

## A simple screening tool for identifying early cognitive impairment among drivers: Summary of a field trial among general medical practitioners in South Australia.

**Background:** It is well known that the ageing process in some individuals is associated with neurodegenerative and vascular diseases, leading to driving problems. In comparison with cognitively normal drivers of the same age, the probability of having a motor vehicle accident is significantly higher in drivers with dementing disorders. Older drivers with moderate to severe dementing disorders pose a hazard to themselves and to others in the community.

In South Australia, doctors are required to provide certification of medical fitness to drive for licence renewal of individuals aged 70+ years. Currently, there is no available cognitive screening instrument with adequate predictive validity of on-road driving ability in older people with dementia. Without the aid of objective measures, doctors are more likely to allow people with dementia to continue to drive, with potentially disastrous consequences.

As an important public health intervention, and in response to increasing numbers of older drivers with cars on South Australian roads, a new cognitive screening test known as 'the Maze Task' was developed in 2005. The Maze Task is a timed, pencil-and-paper screening test. It has been validated against on-road driving ability, and it has good sensitivity and specificity. It is simple to explain, to administer (requiring only two minutes), and to score, as well as safe and acceptable to older people.

A preliminary survey to investigate in-principle support for the Maze Task was conducted in early 2009 with a small sample of leading GPs in South Australia. The results of the survey demonstrated strong in-principle support for this new tool. As an important step towards further testing the Maze Task, the present field trial was conducted to assess how GPs find its use in practice. This report summarises the findings of the field trial with those GPs who agreed to participate and who provided feedback via a survey questionnaire.

**Methods:** Ethics approval for the study was granted by the Department of Health Human Research Ethics Committee. Ninety GPs across South Australia were invited to participate in the field trial. A pack containing the Maze Task and its instructions, the information on how to conduct the field trial, the feedback questionnaire and a reply paid envelope (to return the feedback survey questionnaire to the field trial coordinator), was mailed to these GPs. GPs trialled patients seeking certification of medical fitness to drive for driving licence renewal during the early months of 2010.

Data were entered into the Epi Info database (built for the purpose of this study) and analysed using the Stata statistical package (Stata Corp, version 10.0). Percentages were calculated, and where appropriate, the statistical significance of outcome variables was determined using Chi square test. Thematic analysis was used for qualitative data.

**Results:** Fifty-two (57.7%) GPs from across rural and metropolitan areas of South Australia responded to the survey. They reported to have trialled the Maze Task on a total of 119 patients. The findings of the field trial indicated that: Most GPs (88.5%) believed that their general judgments about cognitive impairment matched patients' performance results on the Maze Task; a large proportion (94%) strongly agreed that the Maze Task would help them screen for signs of mild cognitive impairment (MIC) or early dementia in older drivers; almost all (96.2%) strongly agreed that they would use the Maze Task if it were introduced in South Australia; a vast majority (92.3%) believed that the Maze Task is simple, brief and easy to use; a significant proportion (84.6%) strongly agreed that the Maze Task is economically viable in their practice and a significant proportion (82.7%) strongly agreed that the Maze Task would be considered acceptable as a screening tool by older drivers. Some responses reflected the need to train GPs and the need for promoting the Maze Task among GPs.

**Conclusions:** The findings of the trial indicated a high acceptability rate of the Maze Task by GPs if it were to be introduced in South Australia. Its introduction would offer doctors a means to objectively and consistently assess cognitive functions affecting the driving competency of older drivers. However, because the Maze Task discriminates for cognitive domains specific for safe driving only, it would best be introduced as an adjunctive screening measure in the licence renewal process of older drivers.