Submission - Improving health screening for heavy vehicle drivers

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Office of Transport
Safety Investigations

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Introduction

The Office of Transport Safety Investigations (OTSI) is the independent transport safety investigator for NSW. OTSI completes no-blame transport safety investigations into safety incidents and accidents in NSW involving:

- buses seating more than 8 adults and operating a public passenger service for a fare
- ferries (vessels) seating more than 8 adults and operating a public passenger service for a fare
- railway operations such as the construction of a railway and rolling stock; the management, commissioning and maintenance of rail infrastructure; and the operation or movement of rolling stock for the purposes of operating a railway service.

OTSI's submission is confined to bus and coach drivers within NSW and discussion of the rail safety workers health assessment as appropriate. As OTSI is not an operator or driver our submission is primarily focused on the benefits and opportunities to improve transport safety rather than the costs or limitations.

Submission

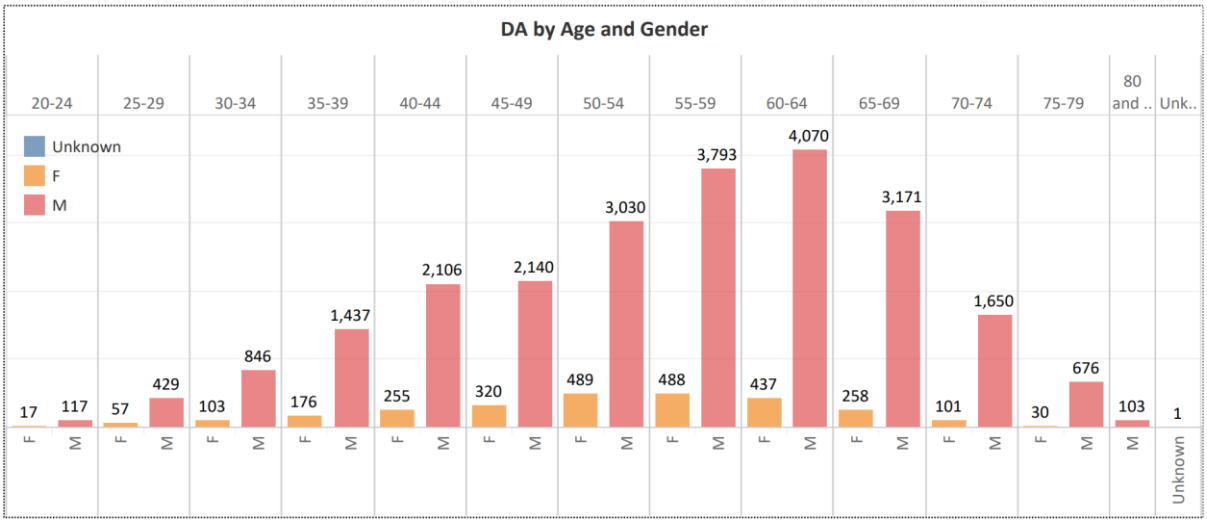
Question 1

Can you provide any more information relevant to supporting our understanding of the commercial vehicle industry, including road safety impacts?

Within NSW, there were 26,300 drivers who held a valid NSW Bus Driver Authority[1] as of December 2024.[2] The Transport for NSW Bus Industry Report provides details for the age and gender of bus drivers (Figure 1) and showed that:

- 69.6 per cent of drivers were over 50 years of age (62.7 per cent were male)
- 39.9 per cent of drivers were over 60 years of age (36.8 per cent were male)
- 9.7 per cent of drivers were over 70 years of age (9.2 per cent were male)
- 89.6 per cent of all drivers were male.

Figure 1: Driver Authority by age and gender – (Bus Industry Report Q4 – 2024)



Source: Transport for NSW

As identified in the discussion paper, older age and male gender are considered common risk factors for cardiovascular disease, diabetes and obstructive sleep apnoea. Given the age of bus drivers in general, and that 89.6 per cent of all bus drivers in NSW are male, there is an increased likelihood that these drivers would be affected by cardiovascular disease, diabetes or sleep apnoea.

Unlike rail that operates on a guided network in a generally closed environment, buses and coaches operate in an open environment, with the driver as a single point of control for the vehicle. When a driver becomes incapacitated when the bus is in motion, the vehicle continues in an uncontrolled manner until it either impacts an object or stops due to loss of momentum without a collision.

[1] Bus drivers within NSW were required to hold a Bus Driver Authority https://www.transport.nsw.gov.au/operations/roads-and-waterways/business-and-industry/buses/bus-drivers/apply-for-a-bus-driver

[2] Data sourced from Transport for NSW. Available at: https://www.transport.nsw.gov.au/system/files/media/documents/2025/bus-industry-dashboard-q4-2024.pdf

Buses as a heavy vehicle regularly transport more than 50 passengers in and around other vehicles and vulnerable road users. The mass of the vehicle increases the severity of collision and number of passengers increases the likelihood of injuries when there is a crash involving a bus or a coach.

OTSI receives notifications for accidents and incidents involving buses that are reportable (including driver incapacitation) under the NSW Passenger Transport (General) Regulation 2017.[3] OTSI cannot investigate all incidents but has investigated multiple incidents where driver incapacitation has contributed to a crash. OTSI released a Safety Advisory SA02/24[4] regarding driver fitness to drive that detailed recent examples of significant bus driver incapacitation incidents in NSW:

Campsie, 20 March 2024[5]

On 20 March 2024, bus m/o1531 was undertaking a scheduled passenger service when the driver missed a route turn and continued through an intersection onto Seventh Avenue, Campsie. The bus then collided with the rear of bus m/o9982, which was travelling ahead. Several vehicles parked on the side of the road were also impacted in the collision. The driver of m/o1531 sustained serious injuries in the collision, and passengers of both buses, and the driver of m/o9982, also sustained injuries requiring medical treatment. OTSI's investigation into the incident identified that the driver of bus m/o1531 likely experienced a sudden incapacitation event, which resulted in the driver losing effective control over the vehicle through a loss of gross and fine motor skills. This likely incapacitation resulted in reduced physical and cognitive ability to operate the bus safely. The mechanisms behind the likely driver incapacitation event could not be determined.

Drummoyne, 22 June 2023

On 22 June 2023, bus 2998ST was travelling on Victoria Road at Drummoyne in Sydney's Inner West when the vehicle started to veer across the road. The bus struck and mounted the concrete divider and collided with an oncoming utility. The utility driver attempted to swerve away but their vehicle was struck on the rear right panel. Several cars were on the road at the time but were able to evade the out-of-control bus. A review of CCTV footage revealed that the driver had suffered a medical episode which resulted in an incapacitation lasting approximately 45 seconds. The 14 passengers on board were shaken but not seriously injured.

Cordeaux Heights, 4 January 2021

On Monday 4 January 2021, the driver of bus 4758MO, suffered an incapacitating medical episode. As a result, the bus rolled uncontrollably in a reverse direction down South Road, Cordeaux Heights. The bus struck several parked vehicles and damaged infrastructure along South Road, before coming to rest against the front of a domestic residence. The driver had experienced an incapacitation event while driving, because of a medical condition of which they were unaware. This incident resulted in the commencement of the OTSI bus and coach rollaways systemic investigation, which is ongoing at the time of publication of this Safety Advisory.

Adamstown, 5 November 2019[6]

On 5 November 2019, a pedestrian waiting at a level crossing on Brunker Road, at Adamstown in Newcastle, was struck and fatally injured after a bus driver experienced a medical episode. The bus veered across the road onto the side of oncoming traffic, struck the pedestrian, then continued to swerve and hit several parked cars before the driver regained consciousness and

[3] Available at: https://legislation.nsw.gov.au/view/html/inforce/current/sl-2017-0473#sec.88
[4] Available at: https://www.otsi.nsw.gov.au/sites/default/files/2024-06/Safety%20Advisory%20SA02_24%20-%20Fitness%20to%20drive.pdf
[5] Available at: https://www.otsi.nsw.gov.au/sites/default/files/2024-06/Bus%20Safety%20InvestigationReport_Collision%20between%20buses%20mo9982%20and%20mo1531%20Campsie_20%20March%202024.pdf
[6] Available at: https://www.otsi.nsw.gov.au/documents/bus-safety-investigation-bus-and-pedestrian-fatal-accident-brunker-road-adamstown-05-november-2019

brought the bus to a stop. The bus was transporting school children, with some sustaining minor physical injuries. The driver was aware of feeling unwell but did not anticipate becoming incapacitated and unable to stop the bus.

Most these incidents are not specifically associated with the conditions that are the focus of this discussion paper but demonstrate the loss of control following an incapacitation.

Question 5

Can you provide any information about other interventions, such as driver monitoring technologies, to support our understanding of managing these conditions?

There are some technologies that may assist to alert a driver and/operator of a distraction or fatigue event that may be associated with the conditions that are the focus of this discussion paper. From the information that OTSI is aware of these systems are not currently able to control the vehicle or stop safely if the driver was to suffer a medical incapacitation.

Recent Australian Design Rules (ADR) for systems such as *ADR 97 Advanced Emergency Braking for Omnibuses, and Medium and Heavy Goods Vehicles*[7] and *ADR 99 - Lane Departure Warnings Systems have been mandated for new heavy vehicles*.[8] These ADRs do not apply to all heavy vehicles, with omnibuses designed for standees and articulated omnibuses not required to comply with these ADRs..

Advanced emergency braking (AEB) may assist in some instances if the driver was to become incapacitated due to a medical condition, however OTSI is not aware how effective this would be. Some AEB systems give the driver the final authority over vehicle controls by recognising control inputs, such as sustained throttle application as a deliberate input by the driver, thus AEB may not intervene. Other systems may override the driver's input and activate AEB to prioritise collision avoidance. The effectiveness of such technologies vary and is dependant on its logic and programming by manufacturers.

Lane departure warning, as well as driver fatigue and distraction detection systems may assist if a driver of a heavy vehicle is partially incapacitated to alert them to an issue associated with a medical condition but that is not the intent of the systems, and the effectiveness is unknown.

Question 9

In relation to options A and B, please comment on the benefits, costs, barriers and limitations and advise of any other information that should be considered.

Option A would have no benefit and adverse road safety outcomes would likely continue without improved health screenings.

Option B as identified in the discussion paper would have some benefits to improving screening of drivers. While improving the implementation and supporting forms may improve the screening of

[7] https://www.legislation.gov.au/F2022L00211/latest/text
[8] https://www.legislation.gov.au/F2024L00161/latest/text

these conditions, they would still be subject to self-declarations and may be open to interpretation. This option would likely have variations in the assessment as the screening would remain subjective.

Question 11

In relation to options 1C, 2C and 3C, can you please comment on the benefits, costs, barriers and limitations and advise of any other information that should be considered?

OTSI considers that options 1C, 2C and 3C would have the greatest safety benefit to all road users, travelling public, and drivers themselves from a health perspective. The predictive screening for these conditions would likely result in detection and options for treatment should a driver have an undiagnosed condition.

Inclusion of defined predictive screening removes the reliance on self-declaration by the driver and provides clearer criteria to inform further assessment.

Medical examinations and driver health was an area of focus of the Waterfall Special Commission of Inquiry (SCOI) following the derailment of Tangara passenger train G7 at Waterfall on 31 January 2003.[9] The train driver and six passengers were killed in the incident after the driver suffered a heart attack.

One of the key findings associated with the Inquiry was that periodic medical examinations of train drivers was inadequate as:

> 45. The SRA's periodic medical examinations of train drivers and other safety critical staff were inadequate in that:
>
> > (a) they did not have any predictive element to identify train drivers or other safety critical staff who were in a high risk category for sudden incapacitation through heart attack or stroke;

The following recommendation was given to Independent Transport Safety and Reliability Regulator (ITSRR) to improve health screening:

> 57. The ITSRR should develop standards for periodic medical examinations which include the following:
>
> > (a) all medical examinations of safety critical employees must contain a predictive element, including use of a cardiac risk factor predictions chart to assess risk of sudden incapacitation, and follow-up procedures, where indicated;
> >
> > ....
> >
> > (e) appropriate follow up examinations, such as a stress ECG or examination by a cardiologist, must be arranged for any safety critical employee whom the occupational physician believes may be at risk of sudden incapacitation;

The findings and recommendations from the SCOI are just as applicable today in relation to the Assessing Fitness to Drive (AFTD) and lack of current predictive elements that this discussion paper considers. The Waterfall findings and recommendation went on to inform the national rail health assessment standard when first published and continues to this date.

[9] McInerney, PA. (2005). Special Commission of Inquiry into the Waterfall Rail Accident, Final Report, Vol 1.

During the Inquiry expert evidence was also given that based on pathology results the blockage the train driver had in their left anterior descending coronary artery, the train drivers would have been an excellent candidate for coronary bypass surgery, with the likely result that the driver may have been alive still. This demonstrates the benefits of predictive medical assessments for early detection so that medical intervention can be undertaken as necessary to improve driver health and reduce risk of driver medical related events

Question 12

Do you have any alternative options to those presented?

If following consultation, options 1C, 2C and 3C are not the preferred option for all commercial drivers, OTSI considers that it would be beneficial if this option was adopted for certain high-risk environments. These as a minimum should include public passenger vehicle drivers (buses and coaches) based on the risk to the travelling public. However, full consideration through a risk-based approach would be appropriate to identify which high-risk environments the options should apply.

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