Ended 31 Dec 2007. Crash Factsheet 2008. Ministry of Transport, Wellington, 2008.
5. VicRoads. Victoria's Road Safety and Transport Strategic Action Plan for Powered Two Wheelers 2009-2013. VicRoads, Kew, 2009. http://www.vicroads.vic.gov.au/NR/rdonlyres/5C578CDD-9FE2-421D-B770-177D1261CDDF/0/PTWPlan20092013.pdf
6. RTA. Motorcycle and Bicycle Action Plan 2002-2004. NSW Roads and Traffic Authority, Sydney, 2002.
7. Haworth, N. and Mulvihill, C. Review of motorcycle licensing and training (Report No. 240). Melbourne: Monash University Accident Research Centre, 2005.
8. Greig, K., Haworth, N. and Wishart, D. Identifying programs to reduce road trauma to ACT motorcyclists. Report prepared for NRMA-ACT Road Safety Trust, 2008. http://eprints.qut.edu.au/27211/
9. Haworth, N., Mulvihill, C., and Clark, B. Motorbike safety in Queensland – Technical paper. Unpublished report. Melbourne: Monash University Accident Research Centre, 2007.
10. N Haworth, L de Rome, P Varnsverry, P. and P Rowden, 'Motorcycle protective clothing: Are stars better than standards?' Australasian Road Safety Research Policing and Education Conference Proceeding, Melbourne, 2007. Melbourne: VicRoads, 2007.
11. C Brennan and K Beer, 'Motorcycle safety in Victoria: Black"spot" the difference' Australasian Road Safety Research Policing and Education Conference Proceeding, Melbourne, 2007. Melbourne: VicRoads, 2007.