
LICENSING OPTIONS FOR MANAGING OLDER DRIVER SAFETY

Original version

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Prepared: 30 June 2002.

Revised version

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Prepared: 30 June 2005.

1.1 A brief statement of the issue

Older drivers are perceived to have a heightened crash risk. This, together with a projected growth in the number of older drivers over the next thirty or so years, has produced a call for improved road safety countermeasures, including more accurate assessment procedures and more targeted licensing conditions to better identify older drivers with unacceptably diminished driving skills.

1.2 An assessment of the road safety issue

The road safety status of older drivers has been discussed elsewhere in the Handbook. As a brief summary:

- In Australasia, drivers aged 65 years and older appear to have a steadily increasing serious casualty crash risk once distance travelled is taken into account. There are various reasons postulated for this heightened risk, including the onset of medical conditions, a greater incidence of functional impairments (slower reaction times, sensory reductions and some cognitive limitations) and reduced driving skills, all of which may be associated with normal ageing. However, for many older drivers, much if not all of the reduction in driving skills may be countered by their self-regulation of driving and, hence, reduced exposure to crash risk.
- A growth in the number of older people is expected as a result of the ageing of the so-called 'baby-boomers'. Moreover, having grown up with the car, baby-boomers will be more likely to keep their licences and drive greater distances in their old age. It has been predicted that older driver casualty crashes may comprise around 25–30% of all casualty crashes by 2025 as a result of this increased exposure, unless effective countermeasures are put in place.

Perceptions of reduced fitness to drive plus increasing numbers of older drivers, have led to conflicting opinions about the best management of older driver safety through licensing options – and in particular, whether older drivers should be required periodically to prove their continued fitness to drive (Fain 2003, Malone and Hackenschmidt 2004).

1.3 Current practices in Australasian jurisdictions

Current licensing practices in Australasian jurisdictions are shown in Table 1.1.

At one extreme, New South Wales, New Zealand, Tasmania, Western Australia and South Australia have relatively stringent assessment requirements which entail both medical examinations and on-road assessment for specified age groups. In contrast, Victoria has no regular assessment, whether medical or on-road. Queensland, the Northern Territory and the Australian Capital Territory occupy the middle ground in that they require mandatory medical examinations but, in most cases, do not require on-road assessment.

In addition to whatever mandatory requirements may exist, any driver of any age in any jurisdiction can be required to demonstrate fitness to continue driving.

Table 0.1: Driver licensing practices in Australasia for motor cars and equivalent

State or Territory	Medical report	Road test
New South Wales	Required annually from 80 onwards	Required annually from 85 onwards
Victoria	When reported	When reported
Queensland	From age 75 onwards, required to carry a medical certificate when driving	Conducted by occupational therapists, if required to assist a medical practitioner in reaching a judgement
Western Australia	At ages 75, 78, 80 and annually thereafter	Required annually from 85 onwards
South Australia	Required annually from 70 onwards	Required annually from 85 onwards for other than car licences or when recommended by a medical practitioner
Tasmania	Required annually from 75 onwards	Required annually from 85 onwards
Australian Capital Territory	Required annually from 75 onwards	When recommended by a medical practitioner
Northern Territory	Vision testing every 5 years, all ages	When reported
New Zealand	At ages 75, 80 and every two years thereafter	When reported

1.4 A review of the research

1.4.1 Do older drivers have an increased crash risk?

There is strengthening evidence that older drivers, some likely diminution of driving skills notwithstanding, are not at additional crash risk relative to other drivers. The main evidence for this claim rests upon the so-called low mileage bias.

It has been long recognised that the relationship between travel distances and crash rates is not linear: independent of age, drivers travelling more kilometres will typically have lower crash rates per kilometre, compared to those driving fewer kilometres. Because older drivers typically drive less distance per trip and have lower accumulated driving distances per year, they have greater crash involvement per unit of distance compared to drivers with greater accumulated driving distances (Janke 1991). This hypothesis has been empirically tested by using Finnish survey data to compare older and young middle-aged drivers' crash rates, controlling for annual distances driven (Hakamies-Blomqvist et al. 2003). When older drivers were compared with younger drivers who had equivalent driving exposure, there was no age-related increase in crashes per distance driven. Thus the apparent age-related risk is more likely attributable to yearly driving distances and not to age per se, a phenomenon that is now called the low mileage bias.

The low mileage bias is being increasingly replicated using different data sets from around the world (Fontaine 2003, Langford et al., 2006a). The message from the latest piece of research is:

When the crash rates of drivers of different ages were compared after being matched for yearly driving distance, most drivers aged 75 years and above were indicatively safer than all other drivers. Only older drivers travelling less than 3,000 kilometres per year (just over 10 % of all older drivers in the survey) gave any indication of elevated crash rates (Langford et al., 2006, p.574).

While the causes for the association between mileage and crash rates have yet to be fully identified, location of driving is likely to be one contributing factor. High mileage drivers are more likely to use freeways and multi-lane divided roadways with limited access and low mileage drivers more likely to drive more on local roads with more potential conflict points. Janke (1991) noted that there were 2.75 times more crashes per mile driven on non-freeways than freeways, while Keall & Frith (2004) have shown that for all ages, the riskiest roads are major and minor urban roads – with motorways being the safest.

Fitness to drive may also be a second, contributing factor at least for older drivers. A study based on a sample of New Zealand older drivers (Langford et al. 2006b) showed that low mileage drivers were characterised by both perceived and actual reduced fitness to drive. As one instance, low mileage drivers were significantly and almost twice as likely to fail on their first attempt at the on-road driving test currently used in New Zealand.

1.4.2 Does mandatory assessment of all older drivers have safety benefits?

Despite the growing number of research studies in the area, it is difficult to find evidence to suggest that there are safety benefits associated with age-based mandatory assessment of older drivers.

The effectiveness of the different licensing systems in Australia has been examined by two studies which have compared the casualty crash rates of older drivers across the different jurisdictions:

- The first study was conducted in the mid-1980s and compared drivers aged 75 years and older. It was found that despite its lack of a mandatory assessment program, Victoria had amongst the lowest per-population older driver crash rates and the lowest older driver crash rate per number of licences issued (Torpey 1986)
- An update of this study also failed to show any safety benefits for mandatory assessment programs in Australia. Older drivers (aged 80 years and above) in jurisdictions with age-based mandatory assessment programs could not be shown to be safer than drivers in Victoria, whereas older drivers in Victoria had significantly reduced per-driver involvement in serious casualty crashes (Langford et al. 2004a).

However, it was noted that some older people maintain their driving licences but rarely if ever drive. Accordingly, the proportion of inactive licence-holders might be higher in Victoria relative to jurisdictions with periodic licence assessment, where inactive drivers may more readily either surrender or lose their licences. The failure to control for possible differences in active-driver levels across jurisdictions may have disguised possible safety benefits associated with mandatory assessment.

Consequently, a further study compared the casualty crash involvement rates of drivers aged 80 years and older in Melbourne (no regular assessment) and Sydney (regular medical and on-road assessment), using population, number of licences held, total distance driven and time spent driving as exposure measures. Results showed that while there was no difference in crash risk for older drivers based on population, Sydney drivers had statistically higher casualty crash involvement than their Melbourne counterparts on a per licence issued basis and time spent driving basis. There was a similar trend based on distance travelled but it was of borderline statistical significance only (Langford et al. 2004b).

These findings from Australia are consistent with overseas research. One of the first evaluations of the effectiveness of mandatory age-based assessment programs compared the Finnish and Swedish licensing practices. Finland requires regular medical checks in connection with licence renewal starting at age 70, whereas Sweden has no age-related controls. No crash reduction effects of the Finnish program could be detected compared to Sweden (Hakamies-Blomqvist et al. 1996).

Most recently, the different licensing procedures for older drivers in the United States have been investigated to find possible differences in older driver fatality rates (Grabowski et al. 2004). Regression techniques were used to study the effects of the following variables related to state laws: (a) laws mandating in-person renewal of licence; (b) laws mandating vision tests; (c) laws mandating on-road tests; and (d) duration of the licence renewal period. It was found that the only variable that had any significant association with a lowered fatality rate was in-person licence renewal, only for drivers aged 85 years or more. It was concluded that: 'more stringent state licensure policies such as vision tests, road tests, and more frequent licence renewal cycles were not independently associated with additional benefits' (Grabowski et al. 2004, p. 2840).

1.4.3 Some unintended consequences of mandatory assessment

While it is difficult to find any demonstrable safety benefits of mandatory assessment, one other outcome is clear. Many drivers allow their licences to lapse rather than undergo mandatory assessment (Hakamies-Blomqvist and Wahlstrom 1998, Levy 1995). Figure 1.1 shows the numbers of drivers in Queensland who failed a medical assessment for licensing purposes, compared to the numbers who decided against sitting for the mandatory medical assessment thereby effectively, voluntarily surrendering their licences (Oxley et al. 2003). (In Queensland, licence renewal requires a medical assessment once every five years from the age of 75 onwards.)

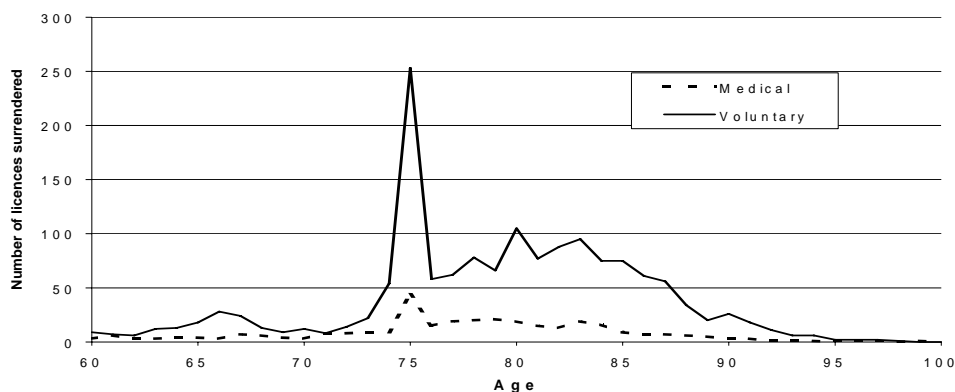


Figure 0.1: Number of medical and voluntary surrenders of licence in Queensland

(Source: Oxley et al. 2003).

From a road safety viewpoint, the reduction in drivers would be welcomed if it meant fewer unsafe older drivers on the road. However with the crash data failing to support this interpretation, it is more likely that some older drivers are unnecessarily ceasing to drive rather than be subject to mandatory assessment.

The mandatory assessment of older drivers may have a second disadvantage: policies that cause older people to cease driving and increase their walking to maintain mobility may well increase the overall accident risk. Reference has already been made to the evaluation of the Swedish and Finnish systems, which also identified a higher older pedestrian fatality rate in Finland, arguably, caused by the number of older people turning from driving to walking as a primary mobility option (Hakamies-Blomqvist et al. 1996). The safety of driving relative to walking is further reinforced by 1997/98 crash and travel survey data from New Zealand. For 80-plus year-olds, a walk of 1 km will incur, on average, 3 casualties per million such trips, but only 0.3 casualties if the trips were driven (Land Transport Safety Authority, undated). (It needs to be recognised however that there may be other health benefits associated with walking that may at least partly counterbalance any crash risk.)

1.4.4 A possible alternative strategy to mandatory assessment

In dismissing mandatory assessment, an OECD Expert Group investigating mobility and safety issues associated with an ageing society, recommended that licensing strategies target only those discernibly at risk, effectively leaving 'safe' drivers outside the assessment process (OECD 2001).

The proposed licensing model for managing older driver safety currently being developed and trialled in Australasia (Fildes et al. 2000, Fildes et al. 2005) complies with the stance taken by the OECD Expert Group. The model's features include:

- The establishment of a network of community notification sources, whereby only drivers suspected to have a high crash risk are identified and referred to the licensing authority for formal assessment. It is proposed that notification sources include general practitioners, police, family and friends – as well as older drivers themselves
- The use of multi-tiered assessment, involving general practitioners, occupational therapists and other health specialists at more elaborate levels of assessment
- The use of assessment instruments of known validity for testing safe driving.

Other licensing options exist, either as possible components of the above model or as practices in their own right. For example, the recent Victorian Parliamentary Inquiry into older road user safety (Road Safety Committee, 2003) considered the following practices:

- shorter duration of licences for older drivers
- use of self-reported health questionnaires at the time of licence renewal
- use of crash and infringement data to assist in any decision to renew a licence;
- the development of conditional licences, possibly using a wider range of conditions, within a well-publicized de-graduated licensing framework
- the possible introduction of attendance at appropriate education courses as a condition for licence renewal.

However, as noted by the Committee, many of these options need further evaluation before any implementation.

1.5 Political, social and other factors associated with older driver licensing

It is essential that older people retain maximum mobility, compatible with a specified safety threshold. The 'urban sprawl' has led to a wide dispersal of essential services, commercial enterprises and social networks and the car remains a major option for tackling these distance problems. For older people (as for others), cessation of driving can result not just in access difficulties but also in considerable distress and a lowering of self-esteem and dignity (Marottoli et al. 1997, Marottoli et al. 2000).

There is also a compelling economic argument for ensuring that older people remain as mobile as is compatible with basic safety (OECD 2001). Ageing baby boomers, in terms of appetite and capacity, have the potential to be a major economic mainstay in future years. Restricted access to their cars means that their contribution to the economy will diminish appreciably.

As a final point, the resources necessary for operating mandatory age-based assessment schemes – which will need to be substantially increased over the next few decades, all else being equal – are being spent on activities that have no safety benefits. These resources are effectively being diverted from other programs which could have an appreciable impact on the road tolls around Australasia.

1.6 Conclusions

While there is growing research evidence to suggest that older drivers as a group do not have an elevated crash risk and are at least as safe as other age groups, the fact remains that a small proportion of older drivers do have diminished driving skills and do represent an exceptional crash risk. There is no evidence that across-the-board mandatory assessment of older drivers as a requirement for continued licensing is effective in removing this small proportion of unsafe drivers from the road. Further, the practice seems to have a marked safety disadvantage in that it may prompt some relatively safe drivers to become pedestrians, thereby causing them to use a riskier transport mode.

A more strategic approach to assessing older drivers' fitness to drive is required. The proposed national licensing model which targets at-risk older drivers holds considerable promise, with further development and on-going evaluation currently being undertaken before any full scale implementation.

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