Learning from the best to save lives and injuries from occurring on WA roads

A Western Australia – Victoria comparison

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Over the past two decades, progress to save lives and serious injuries needlessly occurring on Western Australia's (WA's) roads has been inexcusably slow. Once a leader, we now have one of the poorest road safety performances of all Australian states, with a fatality rate 32 per cent higher than the Australian average[1]. In shifting our efforts up a gear to accelerate our progress, we must learn from the journey and experiences of leading jurisdictions.

Tragically in 2019 alone, 164 people[2] lost their lives and hundreds more were seriously injured on roads in WA. Preventable road trauma has a devastating impact on communities and is, unacceptably, the most common reason for injury-related hospital admissions in WA[3]. Apart from the immeasurable personal and social impacts, the financial cost of road trauma in WA is estimated to be around $2 billion per year[4].

Solving the crisis of road related deaths and serious injuries is a challenge shared by jurisdictions world-wide. While there are many things that influence the characteristics and contributory factors of crashes and therefore the road safety performances of different jurisdictions (including varying socio-demographics factors, cultures and values; degree of urbanisation and population distribution; and traffic density for example), we need to consider lessons learned and smart practice from leading jurisdictions in Australia and also internationally. This must include seeking to understand how and why solutions may have worked and whether they are suitable for local implementation.

In Australia, Victoria has for some time been recognised as the leader in road safety, often being amongst the first to implement new policy and initiatives, and if WA were to match Victoria's fatality rate, 61 fewer people would be killed in crashes each year[5]. As you can see from Figure 1 below, from 2001 (a time when both States had a similar fatality rate) to 2019, Victoria reduced its fatality rate by 55 per cent, whereas WA's only reduced by 28 per cent (about half)[6,7].

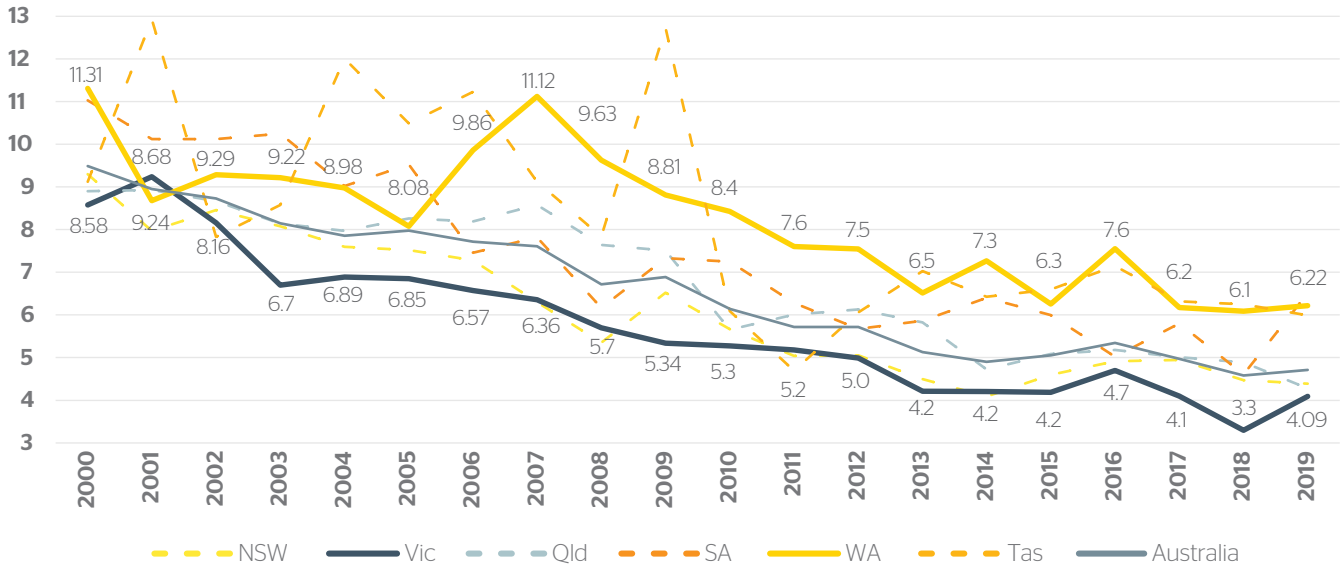

Figure 1: Fatalities per 100,000 population by State

[1] Bureau of Infrastructure, Transport and Regional Economics (BITRE). (2020). *Road Deaths Australia – February 2020*. https://www.bitre.gov.au/sites/default/files/documents/rda_feb_2020.pdf
[2] Statistics from the Road Safety Commission website accessed 7 April, 2020.
[3] Department of Health. (2017). *Western Australian state trauma registry report*. https://rph.health.wa.gov.au/-/media/Files/Hospitals/RPH/About%20us/News/wa-state-trauma-report-2015.
[4] Calculated based on an average cost per fatality of $7.8 million, and $310,094 per serious injury (see Litchfield, 2017), and KSI data supplied by Main Roads WA.
[5] Calculations based on average BITRE fatality rates for Victoria and Western Australia from 2015 to 2019, applied to ABS WA population estimates for the September quarter of each year.
[6] Calculations based on BITRE fatality rates for Victoria and Australia from 2001 and 2019.
[7] Australian Territories have been excluded to enable reading of the graph - the Northern Territory is an outlier with far higher fatality rates, in part due to its remoteness and small, sparse population.

How did Victoria get ahead?

In an effort to answer this question and help identify opportunities for WA, RAC commissioned a study in 2014 (the 2014 study[8]) exploring the reasons behind Victoria's nation-leading road safety performance, with an academic research study a few of years later (the 2018 study[9]) to build on the findings.

These two studies involved extensive literature reviews, interviews with a broad range of experienced road safety experts and organisations, and evaluation of the factors identified as contributing to the disparity in performance.

Based on the findings of these studies, here are some of the identified points of difference:

Governance

In the 2014 study, "road safety governance" was identified as being the top factor that had contributed to WA's slower progress in saving lives and injuries. It concluded that although there were clear governance deficiencies in both states, Victoria had performed much better against the principles of best practice public sector governance: independence; openness and transparency; accountability; integrity; clarity of purpose; and effectiveness[10].

In addition to managing the third-party insurance system, the Victorian Government's Transport Accident Commission (TAC), has oversight of road safety at the departmental level and directs the majority of road safety program investment into Safe System road infrastructure (e.g. through the Safe System Road Infrastructure Program (SSRIP) which is a partnership with VicRoads). The 2014 study found the TAC had significantly contributed to developing:

- an industry of road safety expertise independent of government who add benefits such as accountability and well considered contributions to the road safety public debate;
- much more specific and targeted road safety program funding criteria;
- more scrutiny of road safety projects and programs; and
- greater clarity of purpose and process integrity[11].

In WA, the Road Safety Commission (formerly the Office of Road Safety) has oversight of road safety at the departmental level, however many of its resources are allocated to road user education and it does not direct a budget for infrastructure spending. The Road Safety Council (the Council), which is comprised of ten different (primarily public sector) organisations including road authorities (RAC is also an active participant of the Council, as the representative of all road users), makes recommendations to the Minister for Road Safety to allocate funding from the hypothecated Road Trauma Trust Account to implement priority projects aligned with the State's road safety strategy. However, a majority of road infrastructure expenditure (including spending to deliver road safety outcomes) is allocated by Main Roads WA and local governments.

The 2014 study noted that in Victoria, the scope of the TAC's roles and responsibilities has meant that issues arising from the competing objectives and investment priorities of different agencies with responsibilities for road safety has been less problematic than in WA.

Safe System road infrastructure improvement

Eight in ten road safety experts interviewed in the 2018 study agreed that road infrastructure investments and the establishment of a Safe System compliant road network had contributed to Victoria's comparatively lower fatality rate during the period 2000-2015[12]. Piecing together a reliable history of road safety related expenditure in each jurisdiction is difficult due to each State having a range of road safety related programs, funding sources and incomplete records[13]. Notwithstanding, research highlights Victoria's comparatively higher level of investment in road infrastructure, particularly in relation to highly effective run-off-road and intersection treatments, has likely contributed to its better road safety performance[14].

For example, in 2002, the TAC established the Safe Roads Infrastructure Program[15] (SRIP) which encompasses Black Spot and other road safety initiatives for both State and local roads across Victoria. An assessment[16] of the third iteration of the SRIP found indicatively that 29.9 per cent of its projects involved "Hierarchy Level 1" road safety treatments such as flexible wire rope barriers, which reliably lower crash energies to within the human tolerance for serious injury, compared to just 12.6 per cent, 1 per cent and 6.5 per cent for WA's 2011/2012 National Black Spot[17], 2014/2015 State Black Spot[18] and 2014/2015 Local Black Spot programs[19,20].

[8] Marsh, B. (2014). *WA – Victoria Road Safety Comparison Study.*
[9] Palamara, P. & Mueleners, L. (2018). *WA-Victoria Road Safety Comparison Study: Part Three Final Report.* Curtin-Monash Accident Research Centre.
[10] O'Reilly, E. (2009). *Guide to principles of good governance.* http://www.ombudsmanassociation.org/docs/BIOAGovernanceGuideOct09.pdf.
[11] Supra note 8.
[12] Supra note 9.
[13] Supra note 8.
[14] Ibid.
[15] SRIP become the SSRIP in 2013.
[16] Ibid.
[17] Main Roads WA (2011). 2011-12 *Approved Nation Building Black Spot Program Instrument WPT7101.* https://www.mainroads.wa.gov.au/OurRoads/RoadSafety/BlackSpotProgram/Pages/national_approved.aspx.
[18] Main Roads WA. (2014). *Approved 2014/15 Black Spot Program State Roads.* Program. https://www.mainroads.wa.gov.au/OurRoads/RoadSafety/BlackSpotProgram/Pages/approved_state.aspx.
[19] Main Roads WA. 2014. *Approved 2014/15 Black Spot Program Local Roads.* Program. https://www.mainroads.wa.gov.au/OurRoads/RoadSafety/BlackSpotProgram/Pages/approved_state.aspx.
[20] This comparison did not incorporate an assessment of the Benefit Cost Ratio achieved through KSI savings, which would have been a better measure of effectiveness. Unfortunately, this analysis could not be performed due to the lack of proper monitoring and evaluation, particularly in Victoria over this time period.

This photo shows a highway treated with flexible wire rope barriers.

This photo shows a road which has been treated with audible edge and centrelines, and a widened median.

RAC has called on the State and Federal governments to fund a Regional Road Safety Package to deliver effective low-cost safety treatments to address run-off-road and head on crashes across 17,000km of the State's regional road network. Despite a high Benefit Cost Ratio of 4.05, and the potential to reduce regional road trauma by 60 per cent (saving more than 2,100 people from being killed or seriously injured), funding is yet to be committed to roll out the full package ($900 million).

Flexible wire rope barriers have been proven to be more effective in preventing death and serious injury compared to other road barrier types; this is due to their ability to stretch, and therefore absorb a portion of the force generated in a crash[21]. Victoria has been installing flexible wire rope barriers along the centre of single carriageways creating '2+1', '1+1' arrangements, whereas WA has used wide medians with dual audible centrelines in some locations as an alternative treatment; additionally, Victoria has also implemented roadside barriers to a greater degree than WA[22].

It is however important to note that, as identified in the 2018 study, "one of the difficulties Western Australia faces in relation to the scale of treatment programs is that it has a considerably larger high speed road network to treat across a sparsely populated and lightly trafficked non-metropolitan area. This represents a considerable dilemma when allocating limited resources".

Innovation

In general, Victoria has been more proactive to trial and implement innovative treatments. For example, Victoria[23]:

- introduced **Point to Point average speed cameras** 11 years before WA;
- introduced **alcohol interlocks** approximately 13 years before WA; and
- commenced **roadside alcohol testing** 12 years before and oral fluid testing for illicit drugs to counter drug driving 3 years before WA.

The early testing and adoption of effective road safety innovations, is considered by road safety experts to have resulted in an earlier and greater overall KSI reduction[24].

Driving under the influence of alcohol and drugs

Around eight in ten road safety experts interviewed in the 2018 study, agreed that Victoria's roadside testing program for alcohol and illicit drugs, in addition to the alcohol interlock program, had contributed to the State's comparatively better road safety performance. Victoria was an early adopter of alcohol and drug driving countermeasures, and in general, implemented them on a scale larger than WA:

- A national examination of Random Breath Tests (RBTs) and alcohol-related traffic crash rates showed that Victoria maintained a more intensive RBT program than WA between 2000-2012; during this time, there appeared to be an inverse relationship between RBT rates and alcohol related crashes[25].
- There is a wide variation in both penalty and fine severity across jurisdictions for drink driving offences of a similar scale[26]. For example, in WA, licence disqualifications are only imposed once the driver's Blood Alcohol Concentration (BAC) exceeds 0.08; in Victoria drivers caught with a BAC exceeding 0.05 lose their licence for a minimum of three months[27].
- Alcohol interlocks have been shown to be an effective countermeasure to reduce repeat drink driving[28]. In WA, alcohol interlocks are only mandatory for high-level (BAC 0.15 or over) or repeat offenders[29], however in Victoria, are installed for all first-time offenders with a BAC of 0.08 or higher[30].

[21] Towards Zero. (n.d.). *Flexible wire rope safety barriers.* https://www.towardszero.vic.gov.au/news/articles/flexible-barriers-how-they-work-and-the-cheese-cutter-myth
[22] GHD (2019). *Memorandum - Victoria responding to the Victorian Road Safety Strategy and WA responding to the WA Road Safety Strategy.*
[23] Supra note 9.
[24] Ibid.
[25] Ferris, J., Devaney, M., Sparkes-Carroll, M. & Davis, G. (2015). *A national examination of random breath testing and alcohol-related traffic crash rates (2000-2015).* Canberra: Foundation for Alcohol Research and Education.http://fare.org.au/wp-content/uploads/A-national-examination-of-random-breath-testing-and-alcohol-related-traffic-crashes-2000-2012.pdf.
[26] RAC internal inter-jurisdictional drink and drug driving penalty comparison project.
[27] Towards Zero. (n.d.). *Drink Driving.* https://www.towardszero.vic.gov.au/safe-people/focus-areas/drink-driving.
[28] Elder, R., Voas, R., Beirness, D., Shults, R., Sleet, D. Nichols, J. & Compton, R. (2011). *Effectiveness of ignition interlocks for preventing alcohol-impaired driving and alcohol- related crashes.* American Journal of Preventive Medicine, 40(3), 326-376. https://www.thecommunityguide.org/sites/default/files/assets/PIIS0749379710007105l.pdf.
[29] Road Safety Commission. (2016, October 19). *Alcohol Interlock legislation comes into force next week* [Press release]. https://www.rsc.wa.gov.au/News-Media/Media-Releases/News-Archive/2016/Alcohol-Interlock-legislation-comes-into-force.
[30] Vicroads (2019). *Drink-driving Penalties.* https://www.vicroads.vic.gov.au/safety-and-road-rules/road-rules/penalties/drink-driving-penalties.

- First-time drug driving offenders in Victoria are subject to harsher penalties[31], with offenders being required to have a zero BAC for three years in addition to: receiving a fine; having their licence cancelled for at least 12 months; and needing to complete a mandatory Intensive Drink and Drug Driver Behaviour Change Program. They may also be subject to having a conviction recorded[32,33]. In WA, first-time drug driving offenders found to be impaired by prescribed or illicit drugs will receive a fine and have their licence disqualified for a minimum of 10 months[34]. Repeat drug-driving offenders in Victoria may receive a harsher maximum financial penalty, with the maximum financial penalty being almost $20,000[35]; in WA, the maximum fine is $5,000, however may be substituted with 18 months imprisonment[36].
- Victoria appears to focus more on drink and drug driving education for offenders, with all Victorian penalties including mandatory participation in either a drink or drug driver behaviour change program[37].

Automated speed enforcement and associated penalties

Around seven in ten of the road safety experts interviewed in the 2018 study agreed that automated speed enforcement technologies contributed to Victoria's comparatively lower fatality rate.

Looking back at the period 2000-2015, Victoria operated a higher profile and more diverse speed enforcement program, permitting a higher level of surveillance and it is considered this may have developed a stronger anti-speeding culture and deterrence compared to that in WA[38].

Not only did Victoria introduce automated speed enforcement technologies years earlier than WA, but they also did so on a far greater scale: as of late 2019, there were over 246 speed cameras and 175 red light cameras operating throughout Victoria, whereas WA had only 46 fixed (speed and red light) cameras, 13 fixed and 28 mobile speed cameras[39]. Although WA's mobile speed camera program commenced in 1992, only two years after Victoria's, between 2000 and 2002 Victoria Police gradually increased the number of camera operating hours per month from 4,200 to a maximum of 6,000 hours – a level that WA still had not achieved as late as 2013[40,41].

Graduated driver training and licensing programs

The 2018 study detailed that both WA and Victoria have introduced substantial policy changes in relation to driver training and licensing to counter the elevated risk of crash involvement among young and novice drivers, however, WA's total minimum number of mandatory learner hours is far below that of Victoria's (50 compared to 120). Research suggests that between 80 and 140 mandatory hours is optimal for improved skills and reduced crash risk[42]. In a recent RAC survey related to preparing for and undertaking the practical driving test, novice drivers, non-professional supervisors and instructors generally felt on average 71 hours should be mandated to produce safer drivers.

In 2007, VicRoads introduced a requirement for those younger than 21 years old at the time of licencing to undertake a minimum of 120 hours of supervised driving practice; a requirement that first year probationary drivers carry no more than one peer passenger[43]; and an extension of the probationary period from three to four years (which is double that of WA's)[44]. These changes are considered to have successfully reduced crash involvement rates within provisional drivers' first year of holding a licence: a review of crash rates before and after the introduction of the new requirements determined that there was an 18.7 per cent reduction in casualty crashes[45] and a 19.4 per cent reduction in fatal and serious casualty crashes of those in their first year of provisional driving[46].

This photo shows a fixed dual purpose speed and red light camera.

[31] Based on previous inter-jurisdictional drink and drug driving penalty comparison.
[32] Penalties are for first time drug-driving offenders who are required to go to court, not those who receive a Traffic Infringement Notice.
[33] Vicroads (2019). *Drug-driving Penalties*. https://www.vicroads.vic.gov.au/safety-and-road-rules/road-rules/penalties/drug-driving-penalties.
[34] Road Safety Commission (2019). *Drug Driving*. https://www.rsc.wa.gov.au/Your-Safety/Behaviours/drug-driving.
[35] Supra note 33.
[36] Road Safety Commission. (2019). *Drink Driving Penalties*. https://www.rsc.wa.gov.au/Rules-Penalties/Browse/Drink-Drug-Driving.
[37] Vicroads (2019). *Penalties*. https://www.vicroads.vic.gov.au/safety-and-road-rules/road-rules/penalties.
[38] Supra note 9.
[39] Supra note 22.
[40] Supra note 9.
[41] Due to a lack of published data, it is unclear if this level of camera operating hours has since been achieved.
[42] Austroads (2015). *Summary of Literature of the Effective Components of Graduated Driver Licensing Systems*. https://austroads.com.au/publications/road-safety/ap-r476-15/media/AP-R476-15_Literature_Review_of_Effective_Components_of_Graduated_Licensing_Schemes.pdf.
[43] A peer passenger is someone who's at least 16 but less than 22 years old, but doesn't include a spouse or domestic partner, or a sibling or sibling or step-sibling.
[44] VicRoads (2017). *Examination of the Impact of the Graduated Licensing System on Young Novice Driver Safety*. https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/young-and-new-drivers/victorias-graduated-licensing-system.
[45] Includes all crashes where a person was killed, or injured at any level of severity.
[46] Supra note 44.

The way forward

Moving forward, it is critical WA rolls out road safety policies, programs and initiatives informed by reliable smart practice from elsewhere, and at a scale necessary to drive a real and urgent change. This needs to be underpinned by more formal arrangements to ensure an adequate level of evaluation, so we know what is working, as well as to facilitate greater information exchange so we can share in the successes of others and save more lives and serious injuries on the road ahead.

Determining whether smart practice from elsewhere is suitable for the local context requires some form of comparison. Even now, comparative analysis of jurisdictions in Australia is impeded by gaps in historical data and selective outcome monitoring and evaluations. Findings of both the 2014 and 2018 studies were limited by the following challenges:

- difficulty in piecing together a reliable history of expenditure on road safety in Victoria and WA with each State having a range of road safety related programs, funding sources and incomplete records;
- determining like-for-like comparisons;
- a lack of publicly available information; and
- the well-documented difficulty in isolating relationships between various road safety countermeasures and KSI reductions.

Sourcing primary information from public sector agencies can sometimes be difficult and is often protracted. However, to foster a greater sense of shared responsibility and accountability (across the public and private sectors, as well as the community) in reducing road trauma, we need to ensure better access to a range of information types and sources to identify priority action and how best to maximise the value of investments. This will also be crucial in helping to enhance understanding and bring industry and the community along on the journey towards zero deaths and serious injuries occurring on our roads.

In 2015, RAC called on the State Government to publicly report on a more detailed level of police enforcement data related to road safety (such as the number of speed and red light camera hours per month), to enhance community understanding of the nature and delivery of traffic enforcement. Unfortunately, the level of information made available appears to have worsened; for example, there is an absence of published data to determine whether WA has yet achieved the number of camera operating hours that Victoria had two decades ago.

Recommendations

In this moment, as the WA and national road safety strategies are being developed, we have an exceptional opportunity to reshape the next decade of action to tackle preventable road trauma. RAC calls on government to apply lessons learned and smart practice from leading jurisdictions to accelerate our progress. To better facilitate this, RAC recommends:

- **A framework for monitoring and evaluation**
  At all levels of government, a framework that includes meaningful and measurable criteria, along with appropriate timeframes and a plan for public release, will facilitate accountable outcome monitoring and evaluations of road safety spending. Where possible, these frameworks should be consistent (particularly at the State level) to aid comparative analysis.
- **Formal arrangements be established to identify smart practice**
  The Office of Road Safety must take a leading role in facilitating better collaboration between State, national and international road safety experts to aid more effective information sharing, and also a more comprehensive understanding of how and why smart practice has been achieved. This must transcend government boundaries and include industry and the community.
- **Encourage innovation and roll out proven programs and initiatives, at scale**
  Applying smart practice from elsewhere, that is actively benchmarked and implemented at a scale necessary to make an impact, will help maximise the value of investments to save more lives and serious injuries now and into the future. This should include facilitating a more agile approach to testing and trialling innovations in road safety and the sharing of lessons learned.

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