2015 ACRS/AIPN/RACS Joint Submission to

The Senate Economics References Committee Inquiry into

Personal Choice and Community Impacts

Boosting Australia's public health and productivity outcomes through evidence-based road trauma reduction policies

The *2015 ACRS/AIPN/RACS Submission* to *The Senate Economics References Committee Inquiry into Personal Choice and Community Impacts* informs Australia's leading policymakers of our support for evidence-based road trauma reduction policies, with a focus on bicycle helmet regulation.

The causes and consequences of road trauma have a serious impact on Australia's collective public health as well as the nation's productivity. By the time we reach the final year of Australia's National Road Safety Strategy 2011-2020, and assuming the 30% target reduction is reached, **road trauma will still have cost the Australian economy a staggering $264 billion dollars over this 10 year period**.

As a nation we must do all that we can to raise our collective level of public health, and in providing this submission to you we emphasise that, together with the majority of the community, we strongly support bicycle helmet regulation.

‘Imagine if improvements to combat road trauma were a top national public health priority - the effect on our nation’s health, economy and wellbeing would be a gold standard for the global community’

Lauchlan McIntosh,
President – Australasian College of Road Safety
August 2015

‘Whilst it should not be considered as a single strategy to prevent harm from cycling injuries, legislation requiring use of bicycle helmets is a simple, cost effective way to prevent head injuries resulting from bicycle crashes in children and adults. As one of the few countries mandating this legislation, Australia should be recognised as a leader in cyclist head injury prevention. We look forward to a day where cycling is a major form of transport in our cities: implementing a Safe System, including investment in safer cycling infrastructure, encouraging mutual respect and consideration between drivers and cyclists, and maintaining helmet laws will help to ensure cycling is also a safe activity, with health and environmental benefits.

Dr Kerrianne Watt
President – Australian Injury Prevention Network
August 2015

‘If laws requiring cyclists to wear helmets were dismantled there would be a huge increase in costs to the taxpayer as a result of an increase in emergency admissions, and to victims and their families through reduced quality and years of life’

Dr John Crozier FRACS
Chair - Trauma Committee - Royal Australasian College of Surgeons
August 2015

Australasian College of Road Safety (ACRS)

The **Australasian College of Road Safety** was established in 1988 and is the region's peak association for road safety professionals and members of the public who are focused on saving lives and serious injuries on our roads. The College Patron is His Excellency General the Honourable Sir Peter Cosgrove AK MC (Retd), Governor-General of the Commonwealth of Australia.

Australian Injury Prevention Network (AIPN)

The **Australian Injury Prevention Network (AIPN)** was established in 1996, and is the peak national body advocating for injury prevention and safety promotion in Australia. Through national conferences, publications, events, advocacy activities and research, the Network benefits from its high profile, influential membership base of leading injury prevention researchers, and those working to reduce the incidence of injury and harm throughout Australia.

Royal Australasian College of Surgeons (RACS)

The **Royal Australasian College of Surgeons (RACS)** is the leading advocate for surgical standards, professionalism and surgical education in Australia and New Zealand. The College is a not-for-profit organisation that represents around 7,000 surgeons and 1,300 surgical trainees and International Medical Graduates. RACS also supports healthcare and surgical education in the Asia-Pacific region and is a substantial funder of surgical research.

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Definitions

Traumatic brain injury (TBI) refers to brain injury acquired through a traumatic event, such as a traffic accident or a blow to the head (AIHW, 2008). The leading causes of TBI in Australia are transport accidents, falls, collisions with objects and water related accidents.

TBI can cause long-term physical disability and complex neuro-behavioural effects which disrupt quality of life, including neurological impairment (e.g. motor function impairment and sensory loss), medical complications (e.g. spasticity and post-traumatic epilepsy), cognitive impairment (e.g. memory impairment and problems with planning, language and safety awareness), personality and behavioural changes (e.g. impaired social and coping skills) and lifestyle consequences (e.g. unemployment, difficulty maintaining interpersonal relationships and loss of independence) (Access Economics, 2009).

Note: This is a revised version of the submission. Dated 8 December 2015.

Contents

1.0 Executive Summary

Road trauma is arguably the highest ranking public health issue we face as a nation today. Each week in Australia over 20 people die and 600 are seriously injured on our roads, and the ripple effect of each road trauma event to our families and communities is enormous.

Conservative federal government estimates put the annual cost of road trauma to our economy at $27b (Australian Transport Council, 2011) – similar in size to our annual defence budget. This equates to around $70m every day. This means that every single Australian, from newborns through to older citizens, is bearing the road trauma cost at a rate of $3 per day – equivalent to $21 per week or $1,100 per year, for each of our 23 million citizens. This does not take into account the effect of road trauma across the families and communities that surround each road trauma victim, be it from a death or a serious injury.

If the aim of the National Road Safety Strategy (NRSS) is reached – a target of a 30% reduction in road trauma by 2020 - this trauma will still have cost the Australian economy a massive $264b over the decade to 2020. With this figure in mind there is a great deal to be saved by focusing on preventing death and injury due to road trauma, including those deaths and injuries associated with cycling incidents.

In this submission we set the scene for the current economic impacts of road trauma, and we quantify the longer-term economic costs of road trauma using federal government baseline figures. We also discuss the evidence and public perceptions around cyclist helmet regulation, the vast majority of which is in support of government regulation to benefit public health and safety.

In concluding this submission, ACRS, AIPN and RACS present recommendations aimed at promoting the best possible outcomes for Australia's collective level of public health, as well as maximising our productivity as a nation. Above all, we present evidence overwhelmingly in support of the government's current position on mandatory bicycle helmet legislation.

2.0 Background

2.1 Economic and public health burden of road trauma

The economic and social impacts of road trauma cannot be underestimated, and have been comprehensively outlined in the *2013 ACRS Submission to Federal Parliamentarians* (ACRS FP Submission, 2013), the *2013 ACRS Submission to the Productivity Commission Inquiry into Public Infrastructure* (ACRS PC Submission, 2013), the *2014 Submission to the Australian Road Safety Community* (ACRS RS Submission, 2014), and the *2015 Submission to the Senate Inquiry into*

Aspects of Road Safety in Australia (ACRS RS Submission, 2015). Therefore it follows that any evidence-based measures to decrease the rate of road trauma will have a positive impact on Australia's collective public health as well as our national productivity.

Australia's NRSS estimates the annual cost of road trauma in 2011 to be $27b per year, and sets a target of a 30% reduction in the number of deaths and serious injuries from road trauma by 2020. If the aim of the NRSS is reached, this level of trauma will still have cost the Australian economy $264b over the decade 2011-2020 (Table 1, Figure 1).

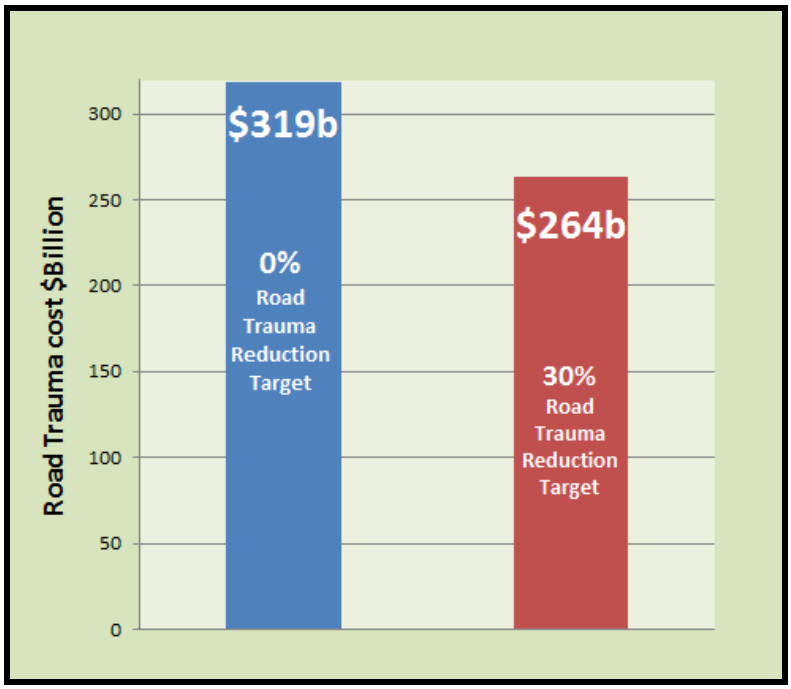
The enormity of the economic impact of road trauma should not be underestimated, and our ability to combat this productivity burden should also not be underestimated.

Table 1: ***Australian road trauma costs 2011-2020***
Comparison of costs ($bn) - 0% vs 30% road trauma reduction targets

	Road Trauma cost				30% reduction target		
Year	Deaths (No.)	Injuries (No.)	Road Trauma Cost ($b)*	Reduction from NRSS baseline (%) **	Deaths (No.)	Injuries (No.)	Road Trauma Cost ($b)*
NRSS baseline	1,400	32,500	27	NRSS baseline	1,400	32,500	27
2011	1,400	32,500	27.81	3%	1,358	31,525	26.98
2012	1,400	32,500	28.64	6%	1,316	30,550	26.93
2013	1,400	32,500	29.50	9%	1,274	29,575	26.85
2014	1,400	32,500	30.39	12%	1,232	28,600	26.74
2015	1,400	32,500	31.30	15%	1,190	27,625	26.61
2016	1,400	32,500	32.24	18%	1,148	26,650	26.44
2017	1,400	32,500	33.21	21%	1,106	25,675	26.23
2018	1,400	32,500	34.20	24%	1,064	24,700	25.99
2019	1,400	32,500	35.23	27%	1,022	23,725	25.72
2020	1,400	32,500	36.29	30%	980	22,750	25.40
Total	15,400	357,500	318.81	30%	11,690	271,375	263.88

* assumes 3% CPI, and utilises $27b figure estimate in NRSS 2011-2020
** assumes linear reduction of 3%pa over 10 years i.e. 42 deaths and 975 serious injuries per year (30%)

Figure 1: **Cost of road trauma to the Australian economy**
$Billion cumulative 2011-2020



Many road trauma trauma victims are incapacitated for life. The consequence of this trauma though does not sit solely with the families and carers of the trauma victims, or the medical professionals involved with them. Communities as a whole are greatly affected by these deaths and injuries, including workplaces, friendship and community networks, and the toll on the mental health of emergency workers including police and ambulance workers, to name just a few.

There has been progress in Australia to increase the level of bipartisan federal political interest in road safety. This is evidenced by the formation of the Parliamentary Friends of Road Safety Group, a group of federal politicians who are committed to elevating awareness of road safety benefits amongst federal politicians. This group have the following collective aims:

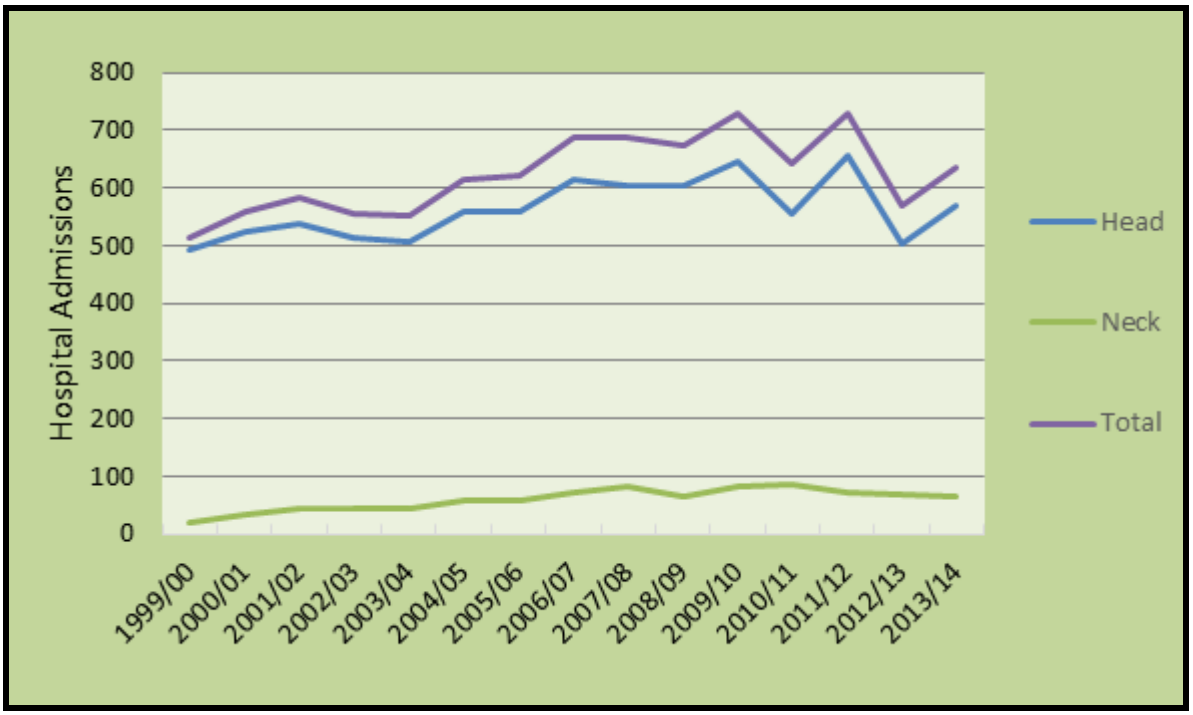
- Elevate within the Federal Parliament greater awareness of road safety.
- Inform Federal Parliamentarians of the need for continual improvement in road safety outcomes.
- Inform Federal Parliamentarians of national and international initiatives with the potential to improve road safety outcomes.
- Ensure Federal Members of Parliament are aware of the enormous social and economic cost of failing to continually prioritise improved road safety outcomes.

2.2 Economic impact of Traumatic Brain Injuries due to cyclist road crashes

There is substantial research evidence that the use of helmets for cyclists presents significant economic savings to the community.

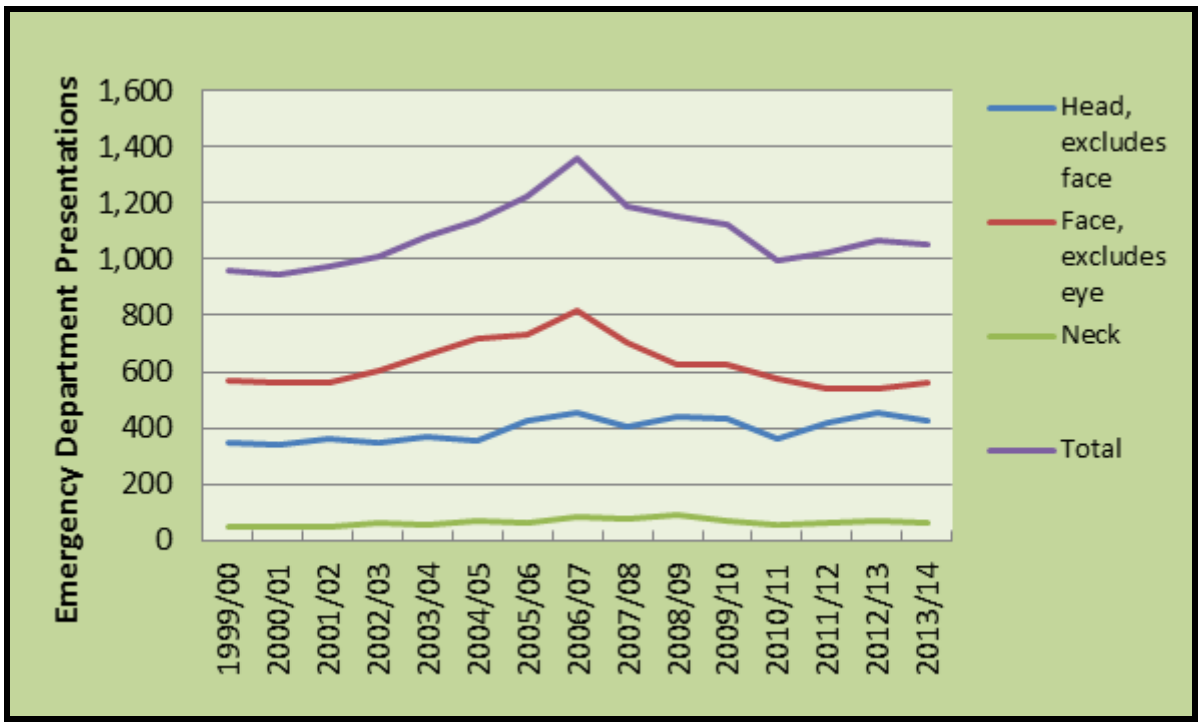
The Victorian Experience: Recent analysis of the Victorian Injury Surveillance Unit dataset by MUARC identifies that each year in Victoria there are over 500 hospital admissions for cyclists with head and neck injuries (Figure 2). There are a further 1,000 emergency department presentations for cyclist head, neck and facial injuries (Figure 3). These figures highlight the significant number of head injuries occurring annually. Furthermore, it is noted that these figures do not capture the full extent of cyclist head injuries, with fatal injuries and less severe injuries not treated in a hospital or emergency department not captured in the dataset.

Figure 2: **Annual Hospital Admissions for Cyclist Head and Neck injuries**[1]
1999/00 – 2013/14 - Victoria, Australia



[1] The Victorian Injury Surveillance Unit (VISU) is situated within the Monash Injury Research Institute (MIRI), alongside the Monash University Accident Research Centre (MUARC). The VISU holds hospital-treated injury data at two levels of severity: hospital admissions and Emergency Department (ED) presentations.

Figure 3: **Annual Emergency Department Presentations for Cyclist Head, Face and Neck injuries**[1]
1999/00 – 2013/14 - Victoria, Australia



"*For those working on the frontline of trauma care, the findings of a report into the protective effects of helmets in cyclists and motorcyclists published in the Medical Journal of Australia last week come as no surprise.*

When an ambulance arrives at an emergency department with a cyclist injured on the road, a clinician needs to first know a few important details. How old is the patient? What are the vital signs? And finally… were they wearing a helmet?

That's because ambulance officers, doctors and nurses have known for a long time that if a helmet is not being worn at the time a head strikes the road, pavement or cycleway, the chances of severe head injury are much higher." **(Dinh *et al*, 2013a)**

In their letter to the Editor of the Medical Journal of Australia, **(Dinh *et al*, 2013b)** report that for any head injury associated with helmet non-use, the adjusted odds ratio was 5.6 (95% CI, 2.1–14.9; *P* <0.001) for pedal cyclists. Further analysis subsequent to publication found that median hospital costs for non-helmeted cyclists ($47,900, IQR 16,000-127,000) were more than double those for helmeted cyclists ($22,900, IQR 13,000- 25,000) (unpublished data).

There are few other research studies or reports that have examined the issue, but of those that do the results suggest significant costs can be averted with increased use of helmets. Schulman et al

found that 107,000 bicycle related head injuries could have been prevented in 1997 in the United States, and that these preventable injuries and deaths represent an estimated $81 million in direct and $2.3 billion in indirect health costs. From the UK, Chapman reported on a basic cost-benefit analysis of a helmet promotion campaign in West Berkshire (total population 450,000; 0-15 years population 120,000). They estimated that, in 1997, the use of helmets by injured cyclists reduced inpatient care costs by £291,703. Using loss of life potential and the 'willingness to pay' approach, an attempt was also made to quantify the indirect cost of the accidents. The costing reflected human cost (pain, suffering, grief); medical costs and direct economic cost e.g. loss of output. The estimated total savings over the 10-year period of the helmet-promotion programme (without special education provision) was £4.2 million.

2.3 Australian National Cycling Strategy 2011-2016

The Australian National Cycling Strategy 2011-2016 **(Australian Bicycle Council, 2011)** sets out a series of actions aimed at delivering its overarching vision to double the number of people cycling in Australia between 2011-2016

The Strategy's goal is underpinned by six key priorities and objectives.

- **Cycling promotion** - Promote cycling as a viable and safe mode of transport, and an enjoyable recreational activity.
- **Infrastructure and facilities** - Create a comprehensive and continuous network of safe and attractive routes to cycle and end-of-trip facilities.
- **Integrated planning** - Consider and address cycling needs in all relevant transport and land use planning activities.
- **Safety** - Enable people to cycle safely.
- **Monitoring and evaluation** - Improve monitoring and evaluation of cycling programs, and develop a national decision-making process for investment in cycling.
- **Guidance and best practice** - Support the development of nationally consistent guidance for stakeholders to use and share best practice across jurisdictions.

The overarching vision to double the number of cyclists by 2016 is underpinned by government policies that help to ensure Australia does not inherit an increase in injury cost burden from this planned increase in participation, simply due to non-helmet cyclist crashes. It is therefore imperative that Australia maintains its stance on helmet laws to ensure the community is not burdened with additional costs – both financial and social.

2.4 Effects of cycling on health

In the CARRS-Q Monograph on Bicycle Helmet Research (Haworth *et al*, 2010), the authors cite research quantifying the financial gain to the community through cycling. The annual health benefit of active travel by bicycle has been estimated at approximately $3,500 for each new person, and half that value for continuing commuters (Genter *et al*, 2008). Haworth *et al* also note that cycling exposes riders to the risk of injury, and that therefore cycling should be encouraged in ways that reduce the risk of the most serious injuries. Further they state that:

> *"Head injuries not only have the potential for death but that they are among the most disabling of non-fatal injuries (in some ways more than spinal injuries). Infrastructure and speed management approaches to improving the safety of cycling should be undertaken as part of a Safe System approach, but protection of the individual by simple and cost-effective methods such as bicycle helmets should also be part of an overall package of measures."* (Haworth *et al*, 2010).

2.5 Current bicycle helmet legislation in Australia and subsequent effect on cyclist head injury rates

Current bicycle helmet legislation and historical context

Victoria was the first state in the world to introduce mandatory bicycle helmet laws, which have been in place since 1990. Some of the important steps that paved the way for this significant initiative included helmet promotion involving education, mass media publicity, support by professional associations and community groups, consultation with bicycle groups, and financial incentives in the preceding ten years before helmet regulation was introduced (Cameron *et al*, 1994).

Although the introduction of bicycle helmet laws was supported by the Victorian Minister of Transport from as far back as 1984, it took a further 6 years for the MHL to be introduced. During this period there were many additional promotional activities but probably the single most significant contribution was an Inquiry into Child Pedestrian and Bicycle Safety by the Social Development Committee of the Victorian Parliament. In 1986 it recommended inter alia 'that mandat5ory helmet use by bicyclists be introduced as soon as possible' (Cameron et al 1994).

Following extensive consultation with cyclists and the community generally, the Road Traffic Authority in Victoria developed a strategy for the implementation of the law from June 1989. This finally happened as part of a package of road safety initiatives from 1 July 1990 (Cameron et al 1994).

In Victoria the legal requirement for helmet use was specified in the Road Safety Bicycle Helmet Regulation 1990 and has since been incorporated into the most recent Road Safety Road Rules 2009. The legislation states that *"The rider of a bicycle must wear an approved bicycle helmet securely fitted and fastened on the rider's head".* Helmet legislation applies when cycling on roads, bike paths, bicycle lanes, shared and separated footpaths, recreational parks and car parks.

In 2010, CARRS-Q reported that in Australia, bicycle helmet wearing laws are universal in approach, applying to bicycle riders and pillions of all ages who are riding on roads and road-related areas (except in Northern Territory where it applies on roads only) (Haworth *et al*, 2010).

Effect of helmet legislation on head injury rates

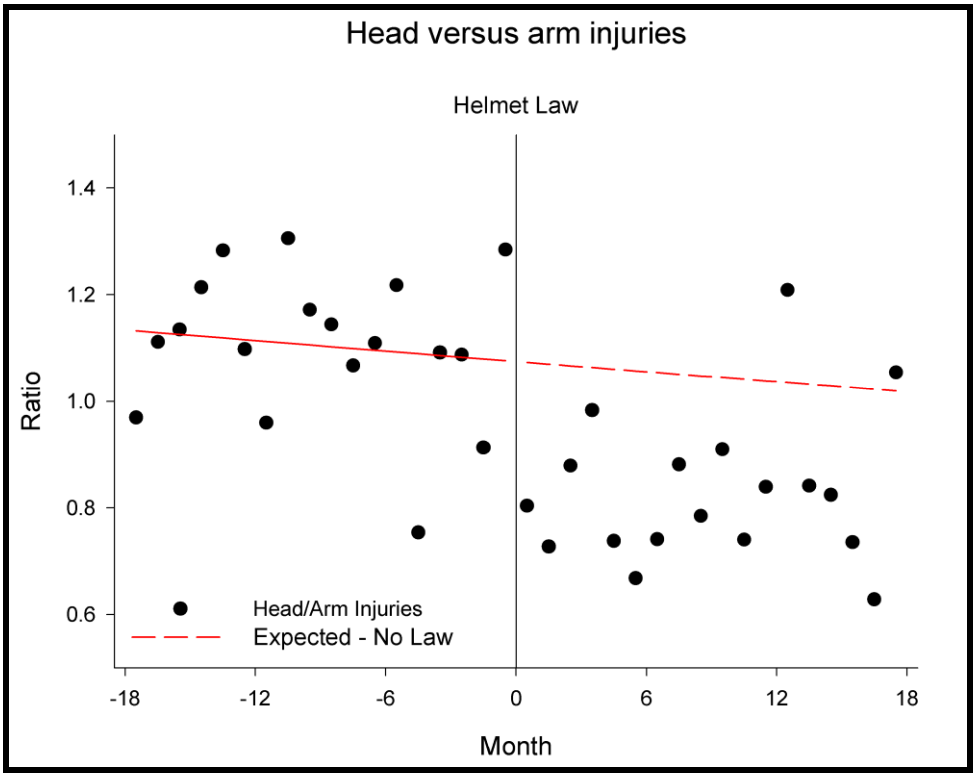
In a recent study, Bambach (2013) reports that helmet use was associated with reduced risk of head injury in bicycle collisions with motor vehicles of up to 74%, and the more severe the injury considered, the greater the reduction. This was also found to be true for particular head injuries such as skull fractures, intracranial injury and open head wounds (Bambach et al, 2013).

Some of the earliest research regarding the benefits of helmets was conducted by the Monash University Accident Research Centre (MUARC) following the introduction of helmet legislation in Victoria. Newstead (1994) conducted a study based on Victorian Transport Accident Commission (TAC) claims data, and found that the rate of cyclist head injury claims significantly reduced following the introduction of helmet legislation (Newstead *et al*, 1994). In addition, a 40% reduction in head injuries resulting in admission to hospital was observed after the introduction of helmet legislation (Carr et al, 1995).

Similar findings were observed in NSW (Walter *et al*, 2011). Walter and colleagues compared the reduction in head injuries resulting from bicycle crashes following introduction of legislation for bicycle helmets to other cycling injuries (e.g., arm and leg), and estimated that the reduction in head injuries attributable to helmet legislation was between 27.5-31% (Walter et al 2011). Similar reductions in head injuries from bicycles relative to other injuries from bicycles in the period immediately prior to the introduction of the legislation (when there was increased media attention and public debate regarding the benefits of helmets) and following the legislation, were observed in QLD (Pitt et al, 1994).

Furthermore, Olivier et al reported in 2014 that in the eighteen month period before the helmet law, the head injury rate was consistently higher than the arm injury rate, while the opposite effect was observed in the eighteen month period following the introduction of helmet legislation (Figure 4) (Olivier *et al*, 2014). Figure 4 shows that head injuries were fewer than arm injuries in almost every month following the legislation. The figure also shows that the actual frequency of head injuries was lower than what would have been predicted if the legislation had not been introduced.

Figure 4: **Time series of the ratio of head to arm bicycle injury hospitalisations in NSW, and the expected ratio without the helmet law (source: NSW Department of Health)**
(Olivier *et al,* 2014)



Together, these studies provide support that mandatory helmet laws reduced the rate of cyclist head injuries.

This finding is also supported by research conducted by the Victorian Injury Surveillance Unit who found that following the introduction of the helmet legislation the rate of child cyclist head injuries reduced (Ozanne-Smith & Sherry, 1990). Other reasearch from the Monash University Accident Reasearch Centre identified that while there was an initial reduction in the number of people cycling in Victoria following the introduction of helmet legislation, within two years the number of bike riders had returned to levels similar to what had been observed prior to the legislation for adult and child cyclists (Finch *et al*, 1993).

Australian and international research has demonstrated that introduction of bicycle helmet legislation was followed by a reduction in the number and severity of head injuries to cyclists (Haworth *et al*, 2010).

2.6 The importance of protecting children

The United Nations Convention on the Rights of a Child (United Nations Treaty, 1990) is a universally agreed set of non-negotiable standards and obligations. The Convention consists of 54

articles and is guided by four key principles. Article 3 states that all organisations concerned with children should work towards what is best for each child. Article 6 states that, 'Children have the right to live a full life. Governments should ensure that children survive and develop healthily.'

A Canadian study (Khambalia et al, 2005) found that children were more than twice as likely to wear a helmet when riding with either a helmeted child or adult companions. The study recommended that efforts be made to improve adult helmet use and children's perceptions and attitudes toward helmet use.

It is the position of the three organisations contributing to this submission that the penalty for a child's lack of judgement, knowledge, or skill when riding a bicycle should not be death or serious injury. Governments should be doing all they can to ensure children wear helmets when riding bicycles, thereby reducing these risks and protecting them from harm.

2.7 Perceptions around cycle helmet regulation

In a peer-reviewed paper published in the November 2014 issue of the Australasian College of Road Safety Journal, '*Anti-helmet arguments: lies, damned lies and flawed statistics*', the authors (Olivier *et al*, 2014) state the following:

> *Bicycle helmets are designed to mitigate head injury during a collision. In the early 1990's, Australia and New Zealand mandated helmet wearing for cyclists in an effort to increase helmet usage. Since that time, helmets and helmet laws have been portrayed as a failure in the peer-reviewed literature, by the media and various advocacy groups. Many of these criticisms claim helmets are ineffective, helmet laws deter cycling, helmet wearing increases the risk of an accident, no evidence helmet laws reduce head injuries at a population level, and helmet laws result in a net health reduction.*
>
> *This paper reviews the data and methods used to support these arguments and shows they are statistically flawed.*
>
> ***When the majority of evidence against helmets or mandatory helmet legislation (MHL) is carefully scrutinised it appears overstated, misleading or invalid. Moreover, much of the statistical analysis has been conducted by people with known affiliations with anti-helmet or anti-MHL organisations.***

Recent survey results support claims that the anti-helmet lobby is not a realistic or objective representation of the general public's point of view. The following surveys suggest the overwhelming majority of Australians are supportive of our Government's laws to regulate the wearing of bicycle helmets, with the main reason being to protect people's health and safety.

2.8 Surveys of public attitudes around the wearing of helmets

Several surveys have been completed that included questions about the wearing of helmets. The three summarised in this submission include the following:

1. Cycling Promotion Fund Survey (CPSF, 2011)
2. Essential Report Survey (ERS, 2012)
3. Cycling and Women Survey (C&WS, 2013)

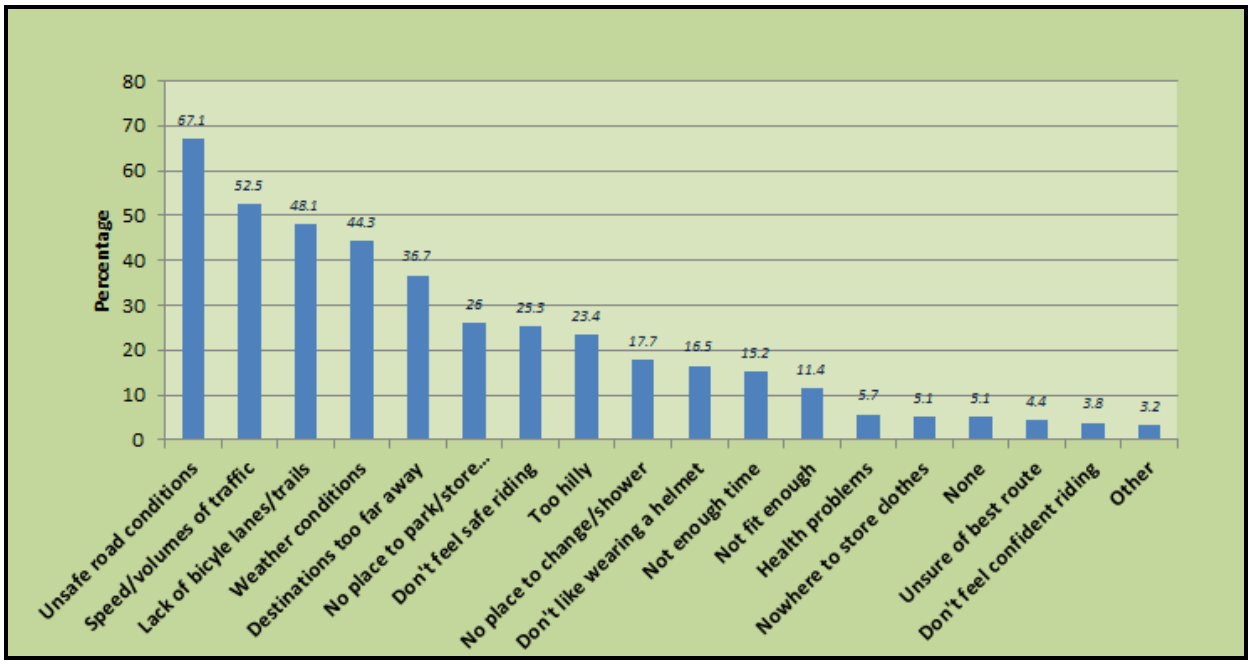
These surveys, and their results relating to helmet regulation, are discussed in more detail below.

Survey 1: Cycling Promotion Fund Survey (2011)

Respondents who had ridden a bike for transport in the past month were asked what discouraged them from riding a bike for transport more often.

- A common theme for not cycling more often was due to road traffic conditions or safety. Respondents were likely to rate unsafe road condition, speed/volume of traffic, lack of bicycle lanes or safety as key reasons for not cycling often.
- Issues such as lack of time or motivation were not significant factors in holding back cyclists.

Figure 5: **Reasons for not riding a bike for transport more frequently**

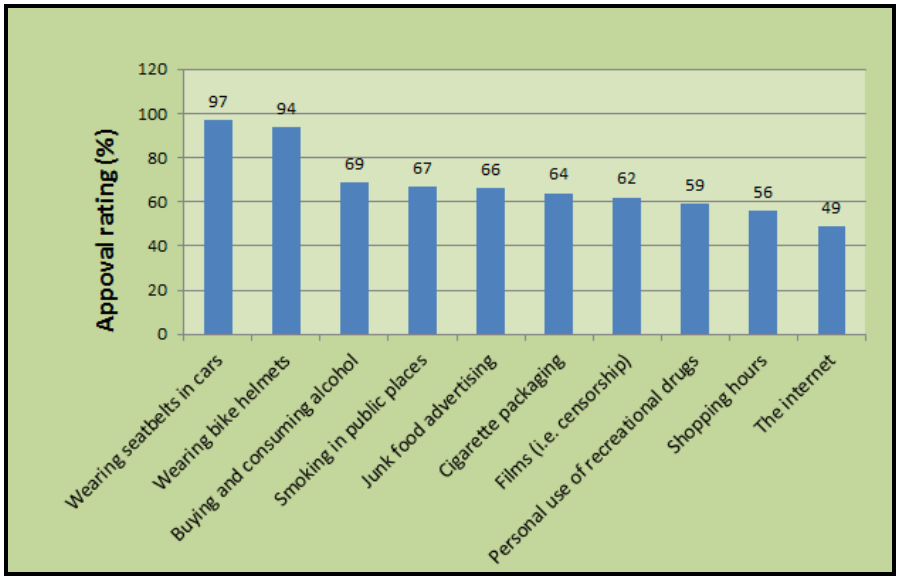


Q: Which of the following, if any, discourage you from riding a bicycle for transport more often? (Multiple response)
Base: Respondents who have ridden a bike for transport in the past month (n=158)

Survey 2: Essential Report Survey (2012)

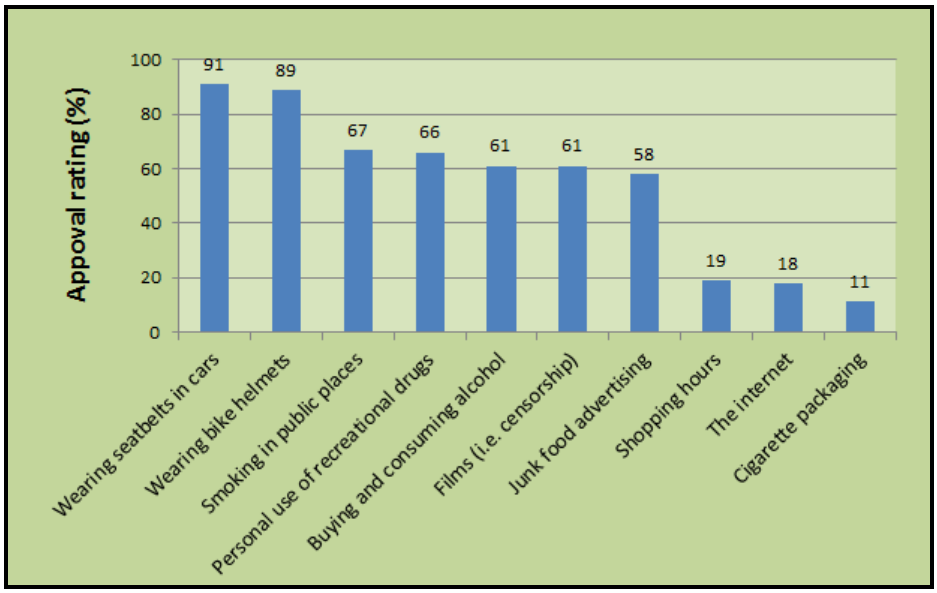
The Essential Report (2012) states that 94% approve of government mandated bike helmets while only 1% strongly disapprove. Also, 89% believe government mandated helmets are for protecting people's health and safety.

Figure 6: **Approval rating (%) for Government making laws to regulate selected activities, including wearing bike helmets**



Note: highest levels of approval were for 'wearing seatbelts in cars' (97%) approve and 'wearing bike helmets' (94%) approve.

Figure 7: **Approval rating (%) for 'Protecting people's health and safety' as the reason for Government regulation for selected activities, including wearing bike helmets**



For most of the areas listed above, the majority of respondents thought the most important factor for Governments to consider was 'protecting people's health and safety'.

Survey 3: Cycling and Women Survey (2013)

The 'Cycling and Women Survey' is the third annual survey conducted by the Heart Foundation and The Cycling Promotion Fund. The 2013 survey builds on the previous two surveys, 'Riding a bike for transport' (2011) and 'Active travel to school' (2012).

There was not one clear stand out reason women believe prevents them (or other women) from cycling. One in ten women reported lacking confidence in riding a bike, along with lack of time to get on a bike. Dislike of wearing a helmet did not rate at all in the Main Reasons that prevented women from cycling (Table 2) (though they could be an unspecified proportion of the 'other' responses).

Table 2: ***Survey Responses: Reasons that prevent women from cycling***
Women and Cycling Survey 2013

Reasons that prevent women from cycling	Main reason (%)
Lack of confidence in cycling ability	10.0
Lack of time	10.0
Lack of fitness	9.1
Speed/volume of traffic	8.2
Getting hot and sweaty/having to wear special clothese	7.6
Agression/abuse from other road users	7.1
Lack of bike paths/lanes	7.1
Inability to carry children or other passengers	6.3
Live too far from school, work, shops etc	5.9
Being involved in an accident	5.8
Inability to carry more stuff	4.0
Darkness/weather conditions	3.1
Inhaling car fumes when cycling on the road	2.8
Lack of showers and/or locker at destination	2.3
Unable to change a flat tyre	0.4
Other	10.3

When asked to nominate other reasons that prevent women from cycling, traffic and aggression from other road users featured prominently.

When asked what would encourage women to cycle more, only 4.1% responded "not having to wear helmets" (Table 3).

Table 3: ***Survey responses: What would encourage women to cycle more?***
Cycling and Women Survey 2013

What would encourage women to cycle more?	Main reason (%)
Completely separated off-road cycling paths	32.3
More bike lanes / Wider lanes on the roads	16.2
Female friendly bicycles	7.4
Orgnaised social cycling events	6.4
Availability of showers	4.9
Not having to wear helmets	4.1
Better connectivity / more direct routes	3.6
Good local bike maps or website so I could check out an pl	3.6
Availability of lockers and/or secure bike parking at destir	2.5
Better lighting along routes	2.5
Reduced traffic speeds	2.4
None of the above	11.0
Other	*3.3*

Conclusion from surveys:

In summary, it is crucial to note that these survey responses overwhelmingly suggest that if helmet laws were repealed there would be no significant associated increase in cycling. The evidence strongly suggests that a repeal of helmet laws would instead lead to a significantly increased TBI burden on Australians, an associated decreased level of public health, and a negative impact on our nation's productivity.

3.0 ACRS/AIPN/RACS Position on bicycle helmet regulation

The ACRS and RACS strongly support the AIPN position on bicycle helmet regulation to reduce road trauma (AIPN, 2013).

There is strong evidence that bicycle helmets offer head protection to cyclists if they crash or fall off their bicycle. Non-usage of helmets has consistently shown to be associated with increased risk of serious injury in cyclists (de Rome *et al*, 2011, Povey *et al.* 1999, Hansen *et al.* 2003, Richter *et al.* 2007).

Findings from systematic reviews of the most rigorous scientific evidence available confirm that wearing a helmet reduces the risk of head injury by approximately 60%, brain injury by 58%, facial injury by 47%, and fatal injury by 73%, in bicyclists involved in a crash (Attewell *et al*, 2001 Bicycle helmets that meet national standards protect cyclists of all ages against head, brain, and facial injuries (Macpherson 2008).

Cycling is an activity that is both enjoyable and is linked to direct and indirect health gains, and so, from a public health perspective, is an activity that should be encouraged. However, cycling can also be a dangerous activity for inexperienced riders, or for riders in unsupportive road environments.

- It does not take a large force to cause serious injury to a human head. Even from a standing height head contact with a concrete footpath or road surface will cause serious injury.
- There is strong evidence that bicycle helmets prevent head injury in the event of a crash (Bambach *et al,* 2013, de Rome *et al*, 2011, Povey *et al.* 1999, Hansen *et al.* 2003, Richter *et al.* 2007).
- Multiple studies have documented the rise in helmet wearing rates with introduction of helmet legislation (Karkhaneh *et al*. 2006, Karkhaneh *et al*. 2011, Leblanc *et al*. 2002).
- Bicycle helmet legislation is effective at increasing helmet wearing rates and decreasing bicycle-related head injuries (Macpherson *et al*. 2008).
- Bicycle helmets must comply with a design and performance standard. It is illegal to sell bicycle helmets in Australia that are not certified to the Australian Standard (AS/NZS 2063). Most places that sell bicycles will also sell affordable bicycle helmets that fully comply with the Australian standards.
- There is evidence that children are more likely to wear helmets if their parents and adult role models do as well (Khambalia *et al*, 2005).

4.0 Recommendations:

ACRS/AIPN/RACS put forward the following recommendations in support of road trauma reductions, with a particular emphasis on cycling and the wearing of bike helmets:

- Mandatory helmet legislation and supporting measures (enforcement and public awareness) are important road safety and public health initiatives aimed at reducing head injuries as a result of a cycling-related crash.
- Given the effectiveness of bicycle helmets in reducing head injury in the event of a crash, helmets should be encouraged for all cyclists, both on and off road.
- Legislation requiring use of cycle helmets for all cyclists including children is effective at increasing helmet wearing rates, and should be in place in all Australian jurisdictions.
- Appropriate educational programs, social marketing and police enforcement is necessary to support cycle helmet legislation and should be appropriately resourced.
- Resources should be made available for improved and supportive cycling environments/infrastructure, including cycle ways that take cyclist safety into account.
- Research should be encouraged into helmet design and improvement and any other devices to protect the vulnerability of cyclists on roads.
- Continued research to develop an evidence base for potential road safety countermeasures to reduce cyclist injury and promote increased participation should be supported.

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Attachments

Attachment 1 *– ACRS, AIPN, RACS Membership*

About the Australasian College of Road Safety:

Australasian College of Road Safety membership consists of the following:

- All Australian and New Zealand road safety research agencies
- Australian and New Zealand universities
- Injury prevention, brain injury and neuroscience research organisations
- Australasian medical representative groups
- Australian federal government road safety & health promotion agencies
- State and Territory road transport agencies
- Local government agencies
- Policing agencies (both federal and state)
- Emergency services agencies
- Road safety research funding organisations
- Medical associations
- Safety promotion and training agencies
- Carer advocacy groups and associations
- Independent road safety consultants
- State vehicle and personal insurance agencies
- Driving schools and instructor associations
- Road safety advocacy groups, including motorcycles, children, youth, pedestrians, cyclists
- Road industry groups, including vehicles, trucks, roads
- International road safety consultants, agencies and advocacy groups
- Fleet safety associations
- Independent economist consultants and companies
- Engineers & engineering associations
- Legal firms
- Trucking companies
- Vehicle manufacturing companies
- Vehicle safety advocacy and testing organisations
- Other public or private companies interested in or working in the field of road safety
- Secondary, tertiary and post-graduate students currently studying in the road trauma field
- Interested members of the public

About the Australian Injury Prevention Network:

The Australian Injury Prevention Network has representation from most States and Territory's across Australia (NSW, Victoria, Queensland, South Australia, and Western Australia). In addition to individual members the AIPN has national and state based non-government organisation members, including Youthsafe, Kidsafe NSW, the Royal Life Saving Society of WA, the Royal Automobile Club of Victoria, and the Injury Control Council of WA.

About the Royal Australasian College of Surgeons:

The Royal Australasian College of Surgeons is the leading advocate for surgical standards, professionalism and surgical education in Australia and New Zealand. The College was formed in 1927 and is a non-profit organisation training surgeons and maintaining surgical standards in Australia and New Zealand. The College's purpose is to be the unifying force for surgery in Australia and New Zealand, with FRACS standing for excellence in surgical care.

The College currently consists of around 7,000 members across nine regions; the eight states and territories of Australia, and New Zealand.

- Australian Capital Territory
- New South Wales
- Northern Territory
- Queensland
- South Australia
- Tasmania
- Victoria
- Western Australia
- New Zealand

Imagine the consequences…

Imagine if our nation was providing defence forces to combat war overseas, and that *25 soldiers were dying and 600 being seriously injured* ***each week*** *- week after week, year after year*. Imagine if there was no end in sight, and the wartime fatalities had increased in the last calendar year compared to the year before. The public and political pressure to end these mass casualties would be immense.

Imagine if there were 5 Boeing 737 crashes every week in Australia, with *25 passengers dying and 600 being seriously injured* **each week**. The public outcry would be enormous, the effects on our nation soul destroying. Every effort would be made to stem this tide of death and injury.

Imagine if there was an epidemic which consistently, year after year, was the leading cause of casualty in our population for 1-44 year olds. Imagine if it was the leading cause of death and injury in our young people between the ages of 15-24. The forces mobilised to counteract this epidemic would be enormous.

Imagine the effects on health system if our hospitals were dealing with the injured from these plane crashes, war events or epidemics – *over 600 people per week* - reaching the emergency doors with serious injuries, enduring lengthy hospital stays and for some a lifetime of disability.

Imagine the strain on our disability services and community support structures if our communities were dealing with these injured people – *over 600 people per week* – some requiring extensive and costly lifetime support.

Imagine the consequences of these deaths and injuries on our communities – the 25 deaths per week resulting in outpourings of grief from our families and communities, and the 600 people each week who are released from hospital to be cared for by families and communities in the longer term.

Imagine if the annual costs to our economy of these plane crashes, wartime efforts or epidemics was estimated to be over $27 billion. This is more than Australia's current annual defence budget of $26 billion. The political and social pressure to solve this problem would be enormous.

This is the road trauma reality – 25 people dead and 600 seriously injured every week.
Week after week. Year after year.

The impact of road trauma is all-encompassing, covering the full spectrum of the political agenda. A much stronger focus on saving lives and injuries on our roads, covering all age groups and user groups, and including all facets of road crashes such as trauma services and post-crash care, would have a major impact on our economic and social well-being. Many solutions are simple and cost-effective.

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