

## Identifying and intervening with potentially high risk young drivers

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### Abstract

Young drivers are over-involved in serious road crashes due to a combination of factors, including inexperience, risky driving, the nature of their driving exposure and lifestyle. As a population group they are justifiably the focus of many road safety initiatives. Whilst risky driving is common among young drivers and generally reduces with age, there does appear to be a subset of young people who are at far greater risk than the average young person.

This paper summarises a project investigating whether it is feasible to identify higher risk young people and effectively intervene prior to them engaging in unsafe driving behaviours. Investigations included:

- literature reviews
- review of young driver fatality coronial data
- consultation with government agencies
- advice from experts in road safety, juvenile justice, developmental psychology and health.

The research literature indicates it may be possible to identify young people who may have a greater likelihood of becoming a higher risk young driver than average. While no particular trait or descriptor is completely accurate in predicting who will become risky on the roads, some patterns are evident. The young people more likely to engage in unsafe driving include those with:

- high sensation seeking and impulsivity traits
- conduct disorders
- anti-social behaviours
- lower than average attentional abilities
- anti-social peers
- poor family relationships, especially low parental monitoring.

### 1. Introduction

Young drivers are over-represented in road trauma in Australia. Research shows that risky driving is more common among young drivers than other age groups and many road safety initiatives justifiably focus on the safety behaviours of the broader population of young drivers. However, there does appear to be a small but significant subset of young people who are at far greater risk than the average young person. These young people more frequently engage in unsafe and illegal behaviours as road users.

VicRoads undertook this project to investigate whether it is feasible to identify higher risk young people and to effectively intervene with their prior to them engaging in unsafe and illegal driving behaviours.

In order to investigate the potential of working at a preventative level to address higher risk young drivers, the following activities have been undertaken:

- a review of Victorian coronial data
- the completion of detailed literature reviews
- consultation with government agencies that deal with young offenders
- advice from an expert group comprising highly experienced people with backgrounds in road safety, juvenile justice, developmental psychology, parenting and health.

## 2. Review of Victorian Coronial Database – Key findings

A review of the Victorian coronial database was undertaken to see whether any information about young people involved in fatal crashes could help in identifying potentially risky drivers. The investigation involved accessing and reviewing the coronial findings of all vehicle related deaths of young people (aged 14-25 years) in Victoria from 2005 to 2008. Those cases which were suicides (12 cases) or resulted without involvement of the young person (8 cases) were excluded from the analysis which left a total of 121 cases which were reviewed.

This investigation revealed that the vast majority of deaths involving young people did involve some level of risk and/or illegal behaviour on behalf of the young person. While the level of information was not detailed enough to clarify each type of person in terms of their level of risk, some patterns emerged.

There was one subgroup of young people involved in fatal crashes who appeared to have risky lifestyles, and engaged in a range of unsafe behaviours. This subgroup is described below.

- *Young people with risky lifestyles:* This group comprised people who had reportedly had a history of drug misuse, were all unemployed, and were killed as drivers, pedestrians or passengers. This group comprised 16.5% of cases.

There were a large number of cases of young people who had clearly engaged in some deliberate risk taking, but there was not sufficient information to determine whether they had risky lifestyles or not. These subgroups include:

- *Young people affected by alcohol:* Among this group, rural blue collar males and hospitality workers were predominant, as were international students, but to a lesser extent. Most were either the driver, or the intoxicated passenger of a drunk driver. This group was the largest group, representing 34.7% of cases.
- *Drug affected drivers:* This group represented 5% of cases. All except one were male. None were affected by alcohol but had high levels of either: THC (Cannabis); methamphetamines; ecstasy or GHB. Unlike those who were categorised as having a “risky lifestyle” most in this group were employed and living in the metropolitan area, often with their family.
- *Speeding drivers:* This group comprised people with a history of speed offences and some were “racing” when killed. All except one were male. This group represented 15% of cases.

There were other cases where there was no direct evidence of the young people involved being engaged in overtly risky behaviours, but they made errors or mistakes that are relatively common among young drivers in general. These included the following subgroups:

- *Inexperienced drivers*: This group of young drivers and riders seemed to have died due to their inexperience. This group mainly comprised learner motorcyclists making mistakes and probationary drivers, usually driving too fast for the conditions. This group represented 10% of all the cases.
- *Low Risk*: This group of young drivers were involved in crashes that seemed to not involve any overtly risky behaviour. Some were possibly distracted or lost concentration and made a mistake. This group represented 19% of cases reviewed.

While the review of the coronial database has offered some insights into young driver crashes, it was limited in some cases by the lack of detail in the coronial reports. For instance, information on any prior crashes or offences was not uniformly reported. These crashes also only represent fatal crashes, and not serious injury crashes which is a considerably larger group.

### 3. Literature review – key findings

The risk of crash involvement among young and novice drivers is thought to be due to factors that may include inexperience in applying cognitive skills to complex driving situations, motivational factors, the effect of peers, and broader lifestyle factors across the young driver population (Harrison, 2011).

There is consistent and good evidence (see Palamara et al, 2012) of an increased risk of crash involvement among young people associated with those:

- in their earliest months of licensure (e.g. less than 12 months), relative to more experienced young drivers
- with a history of drink driving offences
- who speed and particularly those who engage in high level speeding
- using mobile phones or texting whilst driving
- driving without a valid licence or who at some stage have driven without one
- driving while drowsy or fatigued
- who are carrying peer aged passengers
- who drive late at night.

Young drivers as a population group are over-represented in crashes and are justifiably the focus of considerable effort in terms of crash prevention. While many young drivers may engage in some of the behaviours outlined above, research indicates that among young drivers, some are more “risky” than others and have a higher propensity to be involved in deliberately dangerous driving behaviours.

Harrison (2011) reported that among young drivers, it is possible to identify subgroups of drivers who have a higher than average level of crash involvement. Patterns of unsafe driving behaviour amongst some young drivers increase their risk of crash involvement over and above the already high risk for young drivers in general. Literature indicates that a pattern of risky driving behaviour appears to be part of a broader pattern of problem behaviours (Smart et al, 2005). For example, Blows et al. (2005) found that drivers who engage in frequent unsafe driving behaviours also undertake behaviours that reflect an unsafe lifestyle.

Those who engage in serious risk-taking driving behaviour appear to be a relatively small group, with estimates varying from 7% (Smart et al, 2005) to 13% (Scott-Parker & Watson, 2013). It is important to

note that Smart et al. (2005) found that this small high risk subset group had a higher road crash incidence per individual than individuals in the moderate and low risky driving groups. However, the much higher overall numbers of moderate to low risk drivers means that these groups accounted for majority of young driver crash involvements as measured in the study.

Collectively the research indicates that the following characteristics among young people may be more likely to increase an individual's level of risk.

### ***Lifestyle factors***

Lifestyle related factors assessed during adolescence appear to be useful predictors of risk-related driving behaviours in adulthood. Having negative peer and/or parental influences, such as having friends or parents who engage in risky behaviours or condone these behaviours, is an indicator that the young person may be more at risk of engaging in unsafe behaviours themselves. Early use of alcohol and drugs during childhood and early adolescence is also a predictive risk factor (Shope et al, 2003).

### ***High sensation seeking and high impulsivity***

Sensation seeking is described as a propensity to seek out and engage in intense experiences that are likely to produce rewarding outcomes for these people. Impulsivity is described as the tendency to act without foresight, planning or thought. Australian research has found that sensation seeking, impulsivity in mid-adolescence are associated with risk-taking behaviour and risky driving in early adulthood (Hyder et al., 2010).

### ***Poor attentional control***

Attentional abilities can range from having lower persistence (i.e. having a poorer capacity to stay on task and resist distractions) than others to more severe conditions like Attention Deficit Hyperactivity Disorder (characterised by inattention, distractibility and high and poorly controlled activity levels). A longitudinal study that monitored a large sample of young Victorian children from birth to early adulthood found that common risk factors for unsafe or unlawful driving behaviours included a less persistent temperament style and hyperactivity (Smart et al, 2005).

### ***Externalising disorders (eg. conduct disorder or oppositional defiant behaviours)***

Harrison (2011) reported that externalising disorders may be predictive of "high risk driving". He reported that conduct disorder is diagnosed when there is a persistent pattern of behaviours that include aggression, the destruction of property, deceit or theft, or serious rule violation. A longitudinal study involving a large representative sample of young people found that anxiety, depression and conduct disorder were associated with more severe offending behaviour (Copeland et al, 2007).

### ***Anti-social Peers***

Developmentally, young novice drivers are vulnerable to the negative influences of their peers and are susceptible to the need for social approval from their peers (Arnett, 2002). A study in the US found young people with the poorest safety outcomes had high levels of alcohol use, friends' support for drinking, susceptibility to peer pressure, and tolerance of deviance. These results suggest a clear relationship between adolescent behaviours and peer contexts and road safety outcomes (Shope et al, 2003). Having anti-social peers is a significant risk factor among adolescents for a range of risky

behaviours (Viner et al, 2012) and having antisocial peer friendships was a correlated with risky driving among young Victorians (Vasallo et al, in press).

### ***Negative family influences***

Family connectedness is one of the most important factors which protects against poor health outcomes in adolescence. Family norms and attitudes strongly affect adolescent smoking, alcohol use and a range of sexual behaviours. High levels of parental monitoring help to protect young people exposed to peer violence and risk taking (Viner et al, 2012).

Research on the relationship between parenting practices and adolescent problem driving behaviours found that the parental monitoring variable was the most useful in predicting risky driving behaviours. This study also found that young drivers were two times more likely to have traffic offences if they had low parental control (Hartos et al, 2000). More supportive and less conflictual parent-young adult relationships have been found to be related to lower rates of risking driving (Vasallo et al, in press).

### **Illegal driving behaviours**

A review of driving behaviours and risk taking by Scott-Parker and Watson (2013) found that high risk young drivers are more likely to:

- have committed criminal acts and have contact with juvenile justice services
- be more likely to commit certain traffic offences, such as:
  - driving while unsupervised as a learner
  - unlicensed driving and joy riding
  - cheating on their learner log book
  - have crashes and commit offences early and often as a novice driver.

## **4. Expert working group – key outcomes**

The expert workshop involved consultation with subject-matter experts to provide advice and directions about potential interventions to improve the safety of young people identified as being at higher risk. Those participating had extensive expertise in young driver safety, developmental psychology, forensic psychology, medicine and parenting.

In discussions about what interventions might be worth considering, some over-arching considerations related to identifying and intervening to address problem behaviours emerged that are highlighted below.

### ***Identifying high risk young people***

It was noted that there is a difference between predicting increased risk and being able to effectively intervene with these at-risk groups to improve road safety. The information presented in this report relates to statistical predictions. That is, research studies have indicated that there is an association between certain risk factors and road safety outcomes. This is different to predicting exactly which individuals will be more “at-risk” of developing unsafe behaviours.

Using some predictive measures, albeit those based on statistical probabilities, may help to identify risky individuals, but it might lead to some false positives and may also fail to identify some of the risky individuals (Scott-Parker and Watson, 2013).

It was noted in the report by Smart et al (2005) that while some personal and familial aspects of a young person are predictive of later risky driving, it is not completely predictive. This means that while a number of young people with conduct or attention-deficit disorders or anti-social peers or families will become risky drivers, not all of them will and not all risky drivers will have some or all of these traits. Therefore, any interventions that are used for young people identified as being potentially risky had to be matched to suit the level and nature of the young person's risks and should be as effective as possible (Andrews & Bonta, 2003).

### ***Potential interventions***

It is important to note that there is a commonality in risk factors across a range of problem behaviours. This means that interventions that address one risk factor (or a set of risk factors) may influence many problem behaviours. For instance, a program that aims to improve social competence and resilience among young people may be effective in reducing their use of alcohol and drugs, as well as smoking and possibly unsafe driving (Catalano et al, 2007). So there are likely to be benefits in working on interventions with other sectors to create positive road safety outcomes.

### ***Effective interventions***

In terms of effective interventions, advice from the expert group and a brief review of the relevant literature has indicated that in general, effective programs or interventions are those that:

- improve the functioning of the young person's parents and family
- address the underlying problem behaviours in individuals using effective approaches such as cognitive behavioural therapy and motivational interviewing
- focus on the social competence of the young person, and encourage positive school engagement.

Specific programs that target those demonstrating risky behaviours in general in very early childhood (pre-school age), childhood, early adolescence and even in adulthood have been found to be effective, although the earlier the interventions are applied the better the outcomes are likely to be.

Effective interventions range from large scale population level measures to very intensive programs for those individuals who are regarded as particularly high risk.

## **5. Potential interventions**

Outlined below are some potential actions that could be undertaken that are directly related to the road safety system and in many cases build on the established prevention approaches being delivered to reduce road trauma.

### ***Road safety related interventions***

- The Graduated Licensing System (GLS) is an extremely effective primary prevention measure. It is possible that its effectiveness could be improved if the enforcement of the GLS conditions were increased and if we had a better understanding of how to enhance compliance.
- Parents and how they monitor and manage their children during childhood and adolescence seems to be one factor that can be targeted to improve the safety and well-being of young people. Highlighting the

important role of parents, especially improving the levels of parental monitoring of adolescent children, would potentially have road safety benefits (for example: parents not taking demerit points incurred by their children; monitoring use of vehicle at high risk times; delaying purchase of a car; and encouraging the purchase of a safe car).

- Youth mentoring programs that aim to address the disadvantage that some young people face in getting a licence operate in Victoria and other jurisdictions. These programs are good examples of secondary prevention as they focus on young people who may be at-risk of engaging in unlicensed driving and facilitates them getting the required number of supervised driving experience. Opportunities for expansion of these programs to identify and intervene with potentially at-risk young drivers (for example those who drop out of the program, and/or their friends) could be considered.
- The current sanction system could be enhanced through the use of a tailored warning letter or a feedback letter to advise young drivers (learners and probationary drivers) about the nature of their offence, how to avoid this in the future, and highlight the sanctions for subsequent offences. This would be more tailored and apply to more offenders than the current warning letters that inform motorists when they incur demerit points. This is a proven measure that would produce small benefits (on an individual basis), but is attractive due to its cost-effectiveness across the population of offenders.
- How we treat young people who have committed more serious traffic or other offences is an important intervention opportunity. A brief review of the programs that are currently being implemented for juvenile traffic offenders indicated that many programs were not developed using an evidence-based approach. Programs that are evidence-based should be developed and promoted.
- Incorporating a rehabilitative approach to intervening with young people who commit less serious traffic offences could be considered. For instance, a program that focuses on young offenders and their parents, that is an evidence-based approach, could be developed for young people who drive in breach of their learner permit or commit other underage traffic offences, or are involved in crashes. This could be offered or required in addition to the driving penalties that are currently applied.

### ***Other potential interventions***

Some effective interventions currently used in other fields could be applied to young people who are found to be higher risk drivers. The potential interventions are outlined below.

- The development of social competence and resilience among adolescents is a key factor in their ability to handle a range of risky situations as they grow up. School programs that address this could be expanded, potentially in collaboration with other sectors that also wish to target the same underlying capabilities in young people. For instance, the ability for students to practice responding to a range of scenarios that might involve risky driving, alcohol or drug use could be the focus of these social competence and resilience programs.
- Programs to improve school engagement, which is shown to improve the level of safety and well-being among young people in road safety and other health behaviours should be supported and promoted. This could be done in conjunction with other health fields, such as alcohol and drug prevention, suicide prevention and smoking prevention, or mental health or crime prevention. Outcomes in all of these areas

would benefit from improved school engagement.

- Health promotion sectors regularly implement secondary prevention programs in high risk geographic areas or for high risk groups. However, this is not common practice in road safety. The possibility of doing this, in conjunction with other sectors or agencies, should be investigated further, as should the types of interventions that should be implemented. One example of such an approach that has been used overseas is a program of brief interventions delivered in health settings like emergency departments or at general practitioner clinics. The broader inclusion of road safety issues in programs that address young people at higher risk may also be worth pursuing.
- The benefits of working with the families of vulnerable pre-school children, such as those with conduct disorders or anti-social behaviours, are well established. While the outcomes of this early intervention approach is likely to take some time to show positive road safety outcomes, the value of doing this might be worth investigating.

## 6. Conclusions

Countermeasures need to continue targeting young drivers as a population at general high risk due to inexperience, cognitive immaturity, age-related risky driving, lifestyle and driving exposure. There are a range of possible interventions that could be implemented with the aim of improving the road safety behaviours of high risk young people who may potentially become unsafe drivers. The underlying reasons for this unsafe behaviour are likely to be considerably varied. Some individuals may have multiple risk factors due to their individual, family or school situation. As such it is unlikely that single approaches or interventions will create significant improvements. However, implementing a range of interventions, some in conjunction with other sectors, is likely to produce road safety benefits and reduce the risk of some high risk young people becoming unsafe drivers.

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