



Reviewing Assessing Fitness to Drive Summary

2016
August



Report outline

Title	Reviewing Assessing Fitness to Drive: Summary
Type of report	Summary report
Purpose	To explain changes made to <i>Assessing Fitness to Drive</i> .
Abstract	This report explains the changes made to the 2016 edition of <i>Assessing Fitness to Drive</i> . It is a summary of the report <i>Review of Transport Medical Standards: Final Report for the Review of Assessing Fitness to Drive</i> published in July 2016.
Key words	Medical standards, assessing fitness to drive, driver licensing, review of Transport Medical Standards
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Executive Summary

Assessing Fitness to Drive – Commercial and Private Vehicle Drivers is a joint publication of Austroads and the National Transport Commission (NTC). It contains nationally agreed medical standards for the purposes of driver licensing. The NTC has reviewed *Assessing Fitness to Drive* to address issues raised by stakeholders, to ensure the standards reflect current medical evidence and best practice, and to meet the practical needs of private and commercial vehicle drivers. The review also considered the application and clarity of the guidelines, along with associated administrative issues.

This report was developed to explain the changes to the *Assessing Fitness to Drive* guidelines. It covers general issues, followed by a chapter-by-chapter description of medical changes, then changes made to the appendices. The last section addresses issues out of scope. This report should be read in conjunction with the revised *Assessing Fitness to Drive* publication.

The NTC circulated an initial consultation paper in October 2014 requesting stakeholder feedback on the 2012 version of *Assessing Fitness to Drive*. The NTC received valuable feedback from a wide range of stakeholders including medical practitioners and other health professionals, consumer health organisations, government transport departments, driver licensing authorities, unions, operators and peak industry bodies. The feedback was considered by the NTC and the project's medical consultants in developing the revised guidelines. Further input was sought from various medical and allied health experts and transport stakeholders. Findings of accident investigations and recent research were also considered, although a full literature review was not undertaken.

Major changes made to the guidelines during the last review appear to have been well received. This included the restructuring of the guidelines and revisions to particular chapters so as to better focus on functionality (i.e. how the person's medical condition affects driving), rather than simply diagnosis.

Changes in the current review were limited to refinements to further support clarity and interpretation, and thus support consistent implementation. A limited number of changes to the fitness to drive criteria are summarised in the Table 1. The implications for all stakeholders, including health professionals, driver licensing authorities and drivers, will be that there will be consistency in patient/driver management through improvements in clarity and decision support. A summary of the major changes are detailed in this table.

During the course of consultation stakeholders have also commented on a range of matters outside the project scope but still relevant to *Assessing Fitness to Drive*. These were predominantly administrative issues and suggestions on where the standards could apply, including employment settings. In response to these, the exploration of future work, outside the current revising of *Assessing Fitness to Drive*, was recommended.

Austroads is responsible for distributing these guidelines to medical professionals so they can discuss them with their patients.

Table 1: Summary of changes to medical criteria

Chapter	Change to criteria (yes/no)	Detail of change to criteria (tables only)
Blackout	NO	
Cardiovascular	YES	<p>Aneurysms</p> <p>The aneurysm diameter at which a conditional licence may be considered has been amended based on risk stratification for different aneurysm types and current management guidelines.</p> <p>Implantable cardioverter defibrillator</p> <p>For commercial vehicle drivers, clarity is provided that licensing is not permitted for ICDs inserted for primary prevention.</p> <p>Ventricular assist devices (VADs)</p> <p>New criteria have been developed to cover VADs. A conditional licence may be considered for a private driver requiring a LVAD subject to meeting several criteria. They may not drive if they require a combined LVAD/RVAD or an artificial heart. A VAD of any type is not acceptable for commercial vehicle driving.</p>
Diabetes	YES	<p>Diabetes treated by glucose-lowering agents other than insulin</p> <ul style="list-style-type: none"> For private vehicle drivers, the criterion 'the person experiences early warning symptoms of hypoglycaemia' has been qualified to also include 'or has a documented management plan for lack of early warning symptoms'. For commercial vehicle drivers, the criterion for a conditional licence '<i>the condition is satisfactorily controlled</i>' has been removed so that the criteria focus on the main risks to safety, which are hypoglycaemia and end-organ effects. For both private and commercial vehicle drivers, a suitable specialist is defined as an endocrinologist / consultant physician specialising in diabetes. <p>Diabetes treated by insulin</p> <ul style="list-style-type: none"> For both private and commercial drivers, the criterion for a conditional licence '<i>the condition is satisfactorily controlled</i>' has been removed so that the criteria focus on the main risks to safety, which are hypoglycaemia and end-organ effects. For private vehicle drivers, the criterion 'the person experiences early warning symptoms of hypoglycaemia' has been qualified to also include 'or has a documented management plan for lack of early warning symptoms'. For both private and commercial vehicle drivers, a suitable specialist is defined as an endocrinologist / consultant physician specialising in diabetes. <p>Definition of severe hypoglycaemic event</p> <p>For the purposes of the standard the definition of severe hypoglycaemic event encompasses hypoglycaemic seizures.</p>
Hearing	YES	<p>Wording changes provide clarity that:</p> <ul style="list-style-type: none"> audiometry should only be undertaken if clinically indicated (i.e. if hearing loss is identified on clinical assessment) if the hearing threshold is not able to be reached with hearing aids, a person can be individually assessed for suitability for a conditional licence.
Musculoskeletal	NO	
Neurological Conditions – Dementia	NO	

Chapter	Change to criteria (yes/no)	Detail of change to criteria (tables only)
Neurological Conditions – Epilepsy and seizures	YES	<p>Where EEG is required</p> <p>For commercial vehicle drivers, where EEG demonstrating no epileptiform activity is required, timeframes for the EEG are now provided. For example, in the default standard, for a conditional licence an EEG conducted in the last six months must have shown no epileptiform activity, and no other EEG conducted in the last 12 months must have shown epileptiform activity.</p> <p>Reduced periodic review requirements</p> <p>For drivers with epilepsy under treatment who have been seizure-free for an extended period (10 years for private drivers and 20 years for commercial), the driver licensing authority may consider a longer review period on the advice of an independent specialist. Ongoing review for commercial vehicle drivers will continue to be by a specialist in epilepsy.</p>
Neurological Conditions – Vestibular	YES	This chapter has been deleted. Ménière's disease is referred to in the text of 'Other neurological conditions'.
Neurological Conditions – Other	YES	<p>Stroke</p> <p>For private vehicle drivers, the requirement for a conditional licence and periodic review has been removed if the driver has recovered adequate neurological function. This reflects the non-progressive nature of stroke. The standard cross refers to management of treatable causes of stroke.</p> <p>Risk of post-traumatic epilepsy</p> <p>The head injury standard for commercial vehicle drivers now includes criteria relating to risk of post-traumatic epilepsy. A non-driving period of 12 months (without seizures) applies if they are determined to have a high risk of seizures following a head injury. There is not a similar standard for private vehicle drivers.</p> <p>Intellectual disability</p> <p>The standard for intellectual disability has been removed, including reference to IQ. This is covered in 'Other neurological conditions'.</p>
Psychiatric Conditions	NO	
Sleep Disorders	NO	
Substance Misuse	NO	
Vision and eye disorders	YES	<p>Visual fields</p> <p>The standard for private vehicle drivers has been clarified by including the additional criterion to define when a driver no longer meets the requirements for an unconditional licence:</p> <ul style="list-style-type: none"> if there is any significant field loss (scotoma) with more than four contiguous spots within 20 degrees radius from fixation. <p>Monocular vision</p> <p>For commercial vehicle drivers, the review period for drivers with a conditional licence has changed from one year to two years.</p>

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1 Introduction

The *Assessing Fitness to Drive* medical standards and guidelines are produced by the NTC and Austroads. The guidelines' primary purpose is to increase road safety in Australia by helping health professionals:

- assess the fitness of their patients to drive
- promote responsible behaviour of their patients with respect to their health and driving
- conduct medical examinations for licensing of drivers as required by licensing authorities
- provide information to inform conditional licence decisions.

The guidelines also aim to provide guidance to licensing authorities in making licensing decisions.

Assessing Fitness to Drive was last published in March 2012, with amendments made to the diabetes standard in 2013 and other minor corrections in 2014. Since the last publication there have been medical, legal and social developments that may require changes to the medical standards to ensure they are accurate and reflect current practices. As part of the review of *Assessing Fitness to Drive* the NTC asked relevant stakeholders to identify issues and provide feedback on whether the guidelines are meeting their intended purpose.

1.1 The report

This report explains the changes to *Assessing Fitness to Drive* from the last published version in 2012, incorporating changes made in response to consultations in October 2014 and November 2015. This is done through a discussion of general issues, followed by a chapter-by-chapter description of medical changes, then changes made to the appendices. The last section addresses out-of-scope issues that have been raised in the course of the review.

This report is written to be read in conjunction with *Assessing Fitness to Drive*.

1.2 Assessing Fitness to Drive

Assessing Fitness to Drive contains medical standards for the purposes of driver licensing. It aims to improve road safety in Australia by addressing the impact of drivers' health on their ability to drive. Private and commercial vehicle drivers must meet certain medical standards to ensure their health status does not increase the risk of a crash in which they or other road users may be killed or injured.

The standards comprise two main parts. Part A provides general guidance to health professionals in assessing their patients' fitness to drive. Part B sets out the medical standards for specific health areas.

Medical professionals should use these standards to provide advice to patients who drive cars, heavy vehicles, vans, motorcycles and taxis. It is the responsibility of the driver to notify their relevant driver licensing authority of any relevant medical issues; however, in some instances medical professionals will have direct contact with driver licensing authorities. These standards are also used by all driver licensing authorities in making decisions about driver licensing.

1.3 This review of *Assessing Fitness to Drive*

Since 2012, when *Assessing Fitness to Drive* was last fully reviewed, there have been medical advances, and users have gained valuable practical experience in applying the standards. The objective of this project was to review the medical standards contained in *Assessing Fitness to Drive* to ensure they reflect current medical best practice and meet the practical needs of private and commercial vehicle drivers. This will continue to improve road safety outcomes through ensuring that drivers are medically fit to drive safely.

The scope of the review included a review of the introductory content (Part A) and the medical chapters/criteria (Part B) to ensure currency and accuracy. In conducting the review the NTC took into account:

- any advances in medical knowledge
- any new issues affecting medical standards for drivers
- changes to the driving environment and policies
- stakeholder feedback on the operation of the current standards and guidelines (including any problems that have been encountered by medical professionals undertaking testing to date)
- findings of recent coronial and other inquiries
- corrections needed to any of the text where mistakes were identified, or where information was out of date (and required updating).

The project involved a review and amendment of the medical standards only; however, it did not involve new research into gaps in knowledge about medical conditions. It also did not review the administrative arrangements relating to the application of the standards. In particular this includes:

- the issue of mandatory reporting by doctors to the driver licensing authority when patients have certain conditions
- any inconsistencies between jurisdictions, particularly with implementation criteria
- any significant shifts in the application of the medical standards. Note: Industry requested that the NTC move towards a health risk management system for commercial drivers, similar to the rail safety health assessment approach. While there may be some safety benefits to this approach, it would need to be considered as a separate project.

1.4 Project methodology – overview

The review aimed to develop updated endorsed medical standards and supporting guidelines for Ministerial Council approval. This has involved the following main tasks:

- undertaking consultation with all relevant stakeholders
- contracting consultants to undertake specialist tasks and provide expert advice on medical advances
- undertaking an environmental scan to ensure all coronial or other inquiry recommendations have been identified
- seeking advice from the regulating jurisdictions and other stakeholders about the particular issues needing attention
- analysing responses and liaising with medical and other stakeholder groups, including setting up working groups, as required to secure adequate input
- seeking advice from the Office of Best Practice Regulation regarding Regulatory Impact Statement (RIS) requirements
- preparing drafts of the revised documents
- circulating drafts of the revised documents for comment
- seeking endorsement from various medical societies
- seeking endorsement from the Transport and Infrastructure Senior Officials' Committee (TISOC)
- sending final documents and approved RIS (if required) to the Transport and Infrastructure Council for approval.

Based on these requirements, the project has occurred in six phases as described below.

Phase 1: Project preparation (January 2015 – May 2015)

This phase was the sole responsibility of the NTC and involved:

- development of a high-level project plan
- development of a consultation plan
- appointment of consultants
- establishment of an Advisory Group and its terms of reference.

Phase 2: Issue identification (May 2015 – July 2015)

This phase was undertaken by the NTC and consultants. It involved:

- initial stakeholder consultation based on the consultation plan
- follow-up of all key stakeholders to confirm their intention or otherwise to contribute to the review (this is a new task specifically identified by the consultants)
- a review of relevant reports including Coronial reports
- consideration of the recommendations made by the consultants
- compilation of an issues log describing the issues, whether they are considered within the scope of the review and what processes are proposed for resolution
- development of a detailed project plan for addressing the issues raised (this included plans for workshops, developmental work and other expert consultation)
- a review of these outputs (issues log and project plan) by the Advisory Group.

Phase 3: Issues resolution and revisions to standard (July 2015 – October 2015)

This phase was undertaken by the NTC and the consultants and involved:

- liaison with experts (including medical colleges) and other stakeholders based on the issues identified and the project plan developed in phase 2
- development of a definitive issues log including proposed resolutions
- development of a discussion report describing the proposed changes and the rationale, as a basis for public consultation (in phase 5)
- development of draft revisions to *Assessing Fitness to Drive*
- RIS scoping
- review of the outputs (issues log, discussion report and draft standards) by the Advisory Group.

Phase 4: Public consultation and expert endorsement (October 2015 – January 2016)

This phase was undertaken by the NTC and the consultants and involved:

- public consultation regarding the discussion paper developed in phase 3
- response to public consultation including updating of the issues log, discussion paper and draft standard
- endorsement of the draft standard by health professional organisations
- review of these outputs (issues log, discussion paper and draft standard) by the Advisory Group with a recommendation for approval by TISOC and the Transport and Infrastructure Council.

Phase 5: Approval (April 2016 - July 2016)

This phase was undertaken by the NTC and involved:

- endorsement by TISOC
- approval by the Transport and Infrastructure Council.

Phase 6: Publication (February 2016 – October 2016)

This phase was undertaken by Austroads and the NTC and involved:

- editing
- design
- distribution
- promotion.

The NTC circulated an initial consultation paper in October 2014 requesting stakeholder feedback. The NTC received valuable feedback to the paper from a wide range of stakeholders during this period including medical and other health professionals, consumer health organisations, government transport departments, driver licensing authorities, unions, operators and peak industry bodies. To assist with interpreting complex medical information, the NTC appointed Project Health as medical consultants to the project.

The NTC and the project's medical consultants explored the feedback received via:

- further liaison with stakeholders, including specialist medical societies, to better understand the issues raised and to ensure that medical standards meet current best practice
- consideration of coroners' reports, other accident investigations and recent research
- seeking feedback from working groups on issues relating to
 - older drivers and drivers with multiple medical conditions
 - diabetes
 - hearing
 - vision
- bringing together a range of targeted stakeholders in the project Advisory Group (including medical professionals, driver licensing authorities and peak industry bodies) to obtain overarching advice for the review.

The standards have been redrafted after careful consideration was given to submissions and advice from relevant stakeholders.

1.5 Rail Medical Standards

As part of the Review of Transport Medical Standards project, the NTC is also reviewing the National Standard for Health Assessment of Rail Safety Workers (NTC 2012). Stakeholders provided the NTC with feedback on the rail standards during the initial public consultation in October 2014. The outcomes of this project are reported separately. The intent is to maintain parity of medical standards for intermodal transport.

2 Issues raised in Part A and general issues raised

2.1 Introduction

This section of the report describes the feedback and changes to Part A of the guidelines as well as general issues relating to the publication overall. Part A provides general guidance to health professionals in assessing their patients' fitness to drive.

2.2 Inputs from stakeholders

A number of stakeholders provided submissions addressing this section (refer full report). Some issues raised were deemed to be out of scope, and these are discussed in section 5.

Occupational Therapy Australia provided a comprehensive submission, representatives of which were also involved in the Older Drivers and Multiple Medical Conditions Working Group, which advised regarding the revisions for this part of the guidelines. This working group also included:

The majority of feedback on Part A related to clarity and a range of editorial matters. Stakeholders also commented on the issue of access to specialists and practical driver assessments.

2.3 Issues and recommended changes

A number of changes have been made in Part A in response to stakeholder feedback.

2.3.1 Evidence base

This section now reflects the evidence in relation to driver assessment approaches, not just crash risk. This is now included and additional references included at the end of Part A.

2.3.2 Principles of assessing fitness to drive – clinical considerations and functional capacity

Part A has been partially restructured following input from Occupational Therapy Australia, bringing the section about principles of assessing fitness to drive further to the front of Part A and highlighting the impact of medical conditions together with the person's overall functional capacity. This provides greater clarity about the process and differentiates the clinical assessment from functional assessment, which may require a practical driver assessment.

2.3.3 Drugs and driving

Some stakeholders requested more information about multiple medication use. The working group considered this and concluded that the present advice was reasonable and that no further guidance could be provided within the scope of this publication. This was because the combined impact of prescribed medications and other drugs was not straightforward and would require individual assessment.

2.3.4 Practical driver assessment and driver rehabilitation

Also based on input from Occupational Therapy Australia, a section on *Assessing and supporting functional driver capacity* has been included. It comprises the information on practical driver assessment together with a new section on driver rehabilitation, which highlights the role of rehabilitation and retraining programs to support continued driving or return to driving. Updated information for patients is also included in this section. The summary flowcharts in section 5 were also revised to incorporate practical driver assessments and driver rehabilitation.

References to simulator use for practical driver assessments have been removed on the advice of the working group; however, such devices may be useful for driver retraining and rehabilitation.

2.3.5 Roles and responsibilities

Roles and responsibilities of the driver licensing authority

Some additional information has been included to explain more fully what information the driver licensing authority will consider when making decisions about licensing.

Role of health professionals

Some stakeholders suggested that only those health professionals who were registered with the Australian Health Practitioner Regulation Agency (AHPRA) should be able to make assessments on whether their patients were fit to drive or not. It was felt that this was not necessary and that driver licensing authorities should ensure the appropriate qualifications and registrations of health professionals providing reports to them.

In the submission received from the RACP in January 2016, it was requested that there be emphasis in Part A that it is not the responsibility of health professionals to reinstate driver licences but that this rests solely with the driver licensing authority. Such emphasis has been included in section 3 and in Table 3. The process for reinstatement of licences is outlined in section 4.5 and has not been changed.

Health professional reporting to the Driver Licensing Authority

It was noted that there was lack of clarity in some parts of the guidelines about the different legislative situations regarding indemnifying of health professionals who report in good faith – in particular that the Northern Territory does not provide indemnification. This has been clarified where appropriate.

Patient–health professional relationships

Additional information has been included to provide guidance for health professionals in dealing with patients who are not truthful about their health condition, and with patients who are hostile about the advice to cease driving.

Role of the specialist

Further information has been provided in relation to telehealth in order to promote use of this option where geographic access to specialists is limited. Information from Part A is also repeated in relevant chapters to support awareness of the circumstances where specialist review requirements may be undertaken by the treating doctor (see below).

Role of driver assessors and trainers

Corresponding with the new content regarding driver rehabilitation, a new paragraph has been included regarding the roles of driver assessors and trainers.

Role of independent experts/panels

While medical panels are not available in all jurisdictions, driver licensing authorities do have access to mechanisms for independent medical advice. This assists driver licensing authorities to manage difficult or borderline fitness to drive decisions, including circumstances not covered specifically by the standards. It also enables driver licensing authorities to obtain advice about situations that warrant an approach different from that contained in the standards, such as changes to review periods. A paragraph regarding this has been included.

2.3.6 Access to specialists

An issue mentioned during the 2012 review arose from concerns regarding the difficulty in accessing medical specialist opinion to support conditional licensing decisions, particularly for commercial vehicle drivers with common conditions such as diabetes. To address these concerns:

- A provision was included to permit driver licensing authorities to allow commercial vehicle drivers to continue driving until they see a specialist if the condition, in the opinion of a general practitioner (GP), is not likely to lead to acute incapacity or loss of concentration. This reflected the current procedures of the majority of driver licensing authorities.

- The standards regarding Type 2 Diabetes (metformin) and hypertension for commercial vehicle drivers were modified to require a specialist assessment initially, and subsequent review by the treating GP.
- The standard for visual acuity was amended to enable commercial drivers to be assessed by their GP on an ongoing basis.
- Reference to 'rural and remote areas' as possible exemptions for specialist review was replaced with a broader definition to enable treating GP review (on approval of the driver licensing authority) 'where access to specialists is difficult' (section 3.4.6).
- The standard was also revised to encourage consideration of technology such as videoconferencing, as appropriate, to overcome issues of access.

In the current review, a number of stakeholders again raised the issue.

In particular, comments were received identifying that patients with diabetes are often treated by their GP with little input from a specialist. It was proposed that preventing the use of GPs in situations where availability of a specialist is limited is over restrictive and may not impact on road safety. It was also noted that such provision places over-reliance on specialists and is unnecessary if the condition is stable and there is agreement between the specialist, the GP and the licensing authority that the GP be used for this purpose.

Specific suggestions relating to diabetes included:

- expanding the range of health professionals considered acceptable to conduct reviews to include suitably skilled GPs and nurse practitioners
- more encouragement to use telehealth
- allowing for annual review by the treating doctor, and if this is not a specialist then a specialist review at least every three years
- including commercial drivers treated with low-risk oral hypoglycaemic drugs among the circumstances for allowing continued driving when there is a 'delay in seeing a specialist' (section 4.4.7) (see below).

The standard already provides flexibility for GP review where access to specialists is limited; however, this appears not to be well recognised (section 4.4.6). This information has now been reiterated in the diabetes chapter. Expanded reference to the use of telehealth has been included in Part A and the diabetes chapter.

In relation to the Northern Territory Department of Health's suggestion that commercial drivers with diabetes receiving treatment with oral therapy with low risk of hypoglycaemia should be mentioned specifically in the section 4.4.7 addressing 'delay before a specialist can be seen', it was considered that this group of patients is already covered by the second point – 'in the opinion of the general practitioner the condition is not, or the conditions are not, likely to lead to acute incapacity or loss of concentration before then assessment or assessments occur'. As outlined in the section regarding diabetes, specific inclusion of particular medications and combinations of medications will be addressed in the next review (refer [section 3.4](#) of this report).

In relation to other conditions, it was noted that other professionals and support workers may also provide valuable information to support the fitness to drive determination, for example, case workers in the case of drivers with mental illness.

It is also noted that some jurisdictions legislate that fitness to drive determinations are made by medical professionals only.

2.3.7 Licence restrictions

Reference is made to the options for licence restriction, including more information on restricted driving distances.

2.4 Implications

Changes to Part A are expected to improve the application of *Assessing Fitness to Drive* by driver licensing authorities and health professionals.

3 Part B (medical standards)

3.1 Introduction to proposed Part B changes

This section summarises the changes made to each of the medical standards in *Assessing Fitness to Drive*.

Each chapter describes the inputs received through stakeholder consultation, including formal submissions and ongoing consultation with relevant experts. The focus of this section is on inputs relating to the road standards. Some stakeholders from Australian's rail sector also commented on the road standards, which were considered as appropriate for consideration as part of this review. The resulting changes to this chapter, and any particular implications for driver licensing authorities, health professionals and drivers, are described.

It would appear that in general the standards have been well accepted.

3.2 Blackouts

3.2.1 Inputs

No specific feedback was received about this chapter.

3.2.2 Issues and recommendations

In the last review in 2012, this chapter underwent a significant review in response to stakeholder feedback including the need to:

- link the various causes of acute loss of consciousness (e.g. cardiovascular, neurological, diabetes, sleep disorder)
- ensure consistency as appropriate in the standards regarding non-driving periods for the various causes of blackout
- ensure appropriate use of terminology in relation to syncope and blackouts
- include appropriate criteria for conditional licences for cases of unexplained blackout.

Following consultation with neurology and cardiology experts, this chapter was redrafted to summarise the various causes of 'blackout' and to direct users to the relevant chapter as appropriate. A flow chart was included to aid management of cases.

The revised criteria for blackouts of undetermined origin meant that these drivers were managed the same as for those experiencing a seizure. For private vehicle drivers this meant a six-month non-driving blackout-free period (previously two months) before being eligible for a conditional licence; for commercial vehicle drivers it meant a five-year non-driving blackout-free period (previously six months) before being eligible for a conditional licence.

In the course of the current review of the standards an inconsistency in the logic of the Blackouts chapter became apparent, in that there was no advice on managing medical conditions that can cause blackouts, and that are not covered elsewhere in the standard. This has now been rectified with a separate paragraph in the text advising that the general principles be applied and an appropriate change to the flow chart. There has been no change to the criteria outlined in the table.

3.2.3 Implications for stakeholders

Driver licensing authorities

Driver licensing authorities should be provided with better advice on unusual medical causes of blackouts.

Health professionals

Clear advice is now provided to health professionals for managing unusual causes of blackouts.

Drivers

Drivers should benefit from improved management of unusual causes of blackout in regard to licensing.

3.3 Cardiovascular

3.3.1 Inputs

Submissions were received from a number of stakeholders (refer to full report). The review process involved ongoing formal consultation with the Cardiac Society of Australia and New Zealand (CSANZ) via its representative Dr Ken Hossack.

3.3.2 Issues and recommendations

This chapter underwent substantial revision in 2012. A small number of issues were raised in the current review.

Ischaemic heart disease

The Northern Territory Department of Health proposed that Fractional Flow Reserve (FFR) assessment be included as an assessment method for coronary stenosis, proposing that the method is more accurate than visual assessment by coronary angiogram. This proposal was discussed with the CSANZ. It was determined that the extra information gained from FFR was marginal and that the standard should remain unchanged. The additional proposal, that non-invasive computed tomography (CT) be included as an alternative to invasive angiogram, has been incorporated.

Aneurysms

The review of *Assessing Fitness to Drive* in 2008 introduced specific criteria for aneurysm diameter, with aneurysms greater than or equal to 5 cm in diameter considered not to meet the requirements for a conditional licence for both private and commercial drivers.

In the current review, submissions were received from stakeholders requesting reconsideration of the criteria regarding aneurysm diameter for a conditional licence. These were based on a number of concerns including that the current cut-off was generally below that at which surgery is normally indicated. This was responded to, partly based on information in the Canadian Cardiovascular Society's position paper in discussion with a representative of the CSANZ, by making a distinction based on risk stratification between degenerative and bicuspid aortic valve associated aneurysm (55 mm) compared with genetic forms of aneurysm (50 mm) for a conditional licence (Canadian Cardiovascular Society 2014).

Implantable cardioverter defibrillators (ICD)

During the previous review, several submissions were received proposing relaxation of the standard regarding ICDs, which did not allow their use in commercial vehicle drivers. In particular it was identified that ICDs may be inserted for prophylaxis rather than to treat a diagnosed arrhythmia. This was discussed at length by the expert committee at the time and it was determined that the restriction should remain because the discharge of an ICD could cause a driver to lose control of the vehicle.

Further submissions were received in the current review, again seeking relaxation of the prohibition of an ICD in a commercial vehicle driver, if inserted for prophylaxis.

The advice of the CSANZ confirmed that the restriction should remain in keeping with the recent statement from the European Heart Rhythm Association (Vijgen et al. 2009) and other international standards. Additional wording has been included to emphasise that the standard applies in cases of prophylactic ICD use.

The comments from Transport for NSW and Roads and Maritime Services regarding wording of this standard were also addressed to ensure consistency.

Ventricular assisted devices

Clinicians from Alfred Health suggested including a standard for people who have undergone therapy with a VAD for heart failure. While a small number of patients currently receive this therapy, separate criteria for VADs have been established as the devices may pose a risk to road safety due to stroke or malfunction.

Based on advice from cardiologists, a conditional licence may be considered for private drivers with left VAD, but not a combined LVAD/RVAD or an artificial heart. Commercial drivers requiring these devices are not fit to drive. Appropriate text and criteria have been added. These devices are uncommon, so there should be minimal impact on driver licensing authorities.

A practical driver assessment for these patients has not been mandated. It would be helpful if The Alfred (Melbourne) and St Vincent's Hospital Sydney, which are the two major centers involved with VADs were to keep some statistics on the numbers of patients referred for driver assessment and how many passed or failed over the next few years. This would provide data for the criteria in the next edition.

New valvular procedures

New procedures for valve repair have also been introduced including a mitral valve procedure (mitra clip) and an aortic valve procedure (TAVI). These have been included as examples, but there are no changes to the licensing criteria.

Cognitive assessment for older drivers

The CSANZ submitted that older drivers presenting with cardiac issues may also have cognitive impairment, thus a formal driving test should be undertaken. It was determined that this situation applies to a number of conditions and that this was adequately covered in Part A (*Multiple medical conditions and age-related change*).

3.3.3 Implications for stakeholders

Driver licensing authorities

The changes to the criteria for aneurysms and the new criteria for VADs will have little impact on the work of driver licensing authorities. Other changes are minor and will have no impact on implementation.

Health professionals

The changes to criteria for aneurysms will give health professionals more latitude in managing their patients. The new criteria for VADs provide clarity for health professionals managing this small group of patients. Other changes are minor and will have no impact on implementation.

Drivers

The changes to the criteria for aneurysms will probably enable a small number of patients to continue driving. The new criteria for VADs provide clarity for this small group of patients. Other changes are minor and will have no impact on implementation.

3.4 Diabetes

3.4.1 Inputs

A number of stakeholders provided feedback (refer to main report). In 2012, this chapter was extensively revised by a specialist working party convened by the Australian Diabetes Society, with representation from Diabetes Australia and the Diabetes Educators Association. A similar working group was convened by the NTC in 2015.

3.4.2 Issues and recommended changes

Hypoglycaemia

Hypoglycaemia is the main road safety risk for drivers with diabetes. In the 2012 review, this chapter was significantly revised to clarify the definition of a hypoglycaemic episode and to provide detail about the risks and management of lack of hypoglycaemic awareness for both private and commercial drivers. A minimum six-week non-driving period was also introduced for commercial vehicle drivers who had experienced a severe hypoglycaemic event.

The current review noted coronial data showing that nine out of 10 fatal crashes involving people with diabetes had involved people who had type 1 diabetes and who had been on treatment for 10 years or more. It was considered likely that reduced hypoglycaemic awareness was a factor in these crashes, although this could not be proven. Based on this, the working group advised inclusion of the Clarke questionnaire for hypoglycaemic awareness so as to encourage diagnosis, particularly in people with prolonged insulin usage or following a crash or serious hypoglycaemic event (Clarke et al. 1995).

It was noted that the criteria regarding reduced hypoglycaemia awareness did not consider mitigation strategies while driving. Wording to this effect has now been included for private vehicle drivers. The criteria remain the same in this regard for commercial vehicle drivers.

In a submission received during the second consultation period, the Diabetes Educators Association noted that sulphonylureas posed a risk of hypoglycaemia and should have similar criteria to those for insulin, or should be flagged as a risk in this regard. Some additional text is included in the standard to highlight that different medications present different risks in terms of hypoglycaemia. This may be considered further in the next review, including with reference to new medications as discussed below.

Also during the second consultation period, the Northern Territory Department of Health proposed that additional oral medications, including single and combination therapies, be considered as being at low risk of hypoglycaemia and managed as per metformin for commercial vehicle drivers. These include:

- 2PP41 (Sitagliptin, Alogliptin, Saxagliptin)
- SGLT21 (Dapagliflozin, Empagliflozin, Canagliflozin)
- GLP-1 inhibitor (Exenatide, Liragluide)
- Metformin + DPP41
- Metformin + SGLT21
- Metformin + GLP1 analogues.

It was determined that this proposal should be addressed in the next review as it would require a review of the literature and expert opinion.

Satisfactory control of diabetes

In 2012 advice was included in the standard about how 'satisfactory control' could be assessed in relation to recommending a conditional licence. This included reference to the use of HbA1c as an indicator of control. Confusion resulted from the wording, which indicated that drivers with an HbA1c > 9% should be reviewed regarding control of their diabetes. This was interpreted in some jurisdictions that drivers with HbA1c over this level should have their licence withdrawn. This resulted in several submissions to the NTC to remove this requirement, and an interim statement of clarification was issued in 2013.

Driver licensing authorities indicated that information and education of health professionals had largely resolved this issue in the lead up to this review.

Stakeholders have, however, remained unsupportive of the inclusion of reference to HbA1c as an indicator of control with respect to driving and questioned the direct relevance to crash risk. In the course of the review, the Diabetes Society, Diabetes Australia and the Diabetes Educators Association issued a joint statement in support of removing the HbA1c requirement and focusing on the main risks of hypoglycaemia and end-organ effects.

Ongoing consultation resulted in the criteria for 'satisfactory control' being removed from the licensing criteria tables so as to reflect the emphasis on the main risks of hypoglycaemia and end-organ effects. This differentiates the road safety requirements from general management requirements, for which the goal remains good control, indicated by monitoring of blood glucose control and HbA1c. It is noted that current guidelines for diabetes management recommend at least six-monthly measurement of HbA1c (Philips 2012).

Monitoring of blood glucose remains a requirement for commercial vehicle drivers for review of their conditional licence.

It is well recognised that there is a tension between the clinical benefits of tight control and the potential increased risk of hypoglycaemia, which has implications for road safety (Redelmeier, Kenshole & Ray 2009). The review identified evidence that 'tight control' may be a risk for crashes, and this is now included in reference to this aspect of the standard. This is a difficult area and will require ongoing consideration in future reviews.

In a submission received during the second consultation period, the Diabetes Educators Association identified that, in their opinion, the impact of hyperglycaemia was not adequately covered in the standard. This was considered and the current content deemed to be adequate (section 3.2.2).

Seizures

In the submission received from the Epilepsy Society of Australia and the Australian and New Zealand Association of Neurologists, the neurologists noted that seizures associated with severe hypoglycaemia were managed differently from other forms of acute symptomatic seizures in only requiring a minimum of six weeks' non-driving. This was subject to a telephone meeting between diabetes and epilepsy specialists. It was recognised that the diabetes standard requires **all** drivers who have a severe hypoglycaemic event to be assessed by a specialist and that seizures are likely to be taken into account by the specialist when advising on the need for improved diabetes management, as well as an appropriate non-driving period. Therefore, no change was made to the diabetes chapter regarding this. The definition of a 'severe hypoglycaemic event' has been amended to specifically include seizure so as to ensure clarity regarding the management approach.

Role of a specialist in reviewing commercial vehicle drivers

Several comments were received during the 2012 review regarding the logistical difficulties of requiring commercial vehicle drivers on conditional licences to be reviewed by a specialist.

This was discussed extensively by the expert committee, and the requirements were modified for commercial vehicle drivers treated with metformin (but not those treated with insulin). For those drivers treated with metformin, it was required that a specialist assesses the driver for initial consideration of a conditional licence, but thereafter, by mutual agreement, the treating GP could conduct continuing assessments. Also telehealth technologies were recommended to assist in reviewing drivers in rural Australia where access is difficult.

The matter of difficulties of specialist review for commercial vehicle drivers in country areas was again raised by several stakeholders in the current review. In particular it was argued that in many cases the driver is treated by their GP and rarely sees a specialist. Discussion indicated that telehealth was a maturing technology that should help reduce this problem.

As discussed in section 2.3 of this report, the standard already provides flexibility for GP review where access to specialists is limited; however, this appears not to be well recognised (section 4.4.6). This information has now been reiterated in the diabetes chapter. Expanded reference to the use of telehealth has been included in Part A and the diabetes chapter.

Terminology was also clarified to specify which specialists should be conducting the assessments. It was noted that endocrinologists are not necessarily specialists in diabetes thus the terminology has been changed to 'endocrinologist / consultant physician specialising in diabetes'.

Comorbidities - Visual fields

Comment was received from the Royal Australian and New Zealand College of Ophthalmology (RANZCO) that some patients with diabetes were being referred routinely for perimetry of visual fields. Wording has been revised to emphasise that such a referral should be made only when clinically indicated.

Insulin pumps

The current status of insulin pumps was discussed. It was determined that they are not sufficiently developed so as to reliably prevent hypoglycaemic events. Therefore, the current advice remains.

3.4.3 Implications for stakeholders

Driver licensing authorities

The removal of the criteria relating to satisfactory control is unlikely to have an impact on reporting to the driver licensing authority, particularly now that specific reference to HbA1c has been removed.

The use of the Clarke questionnaire has no resource implications for driver licensing authorities and may facilitate decision making.

Health professionals

The removal of the criteria relating to satisfactory control is unlikely to have an impact on patient management with respect to driving because control remains an overall target for the patient's long-term health. There is now clarity regarding the key considerations for fitness to drive being in relation to hypoglycaemia and end-organ effects.

The use of the Clarke questionnaire may be helpful to health professionals in diagnosing reduced hypoglycaemia awareness.

Drivers

The removal of the criteria relating to satisfactory control is unlikely to have an impact on patient management with respect to driving because control remains an overall target for the patient's long-term health. There is now clarity regarding the key considerations for fitness to drive being in relation to hypoglycaemia and end-organ effects.

The use of the Clarke questionnaire does not impose on patients and may be beneficial to them in general.

3.5 Hearing

3.5.1 Inputs

A number of stakeholders provided submissions (refer to full report). A working group was convened to consider these inputs as well as a literature summary of the impact of hearing loss on crash risk in commercial vehicle drivers conducted by audiologist Ross Dineen.

3.5.2 Issues and recommendations

A hearing standard currently applies only for commercial vehicle drivers. It was originally established based on the higher risks associated with driving commercial vehicles and the need for drivers to hear warning signals and changes in engine noise. The hearing threshold is currently 40 dB based on these requirements.

Evidence of crash risk

At the previous review there were suggestions to remove the standard altogether based on the lack of evidence of crash risk and considerations such as variability in ambient noise in trucks and adaptability of people with long-term hearing loss.

Stakeholders continue to suggest that there is little evidence of crash risk and that drivers with hearing loss or deafness are not fairly managed with respect to driver licensing.

The current literature was compiled by Dr Ross Dineen as an input into the working group discussion. It was noted to be equivocal regarding an association between hearing loss and safe driving. It was concluded it was justified continue to restrict the standard to commercial vehicle drivers only.

Inconsistency of application of the standard

The existing standard does provide some flexibility for persons with hearing loss or deafness to drive commercial vehicles, but this appears not to have been well understood in the community and the hearing threshold has been taken as pass or fail. The considerable concerns of Deaf Australia and Deaf Victoria regarding the pass/fail application of the hearing threshold were recognised and the need to individualise assessments was accepted.

The working party agreed to maintain the two-step assessment, but with greater clarification of the process. The standard retains the previous hearing threshold and then allows for meeting the standard by hearing aids. It goes on to detail how individualised assessments should be made to determine licensing status, and addresses circumstances where wearing of hearing aids may impair safety due to distraction caused by amplification. The procedure is equally applicable to congenital or acquired hearing loss and thus simplifies the assessment. A new flow chart should add clarity of the process for all stakeholders.

A list of specific considerations for the individualised assessment is included to guide the assessment process and driver licensing decision-making.

Periodic review

It was noted that drivers with stable conditions were being required to attend review assessments for conditional licences. The revised criteria clarify that periodic review is not required in cases where hearing loss is stable.

Terminology

Stakeholders requested terminology in this chapter be changed to encompass 'deafness' as well as 'hearing loss'. This is reflected in the title of the chapter and in the revised text.

Definition of specialist

Clarity around the appropriate specialist was requested, with stakeholders indicating that an Ear Nose and Throat (ENT) specialist or an audiologist alone may not be equipped to make the assessment in relation to driving and suitable modifications. The standard makes reference to the various inputs that may be required to assess fitness to drive including practical driver assessment.

3.5.3 Implications for stakeholders

Driver licensing authorities

This chapter provides greater clarity regarding assessment requirements, licensing requirements and periodic review, which will assist management and support consistency.

Health professionals

This chapter provides greater clarity regarding assessment requirements, licensing requirements and periodic review, which will assist management and support consistency.

Drivers

The new standard provides a fairer and more consistent process for assessing safe driving.

The misinterpretation that all commercial drivers routinely require audiometry has been clarified reducing an unnecessary cost.

3.6 Musculoskeletal

3.6.1 Inputs

This chapter underwent extensive consultation for the 2012 edition, resulting in a standard that focused on functional capacity rather than anatomical-pathological approach. This appears to have been well accepted, with no submissions received.

3.7 Neurological conditions – Dementia

3.7.1 Inputs

A number of stakeholders provided submissions (refer to full report). A working group was formed to consider the content of the publication with respect to older drivers and multiple medical conditions. The group included various medical/health experts as well as representatives from driver licensing authorities and the consumer advocacy group Alzheimer's Australia.

3.7.2 Issues and recommendations

In 2012 the section on dementia was significantly expanded and was included as a separate subsection within neurological conditions. This redevelopment features:

- information to guide the individualised assessment and management of people with dementia
- advice regarding conditional licences
- generic advice regarding practical driver assessments (it was considered beyond the scope of the publication to provide advice about the options available in each jurisdiction)
- advice regarding the importance of driver insight and the health professional's role in this regard
- links for further driver information to support transition to non-driving.

These changes appear to have been well received and there was limited input into the current review.

Definition and effects of driving

It was requested that further information about dementia, including the different types, how they progress and how it affects driving and crash risk, be provided. However, it was agreed not to include further detail about the various differences between types of dementia, rather this chapter should remain focused on functional status. It was noted that Alzheimer's Australia provides very useful resources for health professionals as well as drivers and carers and that cross-reference to these be included in the publication rather than duplicating such information.

Impact on comprehension/understanding

The RACP, in a submission made during the second round of public consultation, recommended that comprehension of written and spoken language be considered as part of the assessment. This has been included throughout the Neurological conditions chapter and in Part A.

Useability of this chapter

Alzheimer's Australia's submission stated that some GPs find the guidelines on dementia difficult to understand. To remedy this, Alzheimer's Australia developed a flow chart in conjunction with the Royal Australian College of General Practitioners (RACGP). In turn, permission has been given for this flow chart to be included with the standards.

Practical driver assessments

Revisions to Part A may assist in the understanding of the role of such assessments (refer to section 2). Access to practical driver assessments remains an issue, which is not within the scope of the review.

Metabolic encephalopathy

The Victorian Institute of Forensic Medicine's submission noted that there is no standard for severe disturbances in mental state that can arise from liver failure or cirrhosis. They note that this is often an unstable situation and can be triggered by minor changes in circumstances. It was decided that mental states arising from liver failure or cirrhosis, and other metabolic dementias, which may fluctuate, should be managed according to general principles.

3.7.3 Implications for stakeholders

Driver licensing authorities

The changes have no significant implications for driver licensing authorities.

Health professionals

The standards acknowledge that providing advice on fitness to drive for patients with dementia is complex and will usually require the input of specialists. The new flow chart may be helpful in this regard.

Drivers

The information resources have been strengthened with additional material provided by Alzheimer's Australia to assist drivers and their carers.

3.8 Neurological conditions - Epilepsy

3.8.1 Inputs

A number of stakeholders provided feedback (refer to full report). The Epilepsy Society of Australia and the Australian New Zealand Association of Neurologists provided a detailed joint submission. Extensive discussions were subsequently held with its representative, Professor Ernest Somerville.

3.8.2 Issues and recommendations

The Seizures and Epilepsy chapter was substantially revised in 2012. In addition to restructuring this chapter, the science behind the restrictions imposed was clearly identified and expressed in simple terms, noting that the use of conditional licences in epilepsy is based on the concept of an acceptable risk. Where the risk of a seizure resulting in a crash is at or below an acceptable risk, a conditional licence may be considered by the driver licensing authority. The method for determining the various standards for a conditional licence is based on a prediction of the risk that a seizure will occur at the wheel of a vehicle and result in a crash. This will vary with a number of factors including the occurrence of previous seizures, whether treatment has been recently started, the response to treatment, the time since the last seizure, the response to treatment leading up to the last seizure, the existence of a transient brain disorder causing the seizure(s), the occurrence of provoking factors, adherence to medication, occurrence exclusively during sleep and the nature of the seizures. The quality of evidence supporting the predictive utility of each of these factors is variable.

A key feature of the restructured standard was a 'default' standard, which clearly identified default non-driving seizure-free periods for private and commercial vehicle drivers who have suffered one or more seizures, as well as additional criteria for conditional licences. The default standard (12 months for private and 10 years for commercial vehicle drivers) replaced the standards for chronic and recurrent seizures, which had been variously interpreted in the past.

Following the default standard a series of variants of epilepsy were identified (including certain seizures) for which reducing the restrictions may be considered, for example, first seizure, childhood seizures, safe seizures and sleep-only seizures. In addition to reducing the restrictions for particular seizure types, there was also an allowance for 'exceptional cases' where a conditional licence may be considered for private or commercial vehicle drivers on the recommendation of the treating specialist. This enables individualisation of licensing for cases not necessarily covered by the standard and where the person is considered to be safe to drive. This hierarchy provides a logical and fair basis for decision making regarding licensing.

In addition to the circumstances for reducing restrictions that may be applicable, a series of additional management considerations were introduced, including withdrawal of antiepileptic drugs. These are presented in a separate section in the table of standards for ease of access.

These changes appear to have worked well and the refinements recommended by neurologists in the current review are directed mainly at clarification.

Flow charts

In order to improve clarity and understanding of the epilepsy section, two flow charts have been added. One gives an overview of the whole chapter showing the differences between private and commercial vehicle driver standards, as well as the interaction of driving status with several management factors such as change of dosage of medication.

The other flow chart gives guidance on introducing antiepileptic drugs for the first time. This is a complicated matter, and the flow chart should give guidance to treating health professionals and driver licensing authorities.

Non-driving seizure-free periods for commercial vehicle drivers

In 2012 the default standard of a 10-year non-driving period was introduced for commercial vehicle drivers with newly treated epilepsy, as well as those with so-called 'safe seizures', sleep-only seizures and epilepsy treated by surgery. Superficially, this represented a tightening of the criteria for commercial vehicle drivers, since the previous maximum seizure-free requirement was five years. However, for most commercial vehicle drivers with epilepsy, there was an additional requirement of three or fewer seizures in the past 10 years. This meant that only those with the milder forms of epilepsy would qualify. Furthermore, there is now an explicit standard to allow a treating specialist to request the driver licensing authority to consider a shorter non-driving period in cases where they believe the person may be safe to drive.

During the consultation phase in 2012 there was some criticism that the revised commercial driver standard is too strict compared with the previous standard. The rationale for this position is summarised in the box below.

From Review of Assessing Fitness to Drive 2012 Final Report 2011

The default standard of 10 years applies to commercial vehicle drivers with newly treated epilepsy, as well as those with so-called 'safe seizures', sleep-only seizures and epilepsy treated by surgery. Superficially, this represents a tightening of the criteria for commercial vehicle drivers, since the maximum seizure-free requirement was five years. However, for most commercial vehicle drivers with epilepsy, there was an additional requirement of three or fewer seizures in the past 10 years. This meant that only those with the milder forms of epilepsy would qualify. Furthermore, there is now an explicit standard to allow a treating specialist to request the driver licensing authority to consider a shorter non-driving period in cases where they believe the person may be safe to drive.

During the consultation phase there was some criticism that the revised commercial driver standard is too strict compared with the previous standard. It is noted that the change brings the Australian standards more into line with other standards, including those in New Zealand, the UK and the European Union.

For example, the recently revised New Zealand standards (NZ Transport Agency 2009) identify that individuals suffering from epilepsy are normally considered permanently unfit to hold a commercial licence. The NZ Transport Agency may consider granting a licence for commercial vehicle drivers where:

an individual has been seizure-free for five years without taking any anti-seizure medication
a neurologist's opinion supports the application.

In the UK, regulations require a commercial vehicle driver to remain seizure-free for 10 years since the last attack without anticonvulsant medication (Department of Transport 2010). The standard is based on risk of recurrence after the last seizure. The acceptable risk is 20% risk of recurrence for a private vehicle driver, which is set at one year, and 2% risk for a commercial driver. A single (first) seizure requires non-driving for an unspecified time to confirm it is not recurring. The UK standard also emphasises the importance of fatigue in commercial drivers as a provoking factor.

The European Union standard, *Epilepsy and Driving in Europe* (Driving Licence Committee of the European Union 2005) includes similar reasoning to the UK standard. A commercial driver with epilepsy requires a non-driving period until risk of recurrence is less than 2% and the driver is off all anti-epileptic medication. The first unprovoked seizure requires a five-year non-driving period.

The Canadian standards (Canadian Medical Association 2006) require a seizure-free period of five years.

The rationale for the UK, European Union and proposed Australian non-driving periods comes from studies such as Hauser et al. (1998). They studied 204 patients for several years after their first, second and third seizures to determine risk of recurrence. A graph included in this paper shows the risk becomes stable five to 10 years following a first seizure, but with increasingly wide confidence intervals due to small numbers.

Thus the proposed 10-year non-driving period for epilepsy is in line with most overseas jurisdictions, given there is some discretion allowed to experienced neurologists. The five-year non-driving period after a first seizure is similar to standards in Europe.

In the current review the Victorian Institute of Forensic Medicine also submitted that the standard was too restrictive, and some evidence was provided to support this position. This was extensively discussed with neurologists, and the current position (10 years seizure-free) was confirmed based on data from the Western Australian database (Brown et al. 2015).

At the Advisory Group meeting it was noted that the main difficulty with the 10-year non-driving period had been the transition from the original standard as there were drivers who were approaching the end of the five-year period who then needed to be managed to the longer non-driving period.

The Advisory Group proposed that there be some allowance to reduce the requirements for periodic review for drivers undergoing treatment for epilepsy who have not experienced seizures for a long period of time. The Epilepsy Society agreed that this was reasonable, and wording is included as part of the default standard (10 years for private vehicle drivers and 20 years for commercial vehicle drivers).

The Northern Territory Department of Health further suggested in its submission during the second consultation phase that for commercial vehicle drivers such reviews be undertaken by the treating doctor upon mutual agreement with the treating doctor and specialist. This was not agreed at this time.

Electroencephalogram (EEG) criteria

The criteria relating to EEG requirements for the default standard for commercial vehicle drivers has been clarified on the advice of neurologists to specify a clear timeframe. The criteria requires that an EEG undertaken in the last six months shows no epileptiform activity and that if there have been any EEGs in the last 12 months, they also show no epileptiform activity.

Acute symptomatic seizures

In 2012 a new standard for acute symptomatic seizures was introduced to cover people who have experienced seizures only during and because of a transient brain disorder or metabolic disturbance. The person cannot drive for six months after the last seizure (five years for commercial vehicle drivers). If seizures occur after the causative acute illness has resolved the standard for newly treated epilepsy applies.

The section on acute symptomatic seizures was subject to a special working party including Professors Somerville, Lawn and Brown (neurology) and Professor Twigg (diabetes). The discussion was prompted by an inconsistency between managing seizures associated with hypoglycaemia and other symptomatic seizures, the former requiring a minimum non-driving period of six weeks, and the latter six months. On the grounds that severe hypoglycaemic episodes in all drivers require an assessment by a specialist and therefore thorough assessment should occur before resuming driving, it was decided no change would occur in the diabetes standard in this regard. As previously described, the definition of 'severe hypoglycaemic event' has been clarified to specifically include seizures.

This led to further discussion on the difficulties of managing symptomatic seizures, acknowledging that the risk of recurrence varies greatly depending on the cause. It was determined that a sentence to this effect be added to the text. It was also determined that the words 'in exceptional circumstances' be deleted from the commercial vehicle criteria because it was confusing (Brown et al. 2015).

Seizure resulting in a motor vehicle crash

The Victorian Institute of Forensic Medicine's submission suggested a 'crash' should be defined as a collision directly attributable to loss of control of the vehicle due to a seizure but with a lesser non-driving period if the seizure did not result in a crash. This was not agreed by the consultants because an aura is not an acceptable way to manage crash risk, and the distinction between seizures resulting in crash or not is too dependent on chance.

Refusal of treatment

The Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists noted in their submission the need for clarification in the event that a patient refuses treatment. This was addressed with the inclusion of the following words: 'If a patient refuses to follow a treating doctor's recommendation to take antiepileptic medication, the patient should be assessed as not fit to drive'.

Withdrawal or dose reduction of one or more antiepileptic medications

The Victorian Institute of Forensic Medicine's submission noted an inconsistency regarding dose reduction due to side effects that could also increase the risk of a seizure and would require an adequate non-driving period. Wording was altered to account for this: 'However, if the dose is being reduced only because of current dose-related side effects *and is unlikely to result in a seizure*, driving may continue'.

Surgery

The Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists submission requested clarification of surgery in relation to epilepsy as it was unclear if this was depending on whether the surgery was primarily for epilepsy or a cause (such as meningioma) provoking epilepsy. The wording in the table was clarified as follows: 'Epilepsy treated by surgery (where the primary goal of surgery is the elimination of epilepsy)'.

Exceptional circumstances

The South Australian Department of Planning, Transport and Infrastructure's submission requested this paragraph be applied to all of section 6.2, particularly with regard to the non-driving seizure-free periods. It was considered that the present wording is adequate. However, the central issue is to obtain opinion from neurologists specialising in epilepsy, who are not readily available. This leads to the need for consideration of the creation of national medical panels of interested specialists. This is discussed in more detail in section 5.

Safe seizures and seizures only during sleep

The Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists submission identified the need for clarification regarding safe seizures to take into account patients who honestly but mistakenly believe their consciousness is not impaired. The wording in the table has been amended to identify the need for corroboration of this.

The Advisory Group also sought advice as to whether there are circumstances when commercial drivers with 'safe seizures' could be considered for a conditional licence. The Epilepsy Society of Australia advised that it would be difficult to be confident that the risk of seizures was sufficiently low to allow driving. They advised similarly for sleep-only seizures, indicating that such cases would need to be considered by an expert panel, which is currently not generally available. Thus the criteria remain unchanged.

Specialist review

During the second round of consultation the Epilepsy Society of Australia suggested that the phrase 'specialist in epilepsy' be replaced by 'neurologist' to increase accessibility by patients to specialists. The NTC notes that this change would need to be considered more broadly and has therefore not been made. It will be considered in the next review.

Discontinuing antiepileptic drug therapy that may not have been appropriate or was used prophylactically

The Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists submission identified that patients may be disadvantaged by the current wording that didn't take into account withdrawal of antiepileptic drugs in situations when such drugs were not found to be necessary. It was decided that a change would not be necessary.

Head injuries with high risk of seizures

Some head injuries carry a risk of seizures greater than the acceptable risk for commercial drivers (≥ 2 per cent). The only (indirect) reference to seizures in the head injury standard is for those drivers undergoing neurosurgery, in which case, they are referred to the seizures and epilepsy standards. Specific criteria for this situation are now included in the 'Other neurological and neurodevelopmental conditions' section (refer to section 3.10).

Patient reduces dose before telling neurologist

The Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists submission identified that the table refers to 'reduction in dosage' without specifying that this must be recommended by a doctor. The proposed wording change provides greater clarity.

Seizures associated with alcohol and drug withdrawal

The RACP, in their submission of January 2016, suggested that information regarding seizures related to alcohol or drug withdrawal be included in this chapter. These seizures are included under 'Acute symptomatic seizures'; however, additional text has been included to guide readers to this information. It is also included in the Substance misuse chapter.

3.8.3 Implications for stakeholders

Driver licensing authorities

The criteria have been made clearer, which should improve administrative efficiency.

Health professionals

The clarification in the text and through inclusion of flow charts should provide better guidance to health professionals.

Drivers

The changes will have a limited impact on drivers. The revised wording may provide fairer decision making for drivers with seizures.

3.9 Neurological conditions - Vestibular disorders

3.9.1 Inputs

No submissions were received regarding this chapter. This chapter was reviewed in conjunction with Professor Ernest Somerville of the Australian New Zealand Association of Neurologists.

3.9.2 Issues and recommendations

Consultation identified that acute vertigo is of minor importance in road safety. There is usually a prodrome in Ménière's disease, which enables cessation of driving. Benign paroxysmal positional vertigo (BPPV) usually affects vertical movement of the head, which is minimal when driving. A literature search found little evidence that vertigo contributes to crashes. Therefore, the section was deleted and an advisory-only paragraph was added to 'Other neurological and neurodevelopmental conditions'.

3.9.3 Implications for stakeholders

Driver licensing authorities

There may be fewer notifications to the driver licensing authority.

Health professionals

The removal of specific standards should facilitate management and reduce the need to advise reporting to the driver licensing authority.

Drivers

The requirements are less onerous for drivers.

3.10 Neurology conditions – Other neurological conditions

3.10.1 Inputs

Input was received via a combined submission from the Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists. Ongoing consultation with Professor Ernest Somerville assisted with the development of this section.

3.10.2 Issues and recommendations

In 2012 this chapter was extensively revised to better recognise the distinctions between various neurological conditions and therefore their appropriate management regarding driving. The standards also express requirements for neurological functioning in a consistent way, identifying: visuospatial perception, insight, judgement, attention, reaction time, memory, sensation, muscle power, coordination and vision (including visual fields).

Stroke

In 2012 several submissions requested clarification regarding the management of stroke. The section was revised with clear non-driving periods (where there is no long-term neurological impairment) specified for private (four weeks) and commercial vehicle drivers (three months). Previously, a non-driving period of one month was specified in the text for private vehicle drivers but no non-driving period for commercial vehicle drivers.

In the current review the submission from the Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists recommended that the requirement for private vehicle drivers to have a conditional licence with annual review subsequent to a stroke was unnecessary. It was contended that the main risks from stroke relate to neurological (hemiplegia, visual fields) or neuropsychological effects. Once recovery has occurred the stroke will be non-progressive and hence, dependent on meeting the necessary neurological and neuropsychological criteria, the person may resume driving without follow-up. The risk of recurrence is low (Mohan et al. 2011), although preventable causes such as high blood pressure and atrial fibrillation need to be identified and managed. The standard has been amended accordingly. The commercial standard remains unchanged.

The RACP, in their submission made during the second round of public consultation, recommended that comprehension of written and spoken language be considered as part of the assessment. This has been included throughout the Neurological conditions chapter and in Part A. The RACP also recommended wording changes to emphasise the non-driving period. These changes have been made accordingly and clarify the circumstances under which patients who have suffered a stroke may return to driving.

Head injury

In 2012 several comments were received regarding the immediate management of people with head injuries and their return to driving. While short-term management is outside of the scope of the review, which is concerned with the long-term effects of head injury such as neurological or cognitive deficits, advice was provided in the standard regarding a seizure occurring after a head injury because it may indicate a risk of developing epilepsy.

In their submission for the current review, the Epilepsy Society of Australia / Australian and New Zealand Association of Neurologists noted the standards do not adequately address the risk of post-traumatic epilepsy associated with head injuries. The risk was considered to be sufficiently high to lead to modification of the standard regarding commercial vehicle drivers but not private vehicle drivers (John et al. 1998).

Seizure risk after intracranial surgery

In their submission of January 2016, the RACP requested that consideration be given to the non-driving period identified post surgery and that shorter periods might be appropriate in some cases. This will be considered in the next review.

Intellectual disability

The Advisory Group proposed that the criteria for intellectual disability be deleted and included under other neurological conditions'. It was noted that people with intellectual and other disabilities are given the opportunity to undertake the usual testing for driver licensing, including knowledge testing, which is sufficient to determine their suitability to hold a licence.

3.10.3 Implications for stakeholders

Driver licensing authorities

Relaxing the requirements for periodic review of drivers after a stroke will ease the administrative burden for driver licensing authorities.

Health professionals

Relaxing the requirements for periodic review of drivers after a stroke will ease the burden for reassessing these patients for fitness to drive.

Greater clarity regarding the management of risk of post-traumatic epilepsy will support management of these patients.

Drivers

Relaxing the requirements for periodic review of drivers after a stroke will be less onerous for patients. The introduction of criteria relating to the risk of post-traumatic epilepsy may have implications, particularly for commercial vehicle drivers, who will not be able to drive for 12 months if assessed to be at risk after a significant head injury.

3.11 Psychiatric conditions

3.11.1 Inputs and issues

A limited number of stakeholders provided submissions; no submissions were received from health professional stakeholders (refer to the full report).

3.11.2 Issues and recommendations

Impacts of psychiatric conditions and medication on driving ability and driver assessment

In 2012 feedback identified the need for further guidance regarding the specific impacts of various psychiatric conditions on driving ability and the assessment of such conditions for fitness to drive. This was added to the revised chapter, including the impacts of schizophrenia, bipolar disorder, depression, anxiety disorders and personality disorders, as well as the impacts of medication. General guidance for assessment was also provided, including a description of how the mental state examination can be used to assess the various functions required for safe driving. The importance of assessing the person's insight is also highlighted, including reporting to the driver licensing authority if there is a risk to public safety. This chapter also emphasises that psychiatric disorders are highly variable in terms of the symptoms and severity.

In their submission to the current review, the South Australian Department of Planning, Transport and Infrastructure sought more detailed guidance on management of specific conditions such as bipolar disorder. However, the guidelines are orientated towards assessment of the functional impact of disorders on a person's cognitive and behavioural status and particularly the person's insight, rather than specific disorders. Therefore no changes were made.

Tourette's syndrome

The Tourette Syndrome Association of Australia's submission advised that Tourette's syndrome is classified as a neurological condition. It has therefore been moved to the neurological conditions chapter.

Post-traumatic stress disorder (PTSD)

It was recognised that PTSD may arise from many causes, including motor car crashes. Advice has been added regarding return to driving in such circumstances and assistance with rehabilitation.

3.11.3 Implications for stakeholders

Driver licensing authorities

There were no significant changes to this chapter.

Health professionals

There were no significant changes to this chapter.

Drivers

There were no significant changes to this chapter.

Given the seriousness of these conditions and the potential impact on driving ability, psychiatric conditions should be addressed in greater detail in future reviews of *Assessing Fitness to Drive*.

3.12 Sleep disorders

3.12.1 Inputs

A number of stakeholders provided submissions (refer to full report).

The review of the sleep disorders chapter involved extensive consultation with Dr Mark Howard, a representative from the Australasian Sleep Association. The Australasian Sleep Association advised that the guidelines on sleep disorders are generally appropriate and are working reasonably well in practice. They noted that there were no major advances in medical knowledge requiring significant alteration to the guidelines.

3.12.2 Issues and recommendations

Refusal of treatment

Situations have arisen in which a person has been found to have positive polysomnography but denies symptoms of daytime sleepiness. This has been addressed with the option of a Meaningful Wakefulness Time test, although this is not intended to be routine, and is adequately explained in the inserted text. This has been successful in the rail industry.

Driving limitations

Minor wording changes have been suggested to provide more specific examples of self-imposed driving limitations for people whose sleep disorder is being investigated. A further minor wording change relates to kits for home-based assessment.

Chronic Fatigue syndrome

The South Australian Department of Planning, Transport and Infrastructure's submission proposed to include a standard for Chronic Fatigue. It was noted that the functional impact of chronic fatigue and similar conditions was variable and was best addressed through consideration of general principles including a functional assessment.

Sleep apnoea

The consultants note that there is good evidence that sleep apnoea can be readily identified using objective biological markers of body mass index (BMI), diabetes and high blood pressure as shown in the rail industry.

Use of the Epworth Sleepiness Scale (ESS) questionnaire, which is not reliably answered by some drivers, was a significant factor in relevant coronial findings (Zanuso case). It has been suggested by stakeholders that the standards include a requirement for sleep apnoea indicator assessments for commercial vehicle drivers. This is discussed more in section 5. The wording has been amended to emphasise the limitations of subjective assessments such as ESS.

3.12.3 Implications for stakeholders

Driver licensing authorities

There are no changes to the licensing criteria for sleep disorders.

Health professionals

There are no changes to the licensing criteria for sleep disorders. Advice is provided in managing the uncommon situation of a person with positive polysomnography who denies symptoms.

Drivers

There are no changes to the licensing criteria for sleep disorders.

3.13 Substance misuse

3.13.1 Inputs and issues

A small number of stakeholders provided submissions (refer to full report).

3.13.2 Issues and recommendations

Evidence base

In their submission of January 2016, the RACP Chapter of Addiction Medicine provided a literature update in relation to the impact of alcohol and drugs on road safety, which has been incorporated.

Terminology

The Chapter of Addiction Medicine suggested a number of terminology changes to align the publication with current terminology in the field:

- 'alcohol and other drugs use disorder' preferred
- 'opioid misuse disorder' is preferable to 'opioid dependence'
- 'dependence' is preferable to 'addiction'
- 'misuse' is preferable to 'use'.

It was also proposed that there may be cases where a period longer than three months needs to be documented before abstinence can be established, and biochemical monitoring including random supervised testing may be warranted. It was considered that the wording already existing in the standard ('at least three months') adequately portrays this.

Assessment

In their submission of January 2016, the RACP suggested more detail be included regarding assessment of patients with drug or alcohol dependence. Further input will be sought from The Chapter of Addiction Medicine as part of the next review.

Alcohol interlocks

Roads and Maritime Services, New South Wales requested referencing to alcohol interlocks. This material may be helpful to health professionals in managing patients with alcohol dependency. This was agreed and an appendix has been included covering alcohol interlock legislation by jurisdiction (Appendix 5).

Biological monitoring

In their submission of January 2016, the RACP Chapter of Addiction Medicine proposed making biological testing mandatory as a condition of resumption of driving. This will be considered for future reviews.

3.13.3 Implications for stakeholders

Driver licensing authorities

There are no significant changes that impact on driver licensing authorities.

Health professionals

There are no significant changes that impact on health professionals.

Drivers

There are no significant changes that impact on drivers.

3.14 Vision and eye disorders

3.14.1 Inputs

A number of stakeholders provided submissions (refer to full report).

A working group representing the Royal Australian and New Zealand College of Ophthalmologists (RANZCO), Optometry Australia and orthoptists at the University of NSW was convened to consider the various inputs and to make recommendations for chapter amendments.

3.14.2 Issues and recommendations

The key feedback received and action taken as a result of that feedback is summarised below. Where relevant, reference is made to the changes resulting from the 2012 review to provide context.

Visual acuity

In 2012 feedback identified that the acuity standard can be complex to understand by those without medical training, and creates confusion for driver licensing authorities. The section on assessing visual acuity was therefore clarified with the addition of a flow chart. More specific guidance is provided in the table regarding the factors to be taken into account when considering a conditional licence as well as the limits of acuity at which a licence will not be considered.

Visual fields

A major issue was to clarify the standard regarding a visual field defect, particularly arising from a legal case in NSW (*Penny v. RMS*). This led to several amendments.

- The normal visual field for an eye was defined, based on a standard textbook, as: 60 degrees nasally, 100 degrees temporally, 75 degrees inferiorly and 60 degrees superiorly. The 'horizontal extent' includes nasal and temporal fields.
- Assessment methods: Submissions were received regarding the acceptability of devices to measure visual fields. It was decided to retain Esterman as the gold standard but to permit devices that could demonstrate they are the equivalent. It was considered normal practice for professionals to satisfy themselves of the adequacy of their equipment; it is not a matter for driver licensing authorities or the standard.
- The horizontal extent of the visual field was defined as being measured on the Esterman from the last seen to the next seen point.
- Further advice on defining unacceptable central field loss was provided in the text and a note made in the margin of the tables to refer to the appropriate page.
- Several points to assist in clinical assessment of visual field loss were also added to the text.
- The risk of crash in drivers with hemianopia or quadrantanopia was confirmed to be increased, justifying the restriction. The definition of a hemianopic or quadrantanopic scotoma was improved to meet the concerns expressed in the *Penny v. RMS* decision with additional wording to the criteria including: 'if there is any significant visual field loss (scotoma) with more than four contiguous spots within a 20 degree radius from fixation' (Owsley, Wood & McGwin 2015).

It was noted that some patients with diabetes are being routinely referred for perimetry. A sentence has been added to the diabetes chapter to highlight that this is not necessary, and that perimetry is only required if clinically indicated.

Monocularity (one-eye)

Up until the last review, monocularity had only been obliquely dealt with in *Assessing Fitness to Drive* 2003 by requiring an adequate visual field. However, the Royal Australian and New Zealand College of Ophthalmology (RANZCO) recommended a stricter approach, particularly for commercial vehicle drivers, partly due to loss of field and partly due to loss of depth perception. This resulted in an addition to the standard specifically covering monocular drivers.

- A conditional licence may be granted to private vehicle drivers if the visual field is at least 110 degrees and the visual acuity is satisfactory in the remaining eye. The health of the remaining eye must be reviewed two-yearly for private drivers.

- Monocular commercial vehicle drivers do not meet the criteria. They need to be assessed on an individual basis by an ophthalmologist/optometrist. Where a conditional licence is granted the health of the remaining eye must be assessed annually.

Licensing authorities and industry stakeholders reported some difficulties with the introduction of this change. Monocular vision in commercial vehicle drivers was raised as a concern by the South Australian driver licensing authority. It was determined that a restrictive approach should largely continue, but in limited circumstances a conditional license may be considered. This was responded to by providing a more detailed checklist of factors that need to be considered in licensing monocular drivers (and visual field defects in general), and also a provision for exceptional cases.

Diplopia

An inconsistency was identified between diplopia and sudden loss of vision, which requires a non-driving period of three months. A similar non-driving requirement was added for diplopia managed with an occluder. In their submission of January 2016, the RACP identified that evidence as to the impact of an occluder on depth of vision was inconclusive and should be considered further in the next review.

Telescopic lenses

The working party was concerned regarding the effect of these devices on peripheral vision. Therefore the previous position was made more stringent and the text changed to be more succinct.

Information to support the use of these devices was included in a subsequent submission received during the second round of public consultation, and will be considered in the next review.

It is noted that use of this technology is currently rare in Australia.

Role of practical driver assessment

During the previous review, a comment was received regarding the need to allow for practical driving assessment. The advising experts considered on-road assessments to be inappropriate because they are unsafe and not effective in assessing ability to see emergency situations such as a child running onto the road between parked cars. It was not considered appropriate to grant a conditional licence based on evidence of safe driving practice (no accidents).

The advisory committee discussed this matter, determining that the proper application of the standards was sufficient and that practical tests would not be recognised. There were concerns regarding the safety of personnel conducting practical tests with visually impaired drivers.

3.14.3 Implications for stakeholders

Driver licensing authorities

The criteria remain largely unchanged. However, clarity has been given to criteria regarding visual fields and clinical aspects, which should enable better interpretation of health providers' reports. Clarity of standards regarding scotoma should reduce conflict with drivers.

Health professionals

Extensive material has been provided on assessment of visual fields and interpreting the results, which should help better guide health professionals.

Drivers

Improved definitions of loss of visual fields should improve decision making by health professionals and hence lessen uncertainty and unfairness to drivers regarding licensing.

3.14.4 Other issues

As noted in the previous review, stakeholders are in favour of establishing a medical panel in all states (similar to that in Victoria) to deal with the many subtle problems of vision that cannot be catered for in the standards (refer to *Out-of-scope issues*).

RANZCO has reaffirmed its willingness to cooperate on establishing these panels with driver licensing authorities on a state-by-state basis.

4 Part C (Appendices)

As part of the review the NTC sought feedback on any corrections needed to information in the appendices of *Assessing Fitness to Drive*.

Driver licensing authorities provided some of the necessary information in submissions. Additionally the NTC approached the jurisdictions to provide any further corrections or comments on Part C.

There were minimal changes made to the structure of Part C, with the main changes related to updating details to ensure correctness. A new section on legislation relating to alcohol interlocks has been included.

5 Out-of-scope issues

5.1 Introduction to out-of-scope issues

While the focus of the current review was clearly defined in the issues paper and call for submissions, stakeholders also commented on a range of matters outside the project scope but still relevant to *Assessing Fitness to Drive* and its use. Those issues are discussed in this section.

5.2 General issues

5.2.1 Mandatory reporting

An issue routinely raised during reviews of *Assessing Fitness to Drive* is that of mandatory requirements for doctors to report patients (in South Australia and the Northern Territory only) to a driver licensing authority if they believe they are unfit to hold a driver licence. This mandatory reporting has an impact on the doctor–patient relationship. Doctors have concerns that their patients may elect not to disclose symptoms related to an illness for fear of being placed on a conditional licence, or losing their licence completely. Medical practitioners understand they also have a duty to the broader community, in terms of advising their patients when they are not fit to drive a motor vehicle, but also to take appropriate action with the authorities if required.

Legal requirements for mandatory reporting fall under state and territory legislation, and the relevant governments must decide if they are to review any requirements for mandatory reporting.

Other legal issues, such as indemnification of medical professionals and the application and legal status of the standards in various jurisdictions, are also a matter for the relevant state or territory government. Part A omitted a reference to indemnification for health professionals in the Northern Territory. This omission is now rectified.

5.2.2 Consistency of implementation of the guidelines

It is the NTC's goal to create national consistency of medical standards for driver licensing across Australia. However, there is a common lack of consistency in the administration and interpretation of the guidelines. Various editorial changes were made to the standard to support consistency.

In order to promote consistent implementation, it was suggested that jurisdictions publish and review their own guidelines for implementation as well as conducting a regular review process to ensure currency.

The development of such a document would need to be addressed by each individual state and territory. However, consistency in implementation is a matter that could be addressed through the Austroads Registration and Licensing Task Force.

5.2.3 Public passenger and heavy vehicle accreditation

A comment was made regarding the inconsistency relating to the more stringent requirements for passenger vehicle accreditation, which are regulated and managed through agencies such as The Taxi Services Commission, and Uber.

This comment highlights the need for commercial fitness-for-duty standards to support consistency across heavy vehicle and public passenger areas.

5.2.4 Accessibility and publication of *Assessing Fitness to Drive*

Various suggestions were offered to promote greater awareness of *Assessing Fitness to Drive* and facilitate useability and application of the standards. These included:

- undertaking wider promotion
- ensuring the publication is more accessible, including via prescribing software
- ensuring the publication is searchable
- providing the publication as an interactive online tool
- enabling electronic reporting by health professionals to road agencies about fitness to drive.

It was also suggested that the NTC establish a user-friendly and accessible online clearing house for the latest evidence and research to inform consumers and assessors as well as licensing jurisdictions, occupational therapist driver assessors and law enforcement agencies.

Education and resources are provided through a range of other avenues (such as driver licensing authorities, educator groups and the RACGP). Driver licensing authorities are encouraged to develop appropriate communication and education as part of their local implementation. As for previous editions, some communication and promotion is facilitated through Austroads at the time of publication.

Austroads will publish *Assessing Fitness to Drive* once the new edition is approved by ministers in May 2016. Online accessibility and format is also being considered as part of an ongoing solution through VicRoads.

5.2.5 Fitness for duty of commercial vehicle drivers

It has been noted during previous reviews that *Assessing Fitness to Drive*, being a standard for licensing purposes, does not address fitness-for-duty issues. This resulted in recommendations to develop a stand-alone fitness-for-duty standard for commercial vehicle drivers. The NTC has been working with industry to develop and test a detailed project proposal for the consideration of ministers as part of a future NTC work program.

In the current review stakeholders from the road transport industry suggested the commercial medical standards in *Assessing Fitness to Drive* be split into two categories, with a new Category 1 commercial standard for heavy vehicle transport workers to include more stringent sleep apnoea screening, diabetes screening and cardiovascular screening for drivers where it is clinically relevant. The intent of this would be to develop more consistent medical guidelines for road transport to be used as a risk management approach to commercial vehicle drivers' health.

Similarly, it was requested that a fitness standard for driving a wheelchair-accessible taxi be developed due to the increased physical requirements associated with managing the wheelchair aspect.

5.2.6 Role of Commonwealth Rehabilitation Services

It was suggested by a stakeholder that due to federal and state government funding changes, further clarity be provided around the future use and role of Commonwealth Rehabilitation Services.

Given the changing nature of such programs, it was agreed that generic information would be included in Part A about potential sources of funding for driver rehabilitation and return to work.

5.2.7 Access to occupational therapist driver assessments

It was noted that there is an extreme shortage of occupational therapist driver assessors in some jurisdictions.

This is an ongoing issue that needs to be addressed by individual state and territory departments and professional bodies where relevant.

5.2.8 Forms

Inconsistencies with content and application of forms are ongoing issues, which have also been noted in previous reviews of *Assessing Fitness to Drive*. Concerns were expressed about the practicality of forms for medical practitioners and their patients, and that in at least one jurisdiction this has resulted in unnecessary specialist referrals that are inconsistent with the recommendations within the guidelines.

The Australian Trucking Association raised an issue with the forms that were developed to support conduct of health assessments for fitness for duty of commercial vehicle drivers at the end of the last review, noting that they should also be updated as part of this review process.

The intention of those forms, which are separate from *Assessing Fitness to Drive*, are intended to facilitate assessments required for schemes such as TruckSafe and National Heavy Vehicle Accreditation Scheme Fatigue Management Accreditation, as distinct from driver licensing.

The forms are currently available on the Austroads website and can be reproduced or modified as required. On the website it is stated that these forms are **not** to be used for driver licensing assessments.

Given that these forms are separate from *Assessing Fitness to Drive* and are not to be used for driver licensing purposes, they are out of scope for this review. However, the forms should be reviewed and updated to ensure accuracy. On an ongoing basis, these forms should be managed by the National Heavy Vehicle Regulator, or included as part of a Fitness-for-Duty Standard for commercial vehicle drivers.

The NTC has been working with industry to develop a business case for the proposed forward work program for the consideration of ministers.

State and territory driver licensing authorities prepare and manage forms associated with driver licensing. Input from medical professionals could assist in the development of the forms so they are more useful from an assessment perspective, rather than just to report to driver licensing authorities. There have been previous attempts made to put forms into medical software. This could be addressed through the Austroads Registration and Licensing Task Force.

5.2.9 Medical panels

The role of medical panels in supporting licensing decision making was raised during previous reviews and was again raised in this review as a means of supporting fairness and consistency, particularly for difficult or borderline cases. Some key specialist groups, such as neurology and ophthalmology, have expressed interest in providing expertise for such panels. Such a system operates successfully in Victoria.

5.2.10 Future reviews

As a maintenance review, the current review drew on a limited amount of new research into the impact of medical conditions on driving and only as directed by stakeholder input. For future reviews, consideration could be given to inputs such as:

- literature searches
- a review of overseas standards
- the coronial database and other legal decisions
- working parties with various stakeholders.

The inclusion of driver licensing authorities and consumer representatives was found to be helpful in this review.

5.3 Medical issues

5.3.1 Cardiovascular conditions

Cardiac risk screening for commercial vehicle drivers

In line with the proposal for categorising commercial vehicle drivers (refer section 5.2.5), it was requested that a cardiovascular risk assessment be included in the standard for certain commercial vehicle drivers (the proposed Category 1) so as to align with the rail fitness-for-duty standard. Drivers found to be at high risk would be referred for further tests and management as required, including a conditional licence and more frequent review if cardiovascular disease is identified.

The introduction of categories, and a risk assessment approach for commercial vehicle drivers, would require a RIS, which is outside of the scope of this review. In addition, it is difficult to combine the 'licensing' requirements with 'fitness for duty'. As outlined above (fitness for duty for commercial vehicle drivers), this would be best addressed under a separate 'fitness-for-duty' document, which would need to be undertaken as a separate project.

5.3.2 Diabetes

Licence renewal costs for conditional licences

Comments were made regarding the requirement for drivers with chronic conditions such as diabetes mellitus to pay for a new licence at the time of their periodic assessments (yearly or two-yearly), compared with five-yearly or more for drivers without conditional licences.

Licensing renewal periods and fees are decided and enforced by driver licensing authorities, who have noted that drivers with conditional licences are still able to purchase five-yearly or longer licences where appropriate.

HbA1c for monitoring diabetes control

A driver commented that HbA1c should not be used in isolation to assess satisfactory management (not control) of diabetes. It was suggested that an annual cycle of care or management plan be used as the encompassing criteria for assessing fitness to drive.

Assessing Fitness to Drive does not provide guidance about general management of medical conditions such as diabetes but is designed principally to guide and support assessments made by health professionals regarding fitness to drive for licensing purposes. Reference to HbA1c is not made with the intention of it being an isolated assessment but as a potential indicator of satisfactory control, along with other indicators. See also section 3.4.

Diabetes risk assessment for commercial vehicle drivers

Similar to the request to introduce a cardiovascular risk score for commercial vehicle drivers, it was also proposed to include the diabetes risk screen AUSDRISK for certain commercial drivers. Depending on the score, some drivers may be subject to further testing for diabetes.

As above, the introduction of categories, and a risk assessment approach for commercial vehicle drivers, would require a RIS, which is outside of the scope of this review.

This may be best addressed under a separate 'fitness-for-duty' approach, which would need to be developed as a separate project.

5.3.3 Neurology – Epilepsy

Enforcement of driving restrictions

Some restrictions are non-enforceable by police such as no driving within one hour of waking (as opposed to no driving before 11 am). While it is understood that compliance with the standards depend heavily on the cooperation of patients, this cannot be guaranteed, but can be encouraged through penalties and education.

Penalties and enforcement of licensing conditions lies with police and road authorities and cannot be addressed in the *Assessing Fitness to Drive* guidelines.

5.3.4 Psychiatric conditions

Impact of stress on driving

In a submission, the impact of stress (whether work-related or personal) on driver safety was identified as a road safety risk, especially in the case of commercial vehicle drivers. It was proposed that the review of *Assessing Fitness to Drive* may allow the opportunity to provide some guidance and to raise awareness of this issue more broadly for government and industry cooperation.

Worker health management is an organisational issue and falls more to occupational health and safety laws and requirements than driver licensing.

Organisations, especially those involved in the heavy vehicle industry, should have their own policies regarding management of worker health and safety.

Management of worker mental health is an extremely important issue and should be considered under the proposed 'fitness-for-duty' document, which would need to be a stand-alone project.

5.3.5 Sleep disorders

Screening for commercial vehicle drivers

As with the proposal for risk screening for commercial vehicle drivers for cardiovascular conditions and diabetes, this also extended to include objective screening tests for sleep apnoea in commercial vehicle drivers (proposed Category 1), such as those used in the rail medical standards. Further investigations would then be undertaken for those drivers found to be at risk.

As above, the introduction of categories and a risk assessment approach for commercial vehicle drivers would require a RIS, which is outside of the scope of this review.

This would be best addressed under a separate 'fitness-for-duty' document, which would need to be undertaken as a separate project.

6 Appendices

6.1 Advisory Group members

Ms Louise Bilato	Northern Territory Road Transport Association
Dr Marilyn Di Stefano	VicRoads
Ms Mary Drewett	Roads and Maritime Services, New South Wales
Ms Elaena Gardner	Austroads
Ms Fiona Landgren	Project Health (consultant to the NTC)
Dr Bruce Hocking	Australasian Faculty of Occupational and Environmental Medicine / Project Health (consultant to the NTC)
Dr Ken Mackey	Australian College of Rural and Remote Medicine
Mr Bill McKinley	Australian Trucking Association
Associate Professor Morris Odell	Victorian Institute of Forensic Medicine
Ms Jean Phillips	Department of Planning, Transport and Infrastructure, South Australia
Ms Cheryl Richey	Austroads
Ms Irene Siu	Transport for NSW
Dr Nigel Stocks	Royal Australian College of General Practitioners
Ms Trudy Struber	Queensland Transport and Main Roads
Ms Belinda Irwin	National Transport Commission
Mr Paul Davies	National Transport Commission (Chair)

7 References

- Alzheimer's Australia 2015, *Dementia and driving*, viewed October 2015, <<https://fightdementia.org.au/support-and-services/health-professionals/dementia-and-driving>>.
- Austroads 2012, *Assessing Fitness to Drive for commercial and private vehicle drivers*, Sydney.
- Brown JWL, Lawn ND, Lee J, Dunne JW 2015, 'When is it safe to return to driving following first-ever seizure', *Journal of Neurology, Neurosurgery and Psychiatry*, vol. 86, pp. 60–64.
- Canadian Cardiovascular Society 2014, 'Position statement on the management of thoracic aortic disease', *Canadian Journal of Cardiology*, vol. 30, pp. 577–589.
- Centre for Accident Research & Road Safety – Queensland 2015, *State of the road: medications & driving fact sheet*, viewed October 2015, <http://www.carsq.qut.edu.au/publications/corporate/medication_and_driving_fs.pdf>.
- Clarke W, Cox DJ, Gonder-Frederick LA, Julian D, Schlundt D, Polonsky W 1995, 'Reduced awareness of hypoglycemia in adults with IDDM', *Diabetes Care*, vol. 18(4): pp. 517–522.
- John F, Annegers, W, Hauser A, Coan, SP, Rocca WA 1998, 'A population-based study of seizures after traumatic brain injuries', *New England Journal of Medicine*, vol. 338: pp. 20–24.
- Langford J, Koppel S 2006, *The case for an against mandatory age-based assessment of older drivers*, Transportation Research Part F9, pp. 353-363. Monash University, Accident Research Centre, Victoria.
- Mallick J, Johnston J, Goren N, Kennedy V 2007, *Drugs and Driving in Australia: A survey of community attitudes, experiences and understanding*, Australian Drug Foundation, Melbourne.
- Mohan KM, Wolfe CD, Rudd AG, Heuschmann PU, Kolominsky-Rabas PL, Grieve AP 2011, 'Risk and cumulative risk of stroke recurrence: a systematic review and meta-analysis', *Stroke*, vol. 42, no. 5, pp.1489–1494.
- National Sleep Foundation 2015, *NSF's key messages/talking points*, viewed October 2015, <<http://sleepfoundation.org/sites/default/files/Drowsy%20Driving-Key%20Messages%20and%20Talking%20Points.pdf>>.
- Owsley C, Wood JM, McGwin G 2015, 'A roadmap for interpreting the literature on vision and driving', *Survey of Ophthalmology*, vol. 60, pp. 250–262.
- Philips PJ 2012, 'HbA1c and monitoring glycaemia' *Australian Family Physician*, vol. 41, pp. 37–40.
- Redelmeier DA, Kenshole AB, Ray JG 2009, 'Motor vehicle crashes in diabetic patients with tight glycemic control: a population-based case control analysis', *PLoS Med*, vol. 6, no. 12, e1000192.
- Transport Accident Commission 2015, *Older drivers*, viewed October 2015, <<http://www.tac.vic.gov.au/road-safety/safe-driving/older-drivers>>.
- VicRoads 2010, *The Victorian older drivers' handbook*, 7th edition, viewed October 2015, <<https://www.vicroads.vic.gov.au/safety-and-road-rules/driver-safety/older-drivers/older-drivers-handbook>>.
- Vijgen J, Botto G, Camm J, Hoijer CJ, Jung W, Le Heuzey JY, Lubinski A, Norekvål TM, Santomauro M, Schalij M, Schmid JP, Vardas P 2009, 'Consensus statement of the European Heart Rhythm Association: updated recommendations for driving by patients with implantable cardioverter defibrillators', *Europace*, vol. 11, no. 8, pp. 1097–1107.



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