

# **Road Safety's Mid Life Crisis – The Trends and Characteristics for Middle Aged Controllers Involved in Road Trauma**

## **Author:**

Andrew Graham, Roads and Traffic Authority, NSW

## **Biography:**

Andrew Graham has been researching NSW road crash data since 1983 and currently holds the position of Trends Analysis Manager at the RTA. His previous work has included the development of several key components of the Road Safety 2000 and Road Safety 2010 strategy plans for NSW, particularly with regard to the identification of road safety issues, trends and formulation of targets.

## **Abstract:**

NSW, like most of Australia, has achieved significant reductions in the road toll over the last twenty years. These improvements have been particularly strongest for the most at-risk groups such as young drivers. There have also been improvements in fatal crash rates, though smaller in magnitude, for other age groups. However, in recent years the fatal crash involvement rates for middle-aged and older drivers, the largest group of drivers numerically, has either levelled off or worsened. This paper investigates the characteristics of middle-aged drivers involved in fatal crashes.

## **Keywords:**

Middle-Aged Drivers, Fatal Crash Involvements, Aging Population

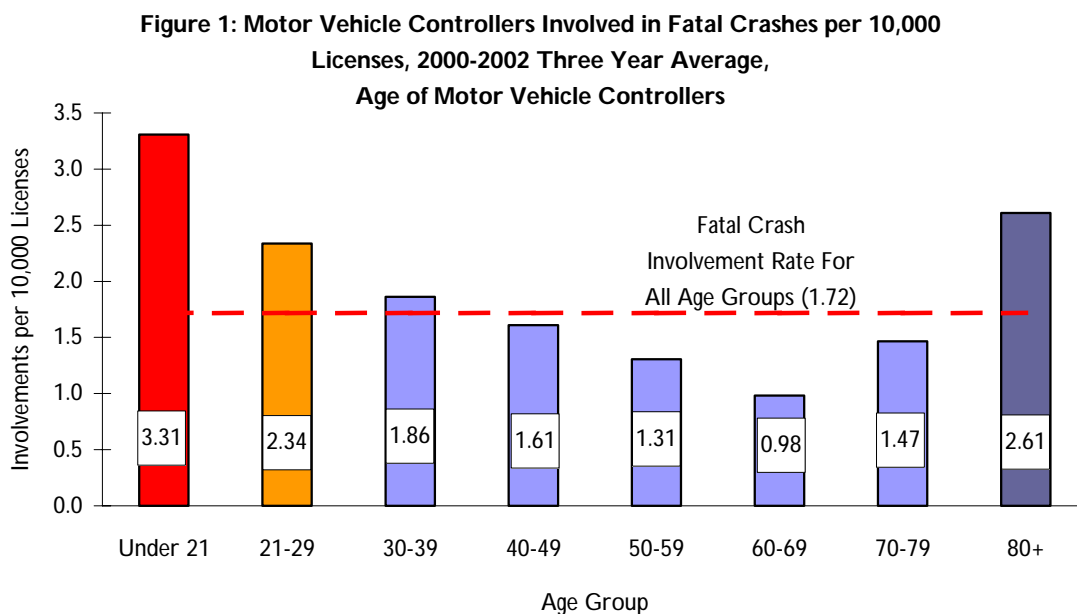
## Road Safety's Mid Life Crisis – The Trends and Characteristics for Middle Aged Controllers Involved in Road Trauma

The following paper presents an overview of fatal crash involvement rate trends for various age groups focusing on trends for middle age motor vehicle controllers (drivers and riders). This section is followed by an analysis of the characteristics of middle-aged controllers involved in fatal crashes.

### Fatal Crash Involvement Rate Trends by Age Group

There is widespread research to show that young and very elderly motor vehicle controllers are over represented in terms of serious crashes per 10,000 licences.

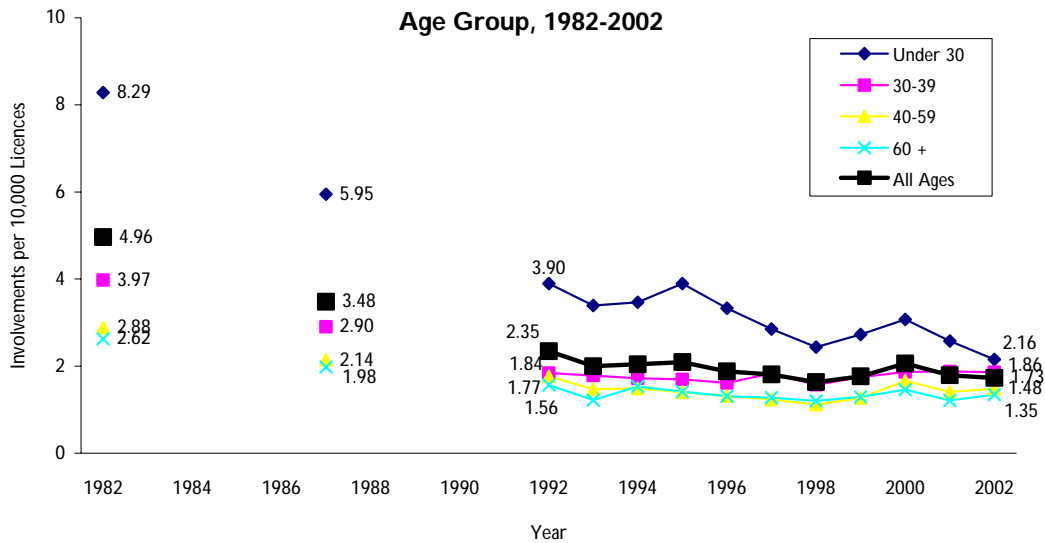
Figure 1 shows that young inexperienced drivers aged under 21 years are around twice as likely than the average for all drivers to be involved in a fatal crash. Elderly drivers aged 80 years and over are also more likely to be involved in a fatal crash. In contrast, middle aged motor vehicle controllers (40 to 59 years) and older aged motor vehicle controllers (60 to 79 years) experienced the lowest fatal crash rates in 2002.



There is also much research to demonstrate that inexperience and risk taking behaviours, such as speeding/alcohol/inappropriate vehicle separation, are the principal factors accounting for the heightened crash rates for young drivers. Similarly, frailty and cognitive abilities/judgement errors potentially account for the heightened fatal crash rates for very elderly drivers.

These factors for these age groups are well known and road safety organisations such as the RTA have in place a wide range of programs to address the specific issues for these age groups.

**Figure 2: Motor Vehicle Controllers Involved in Fatal Crashes per 10,000 Licences, Age Group, 1982-2002**

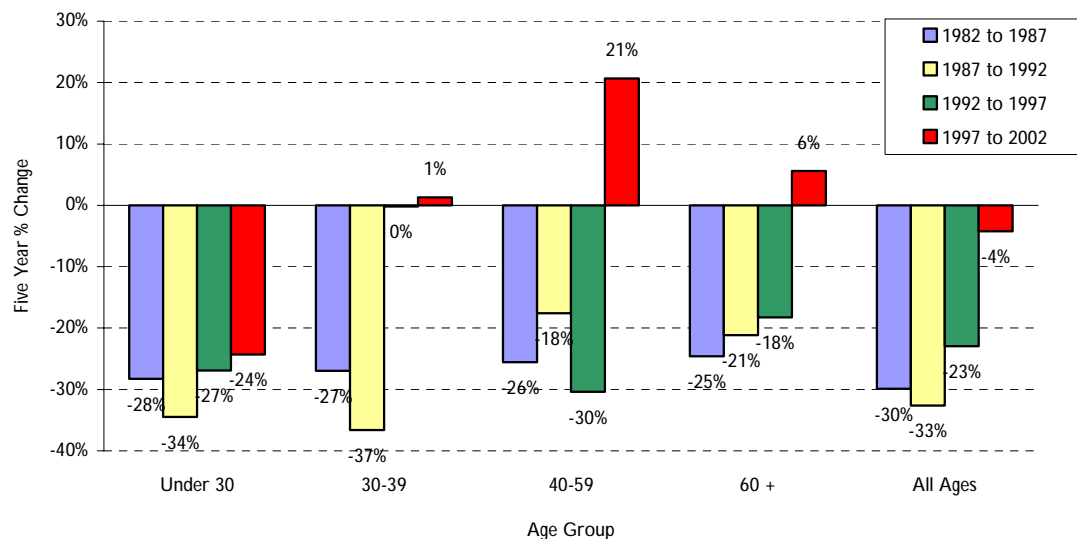


Indeed these programs have produced significant crash reductions over the last twenty years, particularly for the most at risk young drivers. Figure 2 shows that over the last twenty years, the fatal crash rate for motor vehicle controllers aged under 30 years was reduced by three-quarters (74%). Over the same period the decrease for all ages was around two-thirds (65%).

However, a closer look at the fatality involvement rate reductions by age group over the last twenty years suggests these successes have not been delivered across older controller age groups. Indeed, in terms of fatal crash involvements per licences, there is some evidence in recent years of an emerging problem amongst middle-aged drivers.

Figure 3 shows the five-year changes in fatality crash involvements per licences by age groups for 1982 to 1987, 1987 to 1992, 1992 to 1997 and 1997 to 2002.

**Figure 3: Five Year Percentage Changes in Fatal Crash Involvement Rates, Age of Motor Vehicle Controller, 1982-2002**



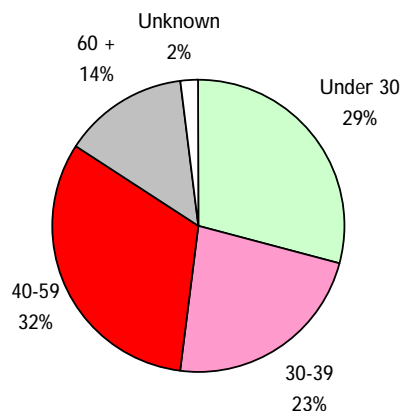
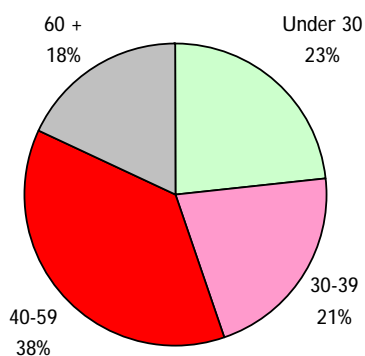
As the graph shows, young motor vehicle controllers have consistently experienced decreased involvement rates of at least 24% for each five-year period over the last twenty years. In contrast, the middle aged and the older age group showed a similar pattern up to 1997 but over the last five years both age groups experienced increased fatal crash involvement rates. Also of concern is the negligible change in crash rates for the 30 to 39 year old age group over the last ten years.

Whilst much progress has been made in reducing fatal crash involvements for young controllers, it should be remembered that although over-represented the under thirty age group does not make up the majority of licence holders or motor vehicle controllers involved in fatal crashes.

As the following pie charts show (Figures 4a and 4b), motor vehicle controllers aged under 30 years held only 23% of licenses and accounted for 29% of motor vehicle controllers involved in fatal crashes in 2002. At the same time, middle aged drivers aged 40 to 59 years held 38% of licenses and accounted for 32% of motor vehicle controllers involved in fatal crashes. Include 30 to 39 year olds into these figures and then you find that over half of licence holders and half of fatal crash involvements involve this grouping of “low risk” middle-aged drivers. Of concern in the battle to reduce the overall road toll is the fact that the crash involvement rate for the 40 to 59 year old age group has been rising over the last five years and therefore offsetting to some degree the gains made by crash reductions amongst young motor vehicle

Figure 4b: Motor Vehicle Controllers Involved in Fatal Crashes, 2002, Age of Motor Vehicle Controller

Figure 4a: Licences on Issue, 2002, Age of Licence Holder



controllers.

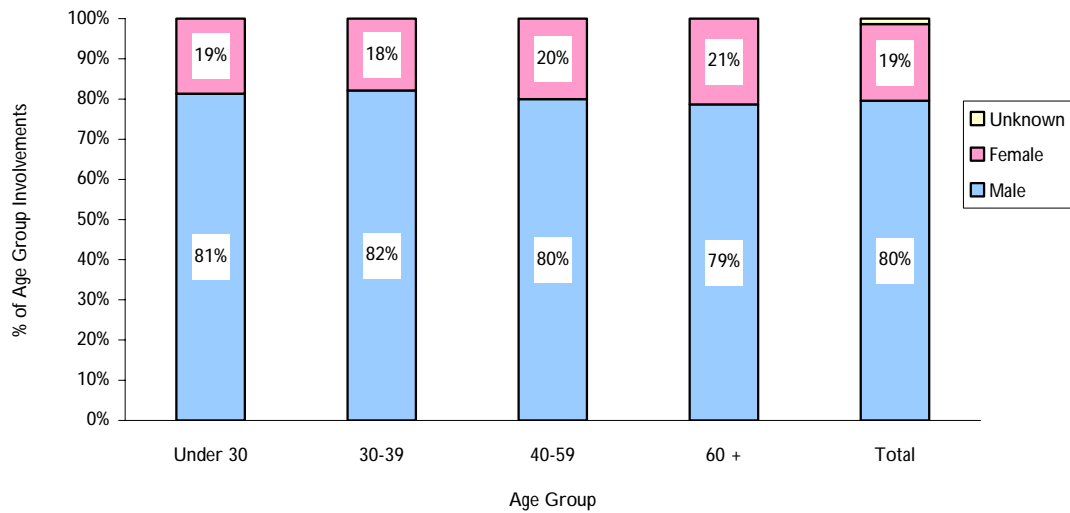
In summary, middle-aged drivers aged 40 to 59 years not only represent the largest age group in terms of number of licences and number of fatal crash involvements in 2002 but their number of fatal crash involvements appears to be worsening.

## Characteristics of Fatal Crash Involvements by Age of Motor Vehicle Controller

### Gender

Males consistently account for the majority (around 80%) of motor vehicle controllers involved in fatal crashes across all age groups.

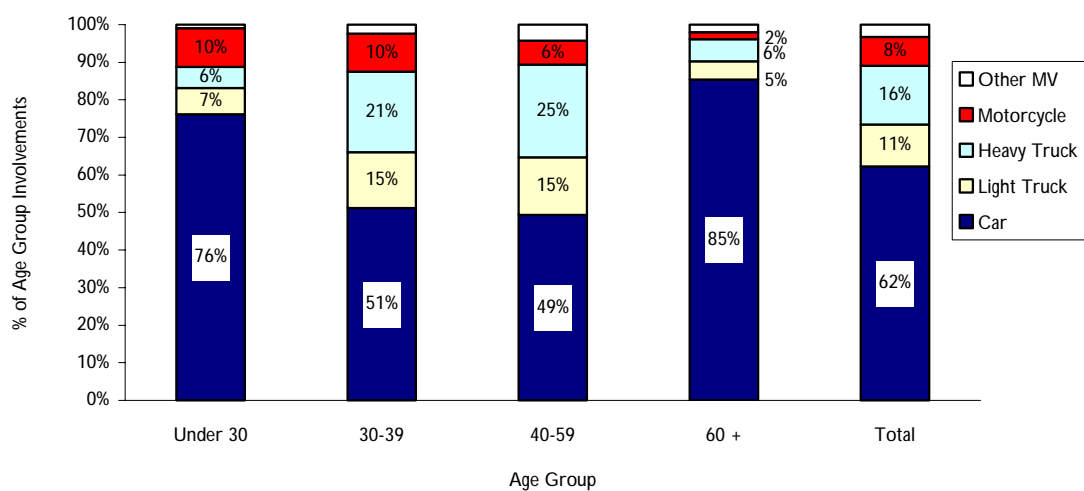
**Figure 5: Motor Vehicle Controllers Involved in Fatal Crashes, 2002,  
Gender of Motor Vehicle Controller**



### Type of Vehicle

Middle-aged motor vehicle controllers are more likely to be driving a light or heavy truck than younger or older drivers.

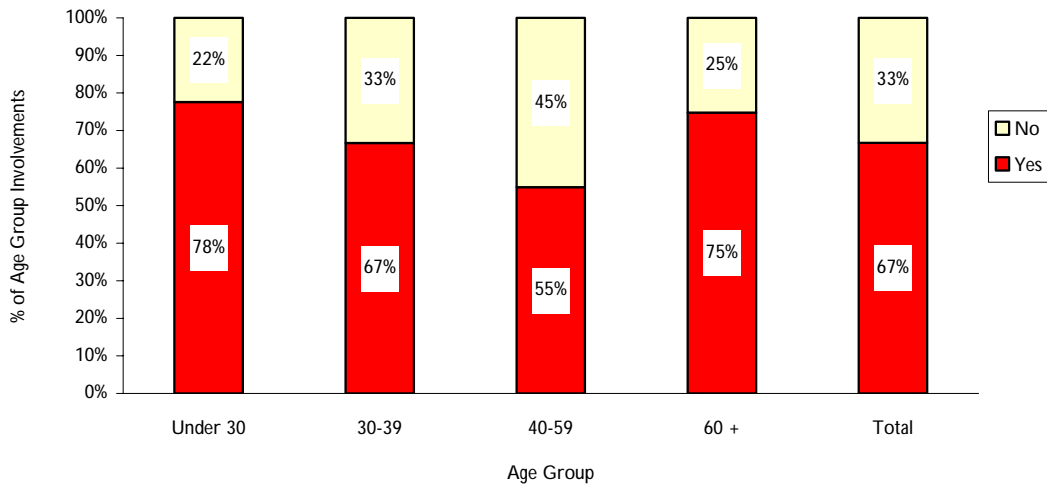
**Figure 6: Motor Vehicle Controllers Involved in Fatal Crashes, 2002,  
Type of Motor Vehicle**



## Key Vehicle Status

Key vehicle status is a coded field in the RTA Traffic Accident Database System which suggests that the vehicle performed the manoeuvre which most likely led to the crash occurring eg turning across the path of another vehicle. Middle-aged drivers are the least likely age group to be identified as the key vehicle controller.

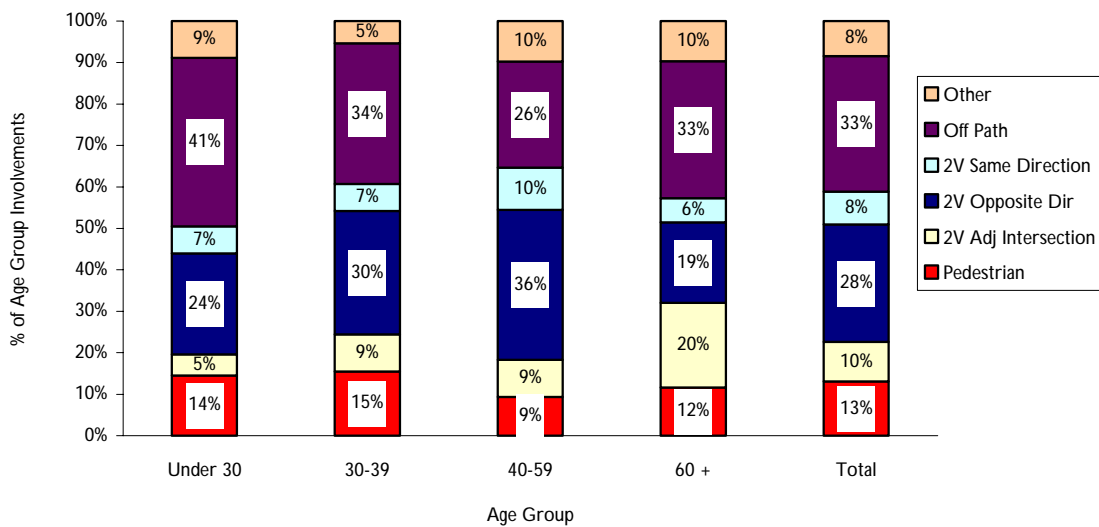
**Figure 7: Motor Vehicle Controllers Involved in Fatal Crashes, 2002, Key Vehicle Status**



## Accident Type

Middle-aged drivers are less likely to have single vehicle off road crashes than other age groups. However, they are more likely to be involved in two vehicle opposite direction (36%) and two vehicle same direction (10%) fatal crashes.

**Figure 8: Motor Vehicle Controllers Involved in Fatal Crashes, 2002, RUM Code**



## Location – Characteristics

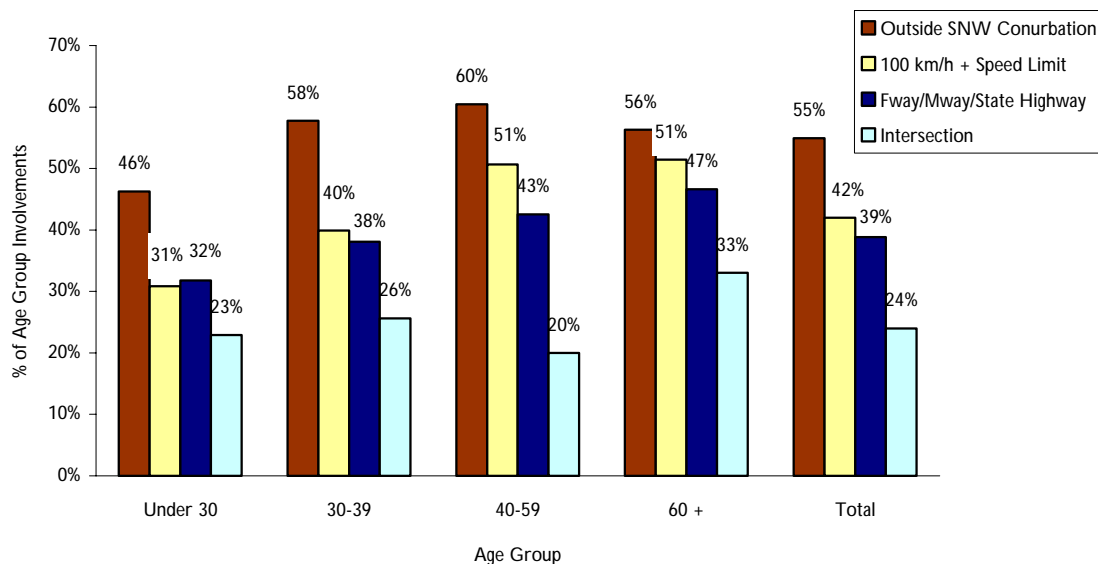
Middle-aged drivers are more likely to be involved in fatal crashes in the country areas of NSW outside the Sydney, Newcastle and Wollongong conurbation. It is probably likely that the previously identified greater involvement of trucks for this age group might reflect this result.

Similarly, middle-aged controllers were more likely to be involved in fatal crashes on freeways/motorways and State Highways than younger controllers.

More than half of middle aged fatal crash involvements occurred on roads with a posted speed limit of 100 km/h or more. This is significantly greater than the proportion for young drivers but similar to that for older drivers.

Only one in five middle-aged fatal crash involvements occurred at intersections. This contrasts with the not unexpected higher proportion (33%) for older controllers.

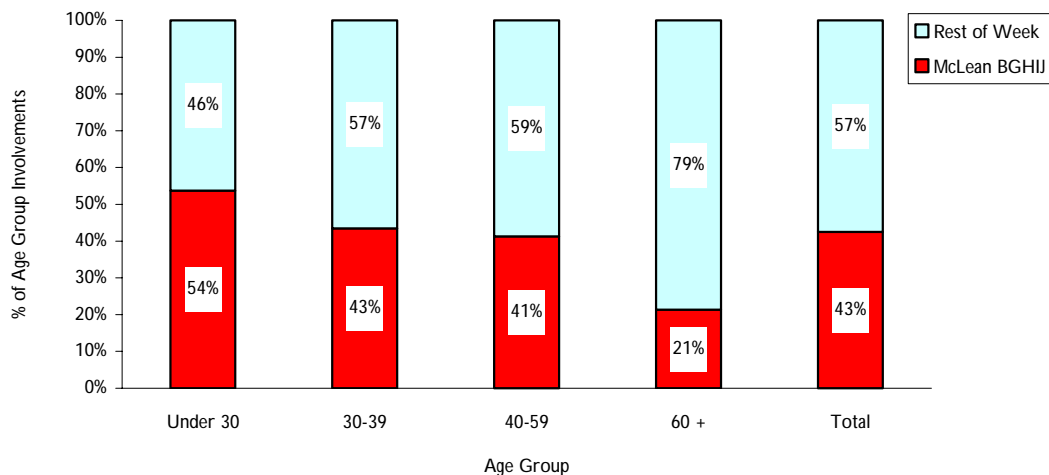
**Figure 9: Motor Vehicle Controllers Involved in Fatal Crashes, 2002,  
Location Features**



## Time Period

McLean Periods (McLean 1980) divide up the time of day and day of week into periods with similar characteristics of traffic conditions, driver/rider behaviour and trip purpose. The aggregated periods BGHIJ comprise the weekend mornings (3am to 9am), Thursday to Sunday afternoons (3pm to 9pm) and all evenings (9pm to 3am next day). Middle aged drivers are less likely to be involved in fatal crashes during periods BGHIJ than young drivers but more likely than older drivers.

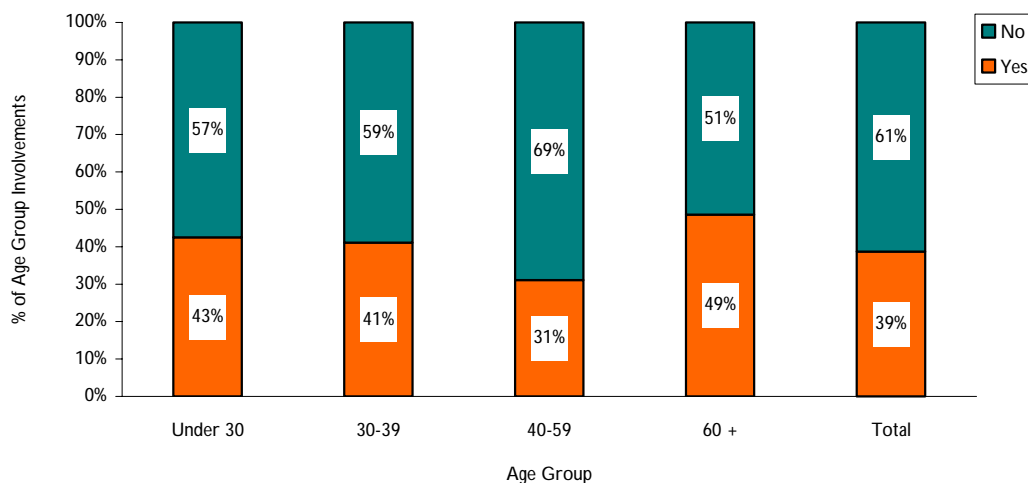
**Figure 10: Motor Vehicle Controllers Involved in Fatal Crashes, 2002,  
Day of Week x Time of Day**



### Controller's Residence

A much larger majority of middle aged drivers are involved in fatal crashes outside the local government area in which they reside. Again, this may be a result influenced by the higher levels of truck and country road involvement.

**Figure 11: Motor Vehicle Controllers Involved in Fatal Crashes, 2002,  
Controllers Resides in the Same LGA as Crash**



### Behaviour Risk Taking – Excessive Speed/Driver Fatigue/Illegal Alcohol/Safety Device Non-Usage

Whilst excessive speed (RTA 2001) is clearly a major risk factor for young controllers, it is still a contributing factor for nearly one in four middle-aged controllers involved in fatal crashes.

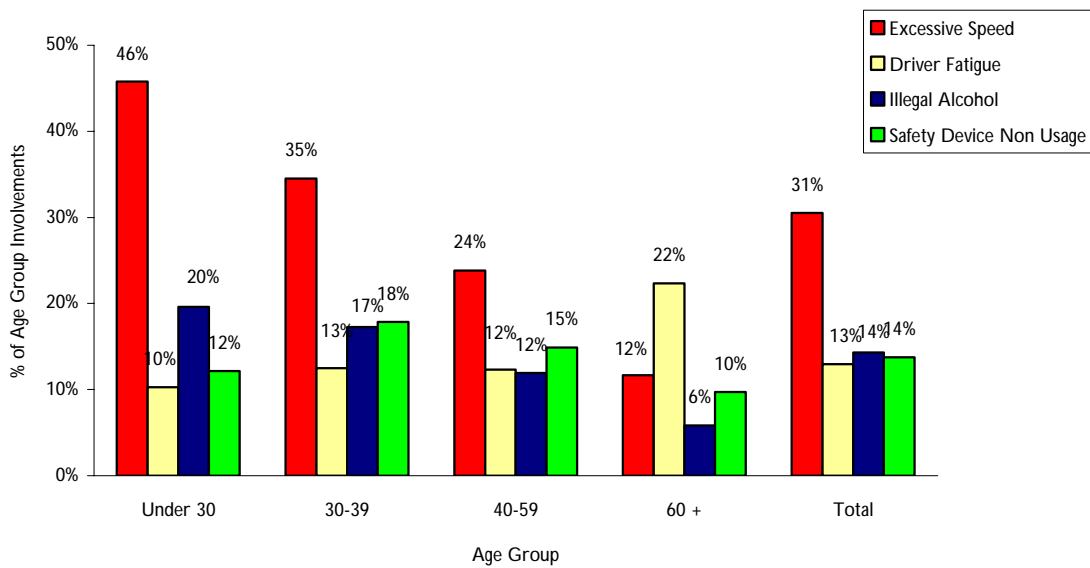


The incidence of driver fatigue (RTA 2001) amongst middle aged controllers involved in fatal crashes is similar to the younger age groups and about half that for older controllers.

Around one in eight middle aged controllers involved in fatal crashes have an illegal alcohol level, a result lower than those experienced for younger controllers but twice that for older controllers.

Though at least one in seven middle aged controllers involved in fatal crashes were not using a safety device (seat belt for drivers/ helmet for motorcycle riders), this incidence was similar to other age groups.

**Figure 12: Motor Vehicle Controllers Involved in Fatal Crashes, 2002, High Risk Behaviour Factors**



## Conclusions and Focus for Countermeasures

The past two decades have demonstrated that the road safety community has been successful with targeted interventions, particularly amongst young motor vehicle controllers. These at-risk groups continue to be over-represented and should still be addressed.

However, whilst fatal crash involvement rates for young at risk controllers have consistently declined since the early 1980s there has been a levelling off in rates for 30 to 39 year olds and an increase in rates for older motor vehicle controllers over the last five years.

A major conclusion is that even with continuing improvements for the most at-risk groups, particularly those aged under 30 years, the aging of the population means that the most at-risk portion of the road user population will be shrinking.

Indeed, the increased aging of the population and the levelling off of crash rates for middle-aged and older motor vehicle controllers could potentially offset, to some degree, the road toll improvements from improved safety for young motor vehicle controllers.

Given that an overall reduction in the road toll will need to improve the fatal crash involvement rates for young, middle-aged and older drivers, are there any opportunities to reduce fatal crash rates, particularly for middle-aged controllers ?

Fortunately, the analysis of fatal crash data suggests that middle-aged controllers have some characteristics which could be investigated for the purposes of intervention. These include:

- drivers of light and heavy trucks
- two-vehicle opposite crashes
- country locations
- freeways/motorways/State highways
- roads with a posted speed limit of 100 km/h or more
- daytime on weekdays
- travel away from home
- excessive speed
- illegal alcohol

It should be noted that middle-aged controllers are not necessarily the most at risk age groups for these factors, but they do have a greater incidence for these factors than either younger and/or older controllers.

## References

McLean, AJ, Holubowycz, OT and Sandow BL (1980). McLean time periods defined in *Alcohol and Crashes: Identification of Relevant Factors in this Association*, Department of Transport, Australia

RTA (2001). Criteria for determining speeding and fatigue involvement are detailed in *Road Traffic Accidents in NSW, 2001* page xiv