National Standard for Health Assessment of Rail Safety Workers

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Report outline

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Contact	National Transport Commission Level 3/600 Bourke Street Melbourne VIC 3000 Ph: (03) 9236 5000 Email: **enquiries@ntc.gov.au** **www.ntc.gov.au**

Foreword

Foreword to be included by Carolyn Walsh, NTC Chair

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Rail Health Advisory Group

Name	Organisation
Catherine Dowe	Office of the National Rail Safety Regulator
Karin Cooke	Department of Transport and Main Roads (Qld)
Dan O'Neil	Transport for NSW
Paul Salter	Department of Transport (Vic)
Guy Riley	Department of Infrastructure, Planning and Logistics
Kyle Waters	Public Transport Authority WA
Bill Reid	Department for Infrastructure and Transport (SA)
Dr Dinesh Arya	ACT Health Directorate
Tegan Pearce	Department of State Growth (Tas)
Alicia Tong	Department of Infrastructure, Transport, Regional Development and Communications
Simon Bourke	Australasian Railways Association
Louisa Hackenberg	Queensland Rail
Patrick Maney	KiwiRail
Graham Jackson	Rail Industry Standards Board
Mitchell McDonald	Australian Rail Track Corporation
Peter Anderson	Association of Tourist & Heritage Rail Australia Inc
Anissa Thompson	Rio Tinto
Shayne Kummerfeld	Rail Bus & Tram Union
Jacquie Lyons	Metro (Vic)
Dr Chris Walls	Occupational Medicine specialist (NZ)
Dr Simon Ryder-Lewis	Occupational Medicine specialist (NZ)
Dr Maria Mazaheri	Chief Medical Officer, Aurizon
Dr Armand Casolin	Chief Medical Officer, Sydney Trains
Dr Keith Adam	Chief Medical Officer and Senior Occupational Physician
Dr Stuart Turnbull	Chief Medical Officer, Metro (Vic)
Josie Thomas	National Transport Commission
Jeremy Wolter	National Transport Commission
Fiona Landgren	Project Health

Chief Medical Officers Council

Name	Role
Dr Chris Walls	Occupational Medicine specialist (NZ)
Dr Simon Ryder-Lewis	Occupational Medicine specialist (NZ)
Dr Maria Mazaheri	Chief Medical Officer, Aurizon
Dr Armand Casolin	Chief Medical Officer, Sydney Trains
Dr Keith Adam	Chief Medical Officer and Senior Occupational Physician
Dr Stuart Turnbull	Chief Medical Officer, Metro (Vic)
Dr Tim Drew	Jobfit Rail Specialist
Dr June Sim	Occupational Physician
Dr David Jones	Specialist Occupational Physician
Dr Graeme Edwards	Chief Medical Officer
Dr Robert McCartney	Director, Resile / Occupational and Environmental Physician
Dr Joel Silbert	Occupational Physician
Dr Craig White	Consultant Occupational Physician
Dr Thang Vuong	Director, Corporate Health Group
Dr Mark Spearpoint	General Practitioner
Graham Jackson	General Manager - Strategy and Stakeholder Relations RISSB

Working groups

Diabetes working group

Name	Organisation
Dr Armand Casolin	Chief Medical Officer, Sydney Trains
Dr Maria Mazaheri	Chief Medical Officer, Aurizon
A/Prof Sof Andrikopoulos	Diabetes Society
Jane Holmes-Walker	Diabetes Society

Sleep disorders working group

Name	Organisation
Dr Armand Casolin	Chief Medical Officer, Sydney Trains
Dr Maria Mazaheri	Chief Medical Officer, Aurizon
Dr June Sim	Occupational Physician
Dr Tim Drew	Jobfit Rail Specialist
Dr Graeme Edwards	Chief Medical Officer, ARTC
Dr Linda Schachter	Australasian Sleep Association

Neurodevelopmental disorders working group

Name	Organisation
Dr Armand Casolin	Chief Medical Officer, Sydney Trains
Dr Graeme Edwards	Chief Medical Officer, ARTC
Dr June Sim	Occupational Physician
Dr Nicola Gates	APS College of Clinical Neuropsychologists

Hearing working group

Name	Organisation
Dr Armand Casolin	Chief Medical Officer, Sydney Trains
Dr June Sim	Occupational Physician
Dr Barbra Timmer	Audiology Australia

Cardiovascular conditions working group

Name	Organisation
Dr Armand Casolin	Chief Medical Officer, Sydney Trains
Dr Maria Mazaheri	Chief Medical Officer, Aurizon
Dr June Sim	Occupational Physician

Acronyms and abbreviations

ADHD	attention deficit hyperactivity disorder
ASD	autism spectrum disorder
ATTP	Around The Track Personnel
BMI	body mass index
dB	decibel
EAP	employee assistance program
ECG	electrocardiograph
ENT	ears, nose and throat
ESS	Epworth Sleepiness Scale
HDL	high-density lipoprotein
MUARC	Monash University Accident Research Centre
MWT	Maintenance of Wakefulness Test
NTC	National Transport Commission
OHS	occupational health and safety
ONRSR	Office of the National Rail Safety Regulator
OSA	Obstructive sleep apnoea
RISSB	Rail Industry Safety and Standards Board
RSNL	Rail Safety National Law
SMS	Safety Management System
WHO	World Health Organisation

Glossary

TERM OR TITLE	DESCRIPTION
Around the Track Personnel	Workers who perform Non-Safety Critical tasks on or near the track.
Authorised Health Professional	Health professional who has been selected by a rail transport operator, on the basis of their compliance with the specified selection criteria, to perform rail safety worker health assessments (refer to Section 2.5 Appointing and authorising health professionals). Generally, a Chief Medical Officer will be considered an Authorised Health Professional.
Chief Medical Officer	A Chief Medical Officer is employed by a rail transport operator to advise them about a range of issues related to the health of rail safety workers and health risks associated with their rail operations.
Chief Medical Officers Council	The Chief Medical Officers Council is a governance group that is auspiced by RISSB for the rail industry and is responsible for providing medical expertise and oversight in the implementation of the Standard.
Civil infrastructure	Track formation and drainage (but excluding track) fixed structures beside, over or under the track, including supports for overhead electric traction equipment, and supports for signalling and telecommunications equipment, but excluding that equipment.
Competence	Possession of skills and knowledge, and the application of them to the standards required in employment.
Contractor	Person who is engaged by, or on behalf of, anybody that has been accredited under state or territory rail safety legislation to provide goods or services to such a body.
Controlled environment	Rail workplace where a risk assessment has been performed to identify hazards and implement controls to ensure that any person working in or transiting the area is not placed at risk from moving rolling stock trains so far as is reasonably practicable.
Electric traction infrastructure	Equipment and systems associated with the supply and reticulation of electricity for traction purposes but excluding elements of civil infrastructure supporting or otherwise associated with the equipment or systems.
Employer	Rail transport operator that engages a rail safety worker, either as a paid worker or volunteer. The use of the term ‘employer,’ ‘operator’ and ‘rail transport operator’ have the same meaning throughout the Standard.
Ensure	Take all reasonable action insofar as controllable factors will allow.
Fit for Duty Subject to Review	This assessment category indicates that the worker does not meet the criteria for Fit for Duty Unconditional.

TERM OR TITLE	DESCRIPTION
Fit for Duty Unconditional	This assessment category indicates that the worker meets all the criteria for Fit for Duty Unconditional in the Standard and is to be reviewed in line with the normal Periodic Health Assessment schedule.
Health Questionnaire	The self-administered questionnaire is a screening tool to help identify conditions that might affect the performance of Safety Critical Work.
Mainline	Line normally used for running trains through and between locations.
May	Existence of an option.
On or near the track	3 metres from the edge of the closest rail when measured horizontally, and at any level above or below the rail when measured vertically, unless in a position of safety.
Periodic Health Assessment	Periodic Health Assessments are conducted to identify health conditions that may affect safe performance of rail safety work. They should be conducted for Category 1, 2 and 3 rail safety workers according to defined frequencies in the Standard.
Permanently Unfit for Duty	This assessment category indicates that the worker has a permanent and/or progressive condition that is predicted to render them unfit for their current rail safety duties for 12 months or more.
Pre-placement Health Assessment	Pre-placement Health Assessments occur to determine a rail safety worker's initial fitness to perform the full range of inherent job requirements and job demands of the rail safety position that they applied for.
Rail infrastructure manager	Person who is a rail infrastructure manager under the law specifically regulating rail safety in the place where the rail infrastructure is managed.
Rail network	System of railways, whether interconnected or not.
Rail safety worker	Worker undertaking rail safety work as defined in state or territory rail safety legislation and for this Standard includes an employee, contractor, subcontractor, or volunteer performing work on a railway or tramway system either: ▪ as a driver, second person, trainee driver, guard, conductor, supervisor, observer, or authorised officer; or ▪ as a signal operator, shunter or person who performs other work relating to the movement of trains or trams; or ▪ in repairs, maintenance, or upgrade of railway infrastructure, including for rolling stock or associated works or equipment; or ▪ in construction or as a look out for construction or maintenance; or ▪ any other work that may be included by regulation.

TERM OR TITLE	DESCRIPTION
Record for Health Professional	This form guides the health professional through the assessment process and provides a standard clinical record.
Request and Report Form	The Request and Report Form is the key means of communication between the rail transport operator and the Authorised Health Professional.
Safety Critical Work/er	These are workers whose action or inaction may lead directly to a serious incident affecting the public or the rail network. Their vigilance and attentiveness to their job is crucial, and they are therefore the focus of this Standard. These workers require health assessments to ensure ill-health does not affect their vigilance and attentiveness to the job, and therefore the safety of the public or the rail network. Safety Critical Workers' tasks are distinguished from tasks that affect only individual worker safety.
Temporarily Unfit for Duty	This assessment category indicates that the worker does not meet the criteria for Fit for Duty Unconditional or Fit for Duty Subject to Review and cannot presently perform current rail safety duties.
the Standard	National Standard for Health Assessment of Rail Safety Workers
Track Safety Health Assessment	The Track Safety Health Assessment for ATTP (Category 3) focuses on medical conditions that could impact on a worker's ability to detect and react quickly to an oncoming train or warnings.
Triggered Health Assessment	Triggered Health Assessments are additional health assessments undertaken earlier than the scheduled Periodic Health Assessment, because of concerns about an individual's health, or because there is a requirement for more frequent monitoring of a medical condition.

1 Introduction

This section of the Standard explains the:

- Purpose, status and scope of the Health Assessment Standard for Rail Safety Workers.
- Legislative basis of the Standard and the interfaces with other legislative requirements related to the health and safety of rail safety workers.
- Implementation of the Standard in relation to other interfacing programs for the management of rail safety worker health.
- Process of development and maintenance.
- Broad roles and responsibilities for Standard implementation.
- Structure of the Standard document.

1.1 Purpose and status

Under the Rail Safety National Law (RSNL), rail transport operators are required to manage the risks posed by the ill-health of rail safety workers. This National Standard for Health Assessment of Rail Safety Workers (the Standard) provides practical guidance for rail transport operators to meet these obligations. This responsibility is an essential part of a rail transport operator's rail safety management system[1] which aims to minimise risks and protect the safety of:

- the public
- rail safety workers and their fellow workers
- the environment.

This Standard applies to all rail transport operators and to all rail safety workers nationally. This Standard recognises health assessments as one aspect of an integrated management system aimed at achieving a high level of safety throughout the rail network (Figure 1).

The Standard aims to support consistency in health management across the rail transport industry in Australia and is therefore called up in Regulations under the RSNL. To this end, the RSNL National Regulations prescribe that rail transport operators must develop and implement a health and fitness program for their rail safety workers that complies with the Standard.

As part of a rail transport operator's accreditation that shows risks to the safety of railway operations are appropriately managed, operators must demonstrate to the Office of the National Rail Safety Regulator (ONRSR) that the health and fitness of rail safety workers is sufficiently managed.

This Standard takes effect on [date to be inserted]. On it taking effect it will replace the National Standard for Health Assessment of Rail Safety Workers, June 2017.

[1] Office of the National Rail Safety Regulator. *Preparation of a rail safety management system*, **https://www.onrsr.com.au/safety-essentials/safety-management-systems** [Accessed 26 July 2022].

Figure 1. The context of health assessments for rail safety workers

1.2 Scope of this Standard

This Standard relates to health assessments and procedures for monitoring and managing the health and fitness of workers in relation to their ability to perform rail safety duties.

Although this Standard does address individual worker safety on and about the track to some extent, it does not cover other occupational health and safety / work health and safety matters such as occupational exposure. It also does not cover fatigue management per se, however the implementation of the Standard interfaces closely with fatigue management programs through the identification and management of medical conditions that could affect sleep.

The Standard also does not include specific requirements for drug and alcohol screening, which is addressed through local requirements in each state or territory, or by individual rail transport operator policy. Such matters should be managed in conjunction with this Standard and are not superseded by it. The rail transport operator must address such issues and integrate them with the health assessments as appropriate (refer also to Section 1.3 Legislative basis and interfaces).

The focus of this Standard is on risk management and achieving desirable outcomes, rather than on prescribed processes. The provisions are described broadly so rail transport operators can implement systems and processes appropriate to their needs.

Should an agreement be reached at an enterprise level, this Standard does not preclude more comprehensive or frequent health assessments. However, those who do implement different methods should consider issues such as anti-discrimination laws and industry interfaces.

1.3 Legislative basis and interfaces

1.3.1 Rail Safety National Law[2] and Regulations[3]

In December 2009, the **Council of Australian Governments** (COAG) agreed to establish a national rail safety regulator and develop a RSNL that ONRSR would administer. The National Transport Commission (NTC) developed the RSNL, based on the National Transport Commission Model Rail Safety Bill (2007) and Model Regulations (Model Law). The RSNL also addressed areas where states and territories had varied from the model bill and regulations. Following extensive consultation with industry, governments and unions, a final version of the National Law was submitted to and approved by transport ministers in November 2011. The RSNL was first enacted in South Australia in 2012. All other states and territories have either adopted the RSNL or passed legislation that models it.

Health and fitness management program

Under Part 5 Rail safety workers, Regulation 26, Health and fitness management program, a rail transport operator must have, and must implement, a health and fitness program for rail safety workers that complies with this Standard, as amended from time to time.

Drug and alcohol management program

Regulation 28 outlines a number of requirements, including that rail transport operators must identify workers who have alcohol or other drug related problems, and where appropriate, refer those workers to be assessed and treated, counselled or rehabilitated. The requirements include establishment of a drug and alcohol management program, implementation of systems and procedures for the provision of information and education to rail safety workers in respect of drugs and alcohol, as well as a drug and alcohol testing regime to be undertaken by rail transport operators.

Fatigue management

RSNL and Regulations also address the requirements in relation to fatigue management for rail safety workers. Safety Management Systems must address fatigue management through compliance with section 116 of the RSNL and regulation 29 of the National Regulations.

1.3.2 Occupational health and safety / work health and safety legislation

Occupational health and safety / work health and safety legislation imposes a general duty of care on the rail transport operator and rail safety worker regarding risk management and integrates closely with the rail safety legislation and this Standard.

The scope of this Standard is confined to the assessment and management of health and fitness to perform rail safety work. Although this Standard does address individual worker safety on and around the track, it does not cover other occupational health and safety / work health and safety matters such as occupational exposure. Additional examinations required under occupational health and safety / work health and safety legislation (e.g., occupational exposure to noise, lead or asbestos, or poor ergonomic design) are not covered by this Standard, but should be addressed by the rail transport operator as required.

[2] *Rail Safety National Law 2012* **https://www.onrsr.com.au/publications/rail-safety-national-law-related-legislation**.

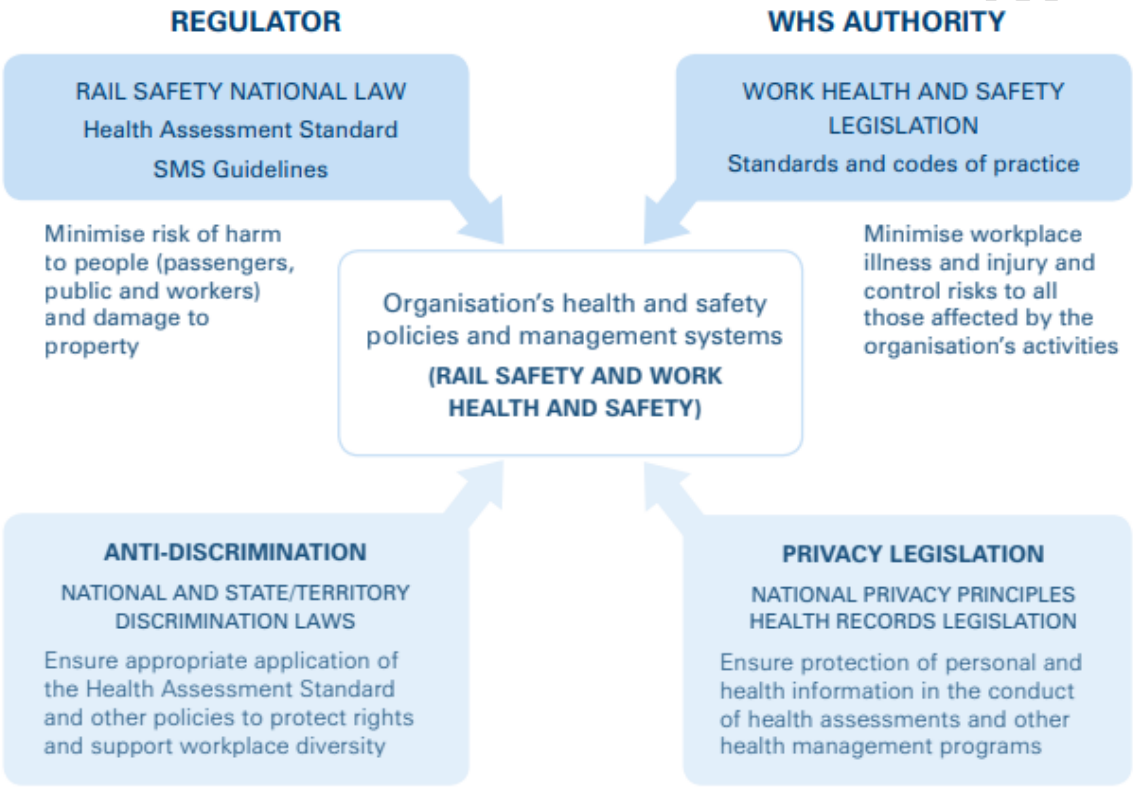
[3] *Rail Safety National Law National Regulations 2012*, as of 1 July 2022 **https://legislation.nsw.gov.au/view/html/inforce/current/sl-2012-0617** [accessed 26 July 2022].

Case study

Noise exposure

Rail safety workers' hearing ability is assessed in accordance with this Standard to ensure they can work safely. In addition, state or territory regulations for hearing protection usually require audiometric testing at defined times for workers required to wear hearing protection due to exposure to certain noise levels. Thus, a 30-year-old worker may only require rail safety worker health assessments every five years but must have audiometric testing every two years if noise exposure warrants it. Rail transport operators must identify such overlaps and manage the process to ensure effective monitoring and management of risks and compliance with relevant legislation.

Figure 2. Legislative context



1.3.3 Anti-discrimination legislation

Anti-discrimination legislation has been considered in the development of the Standard and should be considered by rail transport operators[4] when implementing health assessment systems:

- Health assessments must focus on inherent job requirements, not peripheral requirements. The risk assessment must guide the health assessment process (refer to Section 2.2.1 Risk categorisation of rail safety workers).

[4] Australian Human Rights Commission. *A quick guide to Australian discrimination laws*. 2014 **https://www.humanrights.gov.au/sites/default/files/GPGB_quick_guide_to_discrimination_laws_0.pdf.**

- In certain situations, it may be necessary to demonstrate that the condition prevents the worker from performing the required rail safety tasks—for example, through a functional or practical assessment of neurological conditions or musculoskeletal capacity (refer to Section 3.6.1 Functional and practical assessments).
- Any required tests should be valid, and the criteria must have a clear rationale—that is, the test must be a good predictor of serious illness regarding rail safety.
- If a standard must be met at entry, it should be maintained during employment and examined for periodically (refer to Section 2.2.6 Timing and frequency of health assessments).
- If a criterion is not met, a rail transport operator should consider reasonable adjustments to the workplace to accommodate the disability.

While public safety considerations take precedence over anti-discrimination, this does not exempt a rail transport operator from considering discrimination issues.

1.3.4 Privacy legislation

When administering the rail safety worker health assessments, rail transport operators must ensure compliance with the Australian Privacy principles[5] contained in privacy legislation and ensure that health records are managed and stored in line with the relevant health records legislation[6]. Provisions for these specific requirements are described in Section 2.6.2 Privacy laws.

1.4 Program interfaces

Implementation of the Standard will likely interface with a range of health and human resources policies and programs as shown in Figure 3. Interfaces should be identified and managed to optimise the effectiveness of the health assessment program, ensure consistent management of rail safety workers with respect to their health and reduce duplication.

1.4.1 Drug and alcohol management programs

The health assessments for rail safety workers should interface with drug and alcohol management programs, the requirements for which are defined under the RSNL as described above.

Drug and alcohol screening conducted by rail transport operators in accordance with their drug and alcohol management program is a separate process to the health assessments conducted under this Standard, although Pre-placement and/or Change of Risk Category Health Assessments may include a drug screen, depending on the state/territory's legislation and the rail transport operator's requirements. Periodic Health Assessments should not routinely include a drug or alcohol screen.

The health assessment system provides a minimum mechanism and standard for managing workers who are identified with potential drug or alcohol problems but does not preclude rail transport operators from having additional testing or return to work requirements.

In addition, in cases where a Safety Critical Worker is diagnosed with chronic drug or alcohol issues, a more intensive individualised testing regime may be implemented as part of their management program upon return to work (refer to Section 4.10 Substance misuse and dependence).

[5] Office of the Australian Information Commissioner, *Australian Privacy Principles*, **https://www.oaic.gov.au/privacy-law/privacy-act/australian-privacy-principles** [accessed 3 August 2022].

[6] Office of the Australian Information Commission, *State and Territory privacy*, **https://www.oaic.gov.au/privacy/privacy-in-your-state** [accessed 3 August 2022].

Figure 3. Examples of interfacing health and human resources programs

1.4.2 Fatigue management

As described above, the RSNL requires that rail transport operators prepare and implement fatigue risk management programs for rail safety workers.[7]

Health assessments have a role in identifying health problems as a possible cause of fatigue. The opinion of an Authorised Health Professional may be sought in appropriate cases by a triggered referral (refer to Section 2.2.6 Timing and frequency of health assessments).

Periodic Health Assessments may detect sleep apnoea syndrome which manifests itself as a tendency to doze and lose concentration at inappropriate times. Assessments may also support sleep hygiene education (refer to Section 4.9 Sleep disorders).

1.4.3 Injury management, return to work and rehabilitation

Injury management, return to work and rehabilitation also interface with rail safety worker health assessments and this Standard. For example, a worker on an injury management program should undergo a health assessment (Triggered Health Assessment) based on this Standard to determine fitness for their current rail safety duties or fitness for proposed alternative duties, including work in a different risk category.

[7] National Rail Safety Regulator Guideline. *Safety Management System April 2019. (SMS) Guideline Section 6.29 Fatigue Risk Management* **https://nraspricms01.blob.core.windows.net/assets/documents/Guideline/Safety-Management-System-Guideline-updated-1-July-2022.pdf** [accessed 26 July 2022].

The rail transport operator should ensure relevant providers of rehabilitation/return to work programs are aware of the Standard and assess rail safety workers accordingly for recommending fitness to return to work.

Case study

Post-traumatic stress and return to work

A workplace injury is covered by accident compensation legislation. This means train drivers involved in traumatic events, such as suicides, receive counselling and monitoring as per organisational procedures. Depending on the time a driver is away from the workplace, they may undergo a health assessment to ensure they are fit to return to rail safety work (a Triggered Health Assessment). Rail transport operators must have defined programs for the return to work of rail safety workers.

1.4.4 Critical incident management

Most rail transport operators have counselling and support programs available for workers involved in fatalities, rail incidents and near misses. Periodic Health Assessments provide a further opportunity to review worker responses to critical incidents and to assess general psychological wellbeing. Informing the Authorised Health Professional of traumatic incident history, supports the effectiveness of the health assessment process and critical incident management overall. A Triggered Health Assessment may also be initiated by the rail transport operator as part of the return-to-work process or if there are ongoing concerns regarding a worker's response to or recovery from a critical incident (refer to Section 4.8 Psychiatric conditions).

1.4.5 Psychometric testing

Some rail transport operators have introduced psychometric testing for recruitment, and for promotion or change of grade purposes. The health assessments described in this Standard do not include psychometric testing but may interface with these recruitment and selection tools where they exist. Psychometric testing may also be useful for assessing head injuries, as well as psychiatric and neurological conditions (refer to Sections 4.4, 4.5, 4.6 Neurological conditions, Section 4.7 Neurodevelopmental disorders and Section 4.8 Psychiatric conditions).

1.4.6 Employee assistance programs

Personal and work-related issues can affect work performance. Employee Assistance Programs (EAP) help workers and their families resolve these issues via independent and confidential professional counselling. There is potential for referral to an EAP by the Authorised Health Professional (refer to Section 4.8 Psychiatric conditions).

1.4.7 Health surveillance

As previously noted, health screening undertaken as part of this Standard may interface with other health surveillance requirements, such as hearing testing for those working in environments that require hearing protection or surveillance required for other workplace exposures.

1.4.8 Health promotion

Rail safety worker health and fitness may be supported by health promotion programs, which may complement the health assessment program. For example, an Authorised Health Professional may refer a worker with increased risk factors for cardiac disease, such as smoking, to a health promotion program to assist risk factor modification.

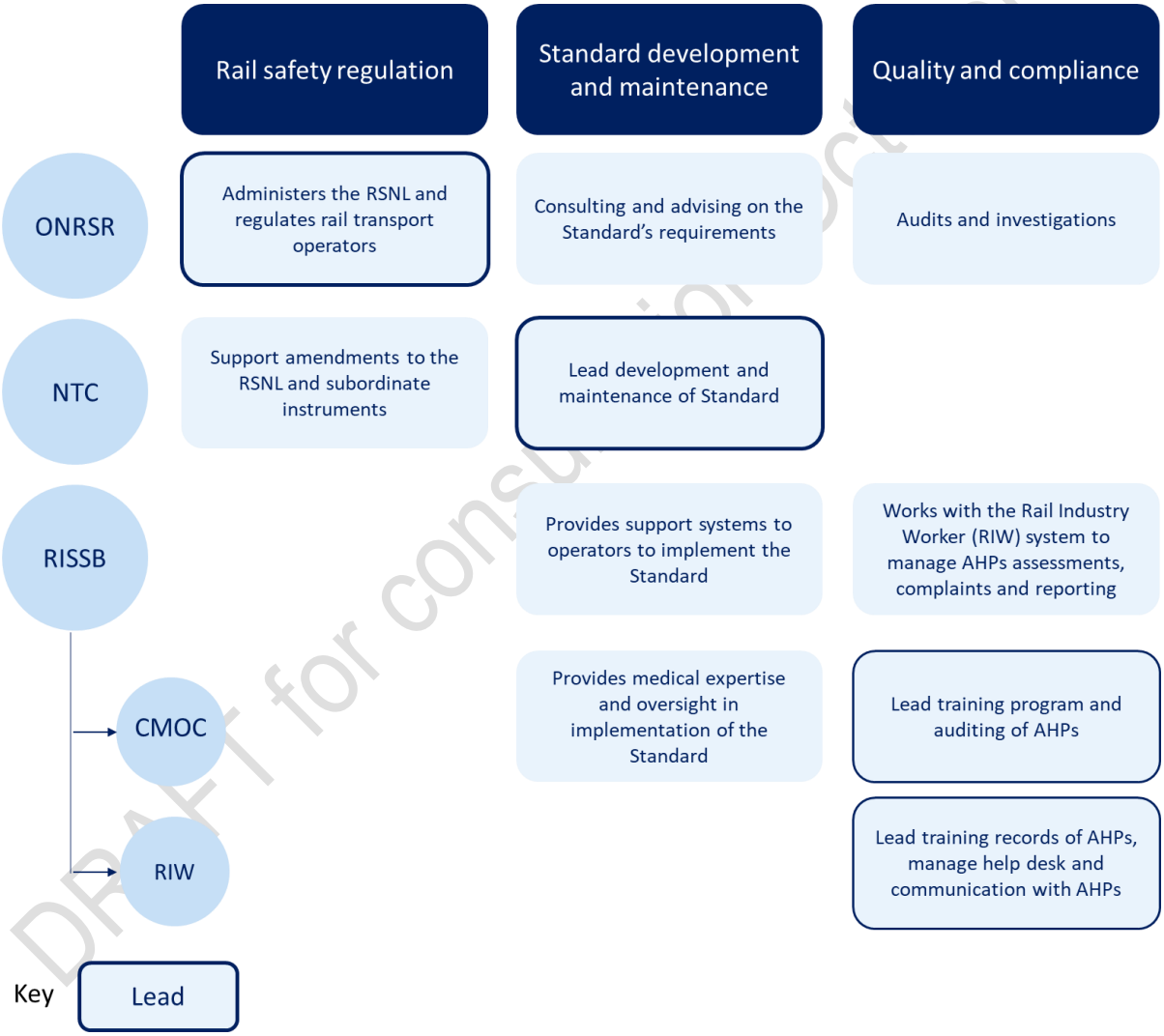
1.5 Roles, responsibilities and relationships

This section describes the roles, responsibilities and relationships of organisations and individuals involved in the implementation of the Standard. It includes high-level responsibilities of organisations involved in Standard development and implementation, as well as the operational responsibilities and interactions between rail transport operators, health professionals and rail safety workers.

1.5.1 High-level implementation responsibilities

The NTC, ONRSR and Rail Industry Safety and Standards Board (RISSB) have responsibilities in overseeing Standard implementation and contributing to Standard development. These responsibilities are described below and reflected in Figure 4.

Figure 4. High-level implementation responsibilities



National Transport Commission

The NTC has an ongoing responsibility to ensure the Standard continues to meet its objectives in supporting rail transport operators to manage the risks posed by ill-health of workers, as part of their overall management of rail network safety. The NTC reviews the Standard periodically to determine whether there have been medical, legal or social developments that need to be

considered in applying the Standard. The NTC consults with stakeholders to review and implement changes to the Standard.

The NTC also plays a role in recommending and supporting changes to the RSNL and subordinate instruments.

Office of the National Rail Safety Regulator

ONRSR administers the RSNL and regulates rail transport operators across Australia. This includes monitoring compliance with the health and fitness requirements of the law through audits and investigations. ONRSR also responds to enquiries on the use of the Standard.

In terms of the Standard, ONRSR is responsible for:

- monitoring compliance with the Standard through audits and investigations
- consulting and advising on the Standard's requirements.

ONRSR is consulted as a key stakeholder during the review of the Standard.

Rail Industry Safety and Standards Board (RISSB) and the Rail Industry Worker system

As part of their role in supporting the rail industry to improve safety, reduce costs and increase productivity, RISSB provides support systems to rail transport operators to implement the Standard.

The Rail Industry Worker (RIW) Program was established by the Australasian Railway Association to provide a national competency and safety management system for rail workers. It provides a single electronic record of worker health, education and competencies as they work across projects, move between employers and operate on different state networks. The RIW Program helps the rail industry meet its fitness for duty and competency obligations under RSNL.

RISSB works with the RIW system to manage Authorised Health Professionals and serve as a repository and central management system for health assessment notifications and reporting. The system also manages complaints associated with implementation of the health assessments.

In relation to managing the Authorised Health Professionals, RISSB is responsible for:

- Maintaining the database of Authorised Health Professionals.
- Managing the training of Authorised Health Professionals, including maintaining the list of approved trainers, publishing the training calendar and maintaining training materials.
- Auditing the conduct of health assessments by Authorised Health Professionals.
- Communicating with Authorised Health Professionals about their authorisation, training requirements and requirements of the Standard more broadly.

RISSB is consulted as a key stakeholder during reviews of the Standard.

Chief Medical Officers Council

The Chief Medical Officers Council is a governance group that is auspiced by RISSB for the rail industry and is responsible for providing medical expertise and oversight in the implementation of the Standard.

The Chief Medical Officers Council contributes to quality assurance of the medical aspects of Standard implementation, by assuring the development and content of the training program for Authorised Health Professionals and addressing quality issues and performance concerns arising from audits.

1.5.2 Responsibilities for the conduct and management of health assessments

At an operational level, the effective implementation of health assessments for rail safety workers relies on a clear understanding of the various responsibilities, as well as effective communication among the individuals or groups involved. Such communication, including management of health records, should be consistent with the provisions of relevant privacy and health records legislation as discussed in the previous section and in Section 2.6.2 Privacy laws.

Rail transport operators

Rail transport operators have a legal responsibility to ensure the health and fitness of workers is monitored and does not jeopardise rail safety, and that systems and processes to achieve this are developed in accordance with this Standard. This document uses the term 'rail transport operator' and 'operator' which also encompasses employers and sub-contractors and applies the same meaning.

Under the Standard, the rail transport operator is responsible for overseeing all aspects of Standard implementation within their organisation including:

- Assessing the risks associated with ill-health for rail safety workers and implementing appropriate health assessments to address these risks.
- Ensuring rail safety workers meet the health assessment requirements and only work if they have a current fit for duty determination.
- Appointing suitably qualified and experienced health professionals to conduct the health assessments and ensuring they are informed about relevant operational requirements and policies.
- Implementing appropriate quality control measures to ensure consistency and quality of health assessments and appropriate management of worker's health.
- Managing worker health information in line with privacy legislation.
- Accommodating the limitations on the worker's capabilities due to health issues through strategies such as job modifications, alternative duties or supervision, as appropriate (refer to Section 1.3.3 Anti-discrimination legislation).
- Communicating effectively with rail safety workers about their obligations and duties including their obligation to report health concerns that may affect their ability to perform their work safely.

If employing contractors, the rail transport operator is required to inform them of their obligations to ensure appropriate health assessment systems are in place for their workers.

Contractors

A rail transport operator is responsible for managing its contractors and ensuring that contractors meet the health assessment requirements under the Standard and are certified fit for their current rail safety duties according to the Standard.

Rail safety workers

Rail safety workers have a duty of care to themselves and others. They should understand the implications of their role on the safety of the public and network, and the importance of their health and fitness to rail safety.

Rail safety workers may only conduct their rail safety duties if they have a current certificate indicating their fitness for those duties. They must attend health assessments for the purpose of establishing their fitness for duty on the direction of their employing rail transport operator or contracting organisation. At the assessment, they must also provide complete and accurate

information concerning their medical history to the assessing Authorised Health Professional, as well as comply with any review requirements of a health assessment.

In between scheduled health assessments, rail safety workers have a responsibility to notify the rail transport operator of any temporary or ongoing health condition or change in health status that is likely to affect their ability to perform their work safely. They may also request referral to an Authorised Health Professional if they are concerned about their ability to perform their work safely due to health reasons (refer to Section 2.2.6 Timing and frequency of health assessments).

If the rail safety worker works for more than one rail transport operator, they have a responsibility to ensure each operator is advised about conditions that may affect their safe working ability.

Health professionals

Authorised Health Professionals

Only health professionals appointed and authorised by the rail transport operator may conduct health assessments for rail safety workers (refer to Section 2.5 Appointing and authorising health professionals).

Under the Standard, Authorised Health Professionals are responsible for:

- Conducting health assessments in line with the procedures and fitness for duty criteria contained in this Standard (refer to Parts 3, 4 and 5). Note that, while screening tests such as visual acuity, audiometry, BMI, blood pressure etc, may be conducted by support personnel who are not Authorised Health Professionals, the clinical assessment, including conducting the physical examination, reviewing the Health Questionnaire with the rail safety worker, establishing the clinical history, liaising with treating health professionals, reviewing specialist reports and integrating all clinical information to make a fitness for duty decision, is the responsibility of the Authorised Health Professional.
- Collecting, disclosing and storing worker's health information in line with privacy legislation (refer to Section 2.6.2 Privacy laws).
- Liaising with the worker's general practitioner and treating specialists, where appropriate, to clarify information relating to the worker's current health status and fitness for rail safety duty.
- Making relevant referrals to specialists where required to determine fitness for duty.
- Communicating and consulting with all relevant providers to ensure the effective management of the worker's health.
- Liaising with the rail transport operator's Chief Medical Officer, if applicable and as required.
- Communicating fitness for duty outcomes to rail transport operators in a timely way.

The ongoing treatment and management of medical conditions should be the responsibility of the worker's general practitioner, treating specialist and other healthcare providers.

Where a worker is already seeing a specialist, referrals for specialist opinion or further investigation for fitness for duty may be made to that specialist.

The relationship between the health professional and the worker/patient is governed by the ethics of the relevant health profession and by privacy laws (refer to Section 2.6.2 Privacy laws).

Chief Medical Officers

Some rail transport operators employ the services of a Chief Medical Officer whose role is to advise the rail transport operator about a range of issues related to the health of rail safety workers and health risks associated with their rail operations. The specific roles and responsibilities of each Chief Medical Officer will vary depending on the requirements of the rail transport operator.

In relation to implementation of the Standard, a Chief Medical Officers roles may include:

- Advising the rail transport operator about the implementation of the Standard within their organisation.
- Advising the rail transport operator about the health management and fitness for duty of individual rail safety workers.
- Advising the rail transport operator about the authorisation of health professionals to conduct health assessments under the Standard.
- Training health professionals about the Standard and the rail transport operator's requirements, policies etc.
- Liaising with Authorised Health Professionals as required to manage fitness for duty outcomes for rail safety workers, including requirements for specialist review or exceptional cases requiring consideration of individual risk.
- Implementing quality assurance activities associated with the Standard including auditing of Authorised Health Professional systems, processes and outputs.
- Providing direct oversight of fitness for duty recommendations made by Authorised Health Professionals who have not received training in conduct of rail safety worker health assessments and application of the Standard (refer to Section 2.5 Appointing and authorising health professionals).

All Chief Medical Officers are deemed to be Authorised Health Professionals on the basis of their skills and experience in conducting health assessments for rail safety workers. As a function of their role, they may or may not be available as Authorised Health Professionals to conduct assessments and may not appear on the Authorised Health Professional list.

In managing the fitness for duty process, it may be necessary for a Chief Medical Officer to issue an updated fitness for duty certificate, subsequent to an Authorised Health Professional's original determination. This may occur, for example, in situations where more information has become available about the rail safety worker's health or operational requirements and in situations where the assessment is not in line with the requirements of the Standard. The most recent certificate must be available for the Authorised Health Professional when conducting subsequent assessments.

In undertaking these roles, the Chief Medical Officer must ensure that they practice ethically and in line with privacy requirements, being alert to and managing any potential conflict of interest arising due to their employment by the rail transport operator or a health service provider, and always observing confidentiality of rail workers' health information.

In particular, and as outlined in the Standard, the Chief Medical Officer may request a copy of the Record for Health Professional, the Health Questionnaire and/or other supporting clinical records from the Authorised Health Professional to ensure consistency and quality of health assessments for rail safety workers or to assist with management of a particular worker. Where such records are accessed or retained by the Chief Medical Officer, their confidentiality must be assured, and systems must be in place to ensure records are not accessed by unauthorised personnel within the rail transport operator.

The Standard does not set out defined responses to quality issues associated with Authorised Health Professionals. If a Chief Medical Officer identifies issues with the quality of health

assessments being conducted by an Authorised Health Professional providing services to their rail transport operator, this may be managed, for example through education and supervision. Cancellation of the rail transport operator's authorisation of a particular health professional may also result from a quality assurance process led by the Chief Medical Officer.

Under exceptional circumstances, such as a pandemic, the Chief Medical Officer may temporarily modify the health assessment process to avoid workers' medicals expiring. For example, the use of telemedicine may mean that elements of the physical examination may not be able to be conducted.

Medical specialists

This Standard generally requires Safety Critical Workers who are assessed Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional.

In certain circumstances, the Chief Medical Officer of a rail organisation may determine that review by a worker's treating general practitioner, or the Authorised Health Professional is sufficient if there is an established pattern of compliance and satisfactory response to treatment. The initial granting of Fit for Duty Subject to Review must be based on information provided by a specialist. These circumstances are identified in this Standard.

Where appropriate and available, the use of telemedicine technologies such as videoconferencing is encouraged as a means of facilitating access to specialist opinion.

1.6 Evidence base

The review of this Standard has coincided with the conduct of a major literature review by the Monash University Accident Research Centre (MUARC). The report, *Influence of chronic illness on crash involvement of motor vehicle drivers* (3rd ed.)[8], has provided the evidence base for the effects of medical conditions on driving and for crash risk associated with medical conditions, and by extrapolation to fitness for Safety Critical Work in rail. This remains a main evidence source for the current edition.

The MUARC report has also informed the review of the medical standards for commercial vehicle drivers contained in *Assessing fitness to drive*, which has also informed this review. Where contributing professional organisations and experts have provided more current references to support changes to the Standard, these have been incorporated. Where evidence was lacking, expert opinion from members of specialist medical colleges and other health professional organisations provides the basis of this Standard.

1.7 Structure of the Standard

This Standard consists of 6 parts:

- **Part 1: Introduction**
  - This Part describes the purpose, scope and context of the Standard as well as roles and responsibilities of various parties involved in or subject to implementation of the Standard.
- **Part 2: The health risk management system**

[8] Charlton, JL et al. 2021, *Influence of chronic illness on crash involvement of motor vehicle drivers*, 3rd Edition, Monash University Accident Research Centre, Melbourne. **https://www.monash.edu/__data/assets/pdf_file/0008/2955617/Chronic-illness-and-MVC-risk_Report-MUARC-report-no-353_JUNE2022.pdf** [accessed 26 July 2022].

- This Part outlines the system for managing rail safety worker fitness for duty under the Standard. It includes a framework for analysing and categorising the risks associated with rail safety tasks and assigning workers to a level of health assessment commensurate with the risks. It also includes procedural requirements for rail transport operators such as scheduling, communication, records management and the appointment of Authorised Health Professionals. Approaches for quality assurance and audit are also included.

- **Part 3: Procedures for Authorised Health Professionals**
  - This Part outlines the procedures relevant to Authorised Health Professionals in managing and conducting health assessments.
- **Part 4: Assessment and management of health conditions (Categories 1 & 2 workers)**
  - This Part includes the fitness for duty criteria for fitness for duty for Safety Critical Workers, arranged alphabetically in sections addressing the main conditions affecting fitness for duty.
- **Part 5: Assessment and management of health conditions (Category 3 workers)**
  - This Part includes the fitness for duty criteria for Non-Safety Critical Workers (Category 3).
- **Part 6: Clinical tools, forms and transition arrangements**
  - This Part includes supporting documentation including:
    - clinical tools such as health questionnaires
    - model forms for managing the health assessments
    - transition arrangements.

2 The health risk management system

This section of the Standard explains:

- The features of the health risk management system, including risk categorisation, timing and frequency of health assessments and fitness for duty reporting framework.
- The detailed job risk assessment and worker categorisation process.
- Appointing and authorising health professionals, including the criteria for appointing Authorised Health Professionals.
- Administrative systems, including privacy laws and health assessment forms.
- Quality control, including systems and audit points.

2.1 Risk management approach

The requirements for rail safety worker health assessments are to be determined by a risk management approach. This aims to ensure the level and frequency of health assessments conducted is commensurate with the risk associated with the tasks performed by rail safety workers.

Rail transport operators must establish systems and procedures to ensure rail safety workers receive the appropriate level and frequency of health assessment that corresponds with the risks associated with the tasks they perform.

Figure 5 shows the ergonomics of a typical rail safety job and provides a framework for understanding and applying a risk management approach to rail safety worker health assessments. It shows that information is gained about the rail system by the senses (mainly vision and hearing). The information is then processed by the brain (cognition, or 'situational awareness') and decisions are made that are then put into effect by the musculoskeletal system to alter the operation of the system. This cycle rapidly repeats. These processes take place within the operational environment of the rail transport operator.

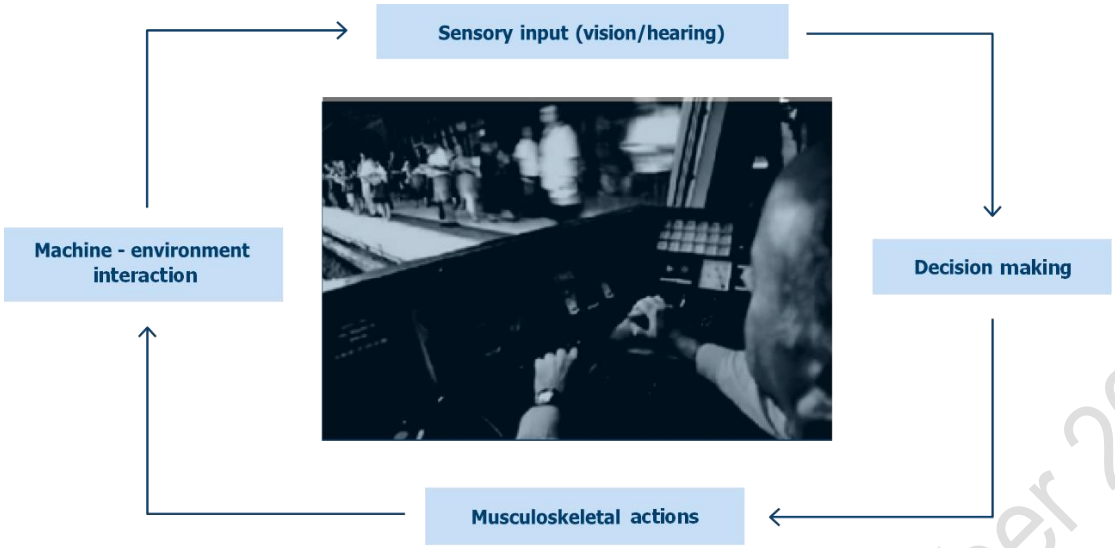
The aim of the health risk management process is to:

- identify what could go wrong in the case of physical or psychological ill-health
- assess the consequences
- establish appropriate controls for the risks associated with ill-health.

The health risk management process focuses on a consideration of the extent to which the worker's physical or psychological health could contribute to a serious incident on the rail network that may result in either:

- the death of a person; or
- incapacitating injury to a person; or
- a collision or derailment involving rolling stock that results in significant damage; or
- any other occurrence that results in significant property damage.

Figure 5. The ergonomics and health attributes required for rail safety work



A further consideration is the extent to which the worker's health affects their own safety and that of fellow rail safety workers.

Health assessments are one approach of treating the risk of serious incidents and the risk to individual safety, thus a mix of engineering, administrative and health assessment measures is likely to be required. When determining the health assessment requirements of rail safety workers, it is important to consider the operational and engineering environment, since overall risk management significantly determines the human attributes that are required for safety.

This interaction between technology and human capabilities has implications not only for the setting and application of health standards, but also for meeting diverse legal requirements. Health assessment standards cannot be simply set at the highest level for safety's sake. They must be set and applied carefully to match the risks associated with the tasks to be consistent with anti-discrimination and privacy laws. This requires careful and thorough assessment of the risks to health, and as a consequence of health, as part of the assessment process.

As the work environment significantly determines the skills and attributes required and the risk involved, a risk analysis should form the basis of all rail safety worker health assessment decisions. A rail transport operator should perform its own risk assessments of rail safety work in its own operating environment and apply health assessments accordingly.

2.2 Features of the health risk management system

The health risk management system defined in this Standard features a number of key elements:

- **Risk categorisation of rail safety workers.** It is not practical to individualise health assessments for every worker or task, thus a system of risk categorisation forms the basis of the health risk management system. This facilitates the risk management process and simplifies application of the health assessment requirements (refer to Section 2.2.1 Risk categorisation of rail safety workers).
- **Health assessments and fitness for duty criteria matched to the risk categories**. Health assessments comprising screening questionnaires and clinical examinations are designed to match the risk categories and identify medical conditions that are likely to impact on safety. In turn, specific fitness for duty criteria for various medical conditions are defined to ensure consistency of application.

- **Defined timing and frequency of health assessments**. Timing and frequency of health assessments are defined to support early detection of health conditions and appropriate management to support long-term fitness for duty.
- **Standard reporting framework**. A standard reporting framework for fitness for duty (or otherwise) supports consistency of application.

2.2.1 Risk categorisation of rail safety workers

This section provides an overview of the risk categories applied in this Standard. Further detail as to how workers are allocated to the respective categories is provided in Section 2.4 Risk assessment and categorisation process.

In the first instance, categorisation of the rail safety worker is based on a consideration of the key question:

- For any aspect of the worker's tasks, could action or inaction on the part of the worker lead directly to a serious incident affecting the public or the rail network?

The response to this question leads to the definition of two main risk categories:

Safety Critical Work/Workers

These are workers whose action or inaction may lead directly to a serious incident affecting the public or the rail network. Their vigilance and attentiveness to their job is crucial, and they are therefore the focus of this Standard. These workers require health assessments to ensure ill-health does not affect their vigilance and attentiveness to the job, and therefore the safety of the public or the rail network. Safety Critical Workers' tasks are distinguished from tasks that affect only individual worker safety.

Non-Safety Critical Work/Workers

These are workers whose action or inaction will not lead directly to a serious incident affecting the public or the rail network. These workers require health assessments to ensure their own safety while working in or around the network.

Safety Critical Workers are further categorised depending on the potential risks associated with ill-health:

Category 1 Safety Critical Work/Workers

Category 1 workers are the highest level of Safety Critical Worker. These are workers who require high levels of attentiveness to their task and for whom sudden incapacity or collapse (e.g., from a heart attack or blackout) may result in a serious incident affecting the public or the rail network. Single-operator train driving on the commercial network is an example of a Category 1 task.

Category 2 Safety Critical Work/Workers

Category 2 workers are those whose work also requires high levels of attentiveness, but for whom fail-safe mechanisms or the nature of their duties ensure sudden incapacity or collapse does not affect safety of the rail network. For example, in many cases signallers are classified as Category 2 because fail-safe signal control systems protect the safety of the network in case of worker incapacity.

Around the Track Personnel (ATTP) is the term used to describe workers who perform Non-Safety Critical tasks on or near the track as defined. Workers who do not work around the track are not at risk from moving rolling stock and are not required to have health assessments under this Standard. They are classified as Category 4.

ATTP who operate in a Controlled Environment are also classified as Category 4. A Controlled Environment is defined in this Standard as a rail workplace where a risk assessment has been performed to identify hazards and implement controls to ensure that any person working in or transiting the area is not placed at risk from moving rolling stock trains so far as is reasonably practicable.

ATTP who operate in an Uncontrolled Environment may be at risk from moving rolling stock. They are classed as Category 3 and are required to have health assessments to identify relevant health conditions that could affect their ability to detect an oncoming train and/or react to a warning and promptly move to a safe area.

When analysing the risk to ATTP and classifying the tasks into Categories 3 or 4, the features of a Controlled Environment need to be carefully considered regarding their adequacy. If workers may move between Controlled and Uncontrolled Environments, then the higher level of risk assessment should be applied. Irregular visitors to the track, such as office workers, are not generally classified as ATTP. When they do visit the track, their safety should be ensured by other means—for example, by escort. Further information about assessing Controlled and Uncontrolled Environments is included in Section 2.4.5 Step 5: Analyse and categorise tasks.

Note that workers who access the track receive track safety awareness training on a regular basis, which is another key aspect of their ability to protect their own safety and that of fellow workers.

2.2.2 Health assessments matched to risk categories

A rail safety worker should receive the level of health assessment commensurate with their rail safety work risk category. These are briefly described in the following sections. The assessment procedures and fitness for duty criteria applicable to each of the Categories 1, 2 and 3 are outlined in detail in Parts 3, 4 and 5.

Safety Critical Worker Health Assessments (Categories 1 and 2)

The health assessment for Safety Critical Workers aims to detect conditions that may impact on their vigilance and attentiveness to their work. These include, for example, cardiovascular disease, diabetes, epilepsy, various other neurological conditions, neurodevelopmental disorders, sleep disorders, alcohol and drug dependence and psychiatric disorders as well as hearing and visual problems. The assessment comprises a Health Questionnaire and clinical examination.

The self-administered Health Questionnaire collects a general history and helps identify specific conditions that might affect rail safety task performance. The questionnaire is not diagnostic, and no decision can be made regarding fitness for duty until the clinical examination is completed.

The clinical examination assesses the key body systems to identify conditions that might affect rail safety task performance as described above. The examination may result in referral for further tests or opinion.

Additional assessment requirements for Category 1 workers

Health conditions that may cause sudden incapacity or collapse are a particular risk for Category 1 workers. They therefore have a cardiac risk level assessment to identify their risk of cardiovascular disease and predict the risk of cardiac events such as heart attack or stroke. The clinical examination for Category 1 workers also focuses on the identification of other health conditions that might result in sudden incapacity or collapse, including hypoglycaemia (in workers with diabetes), epilepsy and transient ischaemic attacks.

Track Safety Health Assessment (Category 3)

The Track Safety Health Assessment for ATTP (Category 3) focuses on medical conditions that could impact on a worker's ability to detect and react quickly to an oncoming train or warnings.

The clinical assessment includes audiometry, testing of visual acuity and visual fields and a general musculoskeletal assessment. It is also acknowledged that health conditions that cause loss of attention or loss of consciousness can prevent a person from seeing, hearing and/or moving out of the path of an oncoming train (e.g., blackouts, cardiovascular conditions, diabetes etc). Identification of these conditions at Pre-placement and Periodic Health Assessment is generally by worker self-report via the Health Questionnaire. Unlike Category 1 workers, there is no active screening for these conditions other than by self-report.

Rail transport operators should also ensure that workers are advised to notify their supervisor and/or request a Triggered Health Assessment if they:

- develop a condition that could lead to collapse on a track
- incur serious injury or illness to their eyes, hearing or limbs
- suffer a serious brain injury, or
- develop a cognitive or serious psychiatric disorder.

Substance abuse should also be declared in accordance with the operator's drug and alcohol management program. Workers making such notifications should be referred for a Triggered Health Assessment to assess implications for safety around the track, and action taken accordingly, including job modification as required. Refer to Section 2.2.6 Timing and frequency of health assessments and Part 5 Assessment and management of health conditions for Category 3 workers.

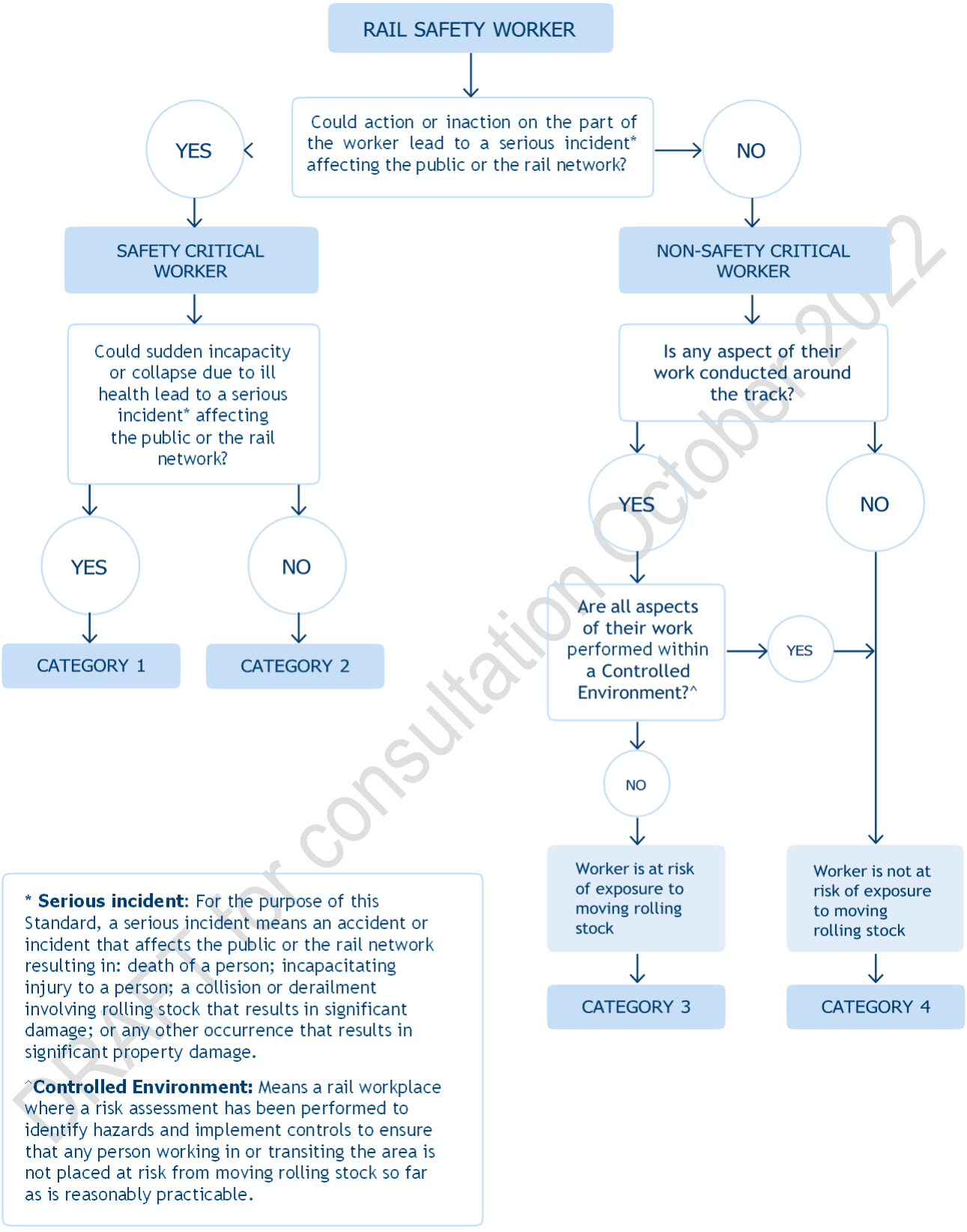
2.2.3 Task-specific requirements

The risk categories and matching health assessments provide a general framework for defining health assessment needs. However, certain tasks will have specific requirements, for example, colour vision, hearing or musculoskeletal attributes.

The health monitoring system should provide appropriate flexibility to ensure that the health assessment requirements reflect the specific requirements of the rail safety tasks including, where appropriate, the frequency with which the tasks are performed.

Further guidance on defining the specific requirements is included in Section 2.4.6 Step 6: Identify task-specific health requirements.

Figure 6. Risk categorisation of Rail Safety Worker



2.2.4 Functional and practical assessments

In some situations, a clinical health assessment may need to be supplemented by a functional or practical test to confirm fitness for duty. This may occur at Pre-placement, Periodic Health Assessments or Triggered Health Assessments including those conducted prior to return to work. For example, a functional assessment of some neurological conditions or of musculoskeletal capacity may be applied to confirm the worker's ability to perform the particular tasks required of them.

Practical tests for colour vision or hearing, however, are not recommended because consistency of methodology, and thereby accuracy and applicability across all rail transport operators, cannot be ensured. Laboratory (clinical)-based tests of hearing or colour vision are standardised and therefore results are portable to all rail systems (refer to Section 4.11 Hearing and Section 4.12 Vision and eye disorders).

Practical tests are usually conducted in the typical work environment, whereas functional assessments are simulations of work in settings such as a gym or cab simulator. Such tests cannot override the fitness for duty criteria; they can only supplement the doctor's decision about the ability to perform rail safety tasks where this Standard is imprecise.

Each rail transport operator should develop their own procedures and criteria for practical and functional assessments based on their system requirements. Assessments may also be designed and tailored to specific situations if needed.

The results of practical tests are not transferable to other organisations or networks unless the work practices and work environments are very similar.

Practical or functional assessments of musculoskeletal function may be conducted by people appropriately trained in the test procedure and with experience of the tasks involved, such as an occupational therapist, a physiotherapist, a principal driver or other experienced staff. Such people should work in conjunction with the Authorised Health Professional.

A principal driver (or equivalent) is a senior driver with wide experience who is often involved in training other drivers. A worker with borderline impairment may be referred to a principal driver for a practical test to assess work performance. This is particularly relevant to musculoskeletal and neurological impairments. Similarly, other experienced staff may assist in assessing work performance of Safety Critical Workers in other jobs. Such an assessment should be arranged through the worker's manager.

Rail transport operators and Authorised Health Professionals should consider the following limitations of functional and practical tests:

- They can never fully simulate the work environment—by nature, the test will always be a snapshot of the person's functional capacity. They are limited in time and may not provide an indication that the individual will be capable of performing those tasks for a full working day.
- The test may place the person being tested at risk of injury. When ordering a functional or practical test, the examining doctor should be satisfied that the individual is fit to perform the test. If fitness to perform the test is questionable, then so is the person's fitness for the role.
- A functional or practical test does not assess risk of injury. Where the health issue is one of recurrent injury, for example, an unstable knee, performing all of the elements of a test does not mean that the person is safe to perform those job demands day after day.
- A practical test is not standardised but is based on local requirements and equipment. Therefore, there is a potential problem in extrapolating the results to other systems if the worker transfers.

2.2.5 Drug and alcohol screening

The RSNL requires rail transport operators to ensure that rail safety workers are not impaired by alcohol or drugs when performing their work. Rail safety workers themselves also have a duty not to perform rail safety work while impaired by alcohol or drugs.

Pre-placement and/or Change of Risk Category Health Assessments may therefore include a drug screen, depending on the state/territory's legislation and the rail transport operator's requirements.

Periodic Health Assessments should not routinely include a drug or alcohol screen. However, testing may occur as part of a return-to-work program for a person with a substance misuse condition.

If a person is suspected of being intoxicated by alcohol or drugs at the time of an examination or if the assessment is triggered due to drug or alcohol concerns, the Authorised Health Professional should assess them and enquire of possible reasons for their condition. Under these specific circumstances the doctor may conduct a drug and alcohol test or assessment. If drug or alcohol intoxication is suspected or confirmed, the Authorised Health Professional should classify the worker as Temporarily Unfit for Duty and notify the rail transport operator (refer to Section 4.10 Substance misuse and dependence).

2.2.6 Timing and frequency of health assessments

The timing and frequency of health assessments also supports a risk management approach. A rigorous health assessment system should:

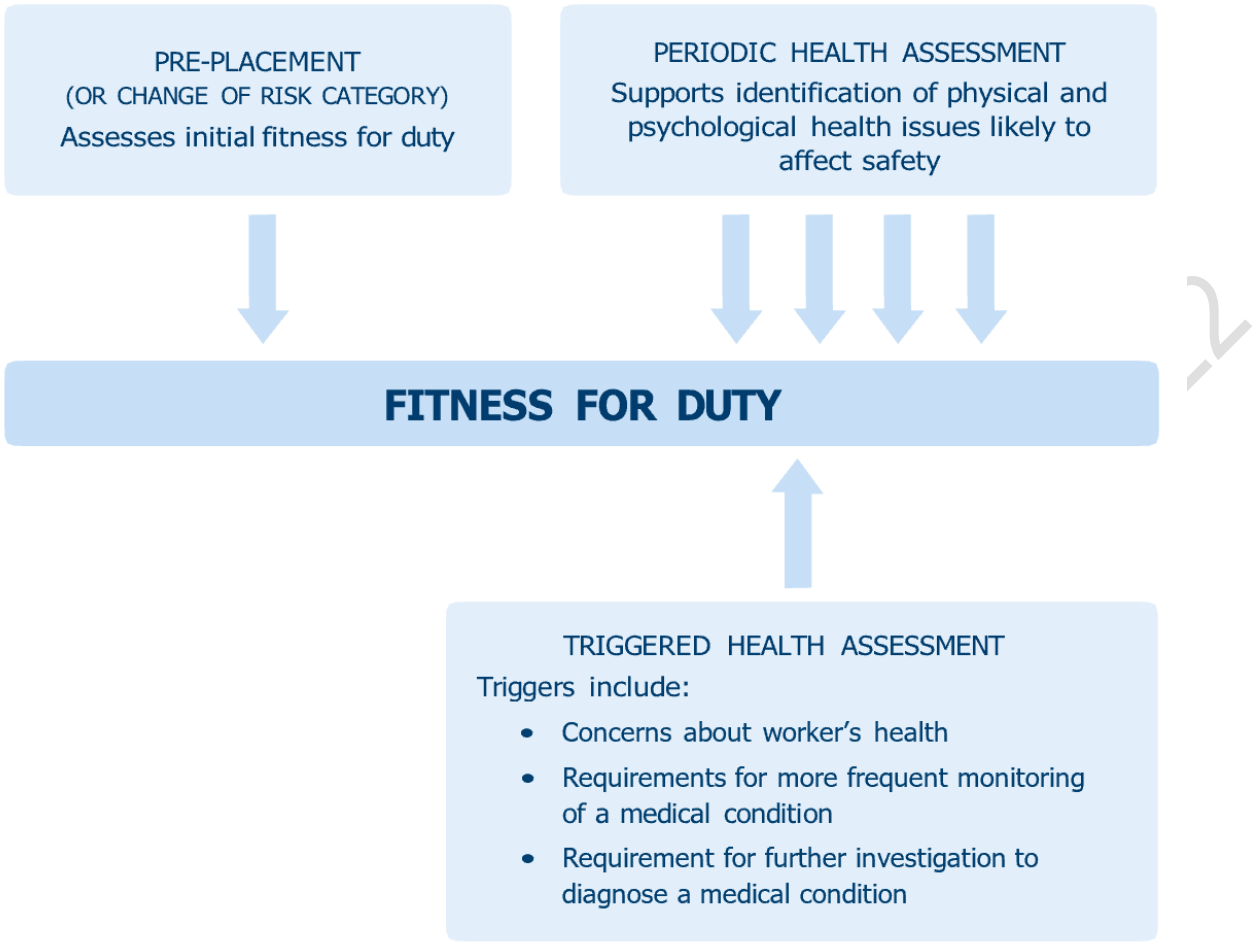
- Confirm that the health and fitness of a rail safety worker candidate is suited to the tasks to be performed.
- Periodically monitor the rail safety worker's health during employment to detect conditions that might affect rail safety.
- Enable timely response to concerns about the worker's health.

The health assessment system should therefore comprise the three types of assessments described below and illustrated in Figure 7.

Pre-placement or change of risk category health assessments

Rail safety workers classified in Categories 1, 2 and 3 require health assessments at Pre-placement and before changing to a position involving tasks of a higher risk category. The assessments are aimed at determining a worker's initial fitness to perform the full range of inherent job requirements and job demands of the rail safety position that they have applied for and should match the risk category of the job they are entering.

Figure 7. Health assessments supporting fitness for duty of rail safety workers



Periodic Health Assessments

Periodic Health Assessments are conducted to identify health conditions that may affect safe performance of rail safety work. They should be conducted for Category 1, 2 and 3 rail safety workers according to the following defined frequencies.

Category 1 and 2: Safety Critical Workers

- At time of commencement (Pre-placement, as above)
- every 5 years to age 50, then
- every 2 years to age 60, then
- every year.

For Category 1 and Category 2 Safety Critical Workers, despite anything to the contrary in the list, the worker must have a health assessment conducted within 2 years after turning 50 years of age, and within 1 year after turning 60 years of age.

Category 3: Around the Track Personnel in an Uncontrolled Environment

- At time of commencement (Pre-placement, as above), then
- every 5 years from the age of 40 years.

Category 3 workers who have had a full health assessment less than 5 years before turning 40 (e.g., for Pre-placement) may have their next Periodic Health Assessment scheduled 5 years from that date.

Rail transport operators may choose the method by which Periodic Health Assessment due dates (and Triggered Health Assessment dates) are calculated, for example by scheduling from the actual examination date or using a fixed anniversary date. It remains the requirement of the Standard that a rail safety worker without a valid fitness for duty report cannot undertake rail safety work.

The frequencies of Periodic Health Assessments are a minimum requirement based on evidence of rate of age-associated degenerative illness, the power of the assessment to detect rail safety workers at risk, and comparison with local and overseas standards. Rail transport operators may choose to implement more frequent Periodic Health Assessments should the need and rationale be identified.

Ongoing treatment of medical conditions should continue to be the responsibility of the worker's general practitioner.

The program of comprehensive Periodic Health Assessments should be maintained even if more frequent Triggered Health Assessments are performed for an individual's particular condition. Where a rail safety worker has an existing medical condition that warrants more frequent review between Periodic Health Assessments the status of this condition should be specifically monitored at each Periodic Health Assessment.

Triggered Health Assessments

Triggered Health Assessments are additional health assessments undertaken earlier than the scheduled Periodic Health Assessment, because of concerns about an individual's health, or because there is a requirement for more frequent monitoring of a medical condition.

Triggered Health Assessments overlay the scheduled Periodic Health Assessments and enable early intervention, appropriate management and timely monitoring of health problems that are likely to affect safety.

Referral for a Triggered Health Assessment may be prompted by one of the circumstances listed below. These circumstances will determine the nature and extent of the health assessment required.

1. Assessments related to more frequent monitoring of a medical condition (Fit for Duty Subject to Review)

Where the rail safety worker has a medical condition which requires more frequent monitoring than that provided under the routine Periodic Health Assessments e.g., diabetes or a sleep disorder, a Triggered Health Assessment may be requested by the examining Authorised Health Professional or the rail transport operator's Chief Medical Officer.

A health assessment will be triggered for an appropriate period as guided by the Standard (for example annually). This will be noted on the Health Assessment Report provided by the Authorised Health Professional and the rail safety worker will be categorised Fit for Duty Subject to Review.

The nature and extent of a Triggered Health Assessment will be determined by the examining Authorised Health Professional or the Chief Medical Officer and will depend on the nature of the medical condition(s) or health concerns. A full assessment (as required for Periodic Health Assessments) is not necessarily required. For example, for a worker with sleep apnoea, it may be sufficient for the Authorised Health Professional to review a printout of the worker's continuous positive air pressure (CPAP) machine. Alternatively, review of reports from treating specialists may be sufficient. In other cases, a face-to-face medical assessment might be required.

The Authorised Health Professional will indicate that a Triggered Health Assessment is required by categorising that the individual is Fit for Duty Subject to Review and will indicate the type of review assessment required (while observing privacy), and when it will be required.

2. Assessments relating to further investigation to diagnose/treat a medical condition (Fit for Duty Subject to Review or Temporarily Unfit for Duty)

Resulting from a Periodic Health Assessment, it may be necessary for the Authorised Health Professional to arrange further investigations, or to request further reports from a treating doctor or specialist to determine fitness for duty.

If the condition does not pose an immediate risk to the safety of the individual or the rail system and where permitted under the Standard, they may remain at work while the investigations are undertaken and/or while awaiting reports. The Authorised Health Professional will categorise the rail safety worker as Fit for Duty Subject to Review, and will indicate the type of review assessment required, and when it will be required, generally within three months.

If the condition is one that imposes an immediate risk, then the rail safety worker will be categorised Temporarily Unfit for Duty until their ongoing fitness can be determined after review of the additional medical information.

3. Health assessment triggered by concerns about a worker's health

A Triggered Health Assessment may be requested by a rail transport operator where there is reason for concern that a health issue may be impacting the worker's ability to perform their duties safely between Periodic Health Assessments.

Rail transport operators should be alert to indicators of ill-health, such as recurrent absenteeism, repeated incidents and recent traumatic events, and should discuss these with the rail safety worker. This may lead to a triggered referral for a health or neuropsychological assessment, retraining in competencies or referral to an EAP.

The worker themselves may also request a health assessment if they have concerns about their ability to work safely due to a medical condition, or due to treatment such as medication.

The nature and extent of the health assessment in these circumstances will depend on the presenting symptoms and circumstances and will be determined by the Authorised Health Professional or Chief Medical Officer. The rail transport operator should request a Triggered Health Assessment and provide sufficient information for the examining doctor to determine the assessment requirements. It is not the responsibility of the rail transport operator to determine the extent of the assessment required.

Triggered Health Assessments in relation to ongoing Periodic Health Assessments

Triggered Health Assessments do not forego the requirement for regular Periodic Health Assessments. Full Periodic Health Assessments should still be conducted according to the timeframes prescribed in the Standard.

Where a rail safety worker has an existing medical condition that warrants more frequent review between Periodic Health Assessments the status of this condition should be specifically monitored at each Periodic Health Assessment.

The Triggered Health Assessment process should not result in a change in the scheduling of the prescribed Periodic Health Assessments, unless the Triggered Health Assessment has comprised a full assessment as defined for Periodic Health Assessments, in which case the date of the next Periodic Health Assessment can be reset.

2.3 Standard reporting framework

Rail transport operators should adopt standard terminology for reporting and managing rail safety workers' fitness for duty.

The terminology provided below and illustrated in Table 1 and Figure 8 is used throughout the Standard and in the model forms in Section 6.2.

2.3.1 Fit for Duty Unconditional

This assessment category indicates that the worker meets all the criteria for Fit for Duty Unconditional in the Standard and is to be reviewed in line with the normal Periodic Health Assessment schedule. It means the worker does not have a health condition or health risk that is likely to impact on their ability to undertake inherent requirements of the rail safety task now or in the foreseeable future. They are not subject to any restrictions or conditions, or more frequent review.

NOTE: Included in this category are rail safety workers who have stable visual impairment that is not associated with a progressive condition and who meet the vision fitness for duty criteria with the appropriate aids (corrective lenses). They must wear the appropriate aids when undertaking rail safety work. The suitability of these aids in meeting the fitness for duty requirements will be monitored by the Authorised Health Professional at each Periodic Health Assessment.

2.3.2 Fit for Duty Subject to Review

This assessment category indicates that the worker does not meet the criteria for Fit for Duty Unconditional; however, the condition or conditions are sufficiently controlled to permit current rail safety duties under certain conditions.

Monitoring of the worker's health condition(s)

Continuation of normal duties is conditional on the worker's health condition(s) being specifically monitored to confirm their ongoing fitness for duty. This may require more frequent assessments than prescribed under the normal Periodic Health Assessment schedule. For example, a Safety Critical Worker diagnosed with diabetes will require more frequent (annual) targeted health assessments to monitor their condition as well as general Periodic Health Assessments. Once they reach the age of 60, the annual review of their diabetes may be incorporated into their annual Periodic Health Assessment. The assessment should include a targeted evaluation of their diabetes as well as the general Periodic Health Assessment requirements.

The review period for Fit for Duty Subject to Review determinations are specified by the Standard. If the Standard does not specify a review period, this will be advised by the Authorised Health Professional based on their clinical assessment.

Job modification

Job modification may also be recommended by the Authorised Health Professional as a condition for the worker to meet the Fit for Duty Subject to Review requirements. This sub-category indicates that the worker does not meet the criteria for Fit for Duty Unconditional but could perform current rail safety duties if suitable modifications were made to the job. These modifications may include:

- modification of physical equipment
- roster changes, or
- worker supervision.

Job modifications are usually short term and subject to review in the context of the relevant health condition. Job modifications may not be practicable in various areas of rail safety work. Existing job modifications will be documented on the Request for Health Assessment Form issued by the rail transport operator. The Authorised Health Professional should report their findings relevant to any existing modifications.

Job modification should be distinguished from alternative duties, which are relevant to workers assessed as Unfit for Duty. Refer to Section 2.3.3 Temporarily Unfit for Duty.

Job modification recommendations will generally only apply to incumbent workers, not applicants.

Provisional categorisation

The Fit for Duty Subject to Review classification may also apply as a provisional classification for a newly diagnosed condition which does not pose an immediate risk to safety but requires further investigation. In this situation, workers must undergo prompt assessment to determine their ongoing status and be definitively classified. The Authorised Health Professional will indicate “Interim Report” on the Report Form.

Categorisation at Pre-placement

An applicant may be categorised Fit for Duty Subject to Review at Pre-placement indicating that employment would be conditional on them attending targeted and potentially more frequent health assessments than required for a standard Periodic Health Assessment.

2.3.3 Temporarily Unfit for Duty

This assessment category indicates that the worker does not meet the criteria for Fit for Duty Unconditional or Fit for Duty Subject to Review and cannot presently perform current rail safety duties.

Their health situation is such that they may pose an immediate risk to safety and therefore should not continue current rail safety duties. They must undergo prompt assessment to determine their ongoing status and be definitively classified.

A worker who is judged unfit for their current category of work may be judged fit to conduct work in a lower category. For example, a Category 1 worker who is judged unfit to conduct their rail safety duties may be judged fit to conduct Category 2 or 3 work. This will be identified by the Authorised Health Professional on the Report Form.

Provisional categorisation

Temporarily Unfit for Duty may also be applied in situations where a clear diagnosis has not been made—for example, in the case of an undifferentiated illness where a worker is being investigated for blackouts. The worker may be assessed as fit for alternative duties.

2.3.4 Permanently Unfit for Duty

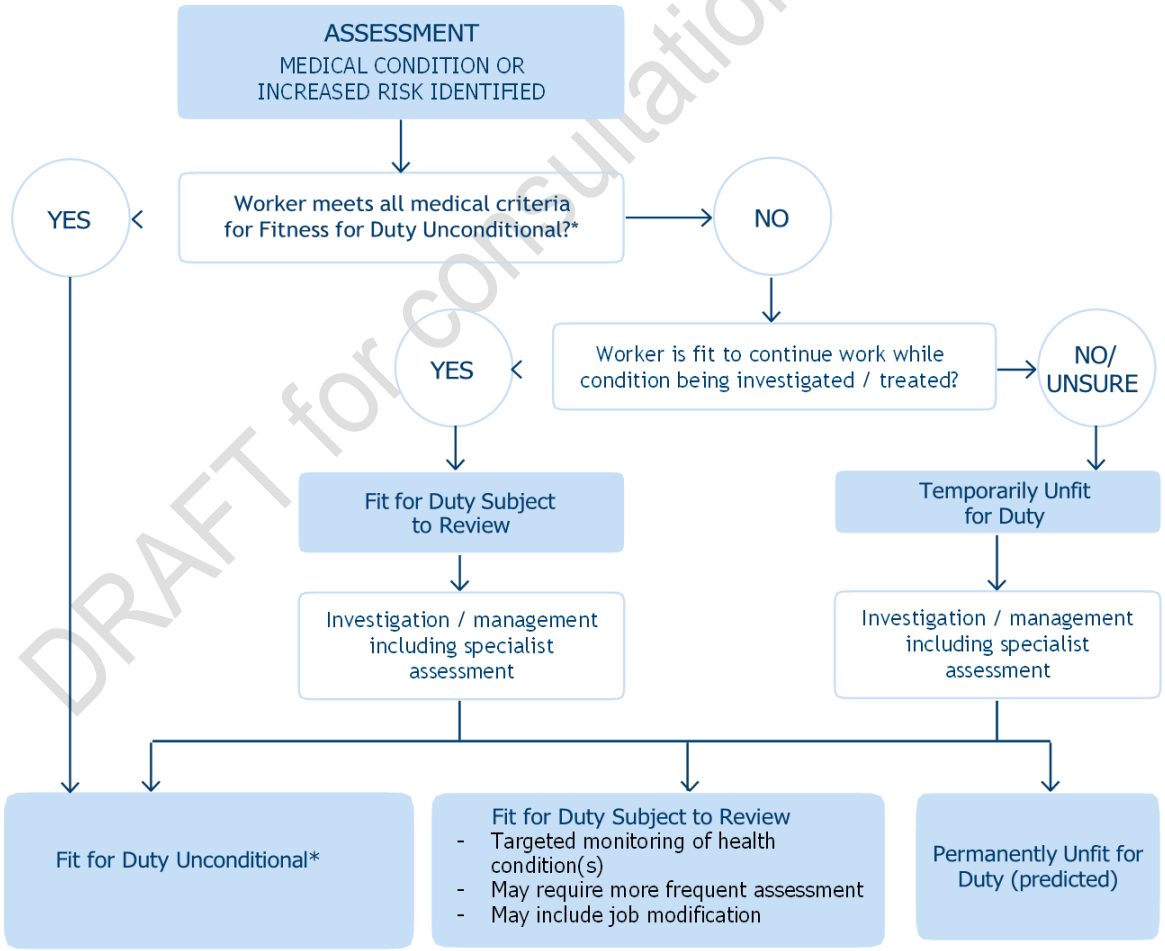
This assessment category indicates that the worker has a permanent and/or progressive condition that is predicted to render them unfit for their current rail safety duties for 12 months or more. This category may apply for example to a worker diagnosed with conditions such as epilepsy, other advanced neurological conditions, eye disorders such as macular degeneration, heart failure, severe chronic psychiatric conditions etc. Normal company policies such as redeployment may be considered.

Table 1. Standard reporting framework

OUTCOME CATEGORY AND DEFINITION	APPLICATION - Pre-placement/ Change of grade	APPLICATION - Ongoing fitness for duty
Fit for Duty Unconditional ▪ The worker meets all the criteria for Fit for Duty Unconditional in the Standard. ▪ They are not subject to any restrictions or conditions (see below re use of aids for vision). ▪ They should be reviewed in line with the normal Periodic Health Assessment schedule. **NOTE:** Included in this category are rail safety workers who have stable visual impairments that are not associated with a progressive condition and who meet the vision fitness for duty criteria with the appropriate aids (corrective lenses).	Fit to undertake proposed rail safety duties – no restrictions or conditions except for wearing of appropriate aids for vision as required.	Fit to continue current rail safety duties – no restrictions or conditions except for wearing of appropriate aids for vision as required.
Fit for Duty Subject to Review ▪ The worker does not meet the criteria for Fit for Duty Unconditional. ▪ The worker's condition is sufficiently controlled to permit current rail safety duties under certain conditions. ▪ Continuation of normal duties is conditional on specific monitoring of the health condition(s), which may require more frequent assessments than prescribed under the Periodic Health Assessment schedule (period specified by the Authorised Health Professional). More frequent assessment is not required if the condition is stable. ▪ This category may be applied in situations where a clear diagnosis has not yet been made but there is no immediate risk to rail safety. ▪ For incumbent workers, this category includes the sub-category Fit for Duty Subject to Job Modification.	Fit to undertake proposed rail safety duties conditional upon specific monitoring of diagnosed health conditions, which may include more frequent assessment. Job modification generally not applicable for applicants. Note: For stable vision conditions these will be categorised as Fit for Duty Unconditional (as above).	Fit to continue current rail safety duties conditional upon specific monitoring of diagnosed health condition(s). Job modification may also be recommended. This does not include alternative duties. These apply if the worker is Unfit for Duty. Note: For stable vision conditions these will be categorised as Fit for Duty Unconditional (as above).
Temporarily Unfit for Duty ▪ The worker does not meet the criteria for Fit for Duty Unconditional or Fit for Duty Subject to Review and cannot presently perform current rail safety duties. ▪ Their health situation is such that they may pose an immediate risk to safety and therefore should not continue current rail safety duties. ▪ They must undergo prompt assessment to determine their ongoing status and be definitively classified. ▪ This category may be applied in situations where a clear diagnosis has not yet been made.	Not fit to undertake proposed rail safety duties. May reapply when health issue is satisfactorily addressed.	Not fit to continue current rail safety duties, pending appropriate management of health issue. Will be subject to targeted and more frequent health assessments (triggered) while health condition is being treated/managed. May be assessed as fit for alternative duties. May be assessed as fit for a role in another category (e.g., Category 2 or 3).

OUTCOME CATEGORY AND DEFINITION	APPLICATION - Pre-placement/ Change of grade	APPLICATION - Ongoing fitness for duty
▪ The worker may be assessed as fit for alternative duties. ▪ A worker may be judged fit for a lower category of rail safety work.		
Permanently Unfit for Duty ▪ The worker has a permanent and/or progressive condition that is predicted to render them unfit for their current rail safety duties for 12 months or more. ▪ This category may be applied to a worker diagnosed with conditions such as epilepsy, other advanced neurological conditions, eye disorders such as macular degeneration, heart failure, severe chronic psychiatric conditions etc. ▪ A worker may be judged fit for a lower category of rail safety work. ▪ Normal company policies such as redeployment may be considered.	Not fit to undertake proposed rail safety duties.	Not fit to continue current rail safety duties in the foreseeable future. A worker may be judged fit for a lower category of rail safety work (e.g., Category 2 or 3).

Figure 8. Reporting framework (applied to newly identified medical condition)



* Included in this category are rail safety workers who have stable visual impairments that are not associated with a progressive condition and who meet the vision fitness for duty criteria with the appropriate aids (corrective lenses).

2.4 Risk assessment and categorisation process

This section outlines the process for performing risk assessments of rail safety workers, including identifying their risk category and their health assessment requirements. The steps are summarised in Figure 9.

There are a number of key guiding principles in conducting such risk assessments:

- **Focus on tasks -** The assessment should focus on tasks, not on formal grades or job classifications. This is because workers often have to be multi-skilled and perform various tasks. A risk categorisation should be assigned to a grade or job classification to match the task assessed as having the highest risk.
- **Consultation -** The process should involve communication between the responsible manager and the workers who perform the tasks so there is an accurate understanding of the nature of the tasks.
- **Documentation -** Documentation should be developed to record the assessment process and provide a clear rationale for the risk categorisation and health assessment requirements. This may have legal significance in the future. The name of the person who made the assessment should be recorded. Documentation can also be used to support the understanding of rail safety work by Authorised Health Professionals. A template to guide the collection and documentation of relevant data about the task risk analysis, health attributes and risk categorisation is also provided (refer to Section 6.2.1 Risk assessment template).
- **Expertise -** The process should draw on appropriate expertise. Involvement of the Chief Medical Officer, an Authorised Health Professional or an occupational physician familiar with rail at the risk analysis stage will help identify necessary health attributes for a task. In turn, the health professional is likely to develop a sound understanding of the work and associated risks.
- **Review -** The health risk management process and effectiveness of risk control strategies should be kept under review. As a minimum, review should occur whenever there are changes to work practices or engineering controls.

The process seeks to:

- identify the attributes needed to safely perform the activities
- identify what could go wrong in the case of ill-health
- assess the consequences
- establish appropriate controls for the risks associated with ill-health.

The steps in the risk assessment process are described in the following sections.

2.4.1 Step 1: Define the context

The first step is to define the context in which the rail safety work is performed. This includes considering:

- Relevant legislative requirements.
- Organisation policies and procedures.
- The business environment (e.g., urban passenger train operations; freight operations, including dangerous goods; infrastructure maintenance or construction; light rail or tram operations; or tourist and heritage train or tram operations).
- The operational environment (e.g., the type of safe-working systems such as block signalling or staff-and-ticket systems; train protection systems such as train stops or automatic train protection; and the maximum speed of operation).

2.4.2 Step 2: Identify rail safety risks

The initial focus of the analysis should be on tasks, not on formal job classifications or grades. This is because workers are often required to be multi-skilled and perform various tasks within one job. Once tasks have been analysed, the analysis may then be applied to multi-skilled positions, with the highest risk task determining the level of health assessment required.

For the purposes of this Standard:

- A job is the aggregation of tasks that go to make a (multi-skilled) position (e.g., driver).
- Tasks are the work required to be done (e.g., driving an urban train, driving a non-urban train, conducting emergency procedures).
- Activities are the units of work done in carrying out the task (e.g., scanning the track, moving controls, walking on ballast).

Figure 9. Steps in risk assessment process

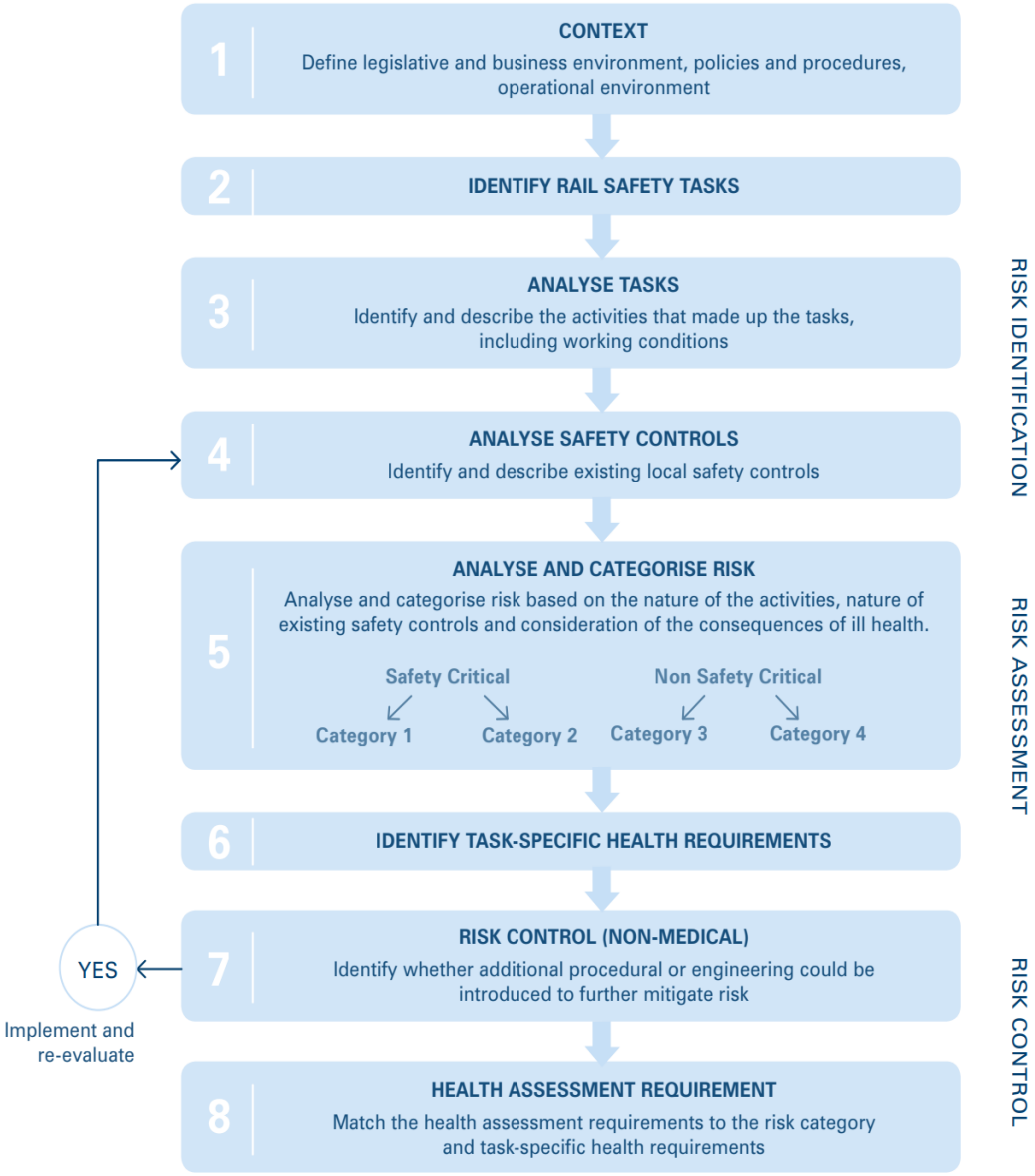
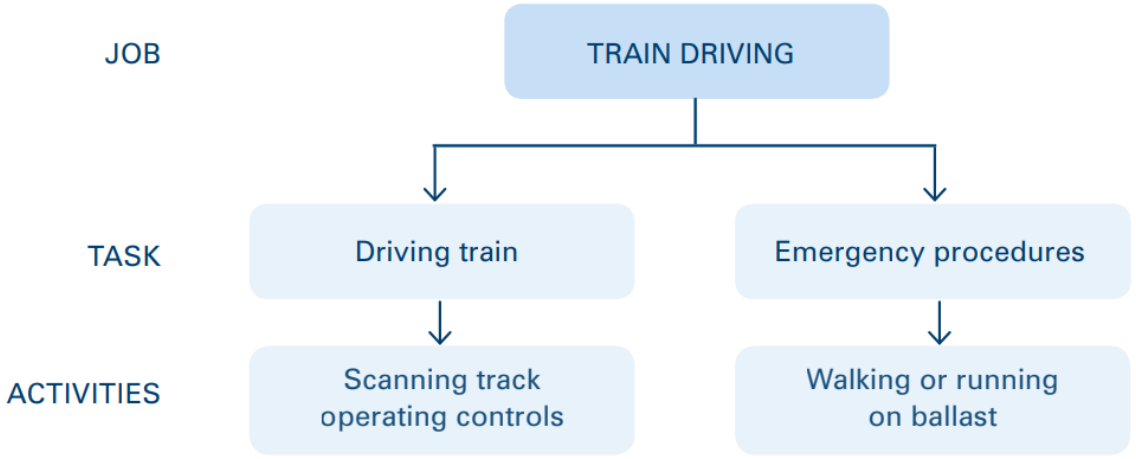


Figure 10. Identifying rail safety tasks



The following provides a list of typical jobs and tasks that may comprise rail safety work for a rail transport operator.

Train driving:

- operation of a passenger train on an urban network
- operation of a freight train on a non-urban network.

Operation of signalling equipment

Train controlling

Infrastructure maintenance:

- driving of a road/rail vehicle
- track machine operation
- safe working protection party duties
- electrical systems maintenance.

Rolling stock maintenance:

- in a workshop or depot
- train examination.

2.4.3 Step 3: Analyse tasks

Task analysis is the process of breaking down a job into its key activities. This should involve:

- A review of relevant job descriptions.
- Discuss and workshop job demands with subject matter experts and observe the activities that comprise the tasks as well as the conditions under which the activities are performed if needed (e.g., shift work, working in extremes of heat and cold or terrain). Figure 5, 'The ergonomics and health attributes required for rail safety work', provides a useful framework for analysing the tasks and activities of a job.
- Identifying activities performed infrequently in response to an emergency situation.

A thorough task analysis will assist in identifying the key requirements of the task and should be used to drive the risk assessment process. It may assist in ensuring appropriate risk management strategies have been employed to manage residual risk. A template form has been included as guidance (refer to Section 6.2.1 Risk assessment template).

2.4.4 Step 4: Identify and describe local safety controls

The nature of the operational and engineering environment will, in part, determine the human attributes that are required for safety. This includes the operational or engineering controls that are intended to mitigate the risk associated with the task.

The next step, therefore, is to identify and assess the impact of the local safety controls on the rail safety task being analysed. For example:

- Safe working rules and procedures.
- Fail-safe systems.
- Numbers of personnel in the working environment (such that other workers may identify worker incapacity and take up their task to ensure safety).
- Driver support devices such as vigilance systems, train stops, the automatic warning system and automatic train protection.

2.4.5 Step 5: Analyse and categorise tasks

The previous steps provide the necessary inputs to categorise the rail safety worker tasks. This risk analysis is best conducted in conjunction with people who are knowledgeable about the tasks and the existing control measures in question.

The first consideration in the analysis is whether the task is Safety Critical or not. This is identified by applying the test (refer to Section 2.2.1 Risk categorisation of rail safety workers):

For any aspect of the tasks identified, could action or inaction on the part of the worker lead directly to a serious incident affecting the public or the rail network?

This question is posed in the context of existing control measures such as vigilance systems and fail-safe mechanisms (as per Step 4). Safety Critical tasks are then subdivided by applying a further test:

For any aspect of the tasks identified, could sudden incapacity or collapse lead to a serious incident on the rail network?

Again, this question is posed in the context of existing control measures and with a consideration of the likelihood of a serious incident resulting from worker incapacity. The test leads to a subdivision of Safety Critical tasks into Category 1 and Category 2 tasks as described in Section 2.2.1 Risk categorisation of rail safety workers.

Road-rail vehicle driver

A road-rail vehicle has a sole driver, travels at up to 80 kilometres per hour and has a vigilance control (which brakes the vehicle if not regularly activated) but requires the driver to stop at level crossings. The task is considered Safety Critical because the driver's continued vigilance is necessary to maintain appropriate control of the vehicle to ensure the safety of the rail network. In the event of sudden incapacity (e.g., a heart attack) just before a level crossing, the vehicle may enter the crossing before stopping. However, the likelihood of collapse occurring in the few hundred metres before a crossing is remote and therefore the risk is analysed as low (Category 2). This contrasts with the driver of a track-tamper machine, which has a settable throttle, and without

vigilance control the collapse of a sole operator could lead to a large machine progressing out of control. Therefore, the risk is analysed as high (Category 1).

Categorising Non-Safety Critical Work

Non-Safety Critical Work is assessed in a similar way, resulting in allocation to Category 3 or Category 4 based on a consideration of the requirements for maintaining the safety of the worker and fellow rail safety workers, and the adequacy of measures to create a Controlled Environment. When analysing the risk to ATTP and classifying the tasks into Categories 3 or 4, the method and adequacy of a Controlled Environment need to be carefully considered.

It is important in the risk analysis to differentiate between risks posed by ill-health as distinct from lack of competency. The latter should be addressed through other control measures, such as training and initial worker selection.

Controlled environment

The determination of a Non-Safety Critical Worker, ATTP Category 4, depends on whether the work is performed in a Controlled Environment. When analysing the risk to ATTP, the features of a Controlled Environment need to be identified and their adequacy carefully considered. The essential requirement of a Controlled Environment is that it must ensure that a person transiting the area is not placed at risk from moving rolling stock, so far as reasonably practicable.

In rail workplaces, such as sidings, rail yards or workshops, controls may include:

- provision of lock-out or warning devices
- barrier segregation from running lines
- permits to work.

These may be supplemented as identified by risk assessment by all or any of the following:

- warning signage
- special instructions
- use of designated pathways or access/transit routes
- supervision.

For special works, a running line may also be assessed as a Controlled Environment in certain circumstances, for example, in the case of:

- complete possession of all sections of track in the vicinity, including parallel lines
- a ‘non-train day’ on isolated historical railways with no active parallel running lines.

In all instances, consideration needs to be given to rolling stock and track machinery movements associated with the works.

Category 3 assessments relate to the ability of a rail safety worker to see and move from the path of rail vehicles. In the case of a worksite where rail vehicles are being moved, a Category 3 assessment should be applied.

2.4.6 Step 6: Identify task-specific health requirements

Some health requirements are independent of the risk category. These include sensory requirements, such as hearing and colour vision, as well as musculoskeletal requirements. Rail transport operators should conduct risk assessments of individual tasks to identify the requirements. These requirements should be communicated to Authorised Health Professionals when requesting a health assessment.

Colour vision risk assessment

Not all rail safety tasks require the ability to differentiate colours, thus risk assessments of the colour vision requirements should be undertaken by rail transport operators as per Figure 11 and communicated to the Authorised Health Professional.

Assessment of a job requires consideration of whether there is a need for colour differentiation. If so, is there redundancy of information that averts the need for colour vision (e.g., semaphore arms)? If there is no redundancy, can the job be redesigned to eliminate the need for colour vision?

If red colour differentiation is required, consideration is then given to whether the task requires seeing colour as point sources (typically signals at a distance) or flat surfaces (typically flags or screens 'Colour Defective Safe B vision'). Jobs requiring seeing point sources may be further subdivided based on viewing conditions, with the most adverse requiring 'Normal colour vision' (typically drivers) and lesser conditions requiring 'Colour Defective Safe A vision.' Consideration may also be given to the consequences of different types of errors e.g., mistaking a red signal for green versus mistaking a green for yellow.

The following descriptions of rail safety jobs illustrate typical colour vision requirements, but they are not necessarily correct for any one network.

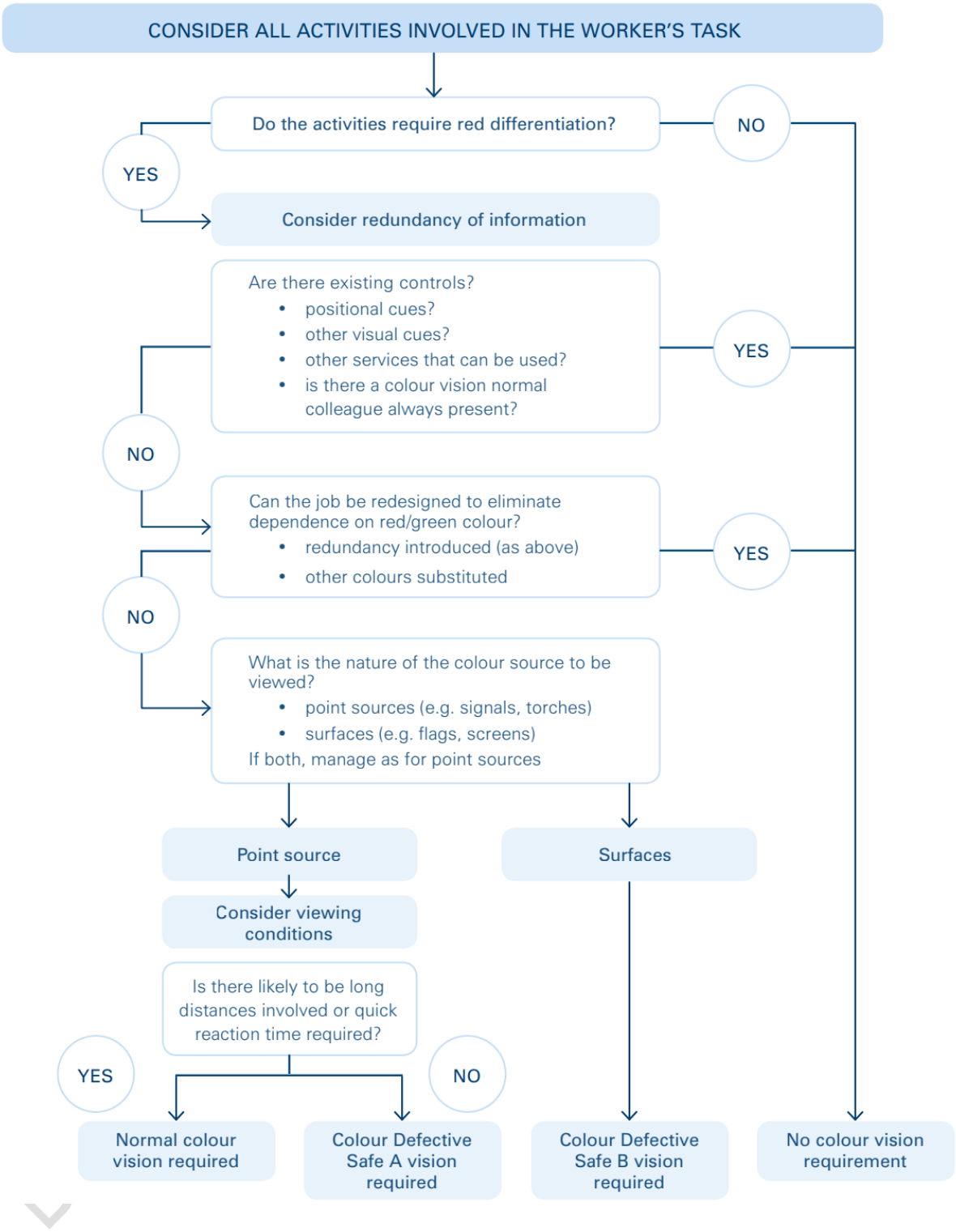
Train drivers must be able to recognise colour signals. Positional cues are not always available because red–green lights often operate from a single lens signal; lights from a signal may have no background or illumination at night to help their identification; there may be dazzle from a low sun behind the signal; and red lights may be shone from a lantern in emergency situations requiring rapid reaction. Combinations of red–yellow–green signals are used to inform the train driver of a safe speed and routing.

Heritage and tourist train drivers who are not on a main line may have a semaphore arm on a signal, which gives a positional cue (redundancy) as well as a red–green light. This only applies for daylight driving. The trains usually travel at low speed.

Case study

A rolling stock maintenance company shunts suburban trains into a large shed before working on them. For safety, the trains are then isolated by placing a red flag on their front, so they are not moved while work is in progress. The need for staff to correctly distinguish red flags from other flags was recognised as requiring accurate colour vision. However, the need to introduce a colour vision test was averted by changing the procedure to state that a train should not be moved if any flag has been placed on the front, regardless of the flag's colour.

Figure 11. Colour vision risk assessment



Hearing risk assessment

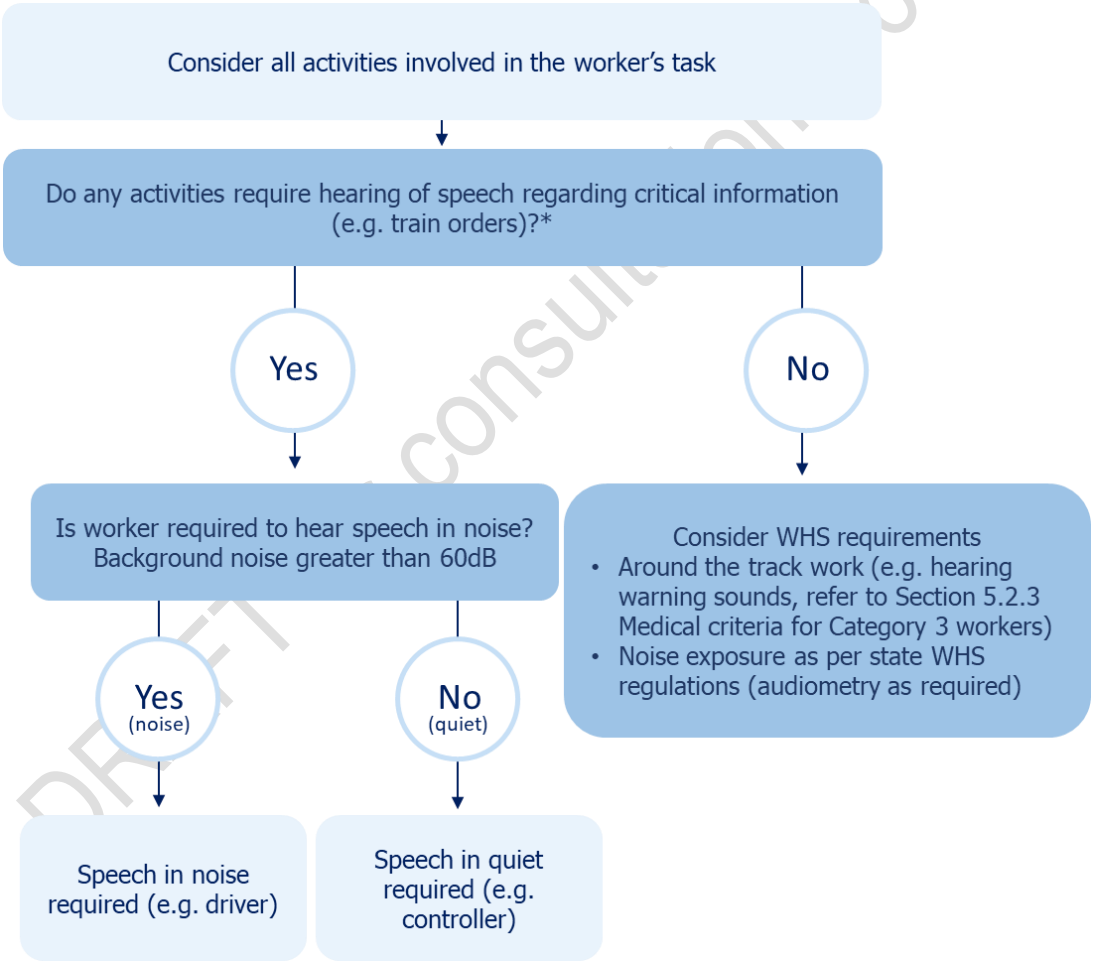
The hearing requirements vary for different tasks and are generally independent of the overall risk category (except for Category 3). For example, a train driver must be able to communicate with control about train orders, often in a noisy cab. This requires sufficient hearing to accurately interpret speech. Alternatively, a track worker only requires sufficient hearing to detect the sound of a train horn or warning shouts from other workers.

All Safety Critical tasks should be assessed in relation to their individual hearing requirements.

Risk assessment of Safety Critical Work divides the hearing task into two categories: 'hearing in quiet', which occurs where hearing takes place in a quiet background (typically indoors such as in a control room); and 'hearing in noise', which occurs where hearing is required against a continuously or intermittently noisy background (typically drivers in a train cab or shunters, or site controllers and flagmen, etc.). For the purposes of this Standard, a 'noisy' environment is defined as continuous or intermittent noise of 60 dB or more (refer to Section 4.11 Hearing).

Rail transport operators should assess the hearing requirements based on the flow chart shown in Figure 12 and communicate these requirements to the Authorised Health Professional.

Figure 12. Hearing and rail safety work: risk assessment



Musculoskeletal requirements

It is not possible to make generic statements regarding the musculoskeletal capacity required for Safety Critical Work because the nature of such work can vary widely. All jobs, whether Category 1 or Category 2, need to be assessed regarding their inherent requirements and hence the musculoskeletal capacities required to perform them. Most Category 1 Safety Critical Workers require soundness of limbs, neck, back and good balance. Category 2 tasks such as train controlling require only limited musculoskeletal capacity. In the case of Category 3 workers, the assessment focuses on their mobility and capacity to move quickly from the path of an oncoming train. The following are provided as examples and are not intended to be exhaustive for every task.

- Train driving requires good musculoskeletal capacity to:
  - Sit and drive the train using the arms and legs.
  - Walk about the train on uneven track and ballast - a fault in a wagon may involve sustained effort for it to be shunted out of the train.
  - Join heavy couplings, bend and check bogies.
  - Enter and exit the cab to and from the ground routinely and in an emergency - in an emergency, there may be quite a drop between the lowest step and the ground.
  - Move rapidly from the path of an oncoming train.
- Flagman (hand signaller) duties require good musculoskeletal capacity to:
  - Move quickly over uneven track and ballast.
  - Place detonators quickly and accurately on the track.
  - Signal to trains.
  - Move rapidly from the path of an oncoming train.
- Shunting requires good musculoskeletal capacity to:
  - Move over uneven track and ballast.
  - Rapidly board or alight from trucks or carriages.
  - Open or close stiff, large coupling mechanisms.
  - Switch points.
  - Move rapidly from the path of an oncoming train.
- Train controlling requires only limited musculoskeletal capacity:
  - Controllers typically work in an indoor environment and do not have to access the track.
  - They require musculoskeletal capacity to work with computer screens and keyboards, paper records and telephones.
- Tram driving requires good musculoskeletal capacity to:
  - Sit for long periods.
  - Operate master control.
  - Board and alight from tram for operational purposes including emergency situations.

2.4.7 Step 7: Risk control

The health risk categorisation performed in Step 6 is the basis of referral to a matched health assessment. However, an important interim step is to consider the other treatment options that might be introduced to mitigate the risk, such as additional administrative or engineering controls.

Table 2 summarises the hierarchy of control measures that should be applied to control safety risks.

Both elimination and substitution control the hazard itself. They are, therefore, more effective in reducing risk than controls that reduce the likelihood of the hazard, such as procedures. A limitation with lower-level controls, such as procedures, is that they can be more easily defeated. However, redundancy is helpful in safety, and the optimal treatment of risk may involve a mix of engineering, administrative and medical risk control measures.

If practicable, engineering or administrative controls are generally preferred to health assessments because they provide more definitive protection. Such improvements should be implemented where possible and the task re-evaluated in terms of the health risk.

Table 2. Summary of hierarchy of control measures

Elimination	Removal of the hazard at its source from the workplace
Substitution	Substitute hazard for one presenting a lower risk
Engineering controls	Install physical barriers or structural changes
Administrative controls	Alter procedures/provide instructions/medical exams
Personal protective equipment	Where no other controls can be applied or where they have limited effect

Case study

An outer flagman protecting a worksite needs to lay detonators after each train passes. However, if the flagman collapses, the detonators will not be set and a train will enter a worksite at high speed and may strike heavy machinery and workers, causing a serious incident. One approach is to require Category 1 Safety Critical health assessments for the flagman to lessen the risk of collapse, but another is to alter the track working rules and provide the flagman with a radio to contact the site controller after they have laid detonators so the site controller can then open the site. This would be a safer work practice and change the categorisation of the job and the examination required to Category 2.

2.4.8 Step 8: Confirm health assessment requirements

After determining the final risk categories of rail safety worker tasks, the health assessments are matched to the categories—that is, Category 1 and Category 2 workers have a similar assessment (except Category 1 workers have a cardiac risk level assessment). Category 3 workers are required to have a Track Safety Health Assessment.

Occupational health, safety and welfare

Because of the crossover between rail safety, and occupational health, safety and welfare, rail transport operators may elect to use this Standard to support obligations for health monitoring imposed by other legislation.

A robust assessment of the tasks performed by rail personnel should assist in capturing factors that may contribute to ill-health. Likewise, health assessments performed because of obligation under other legislation (e.g., audiometry to monitor for noise-induced hearing loss) may give guidance to framing a health assessment under the obligations of rail safety legislation.

2.5 Appointing and authorising health professionals

2.5.1 Who may perform health assessments?

The rail transport operator should appoint a suitably qualified and competent health professional to conduct the assessments of rail safety workers—an Authorised Health Professional (refer Table 3).

Safety Critical Worker health assessments (for Category 1 and Category 2 workers) must be performed by a medical practitioner. Track Safety Health Assessments (for Category 3 workers) may be performed by a health professional with appropriate qualifications and skills to conduct the assessment. They should be appropriately supervised and subject to appropriate quality control measures (refer to Section 2.7 Quality control).

Practical on-site tests, such as tests for musculoskeletal capacity, may be performed by a person with appropriate qualifications and skills. Such a person should work in conjunction with the Authorised Health Professional.

The Australian Rail Association and RISSB have established a nationally accepted list of Authorised Health Professionals within the Rail Industry Worker system. Authorised Health Professionals on this list have all undergone approved training (see below).

Workers who require a medical can search for their closest authorised doctor in this directory of Authorised Health Professionals to facilitate an examination which will be accepted by participating organisations. The list of Authorised Health Professionals may be found at **https://www.riw.net.au/authorised-health-professionals/**.

2.5.2 Criteria for appointing Authorised Health Professionals

The competencies required of an Authorised Health Professional are outlined in Table 3. The competencies focus on the health professional's knowledge and understanding of the rail occupational environment, the risks associated with rail safety work and the corresponding medical standard and clinical tests to be applied. These competencies form the basis of the training conducted under the National Authorised Health Professional Training Program (available at **https://www.riw.net.au/authorised-health-professionals/**).

The Rail Industry Worker website maintains a public list of Authorised Health Professionals, being doctors or other health professionals, who have completed the training. Where a rail transport operator is unable to access services of a trained Authorised Health Professional for logistical reasons (e.g., remote area), they should implement appropriate steps to ensure assessments conducted by their Authorised Health Professional are conducted in line with the Standard. This may include confirmation of the fitness for duty outcome by the Chief Medical Officer or an occupational physician experienced in rail.

Inclusion of Authorised Health Professionals on the Rail Industry Worker list does not forego a rail transport operator's responsibility to ensure the ongoing quality of work of their Authorised Health Professionals. The rail transport operator should ensure that the performance of Authorised Health Professionals is subject to appropriate quality control measures including audit (refer to Section 2.7 Quality control). Refer also to the role of the Chief Medical Officer described in Section 1.5.2 Responsibilities for conduct and management of health assessments.

Concerns about a health professional's performance in conducting rail safety worker health assessments should be addressed by the rail transport operator through training and monitoring, or other corrective action as required. Concerns should be reported to the Rail Industry Worker administrator at **info@riw.net.au**.

The rail transport operator should ensure that Authorised Health Professionals are kept up to date on changes to legislation, this Standard, and the rail transport operator's policies and procedures.

If an Authorised Health Professional's practice ceases to operate or ceases to perform rail safety health assessments, the rail transport operator may require the Authorised Health Professional to forward rail safety worker health records, including the Safety Critical Worker Health Questionnaires, Record for Health Professional and other supporting clinical information, to the Chief Medical Officer or another designated Authorised Health Professional. Such arrangements are aimed at supporting continuity of records. Transfer of rail workers' health records must comply with privacy principles.

Table 3. Qualifications and competencies required of an Authorised Health Professional

SAFETY CRITICAL WORKER HEALTH ASSESSMENTS (CATEGORIES 1 AND 2)	TRACK SAFETY HEALTH ASSESSMENTS (CATEGORY 3)
Qualifications and experience: The health professional must have a qualification in medicine and should have an interest or experience in occupational medicine. They should have successfully completed National Authorised Health Professional Training **https://www.riw.net.au/authorised-health-professionals/** They should be subject to appropriate quality control measures (refer to Section 2.7 Quality control).	**Qualifications and experience:** The health professional should have appropriate qualifications and skills to conduct the assessment. They should be appropriately supervised and subject to appropriate quality control measures (refer to Section 2.7 Quality control).
Rail industry knowledge: The health professional should demonstrate understanding of the rail industry environment, including the work performed and risks involved.	**Rail industry knowledge:** The health professional should demonstrate understanding of the rail industry environment, including the work performed and risks involved.
Standard: The health professional should demonstrate familiarity with the *National Standard for Health Assessment of Rail Safety Workers* and a working knowledge of the 'Assessment Procedures and Fitness for Duty Criteria' set out in this Standard, including: • Appreciation of the role of health assessments in rail safety. • Familiarity with the risk management approach used to identify the level of health assessment required. • Familiarity with the tasks involved in rail operations and with major tasks of Safety Critical Workers. • Knowledge of rail safety worker risk categories and the rationale for health	**Standard:** The health professional should be able to demonstrate familiarity with the *National Standard for Health Assessment of Rail Safety Workers* and a working knowledge of the 'Assessment Procedures and Fitness for Duty Criteria' set out in this Standard, including: • Appreciation of the role of health assessments in rail safety. • Familiarity with the risk management approach used to identify the level of health assessment required. • Familiarity with the tasks in rail operation and with major tasks of Around the Track Personnel. • Knowledge of rail safety worker risk categories and the rationale for health

SAFETY CRITICAL WORKER HEALTH ASSESSMENTS (CATEGORIES 1 AND 2)	TRACK SAFETY HEALTH ASSESSMENTS (CATEGORY 3)
assessments applied. • Knowledge of the *National Standard for Health Assessment of Rail Safety Workers* and ability to perform the Safety Critical Worker health assessment. • Understanding of requirements and reporting options for fitness for rail safety duty. • Knowledge of the administrative requirements, including form completion and record keeping. • Understanding of ethical and legal obligations and the ability to conduct health assessments accordingly, including appropriate communication with the worker and the rail transport operator. • Understanding of ethical issues in relationships with the treating doctor/general practitioner.	assessments applied. • Knowledge of the *National Standard for Health Assessment of Rail Safety Workers* and ability to perform the Track Safety Health Assessment. • Understanding of requirements and reporting options for fitness for rail safety duty. • Knowledge of the administrative requirements, including form completion and record keeping. • Understanding of ethical and legal obligations and the ability to conduct health assessments accordingly, including appropriate communication with the worker and the rail transport operator. • Understanding of ethical issues in relationships with the treating doctor/general practitioner.
Interfacing policies and program: The health professional should be able to demonstrate awareness of legislation, policies and programs that might interface with or affect the performance of the health assessment—for example, drug and alcohol management program, critical incident management programs, and anti-discrimination and privacy legislation.	

2.6 Administrative systems

The rail transport operator should establish appropriate systems and procedures to support effective administration and implementation of the health management requirements of this Standard. This includes systems and procedures relating to:

- scheduling and managing health assessment requests and outcomes
- managing privacy of health information
- communicating with rail safety workers and health professionals.

Administrative requirements for Authorised Health Professionals are detailed in Part 3 of the Standard.

2.6.1 Health assessment database

The rail transport operator should establish an appropriate database to help administer health assessments. The database should identify all of the following:

- each rail safety worker's risk category, and the assessment required
- the due date for each worker's assessment
- any restrictions or conditions on the worker's fitness for duty.

It should be managed so that timely reminders to supervisors and workers are issued and followed up.

A worker's health assessment status must be kept confidential and released only as required to the worker, the supervisor and the rail transport operator's Authorised Health Professional(s).

2.6.2 Privacy laws

In administering the rail safety worker health assessments, rail transport operators must comply with the Australian Privacy principles contained in privacy legislation and ensure that health records are managed and stored in line with the relevant health records legislation. Rail transport operators should consult the Australian Information Commissioner or the Privacy Commissioner in their state/territory if they are uncertain about local requirements, including requirements for privacy policies.

Primary purpose

Underpinning the privacy principles is the concept of the health information's 'primary purpose,' which in relation to this Standard and the health assessments conducted under this Standard is 'to assess and manage rail safety workers' fitness for duty'.

Thus, only information justifiably necessary to assess fitness for duty should be collected. This means the rail transport operator cannot ask an Authorised Health Professional to collect information that is not relevant to the health requirements of the rail safety worker's task.

Similarly, information must only be used and disclosed for the primary purpose, or for a directly related purpose that could reasonably be expected by the rail safety worker, unless the rail safety worker gives their consent to use of the information for a secondary purpose. Thus, the rail transport operator cannot provide the Authorised Health Professional with information that is not relevant to the health assessment unless the rail safety worker gives their consent. Authorised Health Professionals also cannot provide information back to the rail transport operator that is not relevant to management of the rail safety worker and their fitness for duty.

Collection of health information

The Privacy principles require that when collecting rail safety workers' health information rail safety workers are clearly informed about:

- why the health information is being collected
- what information will be stored and where
- the fact that they can access it
- to whom the information may be disclosed
- whether the information is required to be collected by law.

These requirements are detailed on the Health Questionnaire which the rail safety worker completes and signs to acknowledge and agree with how their information will be managed.

Both the rail transport operator and Authorised Health Professionals have a role in ensuring rail safety workers understand how their health information will be managed.

Use and disclosure of health information: the "need to know"

Health information should be used and disclosed in line with the primary purpose. This means that Authorised Health Professionals should only report a rail safety worker's health information to the rail transport operator if the operator needs to know that information for managing the rail safety worker and their fitness for duty.

The rail transport operator needs to know:

- How a rail safety worker's ability to undertake their job might be affected by a health condition; and
- What controls (if any) must be put in place to mitigate risks related to a health condition.

The rail transport operator usually does not need to know:

- The exact nature or details of the underlying medical conditions (e.g., high blood pressure, anxiety state, diabetes); or
- The exact nature of the treatment or management of the condition.

Thus, the Authorised Health Professional can give the rail transport operator advice about a rail safety worker's fitness to perform specific tasks, provided they do not refer to the rail safety worker's diagnosis or treatment. The Authorised Health Professional should not provide the rail safety worker's clinical records (Clinical Record Form other clinical information) to the rail transport operator.

Within the rail transport operator there are also layers of disclosure that will need to be managed to ensure privacy. For example, it is possible that in seeking to manage a medical condition, such as during the rail transport operator's discussions with the rail safety worker regarding alternative duties or job modification, the diagnosis may become self-evident. Careful consideration should be given to how privacy is maintained in this situation, including where information is recorded and who has access to this documentation.

As a further example, invoices for investigations and specialist referrals may need to be paid by the rail transport operator and these may indicate a medical condition e.g., cardiac stress test, referral to psychiatrist. Access to this information should be restricted to those involved in paying the supplier and the information should not be filed in the rail worker's general personnel file.

Workers' compensation and other legal requirements

The Privacy principles apply to workers compensation claims. By law, the nature of a rail safety worker's injury will be disclosed to the rail transport operator on any workers compensation claim form. Therefore, in situations where the Authorised Health Professional is assessing a rail safety worker who has had a workers compensation injury regarding fitness for duty, the nature of that injury may be disclosed.

Health information may also be disclosed if permitted or authorised under another law, such as when a report is subpoenaed by a court of law, for an investigation of an accident or incident, or when a notifiable disease is diagnosed. It may also be used and disclosed for auditing purposes as described below.

Consent for disclosure

Rail safety worker consent must be obtained to disclose any health information to a third party unless permitted by law. This includes for audit and research purposes (see below). The consent statement in the worker declaration form includes disclosure for these purposes.

When appropriate, it is helpful if the rail safety worker gives consent for the nature of their condition(s) to be disclosed to the rail transport operator to facilitate a sensible plan of health management.

Where an Authorised Health Professional seeks information from a rail safety worker's general practitioner or treating doctor to clarify the worker's current health status, such communication should occur with the consent of the worker and should be limited to health issues that impact on the ability of the worker to undertake their job. This consent may be recorded on the relevant form.

Use and disclosure for quality and audit purposes

Where a rail transport operator employs the services of a Chief Medical Officer, the rail transport operator's Chief Medical Officer, may request a copy of the Record for Health Professional, the Safety Critical Worker Health Questionnaire and/or other supporting clinical records from the Authorised Health Professional to ensure consistency and quality of health assessments for rail

safety workers or to assist management of a particular worker. Where such records are accessed or retained by the Chief Medical Officer, their confidentiality must be assured, and systems must be in place to ensure records are not accessed by other personnel within the rail transport operator.

The same provisions apply for external auditors appointed by rail transport operators.

Retention and security of health information

Information should be kept accurate, up to date and protected from loss and unauthorised access, use, disclosure and modification. Records may be scanned and kept in electronic form. The rail safety worker's signature on the completed Health Questionnaire is legally valid after scanning. Similarly, this applies to the Authorised Health Professional's signature.

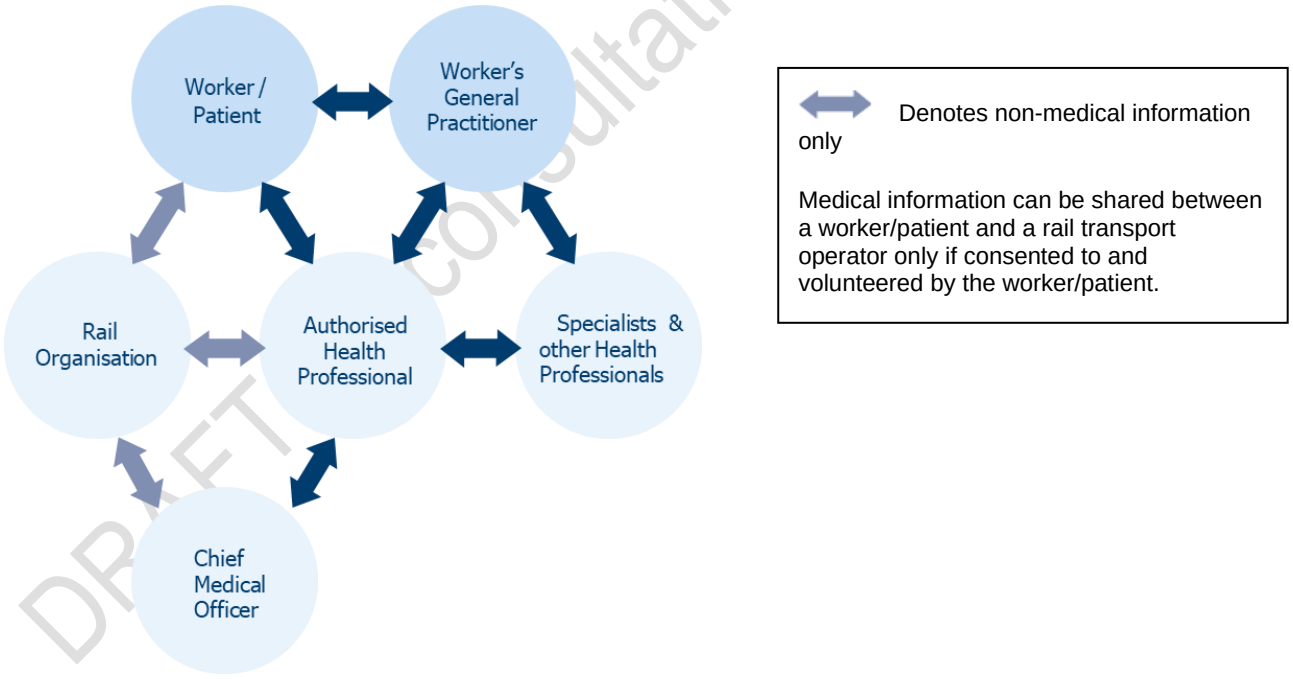
For continuity of records, a rail transport operator may establish a repository for rail safety worker health records provided that such records are accessible only by Authorised Health Professionals, the Chief Medical Officer and authorised personnel.

Figure 13 shows the flow of information that should take place in conducting rail safety worker health assessments, based on privacy requirements.

Interstate considerations

Where workers work across state or territory boundaries, information should only be transferred to other states or territories where privacy laws are similar.

Figure 13. Relationships and information flow for rail safety worker health assessments



2.6.3 Health assessment forms

Model forms have been developed to reflect the requirements of the health management system and the specific requirements of the health assessments. These model forms are provided in Part 6 as a template for rail transport operators to base their administrative processes on.

The forms may be used as provided or form the basis of electronic systems.

Administrative detail on the forms may be altered to be consistent with a rail transport operator's requirements. The provisions for reporting from the health professional to the rail transport operator, and the content of the Safety Critical Worker questionnaire, represent standardised data collection and should not be altered, unless an assessment of workers' fitness for additional job demands is required.

The model forms are also consistent with privacy principles. The rail transport operator should ensure any changes made to the forms are consistent with privacy and health records legislation. A health professional should not conduct an assessment without the appropriate forms.

Use of the forms is described in the following sections and in Figure 14.

Request and Report Form

This form (refer to Section 6.2.2 Request and Report Form) facilitates communication between the rail transport operator and the Authorised Health Professional. The rail transport operator completes relevant details regarding the worker and the type of assessment requested. The Authorised Health Professional summarises fitness for duty assessment findings on the form using the standard reporting terminology (refer to Section 2.3 Standard reporting framework) and returns it to the rail transport operator. Medical data is not conveyed, only functional capacity.

As a general principle, a copy of the report should also be provided to the worker by the Authorised Health Professional to facilitate discussion regarding the assessment outcome. In exceptional circumstances, such as possible aggression from the worker, this step may be omitted.

Worker Notification and Health Questionnaire

This form (refer to Section 6.2.3 Worker Notification and Health Questionnaire) notifies the worker of the requirement to attend a health assessment. It includes the reasons for the assessment and instructions for the worker. It also includes a Health Questionnaire. Workers should be requested to complete the Health Questionnaire before attending their appointment.

Record for Health Professional

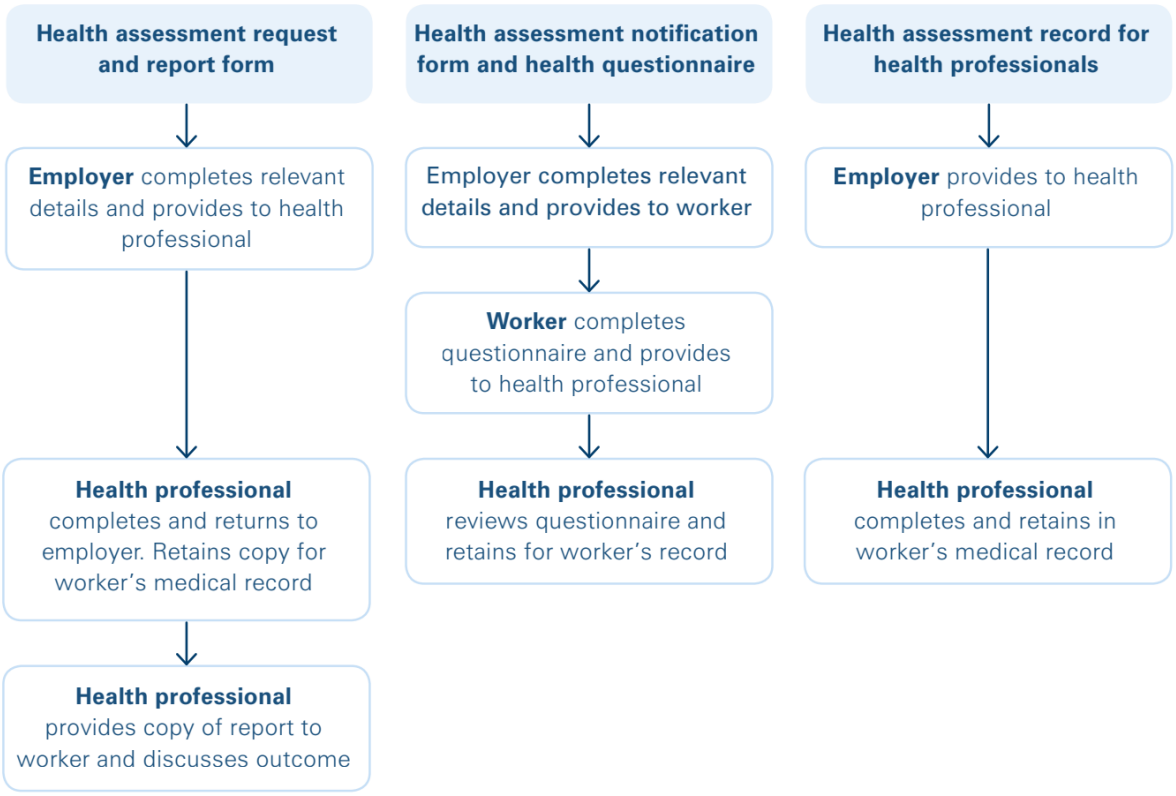
This form (refer to Section 6.2.4 Record for Health Professional) guides the health professional through the assessment process and provides a standard clinical record. The rail transport operator issues the form but, since it will contain details of the clinical findings, it must not be returned to the rail transport operator. Instead, the form should be retained by the health professional.

Where a rail transport operator employs the services of a Chief Medical Officer, their Chief Medical Officer may request a copy of the Record for Health Professional but must maintain confidentiality of such information according to privacy legislation (refer to Section 2.6.2 Privacy laws).

Risk assessment template

The risk assessment template (refer to Section 6.2.1 Risk assessment template) guides the process of risk assessment of rail safety tasks. The completed form should detail activities involved in the worker's task(s), as well as health attributes required to complete the task(s). It is recommended that a copy be included with the information provided to the Authorised Health Professional.

Figure 14. Use of health assessment forms



2.6.4 Worker identification

The rail transport operator should establish systems to ensure proof of identity for the rail safety worker for the purposes of the health assessments, including pathology testing.

The RSNL requires that these include a photo identification (ID). The systems may include a record of the currency of health assessment and review requirements.

2.6.5 Communication with workers

The rail transport operator should establish communication mechanisms to alert workers about health assessment requirements, including alerts to management and workers if systems are breached.

Before the assessment

The worker should receive adequate notice of the due date for their health assessment and the consequences of not presenting for the assessment in that time frame. In line with privacy principles and the general requirements of the assessment, the notification will include advice on:

- The purpose of the assessment.
- Who will conduct the assessment.
- Who will receive the assessment report.
- The worker's responsibility to provide accurate information.
- The requirement to:
  - take photo ID to the appointment and to any other tests
  - take glasses, hearing aids or other aids to the appointment

- take relevant reports from treating doctors
- attend audiometry testing
- complete a Health Questionnaire before attending the appointment
- take current medication (or a list of it) to the health assessment appointment (including prescription, over the counter and alternative medicines).

- For Category 1 Safety Critical Workers, the requirement to have the required tests before the health assessment including an electrocardiograph (ECG) and non-fasting blood test for cholesterol and HbA1c (diabetes).

After the assessment

After receiving the health assessment report form, if the worker has been assessed as anything other than Fit for Duty Unconditional, the rail transport operator should discuss with the worker any implications for their work, and the policies or arrangements to be applied.

A record of such arrangements should be kept on the database, together with the health assessment result and any requirements for review assessments.

The worker should be provided with a copy of the assessment report by the Authorised Health Professional or the rail transport operator (refer Section 6.2.2 Request and Report Form).

2.6.6 Disagreement with a health assessment process or outcome

A worker may disagree with the process followed or outcome of their health assessment. While this Standard does not provide or recommend a specific formal process for managing such circumstances, it would be reasonable to advise the worker to discuss the issue with the examining Authorised Health Professional in the first instance. If this proves to be unsatisfactory, they may request a review by the Chief Medical Officer or relevant rail transport operator. The Chief Medical Officers Council may also have a role in resolving these issues. This process may rely on input from the worker's treating specialist, if relevant. As previously noted, complaints about Authorised Health Professionals may be lodged with the Rail Industry Worker system (refer to Section 2.5.2 Criteria for appointing Authorised Health Professionals).

2.6.7 Communication with the Authorised Health Professional

Before the assessment

The Authorised Health Professional should not perform a health assessment of a rail safety worker without the appropriate forms (Authorised Health Professionals should also refer to Section 3.1 Appointments and documentation).

The rail transport operator should give the Authorised Health Professional all forms and supporting information relevant to the worker's health assessment.

In the case of Category 1 Safety Critical Workers, the examination should take place when the pathology results (i.e., blood test results) needed for the cardiac risk levels are available. If the results are not available, the worker can be issued with a preliminary assessment of fitness or otherwise for duty, based on the clinical examination and other aspects of the assessment. The final assessment should be made as soon as possible, and the Authorised Health Professional should actively pursue the pathology results to ensure their timely completion. The Authorised Health Professional should contact the worker to explain the results whether they are normal or abnormal.

Supporting information

For a Safety Critical Worker Periodic Health Assessment, relevant supporting information includes the previous health assessment report. This is essential for ensuring continuity of the health assessment process and managing ongoing fitness for duty.

In addition, the following information for the previous period should be provided to the Authorised Health Professional as relevant:

- any change in sick leave patterns
- relevant workers compensation history
- critical incident history
- positive drug and alcohol assessments
- record of involvement in a serious incident.

The above information may be provided in summary and in any format that is administratively efficient and sufficiently comprehensive for the Authorised Health Professional.

In cases where a Category 1 worker refuses a blood test, the Authorised Health Professional should indicate that they were ‘unable to complete the assessment’ and refer back to the rail transport operator.

After the assessment

The Authorised Health Professional should contact the rail transport operator immediately by phone if the worker is Unfit for Duty but should not reveal details of the worker’s medical condition without the worker’s consent.

The method of transmission of the report to the rail transport operator should ensure that confidentiality is maintained. The rail transport operator should keep all reports confidentially and securely in compliance with privacy and health records legislation.

2.6.8 Portability of a health assessment report

If a rail safety worker has undertaken a health assessment for a rail transport operator, the health assessment report may be transferable to another rail transport operator provided the rail safety worker has given written agreement. Provision for signed consent of transfer is included on the report form.

The rail transport operator receiving the health assessment report has a responsibility to confirm that the:

- Level of health assessment performed by the original rail transport operator (i.e., Category 1, 2 or 3) is equal to or greater than that required for the tasks performed by the rail safety worker in the other rail transport operator.
- Specific health attributes required by the original rail transport operator (e.g., colour vision, hearing, musculoskeletal) are equal to or greater than those required to complete the tasks in the other rail transport operator.

Practical tests, such as for musculoskeletal capabilities, are generally quite specific to the particular rail environment. The results of such tests are not transferable to other rail transport operators unless the work practices and environment are very similar.

A rail safety worker who works for more than one rail transport operator has a responsibility to ensure that each operator is advised about conditions that may affect the worker’s safe working ability.

2.7 Quality control

2.7.1 General requirements

The adoption of quality control systems is essential for the effective implementation of the health assessments for rail safety workers, and thus for the safety of the rail network.

Quality control is important both for the conduct of the health assessments by the Authorised Health Professionals and for the management systems employed by the rail transport operators. Thus, all rail transport operators should implement a system of formal quality control to ensure that:

- Rail safety workers are being appropriately categorised.
- Rail safety workers are receiving health assessments in accordance with the requirements of this Standard.
- Rail safety worker health assessments are being administered and managed in accordance with the requirements of this Standard, both within the organisation and by Authorised Health Professionals.
- Privacy of health information is maintained.

Where possible, rail transport operators should also establish that Authorised Health Professionals are correctly interpreting and applying the requirements of this Standard in terms of fitness or otherwise for duty, and appropriately managing rail safety workers according to the outcomes of the assessments. This role may be supported by the rail transport operator's Chief Medical Officer if they have one (refer to Section 1.5.2 Responsibilities for the conduct and management of health assessments).

2.7.2 Nature and extent of quality control system

This Standard does not identify specific requirements for the quality control system but recognises that the nature and extent of the system will depend on the nature, size and complexity of the organisations, and the level of risk involved in their operations.

Systems may include elements such as:

- Internal or external audits — for example, audits of databases to ensure health assessments are being scheduled and completed as required.
- Document reviews — for example, reviews of procedures and documentation to ensure consistency with this Standard.
- Consultation and feedback — for example, through discussions with Authorised Health Professionals, internal staff managing the processes and rail safety workers.

Rail transport operators should establish a risk-based system founded on consideration of factors such as:

- **The risk category of the workers**. All categories of assessment should be included in the quality control system; however, the system may focus particularly on Category 1 and Category 2 workers for whom, by definition, the risks are greatest.
- **The experience of the health professionals conducting the health assessments**. The system should involve all Authorised Health Professionals; however, the nature, extent and frequency of review or audit should consider factors such as the:
  - Turnover of Authorised Health Professionals.
  - Relatively few assessments conducted by some practitioners.

  - Existence or otherwise of any routine checks conducted by the rail transport operator's Chief Medical Officer (if they have one).
- **The complexity of the organisation**. Operators may risk 'creep' away from policies and procedures across diverse areas of the organisation and should consider this risk when scheduling audits or reviews and establishing the nature and extent of quality control measures.

The quality control system may change over time, particularly as health professionals and organisations become more familiar with this Standard. Rail transport operators should regularly review their requirements based on a risk management approach. The system should be devised and implemented by those with appropriate experience both of the rail system and this Standard.

2.7.3 Audit points

To guide development of appropriate quality control systems, Table 4 describes possible points for audit or review of the health assessment systems of rail transport operators. Audit points are grouped under the headings of:

- task risk analysis and worker categorisation
- authorisation and management of Authorised Health Professionals
- performance and outcomes of health assessments by Authorised Health Professionals
- management of the health assessment process.

These points provide an indication of the potential scope of quality control systems and are not exhaustive.

Table 4. Audit points for quality control of rail safety health assessments

AUDIT POINTS
1. Task risk analysis and worker categorisation With respect to the task analysis and worker categorisation, rail transport operators should consider adopting audit or review processes that confirm: ▪ That all rail safety worker tasks have been categorised according to this Standard. ▪ Compliance of the categorisation methodology with the Standard, including compliance with the risk management processes outlined in Section 2.2 Features of the health risk management system. ▪ Appropriate documentation of categorisation processes and conclusions. ▪ That the dates of review for risk categorisation have been scheduled and are flagged for reconsideration when job descriptions change.
2. Authorisation and management of Authorised Health Professionals With respect to the authorisation and management of health professionals, rail transport operators should consider adopting audit or review processes that confirm: ▪ Up-to-date records are maintained by health professionals who are authorised by the rail transport operator. ▪ All health professionals who have conducted assessments either in part or in-full (including nurses) are appropriately authorised. ▪ All Authorised Health Professionals have received initial training and refresher training if required including receiving relevant update information from the ONRSR or the NTC. ▪ Current procedures for conducting the health assessments for the particular rail transport operator are held by all Authorised Health Professionals. ▪ Authorised Health Professionals use current versions of forms. ▪ Appropriate systems are in place for regular communication with Authorised Health Professionals.

AUDIT POINTS

3. Performance and outcomes of health assessments by Authorised Health Professionals

With respect to health assessments performed by Authorised Health Professionals, the rail transport operator should consider audit or review processes that confirm the:

- Authorised Health Professional maintains suitable systems and procedures for managing and conducting health assessments, including the use of the appropriate forms.
- Timeliness of various aspects of health assessments from initial assessment to reporting and follow-up as required.
- Continuity of assessment from a medical viewpoint, including the number of different Authorised Health Professionals involved.
- Consistency of the health assessments with the requirements of the Standard.
- Appropriateness of decision-making in terms of fitness for duty.
- Appropriateness of interaction with the rail transport operator.
- Appropriateness of interaction with the rail safety worker.

4. Management of the health assessment process

With respect to management of the health assessment process, rail transport operators should consider adopting audit or review processes that confirm:

- Adequate internal procedures in line with this Standard.
- Rail safety workers hold current medical certification.
- Recall and monitoring systems adequately identify when health assessments are due, and adequately monitor assessment status.
- Timeliness of reporting by Authorised Health Professionals.
- Recall and monitoring system are effective in managing workers with temporary medical certificates (requiring follow-up investigation) and those found Temporarily Unfit for Duty.
- Appropriateness of interaction between the Authorised Health Professional and the rail transport operator (e.g., compliance with privacy requirements).

3 Procedures for Authorised Health Professionals

This section of the Standard explains:

- The procedures associated with conduct of the health assessments for rail safety workers (summarised in Figure 15).
- The relationships, use of forms and flow of information between Authorised Health Professionals and rail transport operators.
- The nature of the tests required for Pre-placement and Periodic Health Assessments.
- The equipment requirements.
- General considerations for conducting the assessments.
- Considerations for communicating with rail safety workers, other health professionals and rail transport operators.
- Considerations for record keeping.

3.1 Appointments and documentation

The rail transport operator will notify rail safety workers of their health assessment requirements, including when they are due for their Periodic Health Assessment or when they are required to undertake a Triggered Health Assessment. An appointment for an assessment can be made by the rail transport operator or the worker.

Before the appointment, the rail transport operator will forward the relevant forms and documentation to the Authorised Health Professional (also refer to Section 2.6.3 Health assessment forms and Section 6.2 Model forms). This will include:

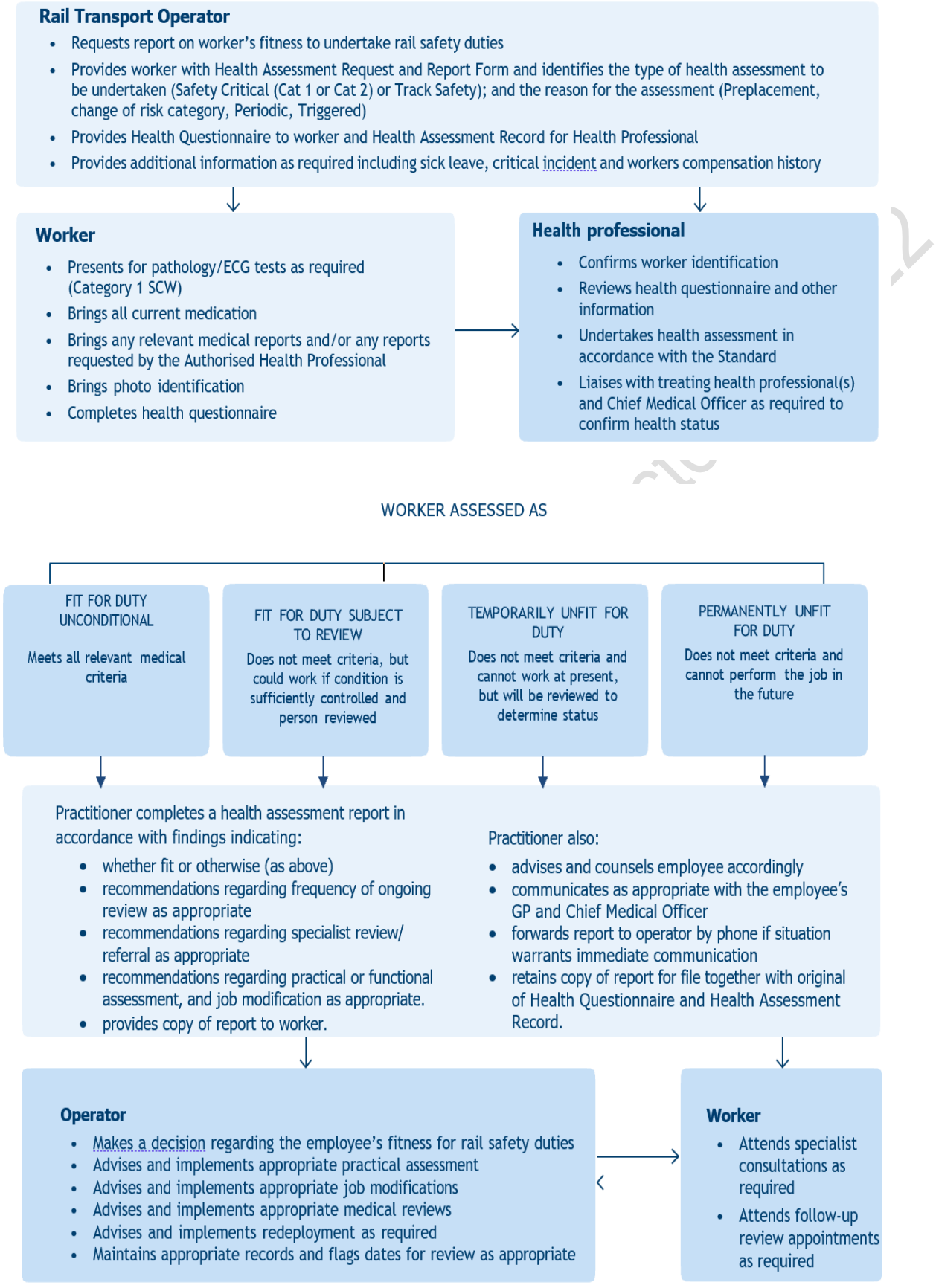
- Request and Report Form, which will indicate the nature of the worker's job and the level (e.g., Category 1, Category 2, Category 3) and type of health assessment required (e.g., Pre-placement, Periodic or Triggered). This form will also identify task-specific requirements for hearing, colour vision and musculoskeletal capacity. It will also indicate the nature of tests required.
- Record for Health Professional, which guides the clinical examination and provides a convenient standardised template for recording a general assessment of fitness for rail safety duty. This form is generally not suitable for a Triggered Health Assessment, which will likely focus on a specific health issue.

The Authorised Health Professional should not conduct the assessment without the appropriate forms. The Authorised Health Professional should not initiate the forms.

Supporting documentation will include a copy of the Report Form from the previous health assessment. Additional information should also be included, for example:

- summary reports of sick leave and workers compensation claims
- notifiable incident history
- indication of a positive alcohol or drug test, or self-declaration.

Figure 15. Conducting a health assessment for fitness for rail safety duty



The Authorised Health Professional may seek further relevant information from the rail transport operator or from previous Authorised Health Professionals if required and consistent with privacy principles.

For Pre-placement and Periodic Health Assessments, workers should bring to the assessment:

- the completed Health Questionnaire
- all medications they are currently taking (or a list of them)
- corrective lenses if usually worn at work
- hearing aids if usually worn at work
- copies of any medical reports or test results that are available or that have been requested by the Authorised Health Professional
- photo identification (ID).

For Triggered Health Assessments, the requirements are similar however rail safety workers do not need to complete the Health Questionnaire.

3.2 Test requirements

For Pre-placement and Periodic Health Assessments, the following tests are required:

- resting electrocardiograph (ECG) (Category 1 only)
- non-fasting blood test for cholesterol (total and HDL) (Category 1 only)
- non-fasting blood test HbA1c (Category 1 only)
- audiometry (all categories if required based on the risk assessment for that worker).

A drug screen may also be requested for all category workers at Pre-placement or Change of Risk Category health assessments.

Results of the tests should be available to the Authorised Health Professional for consideration during the appointment. If the results are not available, the worker can be issued with a preliminary assessment of fitness for duty, based on the clinical examination and other aspects of the assessment. The final assessment should be made as soon as possible, and the Authorised Health Professional should actively pursue the pathology results to ensure their timely completion. The Authorised Health Professional should contact the worker to explain the results whether they are normal or abnormal.

Testing requirements for Triggered Health Assessments will be determined by the Authorised Health Professional and/or the Chief Medical Officer.

3.3 Facilities and equipment

The examination room should be well lit, quiet and offer privacy.

Equipment for the health assessment should include:

- far visual acuity test
- audiometer
- breathalyser (AS3547:2019)
- Ishihara plates (12 plate edition) for colour vision test
- sphygmomanometer

- laptop/PC for recording data and calculating cardiac risk score.

3.4 Orienting the worker

Before starting the assessment, the Authorised Health Professional should:

- Explain the purpose of the health assessment to the worker and that the results will be discussed with them.
- Explain how their health information will be collected, used, disclosed and stored in line with privacy principles, in particular that:
  - only information relevant to the assessment of their fitness for rail safety duty will be collected
  - all clinical and health information will remain confidential and will not be forwarded to the rail transport operator without the worker's consent but may be discussed with the Chief Medical Officer
  - the report provided to the rail transport operator will be in functional terms (rather than diagnostic ones) in relation to their fitness to perform rail safety duties, as indicated on the report form.
- Request the worker to sign the declaration/disclosure statements indicating that:
  - they understand how their health information will be managed
  - they attest that the information they provide to the Authorised Health Professional is complete and correct
  - they give their consent for the Authorised Health Professional to contact their treating health professionals if necessary to establish information necessary to determine their fitness for duty
  - If the worker refuses to sign the disclosure, or the declaration that the information that they have provided is complete and correct, the assessment should be abandoned; the rail transport operator should be notified that the examination has not been conducted and class the worker as Temporarily Unfit for Duty.
- Check the worker's photo ID.

3.5 The examination

3.5.1 Overview

In general terms, the assessment of rail safety workers under the Standard involves:

- identification of health issues
- assessment to determine impact on rail safety work, including referral for investigation/specialist assessment
- application of fitness for duty criteria
- management in terms of directing to appropriate treatment, monitoring and review.

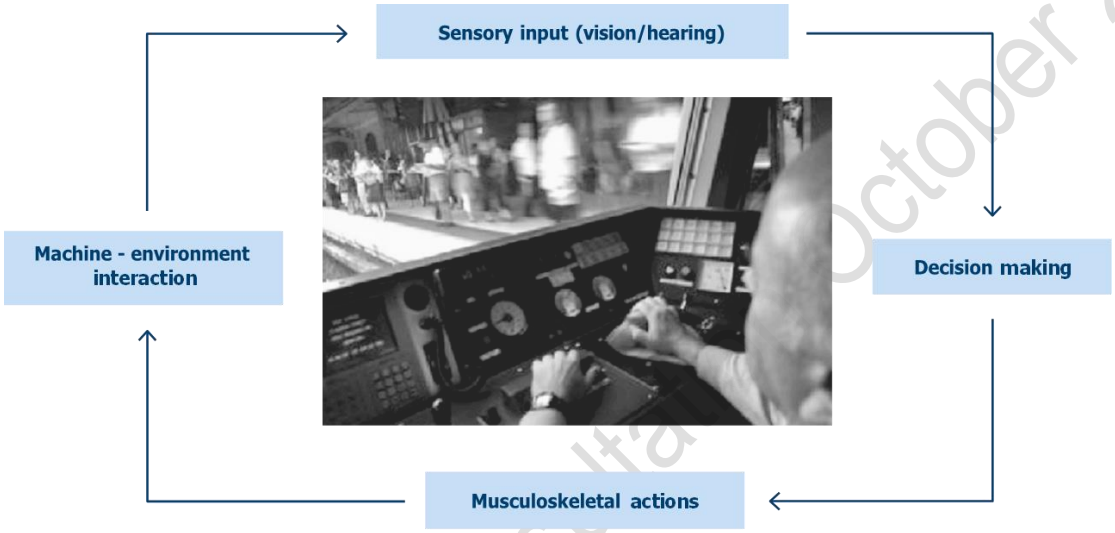
The detailed assessment processes, fitness for duty criteria and general management guidelines for various health conditions and body systems are contained in Part 4 (Category 1 and 2 workers) and Part 5 (Category 3 workers) of the Standard. The information is arranged in chapters alphabetically according to body system or condition. Each chapter provides general information about the body system/condition and its effects on safety, and then provides advice about the assessment of the body system/condition and management, where appropriate. The table in each chapter sets out the criteria to be met for fitness for duty.

The focus of the assessment is on identifying serious conditions that would impact the ability to perform rail safety duties. The criteria emphasise function in relation to the job rather than being based on diagnosis or impairment per se.

It is not possible to cover the complete range of conditions that may need to be considered. A generic approach may be applied in situations where conditions or symptoms are encountered which are not covered in the Standard. This approach also applies to the situation where there are multiple minor conditions where concern may arise regarding their net effect on safety. This may occur, for example, in the setting of degenerative disease or multiple traumas after a motor car crash (refer to Section 3.5.7 Multiple conditions).

The basic principle in such assessments is to be mindful of the inherent requirements of the rail safety worker's job as per Figure 16.

Figure 16. The ergonomics and health attributes required for rail safety work



Clinical judgement is then required regarding assessing the severity of the condition in relation to the demands of performing the job safely. It is desirable that the examining health professional has first-hand understanding of the job requirements to make this assessment with insight. Where necessary, additional tests may be required or discussions with the worker's treating doctors, or others may be helpful.

The examination of rail safety workers seeks to identify significant conditions likely to affect fitness for duty. This includes conditions likely to affect attentiveness to the task, including:

- blackouts
- cardiovascular conditions
- diabetes mellitus
- neurological conditions (seizures and epilepsy, dementia, vestibular disorders and other neurological disorders, etc.)
- neurodevelopmental disorders
- psychiatric conditions
- sleep disorders
- substance abuse.

It also includes examination of task-specific requirements, including:

- hearing
- vision (including colour vision)
- musculoskeletal requirements.

The nature and extent of the assessment is determined by the risk assessment and worker categorisation and is guided by the Record for Health Professional (refer to Section 6.2.4 Record for Health Professional).

For Category 3 workers, the assessment focuses on conditions that affect track safety, including hearing, vision, mobility and the conditions listed in the Category 3 Health Questionnaire which may impact safety around the track by potentially causing sudden incapacity (refer Part 5 Assessment and management of health conditions for Category 3 workers).

The examination proceeds via the conventional steps of:

- Taking a patient history using the Health Questionnaire as the basis.
- Performing the clinical examination, and considering pathology results, other tests and medical reports using the Record for Health Professional to guide the assessment and record results.
- Interpreting the findings in light of this Standard to determine fitness for duty status.

For Periodic Health Assessments the steps will also be informed by previous health assessment outcomes and supporting information provided by the rail transport operator. For Triggered Health Assessments, the steps will be focussed on the triggering factors such as a monitoring a particular health condition. The steps are outlined in further detail in the following sections.

3.5.2 History including Health Questionnaire

All workers (Category 1, 2 and 3) attending for a Pre-placement or Periodic Health Assessment should bring a completed Health Questionnaire. The questionnaire for the Category 3 assessment is not as comprehensive as the Category 1 and Category 2 questionnaire, but still seeks to establish any serious health condition that might impact on track safety. The assessment should not proceed until the Health Questionnaire has been completed. The Authorised Health Professional should review the worker's responses to the questionnaire, elicit further information as required and record the history in detail for all declared conditions.

The Authorised Health Professional should calculate scores for various sections of the questionnaire (Categories 1 and 2 only) and record the results on the Record for Health Professional. These sections include:

- AUDIT questionnaire (Question 8)
- Epworth Sleepiness Scale (ESS) (Question 9).

Note that the K10 questionnaire is now administered verbally and no longer appears in the Health Questionnaire for Category 1 and 2 workers. The results of the questions should be recorded in the Record for Health Professional.

The Authorised Health Professional should clarify and discuss aspects of the questionnaire as required to establish the history, including any changes or incidents since the worker's previous assessment. They should ask the worker to sign the declaration that the information they have provided is accurate and truthful, then countersign and date. If this is refused, then proceed as set out in Section 3.7 Reporting to the rail transport operator.

For Triggered Health Assessments, which usually focus on a specific health condition, completion of the Health Questionnaire is not usually required.

3.5.3 Clinical assessments relevant to the worker's risk category

When examining a worker to assess their fitness for duty, the functionality of various body systems should be addressed as outlined in Part 4 Assessment and management of health conditions for Category 1 and 2 workers and Part 5 Assessment and management of health conditions for Category 3 workers.

As outlined in those sections, additional tests or referral to a specialist may be required to determine fitness for duty if the history and clinical examination raises the possibility of potentially significant problems. It may be necessary to contact the treating doctor to clarify information regarding the worker's health. This must be done with the worker's consent. Such consent may be recorded on the assessment form.

The assessment is guided by the Record for Health Professional and specific assessment protocols outlined in the relevant chapters in Part 4 and Part 5.

In the case of hearing, colour vision and musculoskeletal capacity for Category 1 and Category 2 workers, specific risk assessments and fitness for duty criteria are required in relation to each job.

Depending on the circumstances, a Triggered Health Assessment may require a targeted or more comprehensive assessment than that prescribed for the Periodic Health Assessment and will be individually determined. This should be advised by the Authorised Health Professional (refer to Section 2.2.6 Timing and frequency of health assessments).

3.5.4 Interpretation of the examination findings – general considerations

The findings should be recorded on the form Record for Health Professional, which aims to guide systematic thinking about the findings. It requires documentation of any abnormalities found, their interpretation in regard to this Standard and the action taken (refer to Section 6.2.4 Record for Health Professional). The form may be audited to assist in quality assurance.

The information should be interpreted in light of the guidance and fitness for duty criteria outlined in Part 4 Assessment and management of health conditions (Categories 1 and 2) and Part 5 Assessment and management of health conditions for Category 3 workers.

Category 1 and 2 workers have differing fitness for duty criteria due to the added emphasis on risk of collapse for Category 1 Safety Critical Work. Both categories, however, share the need for cognitive competence and other faculties. Each section in Part 4 clearly differentiates the requirements for Category 1 and Category 2 workers, as appropriate.

The fitness for duty criteria for Category 3 workers differs again, reflecting the requirements for their own safety around the track, as distinct to the safety of the network.

3.5.5 Temporary conditions

This Standard does not deal with the many conditions that may affect health on a short-term basis, and for which a rail safety worker may be referred for assessment regarding fitness to resume duty. Such conditions may include post-major surgeries, severe migraines, limb fractures or acute infections.

Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

3.5.6 Undifferentiated illness

A rail safety worker may have clinical symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a health professional can make a definitive diagnosis, and confidently advise the worker and rail transport operator.

Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect rail safety work.

Generally, a Safety Critical Worker who presents with symptoms of a potentially serious nature—for example, chest pains, blackouts, delusional states or dizzy spells—should be assessed as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be assessed as fit for non-safety critical alternative duties. Fit for Duty Subject to Review may be used to classify workers who require prompt investigation, but whose condition is unlikely to pose a safety risk.

3.5.7 Multiple conditions

Where a worker has a systemic disorder or a number of medical conditions, there may be additive or cumulative detrimental effects on judgement and overall function. For example, there may be a combination of impaired vision, hearing and locomotor dysfunction, or combinations of physical and mental illness, and associated medication. If these or other clinical conditions are not adequately covered in this Standard, the Authorised Health Professional should consider the nature of the worker's tasks and the worker's capacity to perform the duties safely. The general principles of the ergonomics of rail safety work should be borne in mind (refer to Figure 16). The key issue to consider is whether the conditions in combination could do any of the following:

- affect sensory processes (vision, hearing and balance)
- affect cognition (situational awareness)
- lead to sudden collapse
- affect musculoskeletal performance.

If any of the above could happen, could that then, in turn, affect the safety of the rail network? If so, then consider:

- Modifying the tasks or environment to accommodate a person's condition without compromising their efficiency or the health and safety of others or incurring unreasonable expense.
- Providing helpful additional information to the clinical assessment through additional functional or practical assessments (refer to Section 3.6.1 Functional and practical assessments).

3.5.8 Prescription drugs and Safety Critical Work

Acute impairment due to alcohol or drugs (including illicit, prescription and over-the-counter drugs) is managed through the RSNL. Under the RSNL, a rail safety worker must not carry out or attempt to carry out rail safety work while there is any presence in their system of alcohol or a 'prescribed drug', comprising cannabis (THC), speed (methamphetamine) or ecstasy (MDMA). They are also prohibited from working if they are impaired by alcohol or any drugs, prescribed or otherwise.

General considerations

Any drug that acts on the central nervous system has the potential to adversely affect a rail safety worker's functioning. Central nervous system depressants, for example, may reduce vigilance,

increase reaction time and impair decision making in a very similar way to alcohol. In addition, drugs that affect behaviour may exaggerate adverse behavioural traits and introduce risk-taking behaviours[9].

The potential impact of prescription and over-the-counter medication should be a consideration in determining a rail safety worker's fitness for duty. Rail safety workers are asked to record all current prescription and over-the-counter medication on the Health Questionnaire when attending a Health Assessment. This provides an opportunity for the Authorised Health Professional to consider and discuss potential impacts and provide advice accordingly.

The effects of medication and non-compliance with prescribed medication should be considered, including:

- How medication may help to control or overcome aspects of a health condition that may impact on working safely.
- Whether medication side effects may affect working safely, including risk of sedation, impaired reaction time, impaired motor skills, blurred vision, hypotension or dizziness.
- Whether medication may result in a positive or non-negative result on a random drug screen carried out under the rail transport operator's drug and alcohol management program. Prescription medications likely to result in a positive/non-negative test result include benzodiazepines and opiates (see below).

When advising workers and considering their general fitness for Safety Critical Work, whether in the short or long-term, Authorised Health Professionals should also consider the following:

- The individual response of the person—some individuals are more affected than others.
- The added risks of combining two or more drugs capable of causing impairment, including with alcohol.
- The added risks of sleep deprivation (through fatigue) while working, which is particularly relevant to shift workers.
- The potential impact of changing medications or changing dosage.
- The cumulative effects of medications.
- The presence of other medical conditions that may combine to adversely affect their ability to perform Safety Critical Work.
- Other factors that may exacerbate risks, such as known history of alcohol or drug misuse.

The effects of specific drug classes

The potential effects of specific drug classes are well documented but can vary between individuals. And, while the impact on safety in the rail environment has not been systematically studied, evidence in relation to road vehicle driving performance and crash risk provides an indication of the potential risk. While many drugs have effects on the central nervous system, most, except for benzodiazepines, tend not to pose a significantly increased driving crash risk when the drugs are used as prescribed and once the patient is stabilised on the treatment.

- **Benzodiazepines**: Benzodiazepines are well known to increase the risk of a crash/incident and are found in about 4 per cent of road fatalities and 16 per cent of injured drivers taken to hospital. In many of these cases benzodiazepines were either abused or used in combination with other impairing substances, particularly alcohol. If a hypnotic is needed, a shorter acting

[9] Austroads Ltd & NTC (National Transport Commission) 2022, *Assessing Fitness to Drive 2022: for commercial and private vehicle drivers*, Austroads Ltd, Sydney.

drug is preferred. Tolerance to the sedative effects of the longer-acting benzodiazepines used in the treatment of anxiety gradually reduces their adverse impact on driving skills.

Benzodiazepine use will be identified on a random drug screen and rail safety workers should be advised accordingly.

- **Antidepressants**: Although antidepressants are one of the more commonly detected drug groups in fatally injured drivers, this tends to reflect their wide use in the community. The ability to impair is greater with sedating tricyclic antidepressants, such as amitriptyline and dothiepin, than with the less sedating serotonin and mixed reuptake inhibitors such as fluoxetine and sertraline. However, antidepressants can reduce the psychomotor and cognitive impairment caused by depression and return mood towards normal. This can improve driving and work performance.
- **Antipsychotics:** This diverse class of drugs can improve performance if substantial psychotic-related cognitive deficits are present. However, most antipsychotics are sedating and have the potential to adversely affect driving skills (work performance) by blocking central dopaminergic and other receptors. Older drugs such as chlorpromazine are very sedating due to their additional actions on the cholinergic and histamine receptors. Some newer drugs are also sedating, such as clozapine, olanzapine and quetiapine, while others, such as aripiprazole, risperidone and ziprasidone, are less sedating. Sedation may be a particular problem early in treatment and at higher doses.
- **Opioids:** Opioid analgesics are central nervous system depressants and as such can suppress cognitive and psychomotor responses. While cognitive performance is reduced early in treatment (largely due to their sedative effects) neuroadaptation is rapidly established. This means that patients on a stable dose of an opioid may not have a higher risk of a crash. Working at night may be a problem due to the persistent miotic effects of these drugs reducing peripheral vision.

  Opioid use will be identified on a random drug screen and rail workers should be advised accordingly.
- **Medicinal cannabis:** Medicinal cannabis products contain the cannabinoids cannabidiol (CBD) and delta-9-tetrahydrocannabinol (THC). THC is hallucinogenic potentially affecting performance. It will result in a positive drug test in random screening; it is a banned substance under the RSNL.
- **Psychedelics:** Psychedelics are not currently approved for medicinal use within Australia. They are banned substances under the RSNL.

These requirements interface with the management of rail safety worker fitness for duty.

Where medication is relevant to the overall assessment of fitness for Safety Critical Work in the management of specific conditions, such as cardiovascular, diabetes, epilepsy and psychiatric conditions, this is covered in the relevant sections.

3.6 Additional tests and referral

To further assist in assessment, there are some additional tests and rail-specific resources to be aware of and these are discussed in the following sections.

3.6.1 Functional and practical assessments

The role of functional and practical assessments in relation to the overall health assessment system is described in Section 2.2.4 Functional and practical assessments, including considerations for rail transport operators.

A clinical health assessment may need to be supplemented with a functional or practical test to confirm fitness for duty. For example, a functional assessment of some neurological conditions or musculoskeletal capacity may be applied to confirm the worker's ability to perform the particular tasks required of them. Practical tests are usually conducted in the typical work environment, while functional assessments are simulations of work in settings such as a gym or a cab simulator. Such tests cannot override the fitness for duty criteria; they can only supplement the doctor's decision about the ability to perform rail safety tasks where this Standard is imprecise.

Authorised Health Professionals should consider the following limitations of such tests:

- These tests can never fully simulate the work environment. By their nature, the test will always be a snapshot of the person's functional capacity. They are limited in time and may not provide an indication that the individual will be capable of performing those tasks for a full working day.
- The test may place the person being tested at risk of injury. When ordering a functional or practical test, the examining doctor should be satisfied that the individual is fit to perform the test. If fitness to perform the test is questionable, then so is the person's fitness for the role.
- A functional or practical test does not assess risk of injury. Where the health issue is one of recurrent injury—for example, an unstable knee—performing all of the elements of a test does not mean that the person is safe to perform those job demands day after day.

As with ordering any test, the doctor should first consider how a positive, negative or inconclusive result will affect their ultimate decision-making.

Practical tests for colour vision or hearing are not recommended because consistency of methodology, and thereby accuracy and applicability across all rail transport operators, cannot be ensured.

3.6.2 Neuropsychological tests

Neuropsychological tests to assess cognitive capacity and aptitude for various types of rail safety worker may be used in recruitment. They may also be used for assessment of rail safety workers who have had an injury or condition affecting mental processes to help gauge the severity, the extent of recovery, if applicable, and suitability for work. The tests should be applied by a psychologist experienced in using neuropsychological tests.

3.6.3 Specialist referrals and reports

The worker's condition may warrant referral to a specialist to assess fitness for duty and to advise/initiate appropriate treatment. In such cases, the Authorised Health Professional should explain fully the nature of the rail safety tasks involved and the concerns regarding health status.

The specialist's report should be sent to the Authorised Health Professional, not to the rail transport operator. The Authorised Health Professional should also request that a copy of the correspondence and test results be sent to the worker's general practitioner and other treating doctors. Where a worker is already seeing a relevant specialist, the referral may be made to that specialist.

When a worker is assessed as Fit for Duty Subject to Review, they will generally be required to be seen by a specialist leading up to their review appointment with the Authorised Health Professional and to provide a report accordingly. Exceptions to this are detailed in the Standard where applicable for certain conditions.

Where appropriate and available, the use of telemedicine technologies such as videoconferencing is encouraged as a means of facilitating access to specialist opinion.

3.6.4 Determining appropriate review periods

The Standard generally specifies review periods for conditions for which the worker is categorised Fit for Duty Subject to Review. Where the period is not specified, the Authorised Health professional is required to make a recommendation based on the nature of the condition, the response to treatment and the nature of the rail safety work.

The review period may therefore change as treatment is established and the worker's condition stabilises. In circumstances where the condition is considered cured, the Authorised Health Professional may recommend that more frequent review is not required, and the worker's condition can be monitored at their Periodic Health Assessment. Progress of the particular condition will need to be specifically monitored at that assessment and a report from the treating doctor may be required.

3.7 Reporting to the rail transport operator

Fitness for duty should be reported using the standard fitness for duty classifications (refer to Section 2.3 Standard reporting framework):

- Fit for Duty Unconditional
- Fit for Duty Subject to Review
- Temporarily Unfit for Duty
- Permanently Unfit for Duty.

Should the worker be assessed as unfit for duty either temporarily or permanently, the Authorised Health Professional should notify the rail transport operator immediately by phone to discuss the implications of the assessment and to allow the rail transport operator to make appropriate arrangements. The Authorised Health Professional should not discuss specific clinical information, only recommendations in terms of fitness for duty, including any necessary job modifications.

In all cases, the Authorised Health Professional should complete the report section of the Request and Report Form. This report should not include any clinical information. Only the functional assessment of fitness for duty or otherwise, any recommendations regarding specialist review or job modifications, and any tests that need to be ordered by the rail transport operator for future Triggered Health Assessments, e.g., audiogram, HbA1c, should be reported to the operator.

The Health Questionnaire and Record for Health Professional should not be returned to the rail transport operator.

3.8 Record keeping

For each worker, appropriate records should be maintained by the Authorised Health Professional, including:

- completed Health Questionnaire
- completed Record for Health Professional
- copy of the report form sent to the rail transport operator
- copies of relevant support information
- any additional clinical notes.

In addition, and in accordance with legislation:

- the worker's medical records should be made available to the worker on request

- the worker's medical records are subject to confidentiality
- records may be scanned and kept in electronic form. The employee's signature on the completed Health Questionnaire is legally valid after scanning.

3.9 Informing and counselling the worker

The Authorised Health Professional should advise the worker of the results of the assessment and, where relevant, about the ways in which their condition may impair their ability to conduct rail safety work. As part of this process, the worker can become better informed about the nature of their condition, the extent to which they can maintain control over their condition, the importance of regular medical review and the need for medication, where appropriate. The worker should be provided with a copy of the report to facilitate the discussion.

If the worker is found to be unfit for duty, the Authorised Health Professional should take a conciliatory and supportive role while fully explaining the risks posed by the worker's condition with respect to rail safety work.

3.10 Communicating with the worker's general practitioner and other health professionals

The Authorised Health Professional should ensure an ethical relationship with the worker's general practitioner and other treating professionals and ensure continuity of care is maintained.

Reference to the general practitioner should be made for ongoing treatment requirements, for management of lifestyle issues and to discuss issues such as medication causing impairment. The Authorised Health Professional should also request that specialist reports and investigation results be copied to the worker's general practitioner.

The Authorised Health Professional should obtain the worker's consent should they need to contact the worker's general practitioner or treating specialist to clarify information about the worker's health condition.

The final decision regarding fitness for duty or any restrictions rests with the rail transport operator and involves consideration of the advice of health professionals as well as anti-discrimination and retraining issues.

4 Assessment and management of health conditions (Categories 1 and 2)

Part 4A: Conditions causing sudden incapacity or loss of situational awareness

4.1 Blackouts

4.1.1 Relevance to Safety Critical Work

Unpredictable, spontaneous loss of consciousness is incompatible with Category 1 Safety Critical Work. This Standard is therefore primarily applicable to those workers. However, blackouts or presyncope may indicate an underlying medical condition (e.g., seizures, diabetes, cardiovascular condition, a sleep disorder), which may have implications for those performing Category 2 Safety Critical Work and that will require management as per the appropriate standard.

For the purposes of this Standard a syncopal event is defined as a loss of consciousness (blackout) arising from a cardiovascular cause.

4.1.2 General assessment and management guidelines

General considerations

Blackouts may occur due to a range of mechanisms including:

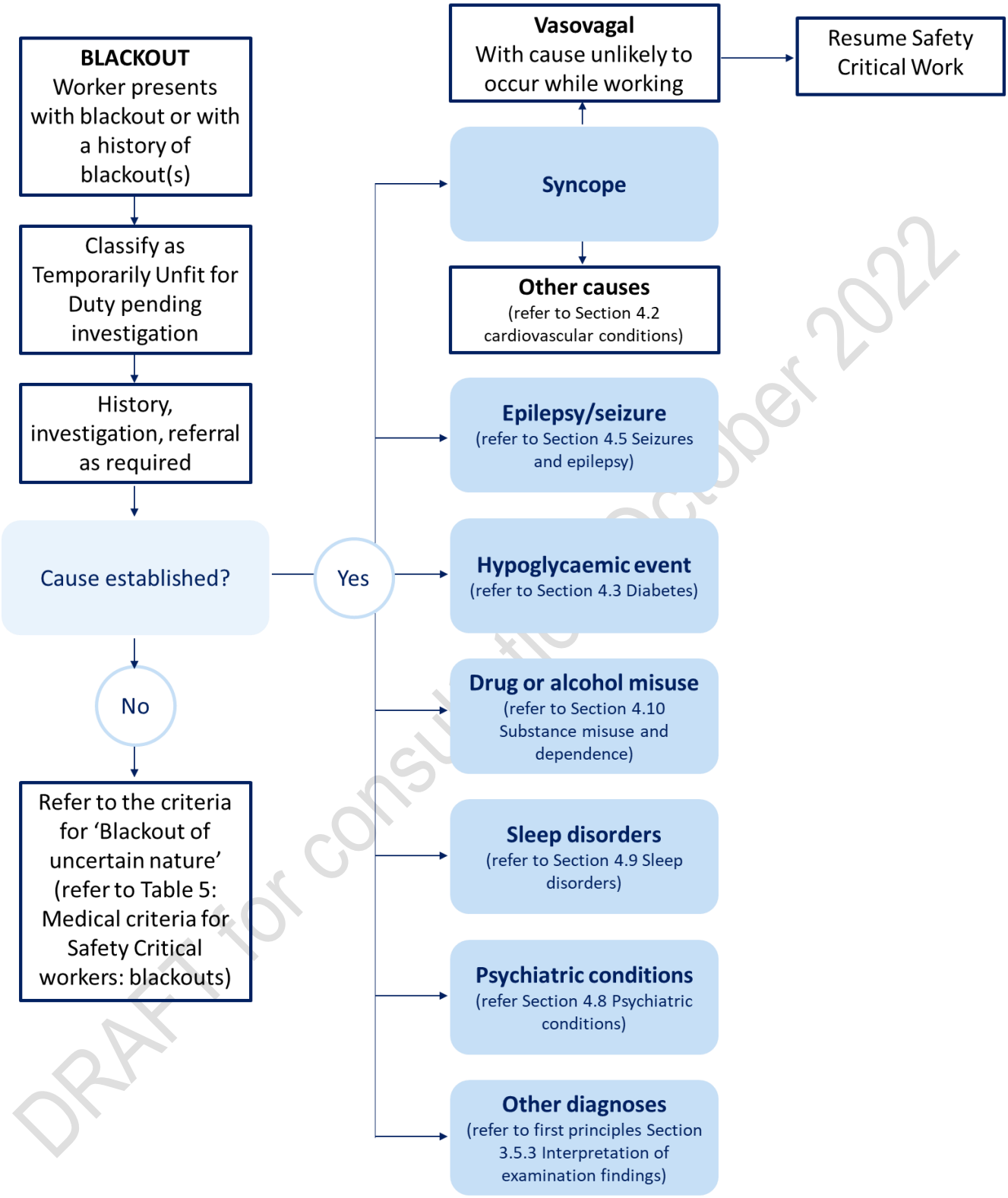
- Vasovagal syncope or 'faint,' which accounts for more than 50 per cent of blackouts and may be due to factors such as hot weather, emotion or venepuncture but may also be due to more serious causes that may recur.
- Syncope due to other cardiovascular causes such as structural heart disease, arrhythmias or vascular disease.
- Epileptic seizure, which accounts for less than 10 per cent of blackouts.
- Other causes including metabolic causes (e.g., hypoglycaemia), psychiatric (e.g., hyperventilation, psychosomatic states, psychogenic non-epileptic seizures); drug intoxication or a sleep disorder.

Blackouts should be managed as per Figure 17: Management of blackouts and Safety Critical Work (Category 1 and Category 2). Although blackout is of principal concern for Category 1 workers, both Category 1 and Category 2 workers should be assessed as Temporarily Unfit for Duty until the cause of the blackout is established. The underlying cause may adversely affect Category 2 work (e.g., diabetes or a sleep disorder).

Determination of the cause of blackouts may be difficult and require extensive investigation and specialist referral. The cause may remain unknown despite extensive investigation.

Some conditions causing blackout are temporary (e.g., fainting in hot weather) and do not impact on fitness for duty.

Figure 17. Management of blackouts and Safety Critical Work (Category 1 and Category 2)



Vasovagal syncope

The most common cause of transient loss of consciousness is vasovagal syncope ('fainting'). Where this has been triggered by a well-defined provoking factor or a situation that is unlikely to recur while working (e.g., prolonged standing, venepuncture or emotional situation), it is not necessary to restrict work. However, vasovagal syncope may also result from other causes that are not so benign. In such cases, fitness for Safety Critical Work should be assessed according to the fitness for duty criteria for syncope (refer to Section 4.2 Cardiovascular conditions).

Blackouts due to medical causes not covered in the Standard

If the cause of the blackout is determined to be due to a medical condition not covered in the Standard, then first principles regarding fitness for duty should be applied (refer to Section 2.1 Risk management approach). Considerations include the likelihood of recurrence of blackout and the treatability of the condition as well as the nature of the safety critical task. There should also be an appropriate review period.

Blackouts of undetermined mechanism

If despite extensive investigation, the mechanism of a blackout cannot be determined, fitness for duty should be assessed according to Table 5 Fitness for duty criteria for Safety Critical Workers: blackouts. The fitness for duty criteria for blackout of undetermined mechanism are similar to those for seizure.

4.1.3 Fitness for duty criteria for Safety Critical Workers

Where a firm diagnosis has been made, the criteria appropriate to the condition should be referred to elsewhere in this Standard. For recurrent blackouts that are not covered elsewhere in this Standard, refer to Table 5 Fitness for duty criteria for Safety Critical Workers: blackouts.

It is important that health professionals familiarise themselves with both the general information previously described and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 5. Fitness for duty criteria for Safety Critical Workers: blackouts

CONDITION	CRITERIA
Blackouts: episode(s) of impaired consciousness of uncertain nature	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: ▪ if the person has experienced blackouts that cannot be diagnosed as syncope, seizure, or another condition. If there has been a single blackout or more than one blackout within a 24-hour period, Fit for Duty Subject to Review may be determined subject to at least annual review, taking into account information provided by an appropriate specialist as to whether the following criterion is met: ▪ there have been no further blackouts for at least 5 years. If there have been 2 or more blackouts separated by at least 24 hours, Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account information provided by an appropriate specialist as to whether the following criterion is met: ▪ there have been no further blackouts for at least 10 years. **Category 2 Safety Critical Workers** Refer to text.

CONDITION	CRITERIA
Exceptional cases	**Category 1 and Category 2 Safety Critical Workers** Where a person with one or more blackouts of undetermined mechanism does not meet the above criteria, Fit for Duty Subject to Review may be determined, based on consideration of the nature of the task and subject to annual review: ▪ if, in the opinion of the treating specialist and in consultation with the Authorised Health Professional and the rail transport operator's Chief Medical Officer (or an occupational physician experienced in rail), the risk to the network caused by blackout is acceptably low.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading - Blackouts

Austroads Ltd & NTC (National Transport Commission) 2022, *Assessing Fitness to Drive 2022: for commercial and private vehicle drivers*, Austroads Ltd, Sydney.

Moya, A. et al. 2018, *2018 ESC Guidelines for the diagnosis and management of syncope*, European Heart Journal, 39(21), 1883-1948, https://academic.oup.com/eurheartj/article/39/21/1883/4939241.

Shen, W. K. et al., 2017, *ACC/AHA/ HRS guideline for the evaluation and management of patients with syncope: A report of the American College of Cardiology/American Heart Association task force on clinical practice guidelines and the Heart Rhythm Society Circulation 136*, e60– e122.

Sorajja, D; Nesbitt, GC; Hodge, DO; Low, PA: Hammill, SC; Gersh, BJ & Shen WK, 2009, *Syncope while driving: clinical characteristics, causes, and prognosis*, Circulation, 15, 120(11), 928-34, http://www.ncbi.nlm.nih.gov/ pmc/articles/PMC3918881/.

4.2 Cardiovascular conditions

4.2.1 Relevance to Safety Critical Work

Effects of cardiovascular conditions on Safety Critical Work

Cardiovascular conditions may affect the ability to perform Safety Critical Work due to sudden incapacity, such as from a heart attack or an arrhythmia. This is particularly relevant to Category 1 workers. They may also affect concentration and the ability to control machinery due to onset of chest pain or palpitations, or dyspnoea, which is relevant to both Category 1 and Category 2 workers.

Cardiovascular conditions may be asymptomatic leading up to an event such as acute myocardial infarction, cardiac arrest, or stroke, and this poses a significant risk to rail safety for Category 1 workers. Predication of cardiac risk and active investigation and management of Category 1 workers found to be at high risk is therefore an important aspect of the Standard.

Cardiovascular disease also may have end-organ effects, such as on the brain (stroke), extremities (vasculature) and vision. The relevant sections should be referred to for advice on assessment of these effects.

Effects of Safety Critical Work on the heart

A further problem in those who have established ischaemic heart disease is that situations experienced while performing Safety Critical Work, such as responding to an emergency, may lead to a faster heart rate and fluctuation in blood pressure, which could theoretically trigger angina or even infarction.

4.2.2 General assessment and management guidelines

Cardiac risk assessment for Category 1 and Category 2 Safety Critical Workers

Assessment of cardiac risk involves clinical assessment as well as a cardiac risk level measurement (for Category 1 only). Clinical assessment includes the evaluation of information such as:

- Symptoms, such as chest pain or palpitations that may cause distraction from Safety Critical Work, as well as being a harbinger of possible collapse.
- Family history, such as first-degree relatives having cardiovascular events in midlife.
- Past history.
- Comorbidities such as obesity, inactivity, obstructive sleep apnoea and depression.
- Work factors such as exposure to climatic extremes in course of work.

All information should be used in assessing fitness for Category 1 and Category 2 workers. Clinical judgement may be needed to determine if a person is Fit for Duty Unconditional, Fit for Duty Subject to Review or Temporarily Unfit for Duty while being further assessed. See also below regarding stress EchoCG and risk factor management.

Cardiac risk level for Category 1 Safety Critical Workers

The cardiac risk assessment for Category 1 workers incorporates the cardiac risk level as a tool for predicting risk of a cardiovascular event, and in particular heart attack, during a five-year period. It considerably increases the power of the assessment to identify workers at risk of sudden incapacity and to guide their management. A Category 1 worker who is asymptomatic but found to

have an increased likelihood of cardiovascular event should be assessed more fully than an ordinary patient because of the risks they pose to public safety.

The Australian absolute cardiovascular disease web-based calculator should be used to calculate risk so as to ensure uniformity **http://www.cvdcheck.org.au/** . Where the online calculator is not available, the tables in Figure 18 may also be used (**https://www.heartfoundation.org.au/Bundles/For-Professionals/CVD-risk-charts**).

Note: If the online calculator does not provide a definitive score for outcomes over 15, the manual tables in Figure 19 should be used to establish if the score is above 25.

1. Data collection

Obtain the following information for the cardiac risk level calculator:

- Age.
- Gender.
- Whether or not the patient smokes cigarettes[10].
- Blood pressure as measured supine.
- Total cholesterol (fasting is not required) (TC) and high-density lipoprotein (HDL).
- Whether the worker has diabetes (a worker is considered to have diabetes if they are under treatment for diabetes or if diabetes is confirmed on HbA1c testing).
- Whether left ventricular hypertrophy (LVH) present based on resting ECG (online calculator only).

2. Determine risk level

Within the chart, the cell nearest to the person's age, systolic blood pressure and total cholesterol:HDL ratio should be used. Workers who fall exactly on a threshold between cells should be placed in the cell indicating a higher risk. For example, workers less than 35 years old should be managed as if they are 35 years old.

3. Stratification and risk management (refer Figure 19)

The cardiac risk level is associated with a probability of a cardiovascular event in the next 5 years. The higher the cardiac risk level, the higher the probability of an event. Therefore, further assessment and management of workers is determined partly by their risk level and partly by their overall cardiac risk assessment (refer Figure 19).

Workers with a moderate to high probability of an event in the next 5 years ($\geq$ 10 per cent should be referred for stress EchoCG and managed accordingly. Workers with a low risk ($\leq$ 9 per cent) should be managed based on their overall cardiac risk, including the presence of risk factors such as obesity, lack of physical activity and family history. Investigations such as stress EchoCG or coronary artery calcium score may be considered in consultation with the treating doctor to inform risk stratification.[11] See Table 6 for details including categorisation and review periods.

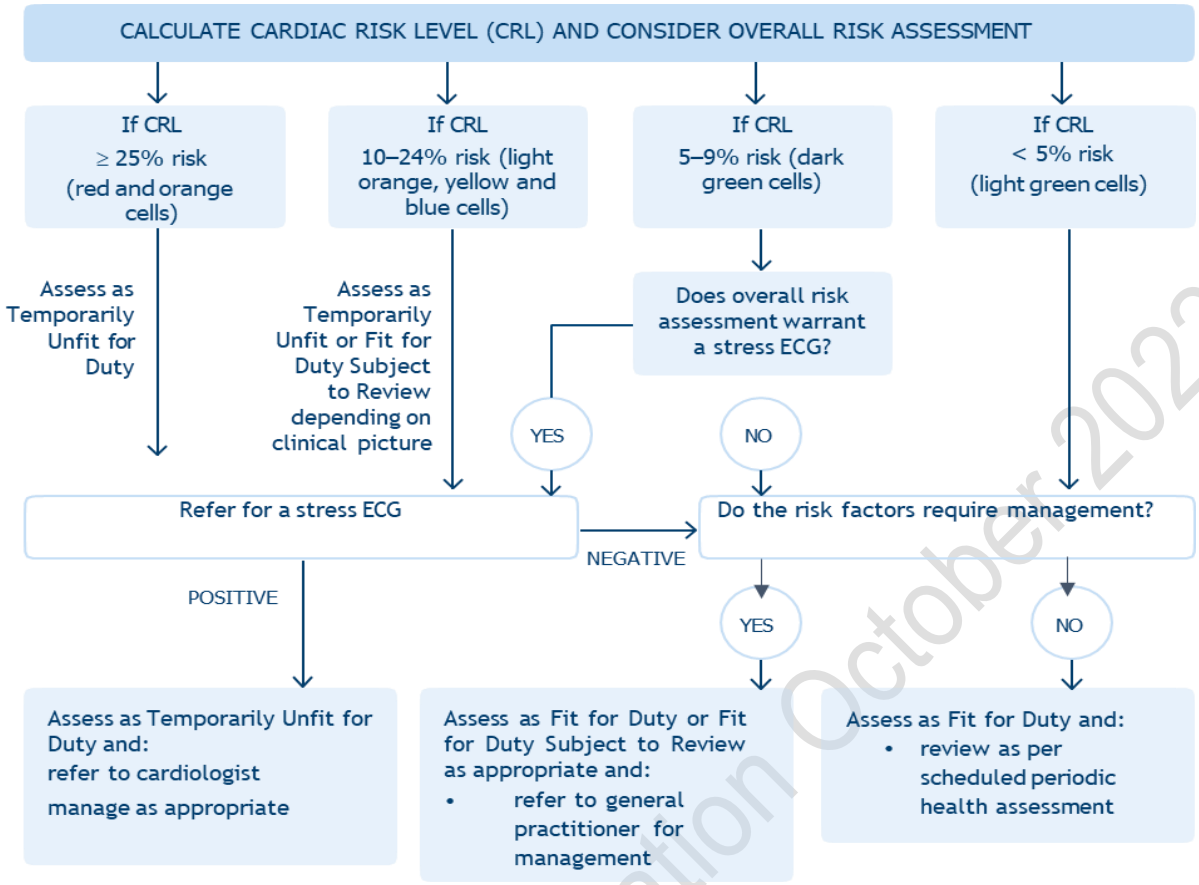
[10] Note: The Health Questionnaire includes a question about vaping but the relevance to cardiac risk is presently not established.

[11] Chua, A., Blankstein, R., Ko, B, 2020, *Coronary artery calcium in primary prevention*. AJGP, vol. 49, no. 8, pp. 464-469.

Figure 18. Coronary heart disease risk factor prediction charts

Source: Reproduced with permission from the Absolute cardiovascular disease risk assessment. Quick reference guide for health professionals. An initiative of the National Vascular Disease Prevention Alliance. © 2009 National Heart Foundation of Australia < https://www.heartfoundation.org.au/getmedia/dbb102e3-850f-41da-afbe-2776d8d4b97e/Absolute-CVD-Risk-Quick-Reference-Guide_2018.pdf >

Figure 19. Management of cardiac risk level (Category 1 workers)



Stress echocardiogram

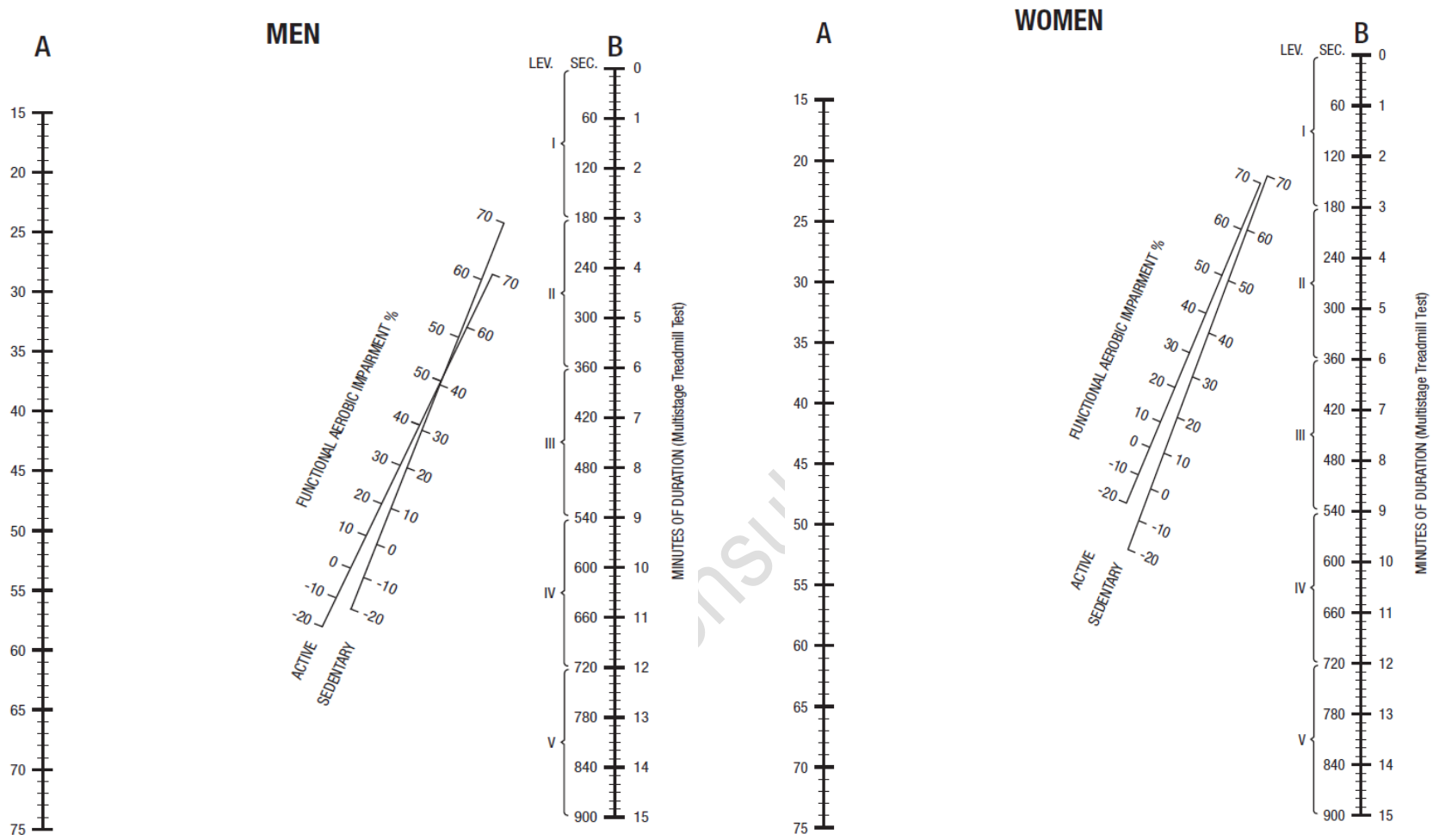
The stress EchoCG should be conducted using the Bruce protocol of the task (refer to Section 4.13 Musculoskeletal conditions).[12] The exercise capacity should be greater than or equal to 90 per cent of the age/sex predicted capacity (refer to Figure 20 Bruce protocol nomogram for men and women). Where a stress EchoCG is positive or clinical assessment warrants it, referral to a cardiologist should be made for further assessment and advice on management. The results of a stress EchoCG are valid for up to 2 years, provided that the person remains asymptomatic.

Management of risk factors

Where risk factors are identified, the worker should be referred to their general practitioner and other appropriate programs. The worker should be reviewed to monitor management of their risk factor profile – the frequency will depend on the overall risk, including consideration of other fitness for duty criteria in this Standard, such as for hypertension or diabetes (refer Table 6). If, during the course of the examination, a Category 2 worker is found to have raised cardiovascular risk factors, there are no specific actions regarding fitness for duty since the major risk is in relation to sudden incapacity. However, if raised cardiovascular risk factors (e.g., smoking) are found, the worker should be referred to their general practitioner.

[12] McLellan, A., Prior, D, 2012, *Cardiac stress testing: Stress electrocardiography and stress echocardiography*, Australian Family Physician, vol. 41, no. 3, pp. 199-122.

Figure 20. Bruce protocol nomogram for men and women



Source: Reproduced with permission from the Department of Cardiology, School of Medicine, University of Washington
Source: Reproduced with permission from the Department of Cardiology, School of Medicine, University of Washington

Ischaemic heart disease and related interventions

In individuals with ischaemic heart disease, the severity, rather than the mere presence of ischaemic heart disease, should be the primary consideration when assessing fitness for duty. For Category 1 and Category 2 workers, the health professional should consider any symptoms of sufficient severity to be a risk to attentiveness while working. For Category 1 workers, the risk of sudden collapse is a further consideration. Those who have had a previous myocardial infarction or similar event are at greater risk of recurrence than the normal population, thus cardiac history is an important consideration.

Exercise testing

The Bruce protocol is recommended for formal exercise testing. Nomograms for assessing functional capacity are shown in Figure 20 Bruce protocol nomogram for men and women.

Suspected angina pectoris

If chest pains of uncertain origin are reported by the Safety Critical Worker, they should be investigated. Generally, it would be wise to class the worker as Temporally Unfit for Duty, particularly if they are increased cardiovascular risk, until cardiovascular or other serious disease are excluded, particularly for Category 1 workers. If the tests indicate ischaemic heart disease, or the person remains symptomatic and requires anti-anginal medication for the control of symptoms, the requirements listed for proven angina pectoris apply (refer to Table 7: Suggested non-working periods post-cardiovascular events or procedures).

Cardiac surgery (open chest)

Cardiac surgery may be performed for various reasons, including valve replacement, excision of atrial myxoma or correction of septal defects. In some cases, this is curative of the underlying disorder and so will not affect fitness for duty in the long term, although the worker should be classed Temporarily Unfit for Duty (refer also to Table 7 regarding non-working periods). In other cases, the condition may not be stabilised and the effect on Safety Critical Work needs to be individually assessed. In addition, all cardiac surgery patients should be advised regarding safety of working in the short term as for any other post-surgery patient (e.g., considering the limitation of chest and shoulder movements after sternotomy).

Disorders of rate, rhythm and conduction

Workers with recurrent arrhythmias causing syncope or presyncope are usually not fit for duty. A classification of Fit for Duty Subject to Review may be considered after appropriate treatment and a non-working period (refer to Table 7: Suggested non-working periods post-cardiovascular events or procedures).

For Category 1 workers, an implantable cardioverter defibrillator (ICD) is acceptable only for primary prevention and under strict conditions as per Table 8. Category 2 workers should be individually assessed based on the nature of their work and the underlying condition.

There is a wide diversity of ECG changes and a diversity of consequences arising from these changes. Sometimes palpitations, and hence loss of attentiveness, may occur. Occasionally there is a risk of collapse. Each case needs to be individually assessed as to the potential consequences and impacts on the particular work being undertaken.

Workers treated with pacemakers, defibrillators or other electronic devices should have their devices assessed for sensitivity to electromagnetic fields (static, extremely low frequency or radiofrequency) that are likely to be present in the rail environment and may cause interference with the device.

Vascular disease

Aneurysms

Thoracic aortic aneurysms are largely asymptomatic until a sudden and catastrophic event occurs, such as rupture or dissection. Such events are rapidly fatal in a large proportion of patients and are therefore relevant to Category 1 workers. Risk varies with the type and size of aneurysm. The standard is set more stringently for atherosclerotic aneurysms or aneurysms associated with bicuspid aortic valve, compared to aneurysms associated with genetic aortopathy, including Marfan's, Turner's and Ehlers-Danlos syndromes, and familial aortopathy.

Aneurysms are unlikely to affect attentiveness as required in Category 2 workers.

Deep vein thrombosis and pulmonary embolism

Although deep vein thrombosis (DVT) may lead to an acute pulmonary embolus (PE), there is little evidence that such an event affects safety. Therefore, there is no standard for either DVT or PE per se, although non-working periods (Temporarily Unfit for Duty) are advised (refer to Table 7: Suggested non-working periods post-cardiovascular events or procedures). If long-term anticoagulation treatment is prescribed, the standard for anticoagulant therapy should be applied (refer to 'Other cardiovascular conditions,' below).

Valvular disease

Valvular disease may present with diverse symptoms including exertional dyspnoea, palpitations, angina, syncope, cardiac arrest or heart failure. It may also be asymptomatic and found on examination. The symptoms, if severe, may cause distraction from work and as such are relevant to both Category 1 and Category 2 workers. The risk of collapse is particularly relevant to Category 1 workers. Specific criteria are set for the complications of cardiac arrest, heart failure and implanted devices (refer to Table 8 Fitness for duty criteria for Safety Critical Workers: cardiovascular conditions).

Myocardial disease

The dilated and hypertrophic cardiomyopathies may present with diverse symptoms, including exertional dyspnoea, palpitations, angina, syncope, cardiac arrest or heart failure. They may also be asymptomatic and found on examination. The symptoms, if severe, may cause distraction from work and as such are relevant to both Category 1 and Category 2 workers. The risk of collapse is particularly relevant to Category 1 workers. Specific criteria are set for the complications of cardiac arrest, heart failure and implanted devices (refer to Table 8 Fitness for duty criteria for Safety Critical Workers: cardiovascular conditions).

There are several other causes of myocardial disease. These may be managed using the principles for the cardiomyopathies or by consideration of the basic principles regarding Safety Critical Work.

Other cardiovascular conditions

Long-term anticoagulant therapy

Long-term anticoagulant therapy may be used to lessen the risk of emboli in disorders of cardiac rhythm, following valve replacement, for deep venous thrombosis and so on. If not adequately controlled, there is a risk of bleeding that may acutely affect Category 1 Safety Critical Work, such as an intracranial bleed. Such workers do not meet the criteria but may be classed as Fit for Duty Subject to Review if their therapy is adequate and stable.

High blood pressure (hypertension)

For Category 1 Safety Critical Workers the concerns about high blood pressure relate to:

- Exceedingly high levels ($\geq$ 200 / $\geq$ 110) where acute incapacity due to events such as stroke are a concern, and the blood pressure is managed as a risk factor per se; and
- Moderately raised blood pressure (> 170/> 100) where blood pressure is managed, along with other risk factors, as a contributor to cardiovascular events (refer to Figure 18 Coronary heart disease risk factor prediction charts).

Category 1 workers with blood pressure levels $\geq$ 170/100 should be managed as per Figure 21 and Table 8.

There are no specific criteria for Category 2 workers; however, their blood pressure should still be measured as part of the assessment. If it is raised, they should be referred to their general practitioner.

Syncope

If an episode of syncope is vasovagal in nature with a clear-cut precipitating factor (e.g., venesection), and the situation is unlikely to occur while performing Safety Critical Work, the person may generally resume work within 24 hours.

With syncope due to other cardiovascular causes, a person should not perform Category 1 Safety Critical Work for at least 3 months, after which time their ongoing fitness for duty should be assessed. In cases where it is not possible to be certain that an episode of loss of consciousness is due to syncope or some other cause, refer to Section 4.1 Blackouts.

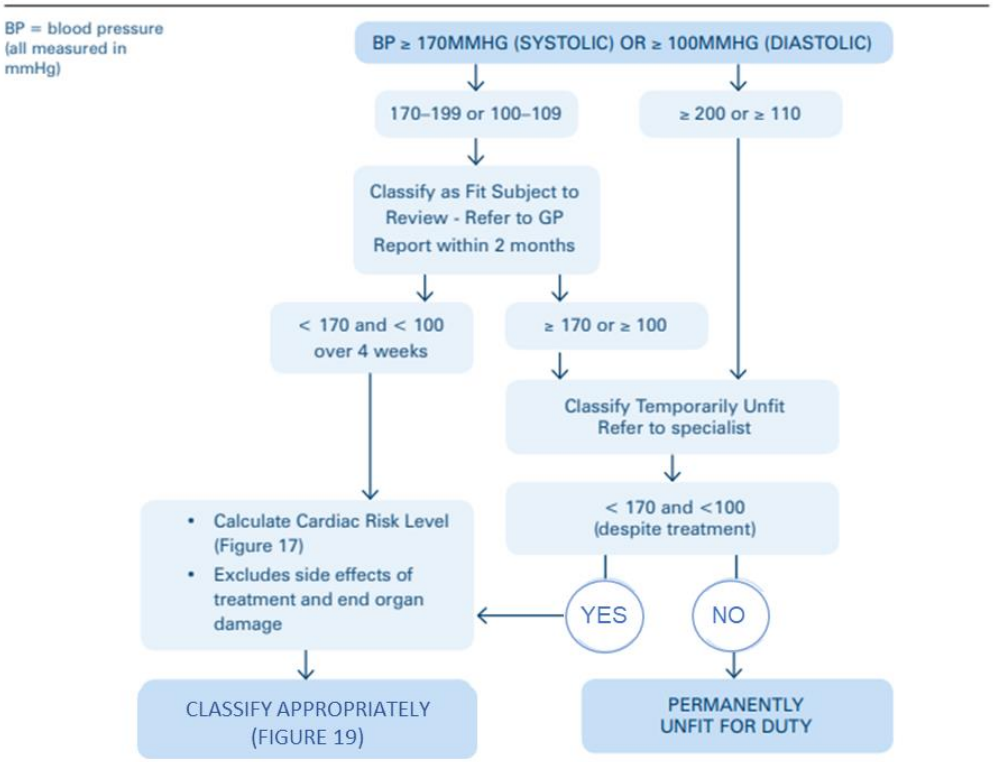
Congenital disorders

The impact of congenital heart disorders on Safety Critical Work relates to the effects of the congenital lesion on systemic ventricular function and complicating arrhythmias.

Pacemakers and ICDs are employed in the management of some individuals with congenital heart disease. If the disorder is corrected and considered cured by the treating specialist, and there are minimal symptoms likely to effect performance of safety critical tasks, the worker may be exempt from ongoing periodic review.

The relevant sections on atrial fibrillation, paroxysmal arrhythmias, implantable cardioverter defibrillators, cardiac pacemaker and heart failure may also apply to workers with complex congenital heart disease.

Figure 21. Management of high blood pressure for Category 1 Safety Critical Workers



4.2.3 Fitness for duty criteria for Safety Critical Workers

As alluded to in previous sections, there are three aspects to the management of fitness for duty and therefore the fitness for duty criteria for cardiac conditions and Safety Critical Work. They include:

- Management of the risk of sudden incapacity due a cardiovascular event such as heart attack or stroke, based on the cardiac risk score, with categorisation and review periods dependent on the level of risk (Category 1 workers).
- Management following an acute event in terms of the non-working period (Temporarily Unfit for Duty).
- Management of longer-term fitness for duty for chronic cardiac conditions.

Criteria for cardiovascular risk

The criteria for managing various levels of risk are shown in Table 6. Initial fitness for duty will depend on the risk level. Ongoing fitness for duty will depend on the findings of investigations and management of the condition identified. If no underlying condition is identified, ongoing review will depend on the level of risk (annually for levels above 10 per cent) and the overall clinical picture including comorbidities addressed elsewhere in the Standard.

Table 6. Management of cardiovascular risk in Category 1 Safety Critical Workers

	Probability of cardiovascular event in the next 5 years			
	≥ 25%	**10 to 24%**	**5 to 9%**	**< 5%**
Initial categorisation	Temporarily Unfit for Duty pending investigation.	Temporarily Unfit for Duty or Fit for Duty Subject to Review pending investigation.	Temporarily Unfit for Duty or Fit for Duty Subject to Review.	Fit for Duty Subject to Review or Fit for Duty Unconditional.
Investigation and referral	Stress EchoCG.	Stress EchoCG.	Assess overall risk including risk factors such as obesity, physical activity, and family history. Referral to GP. Stress EchoCG or other tests as appropriate.	Assess overall risk including risk factors such as obesity, physical activity, and family history. Referral to GP if required.
Subsequent review	Based on outcome of investigation - refer to relevant criteria in the Standard. If no underlying cardiovascular condition, review annually including repeat CRL and stress EchoCG 2-yearly.	Based on outcome of investigation - refer to relevant criteria in the Standard. If no underlying cardiovascular condition review annually including repeat CRL and stress EchoCG 2-yearly.	Based on overall risk and investigations. If no underlying cardiovascular condition review as required to manage risk factors. Period of review to be determined by Authorised Health Professional.	As required for risk factor management. Period of review to be determined by Authorised Health Professional.

Non-working periods following acute events or interventions

A number of cardiovascular incidents and procedures have implications for both short-term and long-term fitness for duty—for example, acute myocardial infarction and cardiac surgery. The person should be classified as Temporarily Unfit for Duty for the appropriate period as shown in Table 7.

The variation in non-working periods reflects the varying effects of these conditions, including the time needed for recovery from discomfort of an intervention to resume necessary musculoskeletal work, as well the time needed to assess stabilisation of the condition or a device.

These exclusion periods are minimum advisory periods only and are based on expert opinion. The classification of Fit for Duty Subject to Review should be considered once the condition has stabilised and safe working capacity can be assessed, as outlined in this section. The non-working periods for Category 2 workers are generally individually assessed based on the nature of task as, by definition, sudden incapacity is not a risk to rail safety for these workers.

Table 7. Suggested non-working periods post-cardiovascular events or procedures

EVENT OR PROCEDURE	MINIMUM NON-WORKING PERIOD FOR CATEGORY 1 WORKERS*	MINIMUM NON-WORKING PERIOD FOR CATEGORY 2 WORKERS*
Ischaemic heart disease		
Acute myocardial infarction	4 weeks	Individually determined
Angioplasty	4 weeks	Individually determined
Coronary artery bypass grafts	3 months	Individually determined
Disorders of rate, rhythm, and conduction		
Cardiac arrest	6 months	Individually determined
Implantable cardioverter defibrillator (ICD) insertion (primary prevention only – see text)	6-months	Individually determined based on underlying condition
Generator change of an ICD	2 weeks	2 weeks
ICD therapy associated with symptoms of haemodynamic compromise	ICD not permitted for Category 1 unless for primary prevention	4 weeks
Cardiac pacemaker insertion	4 weeks	Individually determined
Vascular disease		
Aneurysm repair	3 months	Individually determined
Valvular replacement (including treatment with mitra clips and transcutaneous aortic valve replacement)	3 months	Individually determined
Other		
Deep vein thrombosis	2 weeks	Individually determined
Heart or lung transplant	3 months	Individually determined
Pulmonary embolism	6 weeks	Individually determined
Syncope (due to cardiovascular causes)	3 months	Individually determined

*Generally, some latitude may be allowed in application of the fitness for duty criteria to a Category 2 worker. If there is uncertainty, the advice of an occupational physician with rail industry experience should be sought regarding a risk assessment of the job.

Criteria for long-term fitness for duty including review periods

Standards for chronic disorders are made with the presumption that the disorder is stable and well controlled. If this is not the case, a specialist consultation should be conducted, and the person may need to be classified Temporarily Unfit for Duty while such opinion is being sought. A classification of Fit for Duty Subject to Review may be recommended after initial assessment by an appropriate specialist. Applicability to Category 1 and/or Category 2 workers varies depending on the condition and is shown in the table.

Because many cardiac conditions are stabilised and not cured, the worker should usually be classified as Fit for Duty Subject to Review. In general, the review interval should not exceed 12 months for Category 1 workers with diagnosed cardiac disease (as distinct from raised risk factors).

Where a condition has been effectively treated and there is minimal risk of recurrence, the worker may be classified as Fit for Duty Unconditional (with no requirements for more frequent review) on the advice of a specialist.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Requirements for safe working are included in Table 8 for the following conditions:

- Ischaemic heart disease
  - acute myocardial infarction
  - angina
  - coronary artery bypass grafting
  - percutaneous coronary intervention.
- Disorders of rate, rhythm and conduction
  - arrhythmia
  - cardiac arrest
  - cardiac pacemaker
  - implantable cardioverter defibrillator
  - ECG changes.
- Vascular disease
  - aneurysms (abdominal and thoracic)
  - deep vein thrombosis
  - pulmonary embolism
  - valvular heart disease.
- Myocardial diseases
  - dilated cardiomyopathy
  - hypertrophic cardiomyopathy.
- Other conditions and treatments
  - anticoagulant therapy
  - congenital disorders
  - heart failure
  - heart transplant
  - hypertension
  - stroke
  - syncope.

Table 8. Fitness for duty criteria for Safety Critical Workers: cardiovascular conditions

CONDITION	CRITERIA
Cardiac risk level (Refer to Table 6)	**Category 1 Safety Critical Workers** Refer to Table 6. Refer to related criteria as required (e.g., hypertension and diabetes). **Category 2 Safety Critical Workers** There are no specific criteria for fitness for duty for Category 2 workers since the major risk is in relation to sudden incapacity. However, if during the examination, raised cardiovascular risk levels are found the worker should be referred to their general practitioner.
Ischaemic heart disease	
Acute myocardial infarction (AMI) Refer also to percutaneous coronary intervention (PCI) Refer also to coronary artery bypass grafting (CABG)	**Category 1 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty for at least 4 weeks following an acute myocardial infarction.** A person is not Fit for Duty Unconditional: • if the person has had an acute myocardial infarction. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the criteria described below are met: • it is at least 4 weeks after an uncomplicated acute myocardial infarction; and • there is a satisfactory response to treatment; and • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol (or equivalent exercise test protocol); and • there is no evidence of severe ischaemia (i.e., < 2 mm ST segment depression on an exercise ECG, or a reversible regional wall abnormality on an exercise stress ECG, or absence of a large defect on a stress perfusion scan); and • there is an ejection fraction of > 40%; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person has had an acute myocardial infarction; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period being determined by the Authorised Health Professional, taking into consideration information provided by the treating specialist, and based on a consideration of the nature of the work.
Angina	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person is subject to angina pectoris. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met:

CONDITION	CRITERIA
	• there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol (or equivalent exercise test protocol); and/or • there is no evidence of severe ischaemia (i.e., < 2 mm ST segment depression on an exercise ECG or a reversible regional wall abnormality on an exercise stress echocardiogram or absence of a large defect on a stress perfusion scan); and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). ***Myocardial ischaemia*** If myocardial ischaemia is demonstrated (as per the criteria above), a coronary angiogram may be offered. The person may be classified as Fit for Duty Subject to Review, subject to at least annual review: • if the result of the angiogram shows lumen diameter reduction of < 70% in a major coronary branch and < 50% in the left main coronary artery. If the result of the angiogram shows a lumen diameter reduction of > 70% in a major coronary branch and < 50% in the left main coronary artery (or if an angiogram is not conducted), Fit for Duty Subject to Review, subject to at least annual review may be considered if: • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol (or equivalent exercise test protocol); and • there is no evidence of severe ischaemia (i.e., < 2mm ST segment depression on an exercise ECG or a reversible regional wall abnormality on an exercise stress echocardiogram or absence of a large defect on a stress perfusion scan); and • there is an ejection fraction of > 40%; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). Where surgery or percutaneous coronary intervention (PCI) is undertaken to relieve the angina, the requirements listed for PCI apply (see below). **Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person is subject to angina pectoris; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist and based on a consideration of the nature of the work.
Coronary artery bypass grafting (CABG)	**Category 1 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty for at least 3 months following coronary artery bypass grafting.** A person is not Fit for Duty Unconditional: • if the person requires or has had coronary artery bypass grafting. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • it is at least 3 months after coronary artery bypass grafting; and • there is a satisfactory response to treatment; and • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise

CONDITION	CRITERIA
	capacity according to the Bruce protocol (or equivalent exercise test protocol); and • there is no evidence of severe ischaemia (i.e., < 2mm ST segment depression on an exercise ECG or a reversible regional wall abnormality on an exercise stress echocardiogram or absence of a large defect on a stress perfusion scan); and • there is an ejection fraction of > 40%; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness); and • there is minimal residual musculoskeletal pain after the chest surgery. **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person requires or has had coronary artery bypass grafting; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into consideration information provided by the treating specialist and based on a consideration of the nature of the work.
Percutaneous coronary intervention (PCI) (e.g., angioplasty)	**Category 1 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty for at least 4 weeks after percutaneous coronary intervention (PCI).** A person is not Fit for Duty Unconditional: • if the person requires or has had PCI. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • it is at least 4 weeks after the PCI; and • there is a satisfactory response to treatment; and • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol (or equivalent exercise test protocol); and • there is no evidence of severe ischaemia (i.e., < 2mm ST segment depression on an exercise ECG or a reversible regional wall abnormality on an exercise stress echocardiogram or absence of a large defect on a stress perfusion scan); and • there is an ejection fraction of > 40%; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person requires or has had PCI; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into consideration information provided by

CONDITION	CRITERIA
	the treating specialist and based on a consideration of the nature of the work.
Disorders of rate, rhythm, and conduction	
Atrial fibrillation	**Category 1 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) will depend on the method of treatment (see below).** A person is not Fit for Duty Unconditional: • if the person has a history of recurrent or persistent arrhythmia, which may result in syncope or incapacitating symptoms. Fit for Duty Subject to Review* may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether any of the following criteria are met: • there is a satisfactory response to treatment; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness); and • subject to appropriate follow-up. *Where the condition is considered to be cured, the requirement for periodic review may be waived. The person should not perform Safety Critical Work for at least: • 4 weeks following percutaneous intervention • 4 weeks following initiation of successful medical treatment • 3 months following open chest surgery. If the person is taking anticoagulants, refer to the anticoagulant therapy section, below. **Category 2 Safety Critical Workers** **The non-working period following treatment (Temporarily Unfit for Duty) should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person has a history of recurrent or persistent arrhythmia, and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist and based on a consideration of the nature of the work.
Paroxysmal arrhythmias (e.g., supraventricular tachycardia [SVT] atrial flutter, idiopathic ventricular tachycardia)	**Category 1 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty for at least 4 weeks following initiation of treatment.** A person is not Fit for Duty Unconditional: • if there was near or definite collapse. Fit for Duty Subject to Review* may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether any of the following criteria are met: • there is a satisfactory response to treatment; and • there are normal haemodynamic responses at a moderate level of exercise; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). *Where the condition is considered to be cured, the requirement for periodic review may

CONDITION	CRITERIA
	be waived. The person should not perform Safety Critical Work for: • for at least 4 weeks following percutaneous intervention; • for at least 4 weeks following initiation of successful medical treatment. If the person is taking anticoagulants, refer to the anticoagulant therapy section, below. **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) following treatment should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person has a history of paroxysmal arrythmias, and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into consideration information provided by the treating specialist, and based on a consideration of the nature of the work.
Cardiac arrest	**Category 1 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty for at least 6 months following a cardiac arrest.** A person is not Fit for Duty Unconditional: • if the person has suffered a cardiac arrest. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether any of the following criteria are met: • it is at least 6 months after the arrest; and • a reversible cause is identified, and recurrence is unlikely; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person has suffered a cardiac arrest; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into consideration information provided by the treating specialist and based on a consideration of the nature of the work.
Cardiac pacemaker	**Category 1 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty for at least 4 weeks after insertion of a pacemaker.** A person is not Fit for Duty Unconditional: • if a cardiac pacemaker is required or has been implanted or replaced. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • it is at least 4 weeks after insertion of the cardiac pacemaker; and

CONDITION	CRITERIA
	• the relative risks of pacemaker dysfunction have been considered; and • there are normal haemodynamic responses at a moderate level of exercise; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if a cardiac pacemaker is required, or has been implanted or replaced; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into consideration information provided by the treating specialist and based on a consideration of the nature of the work.
Implantable cardiac defibrillator (ICD)	**Category 1 Safety Critical Workers** Category 1 workers may continue to perform Category 1 work if they have had an ICD implanted for primary prevention of ventricular arrythmias. Other applications are not compatible with Category 1 work (i.e., secondary prevention). **A person should be categorised Temporarily Unfit for Duty for at least 6 months after the ICD is implanted.** A person may be classified Fit for Duty Subject to Review, subject to annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • the ICD was implanted for primary prevention; and • it is at least 6 months after the insertion of the ICD; and • there are no episodes of atrial fibrillation; and • there are no discharges from the defibrillator; and • interrogation of the ICD shows no evidence of anti-tachycardic pacing; and • there is an ejection fraction ≥ 40%; and • there is an exercise tolerance > 90% of the age/sex predicted exercise capacity according to the Bruce protocol or equivalent functional test protocol; and • there is no evidence of severe ischaemia – that is, less than 2mm ST segment depression on an exercise test or reversible regional wall abnormality on an exercise stress echocardiogram or absence of a large defect on a stress perfusion scan; and • there are minimal symptoms relevant to driving (chest pain, palpitations, and breathlessness). **Category 2 Safety Critical Workers** Fitness for duty for Category 2 workers should be individually assessed based on the nature and stability of the underlying condition.
ECG changes (e.g., strain patterns, bundle branch blocks or heart block and left ventricular hypertrophy)	**Category 1 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty for at least 3 months following initiation of treatment.** A person is not Fit for Duty Unconditional: • if the person has an ECG abnormality—for example, left bundle branch block, right bundle branch block, pre-excitation, prolonged QT interval or left ventricular hypertrophy, or changes suggestive of myocardial ischaemia or previous myocardial infarction.

CONDITION	CRITERIA
	Fit for Duty Subject to Review* may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • if the condition has been treated medically for at least 3 months or follow-up investigation has excluded underlying cardiac disease; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). *Where the condition is considered to be cured, the requirement for periodic review may be waived. **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) following initiation of treatment should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person has an ECG abnormality, and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into consideration information provided by the treating specialist, and based on a consideration of the nature of the work.
Vascular disease	

Aneurysms (abdominal and thoracic)	**Category 1 Safety Critical Workers**
	A person should be categorised as Temporarily Unfit for Duty for at least 3 months following repair of the aneurysm.
	A person is not Fit for Duty Unconditional:
	• if the person has an unrepaired aortic aneurysm, thoracic or abdominal.
	Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether either of the following criteria are met:
	• In the case of a repaired aneurysm:
	  • it is at least 3 months after repair; and
	  • the response to treatment is satisfactory, according to the treating vascular surgeon.
	OR
	• in the case of atherosclerotic aneurysm or aneurysm associated with the bicuspid aortic valve, the aneurysm diameter is less than 55 mm; or
	• the diameter is less than 50 mm for all other aneurysms.
	Category 2 Safety Critical Workers
	The non-working period (Temporarily Unfit for Duty) should be determined on clinical grounds.
	A person is not Fit for Duty Unconditional:
	• if, following repair of aneurysm, the person has symptoms that may impair performance of the task.
	Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into consideration information provided by the treating specialist and based on a consideration of the nature of the work.

Deep vein thrombosis (DVT)	**Category 1 and Category 2 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty for at least 2 weeks**

CONDITION	CRITERIA
	after a DVT. **The non-working period (Temporarily Unfit for Duty) for a Category 2 Safety Critical Worker should be determined on clinical grounds.** There are no specific criteria for long-term fitness for duty. For long-term anticoagulation refer to Long-term anticoagulant therapy. Also refer to Section 4.2.2 General assessment and management guidelines.
Pulmonary embolism (PE)	**Category 1 and Category 2 Safety Critical Workers** There are no specific Safety Critical Work criteria for long-term fitness for duty for PE. **A Category 1 Safety Critical Worker should be categorised as Temporarily Unfit for Duty for at least 6 weeks after a PE.** **The non-working period (Temporarily Unfit for Duty) for a Category 2 Safety Critical Worker should be determined on clinical grounds.** Refer to Long-term anticoagulant therapy. Also refer to Section 4.2.2 General assessment and management guidelines..
Valvular heart disease (Including treatment with Mitra Clips and Transcutaneous Aortic Valve Replacement	**Category 1 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty for at least 3 months following valve repair.** A person is not Fit for Duty Unconditional: • if the person has any history or evidence of valve disease, with or without surgical repair or replacement, associated with symptoms or a history of embolism, arrhythmia, cardiac enlargement, abnormal ECG, high blood pressure, or • if the person is taking long-term anticoagulants. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • the person's cardiological assessment shows valvular disease of no haemodynamic significance; or • it is 3 months following surgery and there is no evidence of valvular dysfunction; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness); and • there is minimal residual musculoskeletal pain after chest surgery. **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) following treatment should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person has valvular disease, and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account consideration information provided by the treating specialist, and based on a consideration of the nature of the work.
Myocardial diseases	
Dilated cardiomyopathy	**Category 1 Safety Critical Workers**

CONDITION	CRITERIA
(Refer also heart failure)	A person is not Fit for Duty Unconditional: • if the person has a dilated cardiomyopathy. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • the ejection fraction is ≥ 40%; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness); and • the person is not subject to arrhythmias. **Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has dilated cardiomyopathy; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist, and based on a consideration of the nature of the work
Hypertrophic cardiomyopathy (HCM)	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has hypertrophic cardiomyopathy. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • the left ventricular ejection fraction is 40% or over; and • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol (or equivalent exercise test protocol); and • there is an absence of a history of syncope, severe left ventricle hypertrophy, a family history of sudden death or ventricular arrhythmia on Holter testing; and • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). **Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has hypertrophic cardiomyopathy; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist, and based on a consideration of the nature of the work.
Other cardiovascular diseases	
Anticoagulant therapy	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person is on long-term anticoagulant therapy. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criterion is met: • anticoagulation is maintained at the appropriate degree for the underlying

CONDITION	CRITERIA
	condition. **Category 2 Safety Critical Workers** There are no specific criteria for fitness for duty for Category 2 workers since the major risk is in relation to sudden incapacity.
Congenital disorders	**Category 1 Safety Critical Workers** **A person should be categorised as Temporarily Unfit for Duty:** • **for at least 3 months following surgical treatment for congenital heart disease** • **for at least 4 weeks following percutaneous intervention for congenital heart disease.** A person is not Fit for Duty Unconditional: • if the person has a complicated congenital heart disorder. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • there are minimal symptoms relevant to Safety Critical Work (chest pain, palpitations, breathlessness); and • the ejection fraction is ≥ 40%; and • there is a minor congenital heart disorder of no haemodynamic significance, such as pulmonary stenosis, atrial septal defect, small ventricular septal defect, bicuspid aortic valve, patent ductus arteriosus or mild coarctation of the aorta; or • there has been surgical/percutaneous correction of the congenital lesion including atrial septal defect, ventricular septal defect, patent ductus arteriosus, coarctation, pulmonary stenosis, total correction of tetralogy of Fallot or total correction of transposition of the great arteries and there are no or minimal symptoms. **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) following treatment should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person has a congenital heart disorder; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist, and based on a consideration of the nature of the work
Heart failure	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has heart failure. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • there is a satisfactory response to treatment; and • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol (or equivalent exercise test protocol); and • there is an ejection fraction of ≥ 40%; and • the underlying cause of the heart failure is considered; and • there are minimal symptoms relevant to performing Safety Critical Work (chest

CONDITION	CRITERIA
	pain, palpitations, breathlessness). **Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has heart failure; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist, and based a consideration of the nature of the work.
Heart transplant	**Category 1 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty for at least 3 months after transplant.** A person is not Fit for Duty Unconditional: • if the person requires or has had a heart or heart/lung transplant. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • it is at least 3 months after transplant; and • there is a satisfactory response to treatment; and • there is an exercise tolerance of ≥ 90% of the age/sex predicted exercise capacity according to the Bruce protocol (or equivalent exercise test protocol) • there are minimal symptoms relevant to performing Safety Critical Work (chest pain, palpitations, breathlessness). **Category 2 Safety Critical Workers** **The non-working period (Temporarily Unfit for Duty) should be determined on clinical grounds.** A person is not Fit for Duty Unconditional: • if the person requires or has had a heart or heart/lung transplant; and • they have symptoms (chest pain, palpitations, breathlessness) that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist, and based on a consideration of the nature of the work.
Hypertension	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has blood pressure consistently ≥ 170 mmHg systolic or ≥ 100 mmHg diastolic (treated or untreated). Management of the person and subsequent categorisation will depend on the: • level of blood pressure • response to treatment • cardiac risk level • effects of medication relevant to Safety Critical Work, and • presence of end organ damage relevant to Safety Critical Work. For blood pressure between 170-199mmHg systolic or 100-109mmHg diastolic: • The person should be categorised Fit for Duty Subject to Review and referred to their general practitioner for appropriate investigation and treatment. A report

CONDITION	CRITERIA
	should be provided within 2 months. • If the person's blood pressure is < 170 mmHg systolic and < 100 mmHg diastolic after 4 weeks of treatment, they should have their cardiac risk level calculated based on the new level of blood pressure and they should be managed and categorised accordingly (refer to High blood pressure (Hypertension)), including whether they meet the following criteria: – there are no side effects from the medication that will impair Safety Critical Work; and – there is no evidence of damage to target organs relevant to Safety Critical Work. • If the person's blood pressure remains ≥ 170/100 after 4 weeks of treatment, they should be categorised Temporarily Unfit for Duty and referred to an appropriate specialist for investigation and treatment. Categorisation will subsequently depend on response to treatment, the cardiac risk score and meeting of other criteria as above. • If blood pressure remains ≥ 170 mmHg systolic or ≥ 100 mm Hg diastolic despite treatment, the person should be categorised Permanently Unfit for Duty. For blood pressure ≥ 200 mmHg systolic or ≥ 110 mmHg diastolic: • The person should be categorised Temporarily Unfit for Duty and referred to an appropriate specialist for investigation and treatment. • If the person's blood pressure is < 170 mmHg systolic and < 100 mmHg diastolic after 4 weeks of treatment, they should have their cardiac risk level calculated based on the new level of blood pressure and they should be managed and categorised accordingly (refer to High blood pressure (Hypertension)), including whether they meet the following criteria: – there are no side effects from the medication that will impair Safety Critical Work; and – there is no evidence of damage to target organs relevant to Safety Critical Work. If blood pressure remains ≥ 170 mmHg systolic or ≥ 100 mmHg diastolic despite treatment, the person should be categorised Permanently Unfit for Duty. **Category 2 Safety Critical Workers** There are no specific criteria for Category 2 Safety Critical Workers; however, their blood pressure should still be measured as part of the assessment and if found raised referred to their general practitioner.
Stroke	Refer to Section 4.6 Neurological conditions: other.
Syncope due to hypotension Refer also to Section 4.1 Blackouts	**Category 1 Safety Critical Workers** The person could resume Safety Critical Work within 24 hours if the episode was vasovagal in nature with a clear-cut precipitating factor (e.g., venesection) and the situation is unlikely to occur while performing Safety Critical Work. **A person should be categorised Temporarily Unfit for Duty for at least 3 months after syncope due to other cardiovascular causes.** A person is not Fit for Duty Unconditional: • if the condition is severe enough to cause episodes of loss of consciousness without warning. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by the treating specialist as to whether the following criteria are met: • the underlying cause has been identified: and • satisfactory treatment has been instituted; and

CONDITION	CRITERIA
	• the person has been symptom-free for 3 months. **Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has symptoms of pre-syncope that may impair performance of the task. Fit for Duty Subject to Review may be determined, with the review period determined by the Authorised Health Professional, taking into account information provided by the treating specialist, and based a consideration of the nature of the work.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – cardiovascular conditions

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4.3 Diabetes

(Refer also to Section 4.2 Cardiovascular conditions, 4.4, 4.5, 4.6 Neurological conditions, 4.9 Sleep disorders and 4.12 Vision and eye disorders)

4.3.1 Relevance to Safety Critical Work

Diabetes may affect a person's ability to perform Safety Critical Work, either through impairment or loss of consciousness in a hypoglycaemic episode or from end-organ effects on relevant functions, including effects on vision, the heart, the peripheral nerves and vasculature of the extremities, particularly the feet. Sleep apnoea is also more common in people with type 2 diabetes (refer to Section 4.9 Sleep disorders).

Hypoglycaemia causing collapse is particularly important in Category 1 workers; however, the associated confusional state may affect judgement, which is relevant to both Category 1 and Category 2 workers. This standard is therefore applicable to both categories of workers.

There is also evidence that 'tighter control', as measured by the HbA1c, may be associated with increased crash risk.[13] This has implications for the management of Safety Critical Workers with diabetes in terms of targets for satisfactory control.

4.3.2 General assessment and management guidelines

General management of diabetes in relation to Categories 1 and 2 workers is summarised in Section 4.3.3 Management of diabetes and Safety Critical Work.

For the purposes of this standard an appropriate medical specialist is an endocrinologist specialising in diabetes or a consultant physician specialising in diabetes.

Screening for diabetes

For Category 1 workers, diabetes may be diagnosed on history or on HbA1c testing* on non-fasting blood[14].

- If HbA1c is equal to or greater than 48 mmol/mol (6.5 per cent) regard as having diabetes.
  - If HbA1c is 48 mmol/mol (6.5 per cent) or greater but less than 53 mmol/mol (7 per cent) arrange a repeat (confirmatory) test.
  - If the repeat (confirmatory) HbA1c is 48 mmol/mol (6.5 per cent) or greater, diagnosis of diabetes is confirmed.
  - If the repeat test is not raised, regard as not having diabetes and review as per normal Periodic Health Assessment schedule.
- If the initial test is less than 48 mmol/mol (6.5 per cent), regard as not having diabetes and review as per normal Periodic Health Assessment schedule.

*Note: any condition that leads to a shortened red cell survival time can interfere with the HbA1c assay. This includes the haemoglobinopathies, therapeutic venesection, anaemia, haemolysis, recent transfusion, and chronic renal failure and dialysis. In this situation fasting blood glucose should be used with oral glucose tolerance testing as required.

[13] 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.

[14] d'Emden M, 2014, *Glycated haemoglobin for the diagnosis of diabetes*, Aust Prescr, vol. 37, pp. 98–100.

For Category 2 workers, diagnosis of diabetes is by self-report via the Health Questionnaire.

Satisfactory control of diabetes

When assessing if workers with diabetes are fit to perform Safety Critical Work:

- Individualised assessment of control is important.
- HbA1c is a reasonable indicator of control, however the general goal of HbA1c of < 7.0 per cent may not be applicable or safe for Safety Critical Workers, due to increased risk of hypoglycaemia associated with tight control. If the HbA1c is 9.0 per cent or higher, the Authorised Health Professional should usually refer the person to their treating doctor/specialist for review of their diabetes management.
- For people on insulin treatment, blood glucose monitoring and other related records should be reviewed. The worker should keep a diary of blood glucose levels, taking rosters into account, as agreed with the examining doctor. This is partly so the worker knows they are safe for work and partly so that control of their diabetes can be readily checked at their review. In general, at least the last 3 months of blood glucose monitoring records should be reviewed. Work performance reports may be helpful in assessing if hypoglycaemia is interfering with safety critical decisions.

Review frequency and input from treating doctor or specialist (refer Table 9)

When assessing a worker with diabetes, a report from the person's treating doctor (general practitioner or specialist) is generally required to determine fitness for duty, except where the condition is managed effectively with diet and exercise alone. The report should include details of general health, indication of satisfactory diabetes control (as above) and freedom from severe complications. The reporting and review requirements vary depending on the treatment and the worker's health status and reflect the risks to rail safety as shown in Table 9. For example:

- Workers with diabetes controlled by diet and exercise alone, do not require more frequent review and they are generally categorised Fit for Duty Unconditional unless assessed otherwise based on their general risk profile. The Authorised Health Professional should review at the worker's Periodic Health Assessment and may determine fitness status based on HbA1c. They may request a report from the treating general practitioner.
- Workers treated with metformin alone require annual review and a report from their treating general practitioner. If the diabetes is satisfactorily controlled, the Authorised Health Professional may be able to determine fitness status based on HbA1c and they may determine that less frequent review is adequate. They may request a report from the treating general practitioner.
- For workers treated with other oral agents or injectables other than insulin, at least annual review and a specialist report is generally required. Where a worker has demonstrated satisfactory control and is being managed by their general practitioner, a report from the general practitioner may be accepted by the Authorised Health Professional.
- For workers treated with insulin, ongoing fitness for duty is assessed at least annually and requires a report from the treating specialist.

Where appropriate and available, the use of telemedicine technologies such as videoconferencing is encouraged as a means of facilitating access to specialist opinion.

In all cases, the worker should be instructed to request a Triggered Health Assessment if their condition deteriorates or their treatment changes.

Table 9. Diabetes management - Review frequency and input from GP or specialist

	Controlled by diet alone	Treated with metformin alone	Treated with other oral agents alone	Treated with injectables other than insulin alone	Treated with insulin
Fitness for duty category (if Fitness for Duty criteria met per Table 10)	Fit for Duty Unconditional	Fit for Duty Subject to Review	Fit for Duty Subject to Review	Fit for Duty Subject to Review	Fit for Duty Subject to Review
Frequency of review	As per Periodic Health Assessment	Annual review or less if determined by Authorised Health Professional	At least annual review	At least annual review	At least annual review
Initial reporting requirements	Treating GP	Treating GP	Specialist	Specialist	Specialist
Subsequent reporting requirements (pending satisfactory control)*	Authorised Health Professional review at Periodic Health Assessment based on HbA1c	Authorised Health Professional review based on HbA1c	Treating GP	Treating GP	Specialist

* The worker should be instructed to request a Triggered Health Assessment if their condition deteriorates or their treatment changes.

Hypoglycaemia

Definition: severe hypoglycaemic event

For the purposes of this document, a 'severe hypoglycaemic event' is defined as an event of hypoglycaemia of sufficient severity such that the person is unable to treat the hypoglycaemia themselves, and thus requires an outside party to assist with or administer treatment. It includes hypoglycaemia causing loss of consciousness. Episodes occurring during working time or at any other time of the day or night are relevant to the assessment in relation to this Standard.

A severe hypoglycaemic event is particularly relevant to Safety Critical Work because it affects brain function and may cause impairment of perception, motor skills or consciousness. It may also cause abnormal behaviour. A severe hypoglycaemic event is to be distinguished from mild hypoglycaemic events, with symptoms such as sweating, tremulousness, hunger and tingling around the mouth, which are common occurrences in the life of a person with diabetes treated with insulin and some hypoglycaemic agents.

Potential causes of hypoglycaemia

Hypoglycaemia may be caused by many factors, including non-adherence or alteration to medication, unexpected exertion, alcohol intake or irregular meals and reduced awareness (see below). Irregular meals and variability in medication administration may be an important consideration for long-distance train driving or for those operating on shifts. Impairment of consciousness and judgement can develop rapidly.

Managing a 'severe hypoglycaemic event' including non-working period

Safety Critical Workers with diabetes should be advised to cease safety critical duties if a 'severe hypoglycaemic event' is experienced while working or at any other time. Such an event should result in a Triggered Health Assessment. The worker should be classed Temporarily Unfit for Duty and not work for a significant period of time until cleared to return to work by a specialist in diabetes.

The minimum period of time before returning to Safety Critical Work is generally 6 weeks because it often takes many weeks for patterns of glucose control and behaviour to be re-established and for any temporary 'lack of hypoglycaemia awareness' to resolve. The non-working period will depend on factors such as identifying the reason for the episode, specialist opinion and the nature of the work. Specialist support of a return to Safety Critical Work should be based on patient behaviour and objective measures of glycaemic control (documented blood glucose) over a reasonable time interval, and usage of continuous glucose monitoring with low glucose alerts.

Reducing the risk of hypoglycaemia: advice to Safety Critical Workers

Workers with diabetes should also be advised to take appropriate precautionary steps to help avoid a severe hypoglycaemic event, for example by:

- Complying with specified medical review requirements (general practitioner or specialist).
- Not working if their blood glucose is less than 5 mmol/L or if, while wearing a continuous or flash glucose monitor, the predicted glucose level is showing downward trends into hypoglycaemia range (measured when not working).
- Wearing a continuous or flash glucose monitor, preferably with an active hypoglycaemia alert or alarm.
- Not working for more than 2 hours without testing blood glucose.
- Not delaying or missing a main meal.
- Self-monitoring blood glucose levels before working and every few hours at work, as reasonably practical, taking into account the history of control.
- Carrying adequate glucose for self-treatment.
- Treating mild hypoglycaemia if symptoms occur while working, including:
  - ceasing work as practical
  - self-treating the low blood glucose
  - checking the blood glucose levels 15 minutes or more after the hypoglycaemia has been treated and ensuring it is above 5 mmol/L
  - not recommencing working until feeling well and until at least 30 minutes after the blood glucose is above 5 mmol/L.

Workers should be instructed to request a Triggered Health Assessment if their condition deteriorates or their treatment changes.

Impaired hypoglycaemia awareness

Impaired hypoglycaemic awareness exists when a person does not regularly sense the usual early warning symptoms of mild hypoglycaemia such as sweating, tremulousness, hunger, tingling around the mouth, palpitations and headache. It markedly increases the risk of a severe hypoglycaemic event occurring and is therefore a risk for rail safety.

Rates of severe hypoglycaemia may be up to seven times higher compared to those who retain hypoglycaemia awareness. Impaired hypoglycaemia awareness occurs in 20 to 25 per cent of people with type 1 diabetes and about 10 per cent of those with type 2 diabetes. Prevalence is higher in older people and in those with a longer duration of diabetes.

Impaired hypoglycaemic awareness may be screened for using the Clarke questionnaire (Figure 22), which may be particularly useful for people with insulin-treated diabetes of longer duration (more than 10 years) or following a severe hypoglycaemic event or after an incident. When impaired hypoglycaemia awareness develops in a person who has experienced a severe hypoglycaemic event, it may improve in the subsequent weeks and months if further hypoglycaemia can be avoided.

The use of devices such as continuous or flash glucose monitors do not replace the need for a person to be able to sense the warning signs of hypoglycaemia or to compensate for impaired hypoglycaemia awareness.

A person with impaired hypoglycaemia awareness should be under the regular care of a medical practitioner with expert knowledge in managing diabetes (e.g., endocrinologist or diabetes specialist), who should be involved in assessing their fitness for duty. Any worker who has a lack of hypoglycaemia awareness is generally not fit for duty unless their ability to experience early warning symptoms returns.

In managing impaired hypoglycaemic awareness, the treating medical practitioner should focus on aspects of the person's self-care to minimise a severe hypoglycaemic event occurring while working. In addition, self-care behaviours that help to minimise severe hypoglycaemic events in general should be a major ongoing focus of regular diabetes care. This requires attention by both the treating medical practitioner and the person with diabetes to diet and exercise programs, insulin regimens and blood glucose testing protocols.

Acute hyperglycaemia

Severe hyperglycaemia may change the individual's usual behaviour and decision-making processes and increase fatiguability. An HbA1c > 10 per cent is a level at which medical intervention is warranted in order to continue at work safely. Each person with diabetes should be counselled about management of their diabetes during days when they are unwell and should be advised not to work if they are acutely unwell with metabolically unstable diabetes.

Electromagnetic interference

Workers using insulin pumps or other electronic devices should have their devices assessed for sensitivity to electromagnetic fields (e.g., static, extremely low frequency or radiofrequency) that are likely to be present in the rail environment and may cause interference with the device.

Comorbidities and end-organ complications

Assessment and management of comorbidities is an important aspect of managing people with diabetes with respect to their fitness for Safety Critical Work. This includes but is not limited to the following.

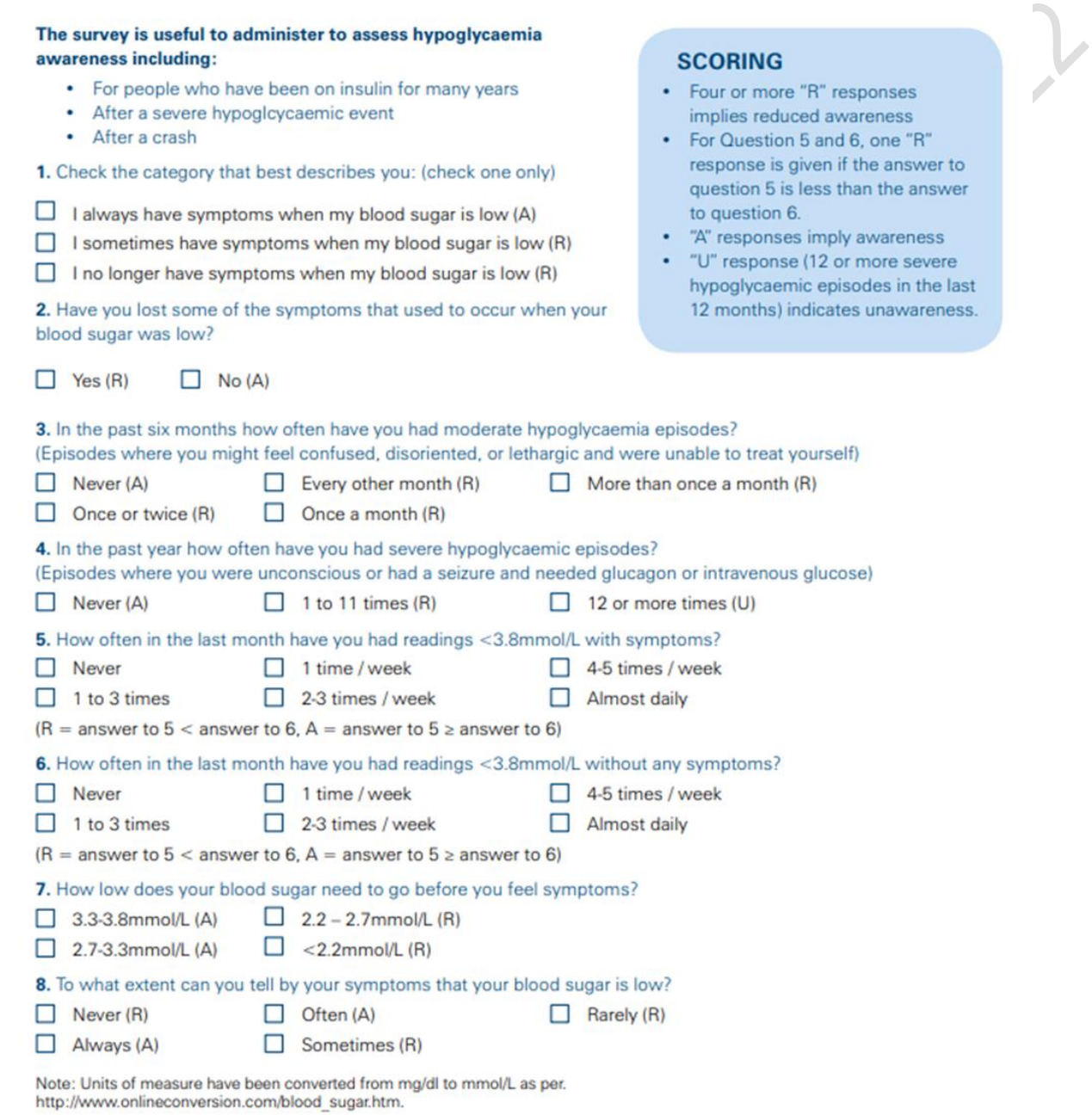
- **Vision.** Visual acuity should be tested annually. Retinal screening should be undertaken every second year if there is no retinopathy, or more frequently if at high risk. Visual field testing is not required unless clinically indicated. Refer to Section 4.12 Vision and eye disorders.
- **Neuropathy and foot care.** Although it can be difficult to be prescriptive about neuropathy in the context of Safety Critical Work, it is important that the severity of the condition is assessed. Adequate sensation is required for the operation of foot controls and adequate stability is necessary for walking on ballast, climbing in and out of trains and so on (refer to Sections 4.4, 4.5, 4.6 Neurological conditions and 4.13 Musculoskeletal conditions).
- **Sleep apnoea.** Sleep apnoea is a common comorbidity affecting many people with type 2 diabetes and has substantial implications for rail safety. The treating health professional should be alert to potential signs (e.g., BMI greater than 35) and symptoms, and apply tests

such as the STOP-Bang questionnaire and Epworth Sleepiness Scale as appropriate (refer to Section 4.9 Sleep disorders).

- **Cardiovascular**. Diabetes is an important risk factor in assessing the cardiac risk level (refer to Section 4.2 Cardiovascular conditions).

Additional information on the use, administration and scoring of the Clarke questionnaire is available in Section 6.1.1.

Figure 22. Clarke hypoglycaemia awareness survey[15]



The survey is useful to administer to assess hypoglycaemia awareness including:

- For people who have been on insulin for many years
- After a severe hypoglcycaemic event
- After a crash

SCORING

- Four or more "R" responses implies reduced awareness
- For Question 5 and 6, one "R" response is given if the answer to question 5 is less than the answer to question 6.
- "A" responses imply awareness
- "U" response (12 or more severe hypoglycaemic episodes in the last 12 months) indicates unawareness.

1. Check the category that best describes you: (check one only)

☐ I always have symptoms when my blood sugar is low (A)
☐ I sometimes have symptoms when my blood sugar is low (R)
☐ I no longer have symptoms when my blood sugar is low (R)

2. Have you lost some of the symptoms that used to occur when your blood sugar was low?

☐ Yes (R) ☐ No (A)

3. In the past six months how often have you had moderate hypoglycaemia episodes?
(Episodes where you might feel confused, disoriented, or lethargic and were unable to treat yourself)

☐ Never (A) ☐ Every other month (R) ☐ More than once a month (R)
☐ Once or twice (R) ☐ Once a month (R)

4. In the past year how often have you had severe hypoglycaemic episodes?
(Episodes where you were unconscious or had a seizure and needed glucagon or intravenous glucose)

☐ Never (A) ☐ 1 to 11 times (R) ☐ 12 or more times (U)

5. How often in the last month have you had readings <3.8mmol/L with symptoms?

☐ Never ☐ 1 time / week ☐ 4-5 times / week
☐ 1 to 3 times ☐ 2-3 times / week ☐ Almost daily

(R = answer to 5 < answer to 6, A = answer to 5 ≥ answer to 6)

6. How often in the last month have you had readings <3.8mmol/L without any symptoms?

☐ Never ☐ 1 time / week ☐ 4-5 times / week
☐ 1 to 3 times ☐ 2-3 times / week ☐ Almost daily

(R = answer to 5 < answer to 6, A = answer to 5 ≥ answer to 6)

7. How low does your blood sugar need to go before you feel symptoms?

☐ 3.3-3.8mmol/L (A) ☐ 2.2 – 2.7mmol/L (R)
☐ 2.7-3.3mmol/L (A) ☐ <2.2mmol/L (R)

8. To what extent can you tell by your symptoms that your blood sugar is low?

☐ Never (R) ☐ Often (A) ☐ Rarely (R)
☐ Always (A) ☐ Sometimes (R)

Note: Units of measure have been converted from mg/dl to mmol/L as per. http://www.onlineconversion.com/blood_sugar.htm.

[15] **http://www.onlineconversion.com/blood_sugar.htm**.

4.3.3 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria for fitness for duty are outlined in Table 10.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 10. Fitness for duty criteria for Safety Critical Workers: diabetes

CONDITION	CRITERIA
Screening for diabetes	**Category 1 Safety Critical Workers** Diabetes may be diagnosed on history or on HbA1c testing on non-fasting blood: • If HbA1c is equal to or greater than 48 mmol/mol (6.5%) regard as having diabetes. – If HbA1c is 48 mmol/mol (6.5%) or greater but less than 53 mmol/mol (7%) arrange a repeat (confirmatory) test. – If the repeat (confirmatory) HbA1c is 48 mmol/mol (6.5%) or greater, diagnosis of diabetes is confirmed. – If repeat test is not raised, regard as not having diabetes and review as per normal periodic schedule. • If the initial test is less than 48 mmol/mol (6.5%), regard as not having diabetes and review as per normal periodic schedule. **Category 2 Safety Critical Workers** Diagnosis of diabetes is by self-report via the Health Questionnaire.
Diabetes controlled by diet and exercise alone	**Category 1 and Category 2 Safety Critical Workers** A person with diabetes controlled by diet and exercise alone may perform Safety Critical Work without restriction. More frequent reviews may not be necessary. They should be reviewed by their treating doctor periodically regarding progression of diabetes. The Authorised Health Professional may determine fitness for duty at Periodic Health Assessment based on HbA1c and clinical assessment. They may request a report from the treating doctor. The worker should be instructed to request a Triggered Health Assessment if their condition deteriorates or their treatment changes.
Diabetes treated by glucose-lowering agents other than insulin (oral agents and other agents e.g., injectable)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has non-insulin-treated diabetes mellitus and is being treated with glucose-lowering agents other than insulin. Fit for Duty Subject to Review may be determined, subject to at least annual review*, taking into account the nature of the work and information provided by a specialist (endocrinologist / consultant physician specialising in diabetes)* on whether the following criteria are met: • the condition is satisfactorily controlled (refer to Section 4.3.2 General assessment and management guidelines) and the person is compliant with treatment; and • there is no history of a severe hypoglycaemic event during recent years as assessed by the specialist; and • the person experiences early warning symptoms (awareness) of hypoglycaemia (refer to Section 4.3.2 General assessment and management guidelines); and • the person is following a treatment regimen that minimises the risk of hypoglycaemia; and • there is an absence of end-organ effects that may affect working as per this

CONDITION	CRITERIA
	Standard. *** Following are exceptions to the above requirements** For workers treated with metformin alone: • The initial determination of fitness for duty must be made based on a report from the treating doctor/general practitioner. • If the person's diabetes is satisfactorily controlled, subsequent reviews may be conducted by the Authorised Health Professional based on HbA1c. • The Authorised Health Professional may recommend an appropriate review period (less frequently than annual review) if the person's diabetes is satisfactorily controlled. For workers treated with other oral agents or injectables other than insulin: • The initial determination of fitness for duty must be made based on a report from a specialist (endocrinologist / consultant physician specialising in diabetes). • Subsequently, a report from the treating general practitioner may be acceptable where a worker has demonstrated a significant period of satisfactory control.
Insulin-treated diabetes	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has insulin-treated diabetes. Fit for Duty Subject to Review may be considered, taking into account the nature of the work and information provided by a specialist in endocrinology or diabetes on whether the following criteria are met, subject to at least annual review: • the condition is satisfactorily controlled (refer to Section 4.3.2 General assessment and management guidelines) and the person is adherent with treatment; and • there is no history of a severe hypoglycaemic event during recent years as assessed by the specialist; and • the person experiences early warning symptoms (awareness) of hypoglycaemia (refer to Section 4.3.2 General assessment and management guidelines); and • the person is following a treatment regimen that minimises the risk of hypoglycaemia; and • there is an absence of end-organ effects that may affect working as per this Standard.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Diabetes

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4.4 Neurological conditions: General and dementia

4.4.1 Relevance to Safety Critical Work

Safety Critical Work requires a number of intact neurological functions. In the rail industry, this is often referred to as having 'situational awareness'. Depending on the job, these neurological functions may include:

- visuospatial perception
- insight
- judgement
- attention and concentration
- reaction time
- memory
- sensation
- muscle power (refer to Section 4.13 Musculoskeletal conditions)
- coordination
- balance
- vision (refer to Section 4.12 Vision and eye disorders).

Impairment of any of these capacities may be caused by neurological disorders and thus affect safe working ability (situational awareness). In addition to these deficits, some neurological conditions produce seizures.

This section provides guidance and fitness for duty criteria for the following conditions:

- dementia
- seizures and epilepsy (refer to Section 4.5 Neurological conditions: seizures and epilepsy)
- vestibular disorders (refer to Section 4.6 Neurological conditions: other)
- other neurological conditions, including (refer to Section 4.6 Neurological conditions: other)
  - unruptured intracranial aneurysms and other vascular malformations
  - cerebral palsy
  - head injury
  - neuromuscular conditions
  - Parkinson's disease
  - multiple sclerosis
  - stroke
  - transient ischaemic attacks
  - subarachnoid haemorrhage
  - space-occupying lesions, including brain tumours
  - neurodevelopmental disorders (refer to Section 4.7 Neurodevelopmental disorders).

The focus of this section is mainly on long-term or progressive disorders affecting safe working ability, but some guidance is also provided regarding short-term fitness to work—for example, following a head injury.

Where people experience musculoskeletal, visual or psychological symptoms, the relevant fitness for duty criteria should also be considered. Refer to Sections 4.13 Musculoskeletal conditions, 4.8 Psychiatric conditions and 4.12 Vision and eye disorders.

4.4.2 Dementia

This section focuses on dementia, which —for the purposes of this Standard— is defined as a progressive deterioration of cognitive function due to degenerative conditions of the central nervous system.

Other causes of fluctuating or permanent cognitive impairment or delirium, such as hepatic, renal or respiratory failure, may be managed according to general principles. Substance misuse is covered in Section 4.10 Substance misuse and dependence.

Relevance to Safety Critical Work

Effects of dementia on Safety Critical Work

Dementia is characterised by significant loss of cognitive abilities such as memory capacity, psychomotor abilities, attention, visuospatial functions and executive functions. This standard is therefore applicable to workers performing Category 1 and Category 2 Safety Critical Work.

Dementia may arise due to numerous causes including Alzheimer's disease, Huntington's disease, fronto-temporal dementia and vascular dementia. Alzheimer's disease is the most common cause, accounting for 50 to 70 per cent of cases. It mainly affects people over the age of 70 and is of some relevance in the rail industry due to an ageing workforce. It may occur prematurely.

Dementia may affect safe working ability in a number of ways, including:

- memory loss
- limited concentration or 'gaps' in attention, such as failing to see or respond to signals (signals passed at danger)
- errors in judgement
- confusion when making choices
- poor decision making or problem solving
- poor insight and denial of deficits
- errors with navigation, including forgetting details of routes
- slowed reaction time, including failure to respond in a timely fashion to instructions
- poor hand–eye coordination.

Due to the progressive and irreversible nature of the condition, people with a diagnosis of dementia will eventually be a risk to themselves and others when working.

Evidence of crash risk

Based on studies of road accidents, a diagnosis of dementia is associated with a moderately high risk of collision compared with matched controls.[16]

[16] Charlton, JL et al. 2021, *Influence of chronic illness on crash involvement of motor vehicle drivers*, 3rd edition, Monash University Accident Research Centre, Melbourne. < https://www.monash.edu/__data/assets/pdf_file/0008/2955617/Chronic-illness-and-MVC-risk_Report-MUARC-report-no-353_JUNE2022.pdf > [accessed 13 July 2022].

Assessment

Dementia is most likely to become evident during a Triggered Health Assessment initiated by rail transport operator in response to behavioural or performance issues or incidents observed in the workplace. Assessment of suspected dementia requires specialist referral.

The level of impairment varies widely; each person will experience a different pattern and timing of impairment as their condition progresses. This presents problems in both diagnosis and management.

The following points may be of assistance in assessing a person:

- **Work history** Have they been involved in any incidents? Have they been referred for assessment by a supervisor?
- **Vision** Can they see things coming straight at them or from the sides? (refer to Section 4.12 Vision and eye disorders).
- **Hearing** Can they hear speech and warning sounds?
- **Reaction time** Can they respond to signals and train orders?
- **Problem solving** Do they become upset and confused when more than one thing happens at the same time?
- **Coordination** Have they become clumsy or started to walk differently because their coordination is affected?
- **Praxis** Do they have difficulty using their hands and feet when asked to follow motor instructions?
- **Alertness and perception** Are they aware and do they understand what is happening around them? Do they experience hallucinations or delusions?
- **Insight** Are they aware of the effects of their dementia? Is there denial?

Because of the lack of insight and variable memory abilities associated with most dementia syndromes, the person may minimise or deny any difficulties with working. Work performance reports, and feedback from supervisors or co-workers may be a useful source of information regarding overall coping and safety decision-making skills.

Preclinical dementia

Preclinical dementia is increasingly being identified using modern diagnostic techniques. The dementia-related pathology is diagnosed in advance of the clinical manifestations of dementia itself, including symptoms that impair Safety Critical Work (e.g., preclinical Alzheimer's disease). A person diagnosed in this manner, who has no clinically significant symptoms of dementia, can be considered Fit for Duty Subject to Review to monitor disease progression and development of dementia symptoms.

Mild cognitive impairment

Mild cognitive impairment, which incorporates the prodromal stage of dementia, causes a slight but measurable decline in cognitive abilities, i.e., a decline from baseline levels but person still within age norms. A Safety Critical Worker with this diagnosis should be categorised Fit for Duty Subject to Review and monitored accordingly.

4.4.3 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria for fitness for duty are outlined in Table 11.

Due to the progressive nature of dementia, a person first diagnosed with suspected dementia should be classed as Temporally Unfit for Duty and referred for specialist assessment.

A Safety Critical Worker with a diagnosis of dementia will generally not meet the fitness for duty criteria. In some situations, a classification of Fit for Duty Subject to Review may be determined subject to careful assessment by an appropriate specialist. Information relating to work performance and safety breaches or near misses, should also be considered.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 11. Fitness for duty criteria for Safety Critical Workers: dementia

CONDITION	CRITERIA
Dementia (including preclinical/prodromal forms)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has a diagnosis of dementia or preclinical or prodromal/Mild Cognitive Impairment stages of the disease. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account: • the nature of the work and work performance reports; • information provided by an appropriate specialist regarding the likely progression of the condition; and • information provided by an appropriate specialist about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time or memory.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Dementia

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4.5 Neurological conditions: seizures and epilepsy

(Refer also to Sections 4.1 Blackouts, 4.2 Cardiovascular conditions and 4.3 Diabetes)

4.5.1 Relevance to Safety Critical Work

Effects of seizures on Safety Critical Work

Epilepsy refers to the tendency to experience recurrent seizures. Not all people who experience a seizure have epilepsy.

Seizures vary considerably, some being purely subjective experiences (e.g., some focal seizures), but the majority involve some impairment of consciousness (e.g., absence and complex partial seizures) or loss of voluntary control of the limbs (e.g., focal motor and complex partial seizures). Convulsive (tonic–clonic) seizures may be generalised from onset or secondarily generalised with focal onset. Seizures associated with loss of awareness, even if brief or subtle, or loss of motor control, have the potential to impair the ability to perform both Category 1 and Category 2 Safety Critical Work.

The seizure-free periods outlined in this Standard are applicable to workers performing Category 1 Safety Critical Work. Category 2 workers should be individually assessed for various seizure types as discussed in this section.

In addition, sleep deprivation is a common provoking factor in epilepsy and may be experienced in shift work.

Evidence of safety risk

Although evidence of accident or incident risk is limited, it is apparent that symptoms that are common to epilepsy, such as potential spontaneous loss of consciousness, are deleterious to safety on the rail network.

4.5.2 General assessment and management guidelines

An overview of the management of Safety Critical Workers who have had a seizure is shown in Figure 23.

The specific criteria outlined in this section relate to Category 1 workers, for which sudden collapse is likely to pose a serious risk for the rail network. The impact of seizures for Category 2 workers is less clear. By definition, sudden collapse will not lead to a serious incident; however, the variable impacts of the condition, including the impact on attentiveness, will need to be considered in light of the individual requirements of the worker's job.

Given the unpredictable nature of epilepsy and the potential serious impact on rail safety, incumbent Category 1 workers experiencing a seizure will generally be Permanently Unfit for Duty, unless there are exceptional circumstances.

Incumbent Category 2 workers experiencing a seizure should be categorised Temporarily Unfit for Duty and be managed on an individual basis, with input from a specialist in epilepsy, to determine the type and severity of the epilepsy, the possible consequences for the safety of the network (and the worker's own safety) and the response to treatment.

Category 2 workers who are required to work around the track should also meet the criteria for Category 3 workers as per Part 5 of this Standard.

Applicants for Safety Critical roles who declare a history of seizures or epilepsy will need to be carefully assessed and would not be considered fit to take on these roles unless the criteria outlined in this section can be confidently established, including the required seizure-free periods. Where the reliability of relevant clinical information is not clear (e.g., unreported seizures likely due to the person not recognising the occurrence of seizures or deliberately not reporting seizures), the person is not fit for duty.

Category 1 default fitness for duty criteria (all cases)

Given the considerable variation in seizures and their potential impact on Safety Critical Work, a hierarchy of standards has been developed that provides a logical and fair basis for decision making regarding fitness for duty.

The 'default criteria' apply to all Category 1 workers who have (ever) had a seizure. It requires a seizure-free period of 10 years before commencing/returning to Safety Critical Work. This will render an incumbent worker Permanently Unfit for Duty.

The default criteria apply in all but a number of defined situations that are associated with a lower risk of a seizure-related crash or incident. Only in these situations may work be resumed after a shorter period of seizure freedom. However, the need for adherence to medical advice and at least annual review still apply.

If a seizure has caused a crash, incident or near miss within the preceding 12 months, the required period of seizure freedom may not be reduced below that required under the default criteria (10 years) and the person will be Permanently Unfit for Duty.

Anti-epileptic medication is not to be withdrawn in Category 1 workers (refer to Table 12 Fitness for duty criteria for Safety Critical Workers: seizures and epilepsy for details).

Variations to the default criteria for Category 1 workers

There are some situations in which a variation to the default criteria may be considered to allow an earlier return to Safety Critical Work or for an applicant to take on a Category 1 role. This will require input from a specialist in epilepsy. These situations are described below. Note that the longer non-working period applies if the situation is covered by more than one variation.

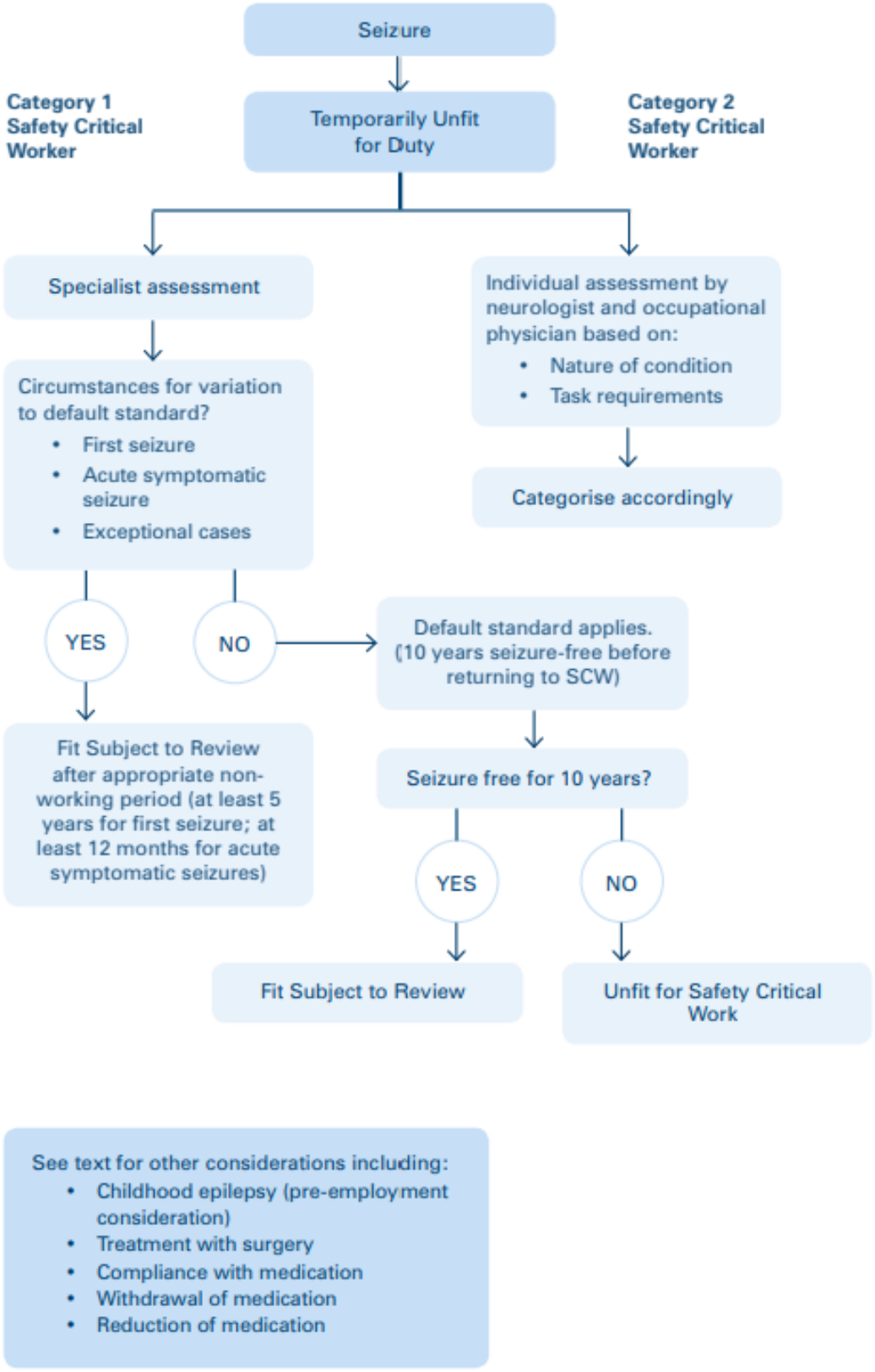
Seizures in childhood

In some specific childhood epilepsy syndromes, seizures usually cease in the teenage years before working age. Applicants for Category 1 roles who declare having seizures in childhood may be classified as Fit for Duty Subject to Review if no seizures have occurred after 11 years of age. If a seizure has occurred after 11 years of age, the person would not be considered fit for Category 1 Safety Critical Work and would not pass the Pre-placement Health Assessment.

First seizure

Approximately half of all people experiencing their first seizure will never have another seizure, whereas half will have further seizures (i.e., epilepsy). The risk of recurrence falls with time thus the non-working seizure-free period is reduced to 5 years for workers experiencing a first seizure and no further seizures during that period. For incumbent Category 1 workers, this would render them Permanently Unfit for Duty. If a second seizure occurs (except within 24 hours of the first), the risk of recurrence is much higher.

Figure 23. Overview of management of Safety Critical Workers following seizure



Acute symptomatic seizures

Acute symptomatic seizures are caused by a transient brain disorder or metabolic disturbance (e.g., encephalitis, hyponatraemia, head injury, or drug or alcohol withdrawal) in patients without previous epilepsy. Acute symptomatic seizures can be followed by further seizures weeks, months or years after resolution of the transient brain disorder. This may occur because of permanent changes to the brain caused by the process underlying the acute symptomatic seizures (e.g., seizures may return years after a resolved episode of encephalitis) or because the transient brain disorder has recurred (e.g., benzodiazepine withdrawal).

People who have experienced a seizure only during and because of a transient brain disorder or metabolic disturbance should not perform Safety Critical Work for a sufficient period to allow the risk of recurrence to fall to an acceptably low level – for Category 1 workers this period is at least 12 months (refer to Table 12: for details). Return to Safety Critical Work requires input from a specialist in epilepsy. The risk of seizure recurrence varies greatly, depending on the cause.

The management of seizures associated with hypoglycaemia is discussed in Section 4.3 Diabetes.

If seizures occur after the causative acute illness has resolved, whether or not due to a second transient brain disorder or metabolic disturbance, the acute symptomatic seizures criteria no longer apply. For example, if a person has a seizure during an episode of encephalitis and then, after recovery from the encephalitis, has another seizure and begins treatment for epilepsy, the default criteria apply.

Similarly, if a person experiences seizures during two separate episodes of benzodiazepine withdrawal, the default criteria apply. The management of late post traumatic epilepsy is discussed under Head Injury.

Exceptional cases

In addition to the reduction for particular circumstances or seizure types, there is also an allowance for ‘exceptional cases’ in which Fit for Duty Subject to Review may be considered for a Category 1 worker on the recommendation of a medical specialist with specific expertise in epilepsy, and in consultation with the Authorised Health Professional and the rail transport operator’s Chief Medical Officer, if they have one, or another occupational physician experienced in rail. This enables individualisation of cases where the person does not meet this Standard but may be considered safe to perform their job.

Other situations relevant to both Category 1 and 2 workers

The following information describes additional circumstances that may present for workers experiencing seizures. These circumstances do not result in a reduced seizure-free period for Category 1 workers. The information may guide the individual assessment and management of Category 2 workers.

Epilepsy treated by surgery

Resection of epileptogenic brain tissue may eliminate seizures completely, allowing performance of Safety Critical Work. For Category 1 workers, the default non-working seizure-free period of 10 years applies, thus incumbent workers will be Permanently Unfit for Duty following such surgery. The vision standard may also apply if there is a residual visual field defect. If medication is being considered, refer to ‘Withdrawal of all antiseizure medication’ (below).

Fitness for duty for Category 2 workers will need to be individually assessed based on the nature of the task.

'Safe' seizures (including prolonged aura)

Some seizures do not impair consciousness; however, this must be well established without exceptions and corroborated by reliable witnesses or video-electroencephalography (EEG) recording because people may believe their consciousness is unimpaired when it is not. For example, some 'auras' are associated with impaired consciousness that the person does not perceive.

Seizures may begin with a subjective sensation (the 'aura') that precedes impairment of consciousness. If this lasts long enough, the person may have time to stop work. However, this can be relied upon only when this pattern has been well established without exceptions and corroborated by witnesses or video-EEG monitoring. Furthermore, it may be impractical to stop Safety Critical Work immediately and safely (e.g., train driving).

For these reasons, such seizures require the application of the default non-working period for Category 1 workers. Fitness for duty for Category 2 workers will need to be individually assessed based on the nature of the task.

Sleep-only seizures

Some seizures occur only in sleep. The default criteria apply to all Category 1 workers. Fitness for duty for Category 2 workers will need to be individually assessed based on the nature of the task.

Seizure in a person whose epilepsy has been previously 'well controlled' including provoked seizures

In people with epilepsy, their seizures are often provoked by factors such as sleep deprivation, missed doses of anti-epileptic medication, over-the-counter medications, alcohol or acute illnesses. If the provoking factor is avoided, the risk of subsequent seizures may be sufficiently low to allow Category 2 work to be resumed after a shorter seizure-free period than when following an unprovoked seizure. However, this applies only if the epilepsy has been well controlled until the provoked seizure, and careful consideration needs to be given to the nature of the work and whether the provoking factor can be reliably avoided. For the purpose of this Standard, sleep deprivation is not considered a provoking factor. There is no such allowance for Category 1 workers, and the default criteria applies. Refer also to 'Medication noncompliance' (below).

Medication noncompliance

Compliance with medical advice regarding medication intake is a requirement for fitness for duty. Where noncompliance with medication is suspected, the worker may be required to have drug-level monitoring. Where a person with a history of compliance with medication experiences a seizure because of a missed dose and there were no seizures in the 12 months leading up to that seizure, the situation can be considered a provoked seizure (refer to criteria for 'Seizure in a person whose epilepsy has been previously 'well controlled' including provoked seizures'). Generally, there is no reduction in the non-working period for Category 1 workers. Category 2 workers should be individually assessed.

Withdrawal of all antiseizure medication or reduction in dose of antiseizure medication

Withdrawal of all anti-epileptic medication is incompatible with Category 1 Safety Critical Work. This also applies to a reduction in dose of anti-epileptic medication except if the dose reduction is due only to the presence of dose-related side-effects, and the dose reduction is unlikely to result in a seizure. Category 2 workers should be individually assessed.

Seizure causing a crash/incident/near miss

Not all seizures carry the same risk of causing a crash/incident/ near miss on the network. People who have been involved in a crash/incident/near miss within the preceding 12 months as a result of a seizure are likely to have a higher risk of further incidents. For a Category 1 worker who has experienced a crash/incident as a result of a seizure, the default seizure-free non-working period

applies, even if they fall into one of the categories that allow a reduction. Category 2 workers should be individually assessed.

Concurrent conditions

Where epilepsy is associated with other impairments or conditions, the relevant sections covering those disorders should also be consulted.

Other conditions with risk of seizure

Seizures can occur in association with many brain disorders. Some of these disorders may also impair safe working because of an associated neurological deficit. Both the occurrence of seizures, as well as the effect of any neurological deficit must be taken into account when determining fitness for duty (refer to Section 4.6 Neurological conditions: other).

Advice to Safety Critical Workers

All Safety Critical Workers with epilepsy should be advised of the following general principles for safety if continuing Safety Critical Work:

- The worker must continue to take anti-epileptic medication regularly when and as prescribed
- The worker should ensure they get adequate sleep and should not work when sleep deprived
- The worker should avoid circumstances or the use of substances (e.g., alcohol) that are known to increase the risk of seizures.

If a Safety Critical Worker refuses to follow a treating doctor's recommendation to take anti-epileptic medication, the worker should be assessed as not fit for safety critical work (refer also 'Medication noncompliance').

4.5.3 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria for fitness for duty are outlined in Table 12 Fitness for duty criteria for Safety Critical Workers: seizures and epilepsy. These mainly apply to Category 1 workers. Category 2 workers should be individually assessed.

All Safety Critical Workers who need active management of epilepsy should be under review, including, where necessary, at least annual specialist appraisal. The use of an independent specialist may be considered.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 12. Fitness for duty criteria for Safety Critical Workers: seizures and epilepsy

CONDITION	CRITERIA
Category 2	
All cases Category 2 workers (Refer also to text)	**Category 2 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty following a seizure.** A person is not Fit for Duty Unconditional • if the person has ever experienced a seizure. Fit for Duty Subject to Review may be determined, based on a consideration of the nature of the task and subject to annual review: • if, in the opinion of the treating specialist and in consultation with the Authorised Health Professional and the rail transport operator's Chief Medical Officer (or an occupational physician experienced in rail), the risk to the network caused by a seizure is acceptably low; and • the person follows medical advice, including adherence to medication if prescribed. Category 2 workers who work around the track should be assessed as per the Category 3 worker criteria – refer Part 5, page 204.
Unreliable or doubtful clinical information	Where the reliability of relevant clinical information is not clear (e.g., unreported seizures likely due to the person not recognising the occurrence of seizures or deliberately not reporting seizures), the person is not fit for duty.
Category 1 – Default criteria	
All cases Category 1 (default criteria) Applies to all Category 1 workers who have experienced a seizure. Exceptions may be considered only if the situation matches one of those listed below.	**Category 1 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty following a seizure.** A person is not Fit for Duty Unconditional: • if the person has ever experienced a seizure. Fit for Duty Subject to Review may be determined, subject to at least annual review*, taking into account information provided by a specialist in epilepsy as to whether the following criteria are met: • there have been no seizures for at least 10 years**; and • an EEG conducted in the last six months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity***; and • the person follows medical advice, including adherence to medication if prescribed or recommended. * If a worker undergoing treatment for epilepsy has experienced an extended seizure free period (more than 20 years) consideration may be given to reduce review requirements based on independent specialist advice. ** Shorter seizure-free periods may he considered if the workers situation matches one of those in the tables that follow. *** This is only required for initial review and not for subsequent annual review.
Category 1 - Possible reductions in the non-working seizure-free periods for Fit for Duty Subject to Review	
History of a benign seizure or epilepsy syndrome limited to childhood (e.g., febrile seizures, benign focal epilepsy,	A history of a benign seizure or epilepsy syndrome limited to childhood does not disqualify the person from performing Category 1 Safety Critical Work, as long as there have been no seizures after 11 years of age. If a seizure has occurred after 11 years of age, there is no reduction, and the default criteria applies unless the situation matches one of those listed below.

CONDITION	CRITERIA
childhood absence epilepsy)	
First seizure (of any type) Note: 2 or more seizures in a 24-hour period are considered a single seizure	**A Category 1 Safety Critical Worker should be categorised Temporarily Unfit for Duty following a first seizure (see definition in text).** A person is not Fit for Duty Unconditional: • if the person has ever experienced a seizure. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account information provided by a specialist in epilepsy as to whether the following criteria are met: • the seizure met the definition of 'first seizure' • there have been no seizures for at least 5 years (with or without medication); and • an EEG conducted in the last 6 months shows no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity.* Resumption of Fitness for Duty Unconditional may be considered, taking into account information provided by a specialist in epilepsy as to whether the following criteria are met: • antiseizure medication has not been prescribed in the last 12 months; and • there have been no seizures for at least 10 years; and • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity. * This is only required for initial review and not for subsequent annual review.
Acute symptomatic seizures Seizures occurring only during a temporary brain disorder or metabolic disturbance in a person without previous seizures. This includes head injuries, and withdrawal from drugs or alcohol. This is not the same as provoked seizures in a person with epilepsy.	**A Category 1 Safety Critical Worker should be categorised Temporarily Unfit for Duty following an acute symptomatic seizure (see definition in text).** The minimum non-working seizure free period is 12 months. A person is not Fit for Duty Unconditional: • if the person has ever experienced an acute symptomatic seizure. Fit for Duty Subject to Review may be determined, subject to annual review, taking into account information provided by a specialist in epilepsy as to whether the following criteria are met: • there have been no further seizures for at least 12 months; and • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity*. If there have been 2 or more separate transient disorders causing acute symptomatic seizures, the default criteria apply (refer above). Resumption of Fitness for Duty Unconditional may be considered, taking into account information provided by a specialist in epilepsy as to whether the following criteria are met: • antiseizure medication has not been prescribed in the last 12 months; and • there have been no seizures for at least 10 years; and • an EEG conducted in the last 6 months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity* * This is only required for initial review and not for subsequent annual review.
Psychogenic nonepileptic seizures	Refer to Section 4.8 Psychiatric conditions.
Unreliable or doubtful clinical information	Where the reliability of relevant clinical information is not clear (e.g., unreported seizures likely due to the person not recognising the occurrence of seizures or

CONDITION	CRITERIA
	deliberately not reporting seizures), the person is not fit for duty.
Exceptional cases	Where a person with seizures or epilepsy does not meet the above criteria, Fit for Duty Subject to Review may be determined, based on consideration of the nature of the task and subject to annual review: • if, in the opinion of a medical specialist with specific expertise in epilepsy, and in consultation with the Authorised Health Professional and the rail transport operator's Chief Medical Officer (or an occupational physician experienced in rail), the risk to the network caused by a seizure is acceptably low; and • the person follows medical advice, including adherence to medication if prescribed.
Other factors that may influence fitness for duty status	
Epilepsy treated by surgery (Where the primary goal of surgery is the elimination of epilepsy)	A person is not Fit for Duty Unconditional: • if they have had surgery aimed at eliminating epilepsy. Fit for Duty Subject to Review may be determined, subject to annual review, taking into account information provided by a specialist in epilepsy as to whether the following criteria are met: • there have been no seizures for at least 10 years; and • an EEG conducted in the last six months has shown no epileptiform activity and no other EEG conducted in the last 12 months has shown epileptiform activity*; and • the person follows medical advice with respect to medication adherence. The vision criteria may also apply if there is a visual field defect. Withdrawal of any anti-epileptic medication is incompatible with performing Safety Critical Work. * This is only required for initial review and not for subsequent annual review.
Recommended reduction in dosage of anti-epileptic medication in a person who satisfies the criteria for Fit for Duty Subject to Review	Safety Critical Work may continue (Fit for Duty Subject to Review): • if the dose reduction is due only to the presence of dose-related side effects and is unlikely to result in a seizure; or. • if the dose is being reduced after an increase due to a temporary situation that has now resolved (e.g., pregnancy) to the dose that was effective before the increase. In circumstances other than the above, the person will no longer meet the criteria for fitness for duty.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Seizures and epilepsy

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4.6 Neurological conditions: other

4.6.1 Relevance to Safety Critical Work

Neurological disorders may affect the ability to perform Safety Critical Work due to their effect on cognitive function, vision, sensation, motor function or balance.

Although evidence of accident or incident risk is limited, it is very likely that symptoms that are common to many neurological conditions, such as potential spontaneous loss of consciousness, confusional states and impairment of muscular power and coordination, are deleterious to Safety Critical Work.

Balance is required for rail safety work in various situations, including walking (and, in an emergency, running) on ballast, or climbing ladders into cabs, on to rolling stock or up to signals. Balance may be affected by a range of neurological conditions, including disorders of the cerebellum, spinal cord, and central or peripheral vestibular systems. Chronic intermittent conditions with acute onset are of main concern due to their potential for unexpected impact on Safety Critical Work. Vertigo resulting from vestibular disorders may also affect the ability to perform Safety Critical Work. Vertigo can occur suddenly and, with sufficient severity, performing Safety Critical Work can be impossible. It may be accompanied by oscillopsia (the illusion that the environment is moving), which compounds the disability in regard to Safety Critical Work. Some vestibular disorders may also affect hearing.

Sudden incapacity, such as from an intracranial bleed, is particularly relevant to Category 1 workers. This Standard generally applies to both Category 1 and Category 2 workers, although individual assessment of impairments and tasks may be required.

4.6.2 General assessment and management guidelines

A worker with a neurological disorder should be examined to determine the impact on the functions required for safe working as listed below (Figure 24).

If the health professional is concerned about a person’s ability to work safely, the person may be referred for a functional or practical assessment (refer to Section 3.6.1 Functional and practical assessments).

Work performance reports may be a useful source of information regarding overall safe working skills. For progressive conditions, deterioration in work performance may be the basis for a triggered referral.

Figure 24. Checklist for neurological disorders:

If the answer is YES to any of the following questions, the person may be unfit for Safety Critical Work and will warrant further assessment.

1. Are there significant impairments of any of the following?
   - visuospatial perception
   - insight
   - judgement
   - attention and concentration
   - reaction time
   - memory
   - sensation
   - muscle power
   - coordination
   - balance
2. Are the visual fields abnormal? (Refer to Section 4.12 Vision and eye disorders)
3. Have there been one or more seizures? (Refer to Section 4.5 Neurological conditions: seizures and epilepsy)
4. Is there loss of hearing or vertigo? If so, refer to this section and Section 4.11 Hearing.

Some neurological conditions are progressive, while others are static. In the case of static conditions in those who meet the criteria for Fit for Duty Subject to Review, more frequent reviews than required for the usual Periodic Health Assessment may not be needed.

In addition to establishing the worker's history, balance and vestibular function should be clinically assessed by the Romberg test. A pass requires the ability to maintain balance while standing with shoes off, feet together side by side, eyes closed and arms by sides for 30 seconds. This test is useful for chronic conditions, but not intermittent ones.

Aneurysms (unruptured intracranial aneurysms and other vascular malformations)

Sudden severe haemorrhage from an intracranial aneurysm or vascular malformation may cause acute incapacity and affect working safely. However, the risk of sudden severe haemorrhage from some unruptured intracranial aneurysms and vascular malformations may be low enough to allow working. Workers should be individually assessed for suitability for Category 1 Safety Critical Work.

If the vascular malformation has bled and produced a neurological deficit, the worker should be assessed to determine if any of the functions listed above are impaired of sufficient severity to affect Safety Critical Work.

If treated surgically, the advice regarding intracranial surgery applies (see 'Intracranial surgery', below). If the person has had a seizure, the seizures and epilepsy fitness for duty criteria also apply (refer to Section 4.5 Neurological conditions: seizures and epilepsy).

Cerebral palsy

Cerebral palsy may impair a worker's ability to perform Safety Critical Work because of difficulty with motor control, or if it is associated with intellectual impairment or other disabilities. However, workers with mild cases may pass the necessary aptitude tests. As the disorder is usually static, periodic review is not normally required.

Head injury

There are various severities of head injury. Any person who has had a traumatic injury causing loss of consciousness should not perform Safety Critical Work for a minimum of 24 hours, and the effects on functions listed in the checklist on page 137 should be monitored. Minor head injuries involving a loss of consciousness of less than one minute with no complications do not usually result in any long-term impairment. Similarly, immediate seizures that occur within 24 hours of a head injury are not considered to be epilepsy, but part of the acute process (refer to 'Acute symptomatic seizures'). Long-term risk of seizures will also need to be considered in light of the nature and severity of the head injury.

More significant head injuries may impair any of the neurological functions listed in the checklist on page 137 and can impair long-term fitness for both Category 1 and Category 2 Safety Critical Work. There may be a focal neurological injury affecting motor or sensory tracts as well as the cranial nerves. Also, personality or behavioural changes may affect judgement and tolerance, and be associated with a psychiatric disorder such as depression or post-traumatic stress disorder (PTSD). Clinical, neuropsychological or functional/practical assessments may be helpful in determining fitness for duty (refer to Section 3.6.1 Functional and practical assessments).

Neurological recovery from a traumatic brain injury may occur over a long period and some people who are initially unfit may recover sufficiently after many months such that Safety Critical Work can be resumed. Workers with appreciable impairments should initially be classed as Temporarily Unfit for Duty and then managed according to their progress.

Risk of posttraumatic epilepsy (PTE): Persons with depressed skull fractures, traumatic intracranial haematoma or severe traumatic brain injury are at increased risk of epilepsy, especially in the first year. Category 1 Safety Critical Workers should be classed Temporarily Unfit for Duty for 12 months after the injury. If one or more seizures have occurred, the symptomatic seizures criteria apply. PTE should be distinguished from immediate post traumatic (acute symptomatic) seizures occurring within 24 hours of a head injury, which are considered part of the acute process (refer 'Acute symptomatic seizures'). Category 2 workers should be assessed individually based on the nature of their task.

Comorbidities such as drug or alcohol misuse, and musculoskeletal injuries may also need to be considered (refer to Sections 4.10 Substance misuse and dependence and 4.13 Musculoskeletal conditions).

Intracranial surgery (non-working periods may be varied by the neurosurgeon)

Non-working periods are advised to allow for the risk of seizures occurring after certain types of intracranial surgery. Following supratentorial surgery or surgery requiring retraction of the cerebral hemispheres, the person generally should not perform Safety Critical Work for 12 months and should be classed as Temporarily Unfit for Duty. There is no specific restriction after infratentorial or trans-sphenoidal surgery. This precautionary approach primarily applies to Category 1 workers since, in the case of Category 2 workers, sudden collapse is unlikely to lead to a serious incident.

If one or more seizures occur, the fitness for duty criteria for seizures and epilepsy apply for Category 1 and Category 2 workers (refer to Section 4.5 Neurological conditions: seizures and epilepsy). Similarly, if there is long-term impairment of any of the functions listed in the checklist on page 137, fitness for work will need to be assessed for Category 1 and Category 2 workers.

Ménière's disease

Ménière's disease often results in recurrent vertigo, despite treatment. The natural history is of progression in the affected ear associated with increasing hearing loss until, in the extreme, total loss of vestibular function and partial loss of cochlear function occurs in the affected ear. The attacks are often heralded by a sense of fullness in the affected ear that may enable the worker to

cease work safely. However, this is not practical for most train or tram driving, and some other Safety Critical Work. Safe cessation of work may be possible for tasks such as train controlling. Safety of the worker around the track will also need to be considered. A risk assessment of the job may assist to determine the ability to cease work safely, both for Category 1 and Category 2 workers. In addition, the worker, whether Category 1 or Category 2, must meet any required hearing criteria (refer to Section 4.11 Hearing).

Multiple sclerosis

Multiple sclerosis may produce a wide range of neurological deficits that may be temporary or permanent and impair the performance of Category 1 and Category 2 workers. Possible deficits that may impair safe working include all of those listed on page 137. Where practical, job modifications may be made to assist with some of these impairments; the advice of an occupational therapist may be helpful in this regard (refer to Section 3.6.1 Functional and practical assessments).

Neuromuscular disorders

Neuromuscular disorders include diseases of the peripheral nerves, muscles or neuromuscular junction, and may impair the performance of Category 1 and Category 2 workers. Peripheral neuropathy may impair safe working due to difficulties with sensation (particularly proprioception) or from severe weakness. Disorders of the muscles or neuromuscular junction may also interfere with the ability to control a train or machinery. A functional or practical assessment may be required (refer to Section 3.6.1 Functional and practical assessments).

Parkinson's disease

Parkinson's disease is a common, progressive disease that may affect safe working in the advanced stages due to motor manifestations (bradykinesia and rigidity) or cognitive impairments (deficits in executive function and memory, and visuospatial difficulties) and hence may impair the performance of Category 1 and Category 2 workers. When assessing the response to treatment, the response over the whole dose cycle should be taken into account (e.g., in patients with motor fluctuations, it would not be appropriate to assess fitness only on the basis of the best 'on' response). Most patients with severe motor fluctuations will be unfit for Safety Critical Work. A functional or practical assessment may be required (refer to Section 3.6.1 Functional and practical assessments).

There may also be disturbances of sleep with episodes of sleepiness when working (refer to Section 4.9 Sleep disorders).

Stroke (cerebral infarction or intracerebral haemorrhage)

Stroke may impair safe working ability due to long-term neurological deficit, or due to the risk of a recurrent stroke or transient ischaemic attack (TIA) (refer below). However, stroke and TIA rarely cause loss of consciousness. (It is uncommon for undiagnosed strokes or TIA to result in motor vehicle crashes. When they do, it is usually due to an unrecognised visual field deficit).

The risk of recurrent stroke is probably highest in the first month after the initial stroke but is still sufficiently low (about 10 per cent in the first year) that it does not on its own require suspension of Safety Critical Work. However, fatigue and impairments in concentration and attention are common after stroke (even in those with no persisting neurological deficits) and may impair the ability to perform Safety Critical Work. For this reason, there should be a non-working period after stroke for Category 1 and Category 2 workers, even in those with no detectable persisting neurological deficit.

For those with a persistent neurological deficit, subsequent fitness for duty will depend on the extent of impairment of the functions listed in the checklist on page 137. A functional or practical

assessment may be required (refer to Section 3.6.1 Functional and practical assessments). The vision criteria may also apply (refer to Section 4.12 Vision and eye disorders). If the person has had a seizure, the seizures and epilepsy fitness for duty criteria also apply (refer to Section 4.5 Neurological conditions: seizures and epilepsy).

Transient ischaemic attack

TIAs can be single or recurrent and may be followed by stroke. They may impair safe working if they occur while at work. This is particularly relevant to Category 1 workers. The risk of a further TIA or stroke is about 15 per cent in the first 3 months and about half of that risk occurs in the first week. In view of the low risk of TIA or stroke affecting safe working, Category 1 workers should not work for 4 weeks after a TIA (Temporarily Unfit for Duty) and should be reassessed at that point.

The worker may then be classed as Fit for Duty Subject to Review by an appropriate specialist if there is no long-term impairment and risk of recurrence is low (refer to Section 3.5.5 Temporary conditions). A shorter non-working period of 2 weeks applies for Category 2 workers, who may then be classified as Fit for Duty Subject to Review.

Subarachnoid haemorrhage

Category 1 workers should not perform Safety Critical Work for at least 6 months, and Category 2 for at least 3 months, following a subarachnoid haemorrhage. Fit for Duty Subject to Review may be determined after this non-working period, taking into account the presence of neurological disabilities as described on page 137. The vision criteria may also apply (refer to Section 4.12 Vision and eye disorders). If the person has had one or more seizures, the seizures and epilepsy fitness for duty criteria also apply (refer to Section 4.5 Neurological conditions: seizures and epilepsy). If a craniotomy has been performed, the advice for intracranial surgery also applies (refer to page 138). A functional or practical assessment may be considered (refer to Section 3.6.1 Functional and practical assessments).

Minor non-aneurysmal subarachnoid haemorrhage restricted to the cerebral convexity is associated with a range of underlying neurovascular conditions (e.g., cerebral amyloid angiopathy and reversible cerebral vasoconstriction syndrome) with differing symptom associations and risks. For such workers, assessment of fitness for duty will depend on the underlying aetiology and presence of neurological impairments as described in Figure 24. The vision criteria may apply (refer to Section 4.12 Vision and eye disorders). If the person has had one or more seizures, the seizures and epilepsy fitness for duty criteria also apply (refer to Section 4.5 Neurological conditions: seizures and epilepsy). If a craniotomy has been performed, the advice for intracranial surgery also applies (refer to page 138). A practical or functional assessment may be considered (refer to Section 3.6.1 Functional and practical assessments).

Space-occupying lesions, including brain tumours

Brain tumours and other space-occupying lesions (e.g., abscesses, chronic subdural haematomas and cysticercosis) may cause diverse effects depending on their location and type. They may impair any of the neurological functions listed on page 137 and hence affect both Category 1 and Category 2 Safety Critical Work. If the person has had one or more seizures, the seizures and epilepsy fitness for duty criteria also apply (refer to Section 4.5 Neurological conditions: seizures and epilepsy).

If a craniotomy has been performed, the advice regarding intracranial surgery also applies (refer page 138).

4.6.3 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria is outlined in Table 13 (in alphabetical order), including fitness for duty criteria for:

- aneurysms (unruptured intracranial aneurysms and other vascular malformations)
- cerebral palsy
- head injury
- intracranial surgery
- Meniere's disease
- multiple sclerosis
- neuromuscular conditions
- Parkinson's disease
- stroke
- transient ischaemic attacks
- space-occupying lesions, including brain tumours
- subarachnoid haemorrhage.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 13. Fitness for duty criteria for Safety Critical Workers: neurological disorders

CONDITION	CRITERIA
Aneurysms **(Unruptured intracranial aneurysms) and other vascular malformations of the brain** (Refer also to Subarachnoid haemorrhage)	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has an unruptured intracranial aneurysm or other vascular malformation. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account: • information provided by an appropriate specialist regarding the risk of symptomatic haemorrhage; and • the response to treatment. If there is any neurological deficit, the worker should be assessed to determine if there is impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, memory, muscle power, balance, coordination or vision (including visual fields). If treated surgically, the Intracranial surgery advice applies (see below). **The non-working period (Temporarily Unfit for Duty) should be based on the advice of the treating specialist if treated intra-arterially.** If the person has had a seizure, the seizure and epilepsy fitness for duty criteria apply (refer to Section 4.5 Neurological conditions: seizures and epilepsy). Periodic review is not required if the condition is considered cured based on the advice of the treating specialist.
Cerebral palsy (Refer also to Neuromuscular)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has cerebral palsy producing significant impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, muscle power, balance, coordination or vision (including visual fields). Fit for Duty Subject to Review may be considered, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist regarding the level of

CONDITION	CRITERIA
	impairment. Periodic review is not required if the condition is static.
Head injury (Refer also to Intracranial surgery)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has traumatic brain injury producing significant impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, muscle power, balance, coordination or vision (including visual fields). Fit for Duty Subject to Review may be considered, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist regarding the level of impairment and the presence of other disabilities that may impair Safety Critical Work according to this Standard; and • the results of neuropsychological testing, as appropriate. Periodic review is not required if the condition is static. A person is not Fit for Duty Unconditional: • if they have a high risk of post traumatic epilepsy [penetrating brain injury, brain contusion, subdural haematoma, loss of consciousness/alteration of consciousness or post traumatic amnesia greater than 24 hours]. Fit for Duty Subject to Review may be considered, if the person has had no seizures for at least 12 months. If a seizure has occurred, refer to Section 4.5 Neurological conditions: seizures and epilepsy.
Intracranial surgery	**Category 1 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty for 12 months following supratentorial surgery or surgery that involves retraction of the cerebral hemispheres.** **Category 1 and 2 Safety Critical Workers** If there are seizures or long-term neurological deficits, refer to Section 4.5 Neurological conditions: seizures and epilepsy, or Other neurological conditions below (page 144)
Ménière's disease	**Category 1 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has Ménière's disease. Fit for Duty Subject to Review may be determined, subject to annual review, taking into account the nature of the work and work performance reports, and information provided by the treating neurologist/ear, nose and throat specialist as to whether the following criteria are met: • if, in the opinion of a relevant specialist the risk to the network caused by an attack is acceptably low; and • the person follows medical advice, including adherence to medication if prescribed; and • the appropriate hearing criteria is met. **Category 2 Safety Critical Workers** Category 2 workers require an individual risk assessment of their job. They may be classed Fit for Duty if acute incapacity is not detrimental to safety. They may require good hearing, refer to Section 4.11 Hearing. Restrictions in relation to work around the track may need to apply (refer Part 5, page 204).
Multiple sclerosis	**Category 1 and Category 2 Safety Critical Workers**

CONDITION	CRITERIA
	A person is not Fit for Duty Unconditional: • if the person has multiple sclerosis. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, memory, sensation, muscle power, balance, coordination or vision (including visual fields).
Neuromuscular conditions (peripheral neuropathy, muscular dystrophy, etc.)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has peripheral neuropathy, muscular dystrophy or any other neuromuscular disorder that significantly impairs muscle power, sensation or coordination. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist regarding the level of impairment of muscle power, sensation balance or coordination.
Parkinson's disease	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has Parkinson's disease. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist regarding the level of motor and cognitive impairment, and the response to treatment.
Stroke **(Cerebral infarction or intracerebral haemorrhage)**	**Category 1 and Category 2 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty for at least 3 months following a stroke.** A person is not Fit for Duty Unconditional: • if the person has had a stroke. Fit for Duty Subject to Review may be determined subject to at least annual review, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist regarding the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, memory, sensation, muscle power, balance, co-ordination or vision (including visual fields). Periodic review may not be required if the worker has recovered or if the condition is static based on specialist advice.
Transient ischaemic attack (TIA)	**Category 1 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty for at least 4 weeks following a TIA.** The worker may then be classed as Fit for Duty Subject to Review by an appropriate specialist if there is no long-term impairment and risk of recurrence is low.

CONDITION	CRITERIA
	Category 2 Safety Critical Workers **A person should be categorised Temporarily Unfit for Duty for at least 2 weeks following a TIA.** The worker may then be classed as Fit for Duty Subject to Review by an appropriate specialist if there is no long-term impairment and risk of recurrence is low.
Space-occupying lesions (including brain tumours) (Refer also to Intracranial surgery)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has a space-occupying lesion. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, memory, muscle power, balance, coordination or vision (including visual fields). If seizures occur, the fitness for duty criteria for seizures and epilepsy apply (refer to Section 4.5 Neurological conditions: seizures and epilepsy). If surgically treated, the criteria for Intracranial surgery apply.
Subarachnoid haemorrhage (Refer also to Aneurysms)	**Category 1 Safety Critical Workers** **A Category 1 worker should be categorised Temporarily Unfit for Duty for at least 6 months following a subarachnoid haemorrhage.** A person is not Fit for Duty Unconditional: • if the person has had a subarachnoid haemorrhage*. Fit for Duty Subject to Review may be determined after 6 months, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, memory, muscle power, balance, coordination or vision (including visual fields). **Category 2 Safety Critical Workers** **A Category 2 worker for should be categorised Temporarily Unfit for Duty for at least 3 months following a subarachnoid haemorrhage.** A person is not Fit for Duty Unconditional: • if the person has had a subarachnoid haemorrhage*. Fit for Duty Subject to Review may be determined after 3 months, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist about the level of impairment of any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, memory, muscle power, balance, coordination or vision (including visual fields). ** This does not include a minor non-aneurysmal subarachnoid haemorrhage restricted to the cerebral convexity unless impairments are present – refer to page 140.*
Other neurological conditions (Refer also Section 4.7 Neurodevelopmental disorders)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has a neurological disorder that significantly impairs any of the following: visuospatial perception, insight, judgement, attention, reaction time, sensation, memory, muscle power, coordination, balance or vision (including

CONDITION	CRITERIA
	visual fields). Fit for Duty Subject to Review may be determined subject to at least annual review, taking into account: • the nature of the work and reports on work performance; and • information provided by an appropriate specialist about the likely impact of the neurological impairment on Safety Critical Work. Periodic review may not be necessary if the condition is static.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Other neurological conditions

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4.7 Neurodevelopmental disorders

Neurodevelopmental disorders encompass a number of conditions, the most prominent being attention deficit hyperactivity disorder (ADHD) and autism spectrum disorder (ASD), which are the focus of this section.

While defined as mental disorders according to the Diagnostic and Statistical Manual of Mental Disorders (DMS-5-TR) these disorders are the subject of a separate section in this Standard due to their non-episodic nature and the approach to assessment and management.

For the purposes of this Standard, the term neurodevelopmental disorders apply to disorders that usually first manifest in childhood but may not be diagnosed until adulthood, as distinct from acquired in adulthood. It also applies to behavioural traits individuals whose neurocognitive function had child-onset that lies towards the extreme of the spectrum of neurodiversity which may be associated with potentially safety critical functional impairment.

4.7.1 Relevance to Safety Critical Work

Neurodevelopmental disorders may be associated with various symptoms including disturbances of behaviour, language, social communication, cognition and perception, as well as poor responses to unexpected change. They therefore have the potential to affect Safety Critical Work. In relation to social communication, the impacts are in relation to aspects such as misunderstanding nuance, tone, facial expression and the ability to infer.

ADHD and ASD are separate disorders, but they can share some symptoms and a person can have both conditions at the same time. People with neurodevelopmental disorders also commonly experience comorbid psychiatric conditions.

People with ASD can have differences in social communication and interaction, with restricted and repetitive patterns of behaviour, interests and activities. Relevant to the conduct of rail safety work, people with ASD may have difficulty with:

- managing attention and distraction
- understanding non-verbal communication
- planning and organising tasks
- adapting to unexpected change
- sensory sensitivities (e.g., glare and sound)
- emotional regulation
- input overload and reduced tolerance
- repetitive behaviours such as rocking or hand flapping.

ADHD is characterised by inattention, hyperactivity and/or impulsivity. Relevant to the conduct of rail safety work, people with ADHD may have difficulty with:

- planning, organising and prioritising tasks
- sustaining or shifting focus
- managing frustration, modulating emotions and self-regulation
- being more prone to angry, aggressive, or risky behaviours
- restlessness and agitation
- managing distraction (internal and external).

In those people who suffer from neurodevelopmental disorders with occupational capacity, functional impacts can be either beneficial or challenging depending on specific role requirements, often linked to the person's coping strategies and their environment. Functional reserve capacity, the capacity to tolerate unexpected change, critically reflects their insight, adaptive coping strategies, stability of their environment, and compliance with treatment.

Medications prescribed for treating ADHD may also impair performance of Safety Critical Work.

Evidence of crash risk

There is no specific data on the impact of neurodevelopmental disorders on the rates of incidents in rail, but there is evidence of impacts on safety more generally and in relation to road safety, particularly among young drivers.

For people with ASD, shortcomings in tactical driving skills have been observed, while rule-following aspects of driving are improved.

For people with ADHD, there is increased risk of involvement in motor accidents in all ages compared to those without ADHD, with inattention and hyperactivity/impulsivity predicting accident risk.

ADHD medication appears to be effective at reducing accident risk (motor vehicle and other) across all age groups.

4.7.2 General assessment and management guidelines

Neurodevelopmental disorders may be self-declared by rail safety workers at Pre-placement or Periodic Health Assessment (Health Questionnaire). If not declared at the beginning of employment, they may become evident during a health assessment, or result in a Triggered Health Assessment initiated by the Safety Critical Worker or by the rail transport operator associated with behavioural or performance issues, difficulty passing assessments or incidents observed in the workplace.

As for other psychiatric conditions, assessment of the impact of neurodevelopmental disorders on Safety Critical Work should be individualised. A person needs to be assessed regarding the specific pattern of disorder, potential impairments and severity, together with the skills needed to work safely and the impact of the working environment, as well as any comorbid conditions such as psychiatric conditions or substance misuse. Consideration should also be given to the person's social circumstances and coping strategies which will influence the impact of the condition on their working performance.

The assessment may include a clinical assessment (e.g., neuropsychological testing) and/or consideration of work performance or training reports.

The presence of a severe condition is unlikely to be compatible with being able to sustain Safety Critical Work in the long run and will usually result in the person being classed Permanently Unfit for operational duties.

4.7.3 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria is outlined in Table 14 Fitness for duty criteria for Safety Critical Workers: neurodevelopmental disorders.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 14. Fitness for duty criteria for Safety Critical Workers: neurodevelopmental disorders

CONDITION	CRITERIA
Neurodevelopmental disorders (Including ADHD, ASD)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has a neurodevelopmental disorder that significantly impairs any of the following: insight, judgement, behaviour, attention, concentration, language, social communication, planning or organisation. Fit for Duty Subject to Review may be determined subject to periodic review* taking into account the nature of the work, work performance reports and information provided by a psychiatrist or other appropriate specialist as to whether the following criteria are met: • the diagnosis has been confirmed by an appropriate specialist; • the person has insight into their condition and the potential impacts on safe working; and • the condition and any comorbidities are well controlled. ** Periodic review may not be necessary if the condition is static.*

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Neurodevelopmental disorders

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American Psychiatric Association. 2013, *Autism Spectrum Disorder Fact Sheet*. https://psychiatry.org/File%20Library/Psychiatrists/Practice/DSM/APA_DSM-5-Autism-Spectrum-Disorder.pdf

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4.8 Psychiatric conditions

(Refer also to Section 4.6 Neurological conditions: other and Section 4.10 Substance misuse and dependence).

Psychiatric disorders encompass a range of cognitive, emotional and behavioural disorders such as schizophrenia, depression, anxiety disorders and personality disorders. They also include dementia and substance abuse disorders, which are addressed elsewhere in the Standard (refer to Section 4.4.2 Dementia and 4.10 Substance misuse and dependence). Neurodevelopmental disorders are covered in section 4.7.

4.8.1 Relevance to Safety Critical Work

Safety Critical Work is a complicated psychomotor performance that depends on fine coordination between the sensory and motor systems. It is influenced by factors such as arousal, perception, learning, memory, attention, concentration, emotion, reflex speed, time estimation, auditory and visual functions, decision-making ability and personality. Complex feedback systems interact to produce the appropriate coordinated behavioural response. Anything that interferes with any of these factors to a significant degree may impair the ability to perform Safety Critical Work.

Specifically, train drivers are required to stay aware, perceive, interpret, recognise, anticipate and act on environmental signals in specific situations. They should have the ability to concentrate and to perform their work accurately. Selective, divided and sustained attention (e.g., vigilance) is required. Train drivers are also required to memorise relevant information. They must be capable of coping with emotional demands, low decision latitude and a solitary work environment.[17]

Psychiatric disorders may be associated with disturbances of behaviour, cognitive abilities and perception, and therefore have the potential to affect performance of Safety Critical Work. They do, however, differ considerably in their aetiology, symptoms and severity, and may be episodic or persistent.

The impact of mental illness also varies depending on a person's social circumstances, job and coping strategies. Assessment of fitness for duty must therefore be individualised, and should rely on evaluation of the specific pattern of illness and potential impairments as well as severity, rather than the diagnosis per se. The range of potential impairments for various conditions is described below. These impairments are difficult to determine precisely because impairment differs at various phases of the illness and may vary markedly between individuals.

Table 15 summarises the potential impacts of various psychiatric disorders on Safety Critical Work.

[17] Zoer I, Sluiter JK, Frings-Dresen M, 2014. Psychological work characteristics, psychological workload and associated psychological and cognitive requirements of train drivers. Ergonomics; 57(10):1473-1487

Table 15. Potential impairments associated with various psychiatric conditions

CONDITION	CRITERIA
Depression	Disturbance of attention, information processing and judgement, including reduced ability to anticipate situations Psychomotor retardation and reduced reaction times Sleep disturbance and fatigue Suicidal ideation that may result in reckless conduct
Anxiety disorders	Preoccupation or distraction Decreased working memory Panic attacks Obsessional behaviours, including obsessional slowness, which impairs the ability to work efficiently and safely
Post-traumatic stress disorder	Avoidance of certain situations related to traumatic experience Increased startle response Poor sleep and nightmares Recurrent intrusive memories (There may be overlap with depression and substance misuse)
Bipolar affective disorder	Depression and suicidal ideation Mania or hypomania, with impaired judgement about working safely, skill and associated recklessness Delusional beliefs that may directly affect work Grandiose beliefs that may result in extreme risk taking
Personality disorders	Aggressive or impulsive behaviour Resentment of authority or reckless behaviour Disordered interpersonal relationships Impaired decision making
Schizophrenia	Reduced ability to sustain concentration or attention Reduced cognitive and perceptual processing speeds, including reaction time Reduced ability to perform in complex situations such as when there are multiple distractions Abnormalities of perceptions such as hallucinations, which are distracting and pre-occupying Delusional beliefs that interfere with working, for example, persecutory beliefs may include being followed and result in erratic working Current antipsychotic medications do not have powerful beneficial effects on cognition
Psychogenic non-epileptic seizures	Impaired consciousness Impaired awareness Impaired motor control

Effects of Safety Critical Work on mental health

Front-line rail workers such as train drivers also have a unique risk in the course of their work due to people suiciding on railways. These incidents are usually managed through a rail transport

operator's critical event management program. However, such events, particularly when recurrent, may lead to depression, anxiety (in the form of PTSD) and substance misuse.

Evidence of crash risk

There is no specific data on the impact of psychiatric illness on the incidence of crashes or incidents in rail, but by extrapolation information may be derived from road accident data. Some studies have shown that drivers with a psychiatric illness have an increased crash risk compared with drivers without a psychiatric illness. There is also specific evidence for increased risk among those with schizophrenia and personality disorders.[18]

Impairments associated with medication

Medications prescribed for treating psychiatric disorders may impair performance of Safety Critical Work. There is, however, little evidence that medication, if taken as prescribed, contributes to road crashes; in fact, it may even help reduce the risk of a crash (refer to Section 3.5.8 Prescription drugs and Safety Critical Work).

The assessment of medication effects should be individualised and rely upon self-report, observation, clinical assessment and collateral information to determine if particular medications might affect Safety Critical Work. Authorised Health Professionals should have heightened concern when sedative medications are prescribed but should also consider the need to treat psychiatric disorders effectively (also refer to Section 4.10 Substance misuse and dependence).

4.8.2 General assessment and management guidelines

Identifying psychological health problems

Unlike chronic degenerative disease where the incidence increases with age, common psychiatric disorders show a relatively constant incidence across working age.[19] Such conditions may therefore arise between Periodic Health Assessments, relying on the worker or manager to initiate a Triggered Health Assessment.

Triggered referral for assessment is therefore an important mechanism of identifying and managing Safety Critical Workers with psychiatric conditions, underpinned by a positive organisational culture of reporting and confidence in the process. For example, new onset of forgetfulness, inability to pass competency assessments that were previously passed, or inability to learn and retain new information, or poor behaviour may indicate the need for a Triggered Health Assessment.

While identification of psychiatric conditions via screening at Periodic Health Assessment remains important, the limitations of self-administered screening tools are acknowledged and the value of establishing a rapport with the worker is emphasised.

Screening for anxiety/depression at recruitment and Periodic Health Assessment

Substantial anxiety/depression affects up to 10 per cent of the adult population. This has led to the introduction of the K10 questionnaire, a well-validated tool for screening for anxiety and depression (refer to Figure 25).

While the tool is well-validated in community settings, its limitations as a self-administered questionnaire in the occupational context is acknowledged; thus, it should be **administered**

[18] Charlton JL et al. 2021, Influence of chronic illness on crash involvement of motor vehicle drivers, 3rd edn, Monash University Accident Research Centre, Melbourne.

[19] ABS National Health Survey. 2017–18.

verbally by the Authorised Health Professional, incorporating follow-up questions as required to build a rapport with the worker. The results should be recorded on the Record for Health Professional.

Note that the K10 is a screening instrument, not a diagnostic tool; thus, examining health professionals should apply clinical judgement in the interpretation of the score and the action required. A detailed explanation of the tool and scoring is provided in section 6.1.1 K10 questionnaire. If the person appears unduly familiar with the K10, other validated questionnaires such as the DASS21[20] may be applied after consultation with the rail transport operator's Chief Medical Officer or equivalent.

Psychiatric referral or neuropsychological testing may be helpful to forming an overall opinion of fitness for duty.

Additional information on the use, administration and scoring of the K10 questionnaire is available in Section 6.1.2

Figure 25. K10 questionnaire

Please tick the answer that is correct for you:	All of the time (Score 5)	Most of the time (Score 4)	Some of the time (Score 3)	A little of the time (Score 2)	None of the time (Score 1)
1. In the past 4 weeks, about how often did you feel tired out for no good reason?	☐	☐	☐	☐	☐
2. In the past 4 weeks, about how often did you feel nervous?	☐	☐	☐	☐	☐
3. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?	☐	☐	☐	☐	☐
4. In the past 4 weeks, about how often did you feel hopeless?	☐	☐	☐	☐	☐
5. In the past 4 weeks, about how often did you feel restless or fidgety?	☐	☐	☐	☐	☐
6. In the past 4 weeks, about how often did you feel so restless you could not sit still?	☐	☐	☐	☐	☐
7. In the past 4 weeks, about how often did you feel depressed?	☐	☐	☐	☐	☐
8. In the past 4 weeks, about how often did you feel that everything was an effort?	☐	☐	☐	☐	☐
9. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?	☐	☐	☐	☐	☐

[20] http://www2.psy.unsw.edu.au/groups/dass/.

Assessment for psychiatric conditions during a Triggered Health Assessment

Screening tools such as the K10 are less likely to be useful in a triggered situation, where specific concerns may have been raised regarding possible psychological ill-health.

The nature of the assessment will depend on the circumstances and the clinical presentation and be orientated towards psychiatric disorders, substance misuse or neurological disorders and possibly other medical conditions.

Further assessments may include relevant questionnaires, psychiatric or neuropsychological assessment. Work performance reports may be a useful source of information regarding overall safe working skills. Reports of critical incidents, such as suicides on railways, should also be considered.

A “dual diagnosis” with substance misuse is often a consideration. Referral to specialists will be appropriate to the working diagnosis.

In the event of a worker not being cooperative in the conduct of the assessment, they should be assessed as Temporarily Unfit for Duty and the rail transport operator notified.

General assessment and mental state examination

When assessing the impact of a mental illness on the ability to work safely, the focus should be on assessing the severity and significance of likely functional effects, rather than the simple diagnosis of a mental illness.

The mental state examination can be usefully applied in identifying areas of impairment that may affect fitness for duty.

- **Appearance** - Appearance is suggestive of general functioning (e.g., attention to personal hygiene, grooming, sedation, indications of substance use).
- **Attitude** - This may, for example, be described as cooperative, uncooperative, hostile, guarded or suspicious. Although subjective, it helps to evaluate the quality of information gained in the rest of the assessment and may reflect personality attributes.
- **Behaviour -** This may include observation of specific behaviours or general functioning, including ability to function in normal work and social environments.
- **Mood and affect** - This includes elevated mood (increase in risk taking) and low mood (suicidal ideation).
- **Thought form, stream and content** - This relates to the logic, quantity, flow and subject of thoughts, which may be affected by mania, depression, schizophrenia or dementia. Delusions with specific related content may impact on safe working ability.
- **Perception** - This relates to the presence of disturbances, such as hallucinations, that may interfere with attention or concentration, or may influence behaviour.
- **Cognition -** This relates to alertness, orientation, attention, memory, visuospatial functioning, language functions and executive functions. Evidence from formal testing, screening tests and observations related to adaptive functioning may be sought to determine if a psychiatric disorder is associated with deficits in these areas that are relevant to safe working.
- **Insight -** This relates to self-awareness of the effects of the condition on behaviour and thinking. Assessment requires exploration of the person’s awareness of the nature and impacts of their condition and has major implications for management.
- **Judgement** - The person’s ability to make sound and responsible decisions has obvious implications for safety.

Mild mental illness does not usually have a significant impact on functioning. Moderate levels of mental illness commonly affect functioning, but many people will be able to manage usual activities, often with some modification. Severe mental illness often impairs multiple domains of functioning, and it is this category that is most likely to impact on the functions and abilities required for Safety Critical Work. A person's medication requirements should not be used as the only measure of disease severity.

The person with insight may recognise when they are unwell and self-limit their working. Limited insight may be associated with reduced awareness or deficits and may result in markedly impaired judgement or self-appraisal. Workers with lack of insight should be classed as Temporarily Unfit for Duty or even Permanently Unfit for Duty as required.

Mental illness, particularly if accompanied by paranoid beliefs or lack of insight, may lead to noncompliance with requests to attend medical reviews or take prescribed medication, and may lead to difficulty obtaining a full picture of the workers condition and functioning. In cases where the Authorised Health Professional is not satisfied that they have a complete picture of the worker's condition, the worker should be classed Temporarily Unfit for Duty until adequate information can be obtained.

Acute psychotic episodes

A person suffering an acute severe episode of mental illness (e.g., psychosis, moderate–severe depression or mania) may pose a significant risk. They should be classed as Temporarily Unfit for Duty.

Severe chronic conditions

A person with a severe chronic or relapsing psychiatric disorder (including neurodevelopmental disorders – refer to Section 4.7) needs to be assessed regarding the impairments associated with the condition and the skills needed to work safely. This may include a clinical assessment (e.g., neuropsychological) and/or consideration of work performance reports. The presence of a severe or relapsing psychiatric condition is unlikely to be compatible with being able to sustain Safety Critical Work in the long run and will usually result in the person being classed Permanently Unfit for operational duties.

Psychogenic nonepileptic seizures[21,22]

Some transient episodes of apparently impaired consciousness, awareness or motor control resemble epileptic seizures or syncope, yet have a psychological cause. These episodes are usually termed psychogenic nonepileptic seizures (PNES), although they are sometimes known as dissociative, functional or pseudoseizures. Most people diagnosed with PNES self-report loss of responsiveness or loss of awareness that may impact safety on the network, particularly for Category 1 workers and Category 2 workers working around the track.

People with active PNES should generally be assessed as Unfit for Duty if they lose awareness or responsiveness with their psychogenic seizures, have a history of seizure related injuries, or if the semiology suggests that ability to undertake Safety Critical Work would be impaired during a psychogenic seizure. The safety risk is sufficiently low after a three-month period, with no further psychogenic seizures, to allow a return to work on the recommendation of a specialist.

[21] Asadi-Pooya, A. A. & Sperling, M. R, 2015, *Epidemiology of psychogenic nonepileptic seizures*. Epilepsy and Behavior vol. 46, pp. 60-5.

[22] Asadi-Pooya, A. A. et al, 2020, *Driving a motor vehicle and psychogenic nonepileptic seizures: ILAE Report by the Task Force on Psychogenic Nonepileptic Seizures*, Epilepsia Open, vol. 5, pp. 371-85.

Diagnosis of PNES must establish that such episodes are psychogenic only. This may require recording an episode with video or video-EEG. Approximately 20 per cent of people with PNES have a history of epilepsy. In such patients, it is important to distinguish between the two types of attack and to establish whether an epileptic seizure has occurred. The seizure and epilepsy fitness for duty criteria may apply in these cases (refer to Section 4.5 Neurological conditions: seizures and epilepsy). If there is uncertainty regarding the type of attack, the blackouts of uncertain mechanism (refer to Section 4.1 Blackouts) fitness for duty criteria may apply. If more than one standard applies, the longer non-working period applies.

Substance misuse (Also refer to Section 4.10 Substance misuse and dependence)

People with a 'dual diagnosis' of a psychiatric disorder, and drug or alcohol misuse are likely to be at higher risk and warrant careful consideration. The assessment should seek to identify the potential relevance of:

- problematic alcohol consumption
- use of illicit substances
- prescription drug abuse (e.g., increased use of sedatives or painkillers).

If a person is prescribed stimulants (e.g., dexamphetamine) for treating ADHD, this should be known to the Authorised Health Professional in case the person is subject to drug testing in the future.

Treatment and management

Treatments of psychiatric conditions, including medication and 'talking therapies', should be considered in terms of the likely impact on fitness for duty, including the benefits and possible adverse side-effects. Compliance with treatment should also be considered and may depend on a number of factors including the nature of the condition and insight by the worker.

The effects of prescribed medication should be considered, including:

- how medication may help to control or overcome aspects of the condition that may impact on working safely; and
- whether medication side effects may affect working safely, including risk of sedation, impaired reaction time, impaired motor skills, blurred vision, hypotension or dizziness.

Information about the potential effects of various medications is summarised in Section 3.5.8 Prescription drugs and Safety Critical Work.

'Talking therapies' and on-line therapy may be useful alternatives or supplements to medication in order to lessen the risk of impairment.[23]

Workers who are already being treated for psychiatric disorders should have a mental health plan which should be discussed at assessment. The plan should reference the need for cognitive and communication skills and responsiveness in emergency situations. Good liaison with the treating doctor/psychologist is important to ensure they understand the implications for the worker's Safety Critical Work and the need to work shift rosters.

The presence or absence of insight has implications for management. The person with insight may recognise when they are unwell and self-limit their Safety Critical Work. Limited insight may be associated with reduced awareness of deficits and may result in markedly impaired judgement or self-appraisal.

[23] e-Mental health http://www.racgp.org.au/your-practice/guidelines/e-mental-health/.

The review period should be tailored to the likely prognosis or pattern of progression of the disorder in an individual with a conservative approach to Safety Critical Work.

Interfacing programs

There may be a number of support programs that are available to workers to which an Authorised Health Professional may refer as required, for example, an Employee Assistance Program or peer support (refer to Section 1.3 Legislative basis and interfaces).

4.8.3 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria is outlined in Table 16 Fitness for duty criteria for Safety Critical Workers: psychiatric disorders.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 16. Fitness for duty criteria for Safety Critical Workers: psychiatric disorders

CONDITION	CRITERIA
K10 score **The scores are a guide and should be interpreted in conjunction with clinical assessment** **To be administered verbally**	**Category 1 and Category 2 Safety Critical Workers** If the person has a K10 score of ≥ 19, the person may be classified as Temporarily Unfit for Duty or Fit for Duty Subject to Review while the causes are being assessed and managed (refer to Section 6.1.2 K10 questionnaire for anxiety/depression): • For scores of 19–24, the worker may be classified Fit for Duty Subject to Review without external referral if the examining doctor feels the issues can be managed within the consultation. • For scores of 25–29, the worker must be referred back to their treating doctor for further management. If score is > 30, the worker must be classified Temporarily Unfit for Duty pending further management.
Psychiatric disorders	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person has a psychiatric disorder of sufficient severity that it may impair behaviour, cognitive ability or perception required for Safety Critical Work (refer to Section 4.8.1 Relevance to Safety Critical Work); or • if the Authorised Health Professional believes that there is a significant risk of a previous psychiatric condition relapsing. Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work, work performance reports and information provided by a psychiatrist as to whether the following criteria are met: • the person has the psychological capacities to undertake their Safety Critical role; and • the condition is well controlled, and the person is compliant with treatment over a substantial period, and the person has insight into the potential effects of their condition on safe working; and • there are no adverse medication effects that may impair their capacity for safe working; and • the impact of comorbidities has been considered (e.g., substance abuse).
Psychogenic nonepileptic seizures **(Refer also 4.5 Seizures and**	**Category 1 Safety Critical Workers** **A person should be categorised Temporarily Unfit for Duty following a psychogenic non-epileptic seizure.**

CONDITION	CRITERIA
epilepsy)	A person is not Fit for Duty Unconditional: • if the person has ever experienced a psychogenic non-epileptic seizure. Fit for Duty Subject to Review may be considered subject to at least annual review, taking into account information provided by the treating neurologist or psychiatrist as to whether the following criteria are met: • seizures are identified as psychogenic only with no epileptic seizures*; and • there have been no further psychogenic seizures for at least 3 months. ** The seizure and epilepsy criteria also apply in cases where there is co-existent epilepsy (refer to Section 4.5 Neurological conditions: seizures and epilepsy). If psychogenic and epileptic seizures cannot be differentiated, the* *Blackouts of uncertain mechanism criteria apply (refer to S*ection 4.1 Blackouts of undetermined mechanism*). If more than one standard applies, the standard with the longer non-driving period prevails*

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Psychiatric conditions

Asadi-Pooya, A. A. & Sperling, M. R, 2015, *Epidemiology of psychogenic nonepileptic seizures*. Epilepsy and Behavior, vol. 46, pp. 60-5.

Asadi-Pooya, A. A. et al, 2020, *Driving a motor vehicle and psychogenic nonepileptic seizures: ILAE Report by the Task Force on Psychogenic Nonepileptic Seizures*. Epilepsia Open, vol. 5, pp. 371-85.

Austroads Ltd & NTC (National Transport Commission) 2022, *Assessing Fitness to Drive 2022: for commercial and private vehicle drivers*, Austroads Ltd, Sydney.

Charlton JL et al. 2021, *Influence of chronic illness on crash involvement of motor vehicle drivers*, 3rd edn, Monash University Accident Research Centre, Melbourne. https://www.monash.edu/__data/assets/pdf_file/0008/2955617/Chronic-illness-and-MVC-risk_Report-MUARC-report-no-353_JUNE2022.pdf

Zoer, I, Sluiter, J & Frings-Dresen, M, 2014, *Psychological work characteristics, psychological workload and associated psychological and cognitive requirements of train drivers*, Ergonomics, 57(10), 1473-87.

4.9 Sleep disorders

4.9.1 Scope and interfaces

This chapter focuses on sleep disorders, particularly sleep apnoea, as they present a significant risk to safety through impaired judgment and/or increased sleepiness and are associated with comorbidities that may impact Safety Critical Work.

It is acknowledged that many chronic illnesses can cause fatigue, which may or may not be associated with increased sleepiness. A Safety Critical Worker may therefore be referred for a health assessment (Triggered Health Assessment) with symptoms of fatigue in association with poor work performance or incidents. They should be assessed for a broad range of medical conditions and related factors including the following:

- Medical conditions including anaemia, diabetes, hypothyroidism, cardiac disease, chronic obstructive pulmonary disease, sleep disorders.
- Psychological conditions including depression, anxiety, PTSD.
- Occupational factors including rosters, shift work and sleeping arrangements, bullying/conflict.
- Social factors including family and relationship problems.

Such workers should be assessed, classified appropriately with regard to fitness for duty as per this Standard, and referred to their general practitioner as required.

This chapter interfaces with fatigue risk management (refer to Section 1.4.2 Fatigue management). The ONRSR Guideline Safety Management System (SMS)[24] identifies that rail transport operators must:

- develop a fatigue risk management program
- provide education and information, and
- manage risks associated with hours of work.

4.9.2 Relevance to Safety Critical Work

Effects of sleep disorders on Safety Critical Work

A number of sleep disorders may cause excessive daytime sleepiness, which manifests itself as a tendency to doze at inappropriate times when intending to stay awake, and which has obvious implications for rail safety.

Relevant disorders include:

- Sleep apnoea (obstructive sleep apnoea (OSA)*, central sleep apnoea and nocturnal hypoventilation).
- Periodic limb movement disorder.
- Circadian rhythm sleep wake disorders (e.g., advanced or delayed sleep-phase syndrome)
- Some forms of insomnia.

[24] Office of the National Rail Safety Regulator, 2019, *ONRSR Guideline Safety Management System* **https://nraspricms01.blob.core.windows.net/assets/documents/Guideline/Safety-Management-System-Guideline-updated-1-July-2022.pdf**.

- Narcolepsy.

*For the purposes of this document obstructive sleep apnoea syndrome (OSAS) is excessive daytime sleepiness in combination with sleep apnoea on overnight monitoring.

Such disorders may affect the ability to perform Safety Critical Work due to sleepiness and/or due to altered higher executive cognitive function. These effects are relevant to both Category 1 and Category 2 workers.

These disorders are common and underdiagnosed. An Australian study of middle-aged adults aged 45 to 65 involving survey, clinical assessment and in-laboratory polysomnography found prevalence of OSA in 24 per cent of females and 47 per cent of males; insomnia 16 per cent of females and 9 per cent of males; and restless legs syndrome 4 per cent of females and 2 per cent of males. At least one sleep disorder was present in 43 per cent of the 895 people studied.[25] Some studies have suggested a higher prevalence of sleep apnoea in transport vehicle drivers associated with risk factors such as obesity, age and male gender. This may have implications for rail.

OSA is frequently associated with comorbidities including metabolic, cardiovascular, renal, pulmonary and neuropsychiatric.[26] There is considerable evidence that OSA is an independent risk factor for many of these comorbidities and there is also evidence that some of these comorbidities may predispose to the development of OSA. Sleep apnoea may also worsen conditions relevant to Safety Critical Work such as hypertension and depression and is associated with type 2 diabetes. Attention to and management of comorbidities is an important consideration for fitness for duty and general health management of Safety Critical Workers.

Increased sleepiness during the daytime may also occur in otherwise normal people and may be due to:

- previous sleep deprivation (restricting the time for sleep)
- poor sleep hygiene habits
- irregular sleep–wake schedules (e.g., rosters)
- the influence of sedative medications including alcohol.

These factors may increase the severity of sleep disorders and result in more severe sleepiness in workers with sleep disorders.

Effects of rail safety work on sleep

Safety Critical Work may require working shift rosters which may be associated with Shiftwork Sleep Disorder[27]. Shift work sleep disorder consists of symptoms of excessive tiredness and often depressed mood.

[25] McArdle N, Reynolds AC, Hillman D,et al, 2022, *Prevalence of common sleep disorders in middle-aged community sample*, J Clin Sleep Med, vol. 18, no. 6, pp. 1503-14.

[26] Bonsignore MR, Balamonte P, Mazzuca E et al, 2019, *Obstructive sleep apnea and comorbidities: a dangerous liaison*, Multidisciplinary respiratory Medicine, vol. 14, no. 8.

[27] Australian Sleep Association, 2017. *Shift work Sleep Disorder* https://sleep.org.au/common/Uploaded%20files/Public%20Files/Professional%20resources/Adult%20resources/Shiftwork%20Disorder_0617.pdf.

Evidence of crash risk

Information about risk of accidents due to sleep disorders mainly comes from road crash data. Studies have shown an increased rate of motor vehicle accidents of between 2 and 7 times that of control subjects in those with sleep apnoea. Studies have also demonstrated increased objectively measured sleepiness while driving (electroencephalography and eye closure measurements) and impaired driving-simulator performance in sleep apnoea patients. This performance impairment is similar to that seen due to illegal alcohol impairment or sleep deprivation.

Drivers with severe sleep disordered breathing may have a much higher rate of accidents than those with a less severe sleep disorder. Drivers with a high Epworth Sleepiness Scale (ESS) score have a higher crash risk (see below). Those with self-reported episodes of dozing, or frequent sleepiness while driving, are also at a higher crash risk, irrespective of sleep apnoea severity.

Patients with narcolepsy present with excessive sleepiness and can have periods of sleep with little or no warning of sleep onset. Other symptoms include cataplexy, sleep paralysis and vivid hypnagogic hallucinations, which present a significant risk for Safety Critical Work. Those with narcolepsy perform worse than control subjects on simulated driving tasks and are more likely to have (motor vehicle) accidents.

4.9.3 General assessment and management guidelines

The approach to the assessment and initial management of sleep disorders is summarised in Figure 26 and described below. It involves:

- Establishing whether there is evidence or indicators of excessive daytime sleepiness (relevant to all sleep disorders).
- Establishing the specific risk of OSA.
- Referring as appropriate for sleep study.
- Referring as appropriate for specialist assessment and management.

Assessing for high risk of excessive daytime sleepiness

Determining whether the worker experiences excessive daytime sleepiness is a priority in terms of safety on the network.

Witnessed episodes of dozing at work and work performance or incident reports may be indicative of excessive sleepiness at work and may prompt a Triggered Health Assessment, during which the patterns of sleepiness can be explored with the worker in terms of possible causes, both medical and lifestyle related, or work-related, such as shiftwork.

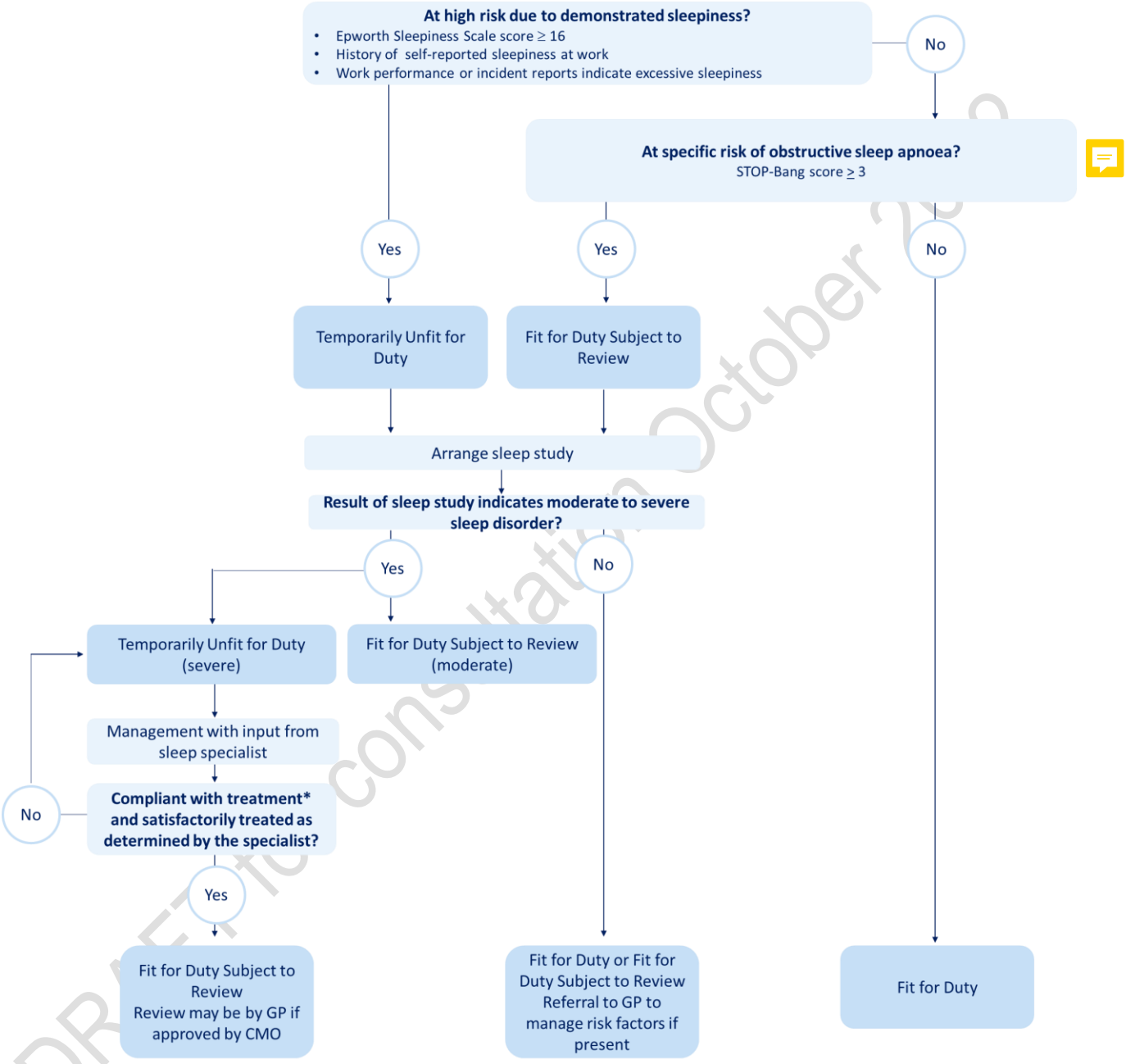
For Periodic Health Assessments, the worker is asked to self-report sleepiness at work, declare any existing sleep disorders and complete the ESS, a subjective tool which asks about likelihood of dozing in various circumstances during the day, irrespective of the cause (refer Figure 27).

Evidence of sleepiness at work, sleepiness related incidents or a raised ESS (16 or more) warrant referral for a sleep study (polysomnography). In most cases, the worker will need to be immediately classed Temporarily Unfit for Duty pending further assessment.

It is recognised that tests such as the ESS rely on honest completion by the worker, and there is evidence that incorrect reporting may occur. The use of such tools is therefore just one aspect of the comprehensive assessment. Verbal re-administration of the tool may be considered during the course of the assessment, particularly if objective measures of sleep disorder risk and general clinical assessment warrant it.

Unexplained episodes of ‘sleepiness’ may also require consideration of the several causes of blackouts (refer to Section 4.1 Blackouts).

Figure 26. Sleep disorder assessment and management for Safety Critical Workers (Category 1 and 2)



***** Workers who refuse treatment may be offered a Maintenance of Wakefulness Test under specific circumstances – see text.

Additional information on the use, administration and scoring of the ESS is available in Section 6.1.3.

Figure 27. Epworth Sleepiness Scale questionnaire

How likely are you to doze off or fall asleep (rather than just feeling tired) in the following situations:	would never doze off **(0)**	slight chance of dozing **(1)**	moderate chance of dozing **(2)**	high chance of dozing **(3)**
Sitting and reading	☐	☐	☐	☐
Watching TV	☐	☐	☐	☐
Sitting inactive in a public place (e.g., a theatre or a meeting)	☐	☐	☐	☐
As a passenger in a car for an hour without a break	☐	☐	☐	☐
Lying down to rest in the afternoon when circumstances permit	☐	☐	☐	☐
Sitting and talking to someone	☐	☐	☐	☐
Sitting quietly after a lunch without alcohol	☐	☐	☐	☐
In a car, while stopped for a few minutes in the traffic	☐	☐	☐	☐

SCORING:

- The ESS is scored by summing the numeric values in the boxes in the questionnaire; the maximum possible is 8 x 3 = 24.
- A score of between 0 and 10 is within the normal range.
- A score of between 11 and 15 indicates mild to moderate sleepiness.
- A score of between 16 and 24 indicates moderate to severe sleepiness.

**** The Epworth Sleepiness Scale is under copyright to Dr Murray Jones 1991 – 1997. It may be used by individual doctors without permission, but its use on a commercial basis must be negotiated.***

Risk of obstructive sleep apnoea

Periodic Health Assessments (and Triggered Health Assessments if indicated) also include assessment of the risk of obstructive sleep apnoea using the STOP-Bang questionnaire (Figure 28). This validated screening tool consists of eight yes/no questions including age, gender, history of snoring, body mass index (BMI), neck circumference, self-reported tiredness, observed breathing problems during sleep and treatment for blood pressure. A high risk for obstructive sleep apnoea is defined as a positive response to 3 or more items.

While not included in the STOP-Bang, a diagnosis of type 2 diabetes also adds to the suspicion of OSA. Poor memory and concentration, morning headaches and insomnia may also be presenting features.

Additional information on the use, administration and scoring of the STOP-Bang questionnaire is available in Section 6.1.4.

Figure 28. STOP-Bang questionnaire

	Score for YES
Snoring? Do you Snore Loudly (loud enough to be heard through closed doors or your bed-partner elbows you for snoring at night)?	**1**
Tired? Do you often feel Tired, Fatigued, or Sleepy during the daytime (such as falling asleep during driving or talking to someone)?	**1**
Observed? Has anyone Observed you Stop Breathing or Choking/Gasping during your sleep?	**1**
Pressure? Do you have or are being treated for High Blood Pressure?	**1**
Body Mass Index more than 35 kg/m2?	**1**
Age older than 50?	**1**
Neck size large? (Measured around Adams apple) Is your shirt collar 16 inches / 40cm or larger?	**1**
Gender = Male?	**1**
SCORING: • The STOP-Bang is scored (1) per each YES response OSA - Low Risk: Yes to 0 to 2 questions OSA - Intermediate Risk: Yes to 3 to 4 questions OSA - High Risk: Yes to 5 to 8 questions	

Referral for polysomnography

Safety Critical Workers with confirmed or suspected daytime sleepiness or a raised STOP-Bang score should have a sleep study, which may be arranged by the Authorised Health Professional. They should be classed Fit for Duty Subject to Review or Temporarily Unfit for Duty until the disorder is investigated, treated effectively and fitness for duty status finally determined (refer Figure 26).

While the gold standard test for diagnosing OSA is with in-laboratory full polysomnography with sleep technician in attendance (Type 1), initial screening may be conducted using polysomnography packages that are available for home assessment (refer Table 17). Type 3 and Type 4 assessments are not suitable for assessing Safety Critical Workers.

Table 17. Types of polysomnography packages

Recommended for Safety Critical Worker assessment	Type 1	Attended, in-laboratory, full PSG with ≥ 7 recording channels measuring sleep stage, breathing and cardiac parameters, and limb movements.
	Type 2	Unattended, home, full PSG with ≥ 7 recording channels
NOT recommended for Safety Critical Worker assessment	Type 3	Limited channel monitoring of breathing parameters without sleep assessment.
	Type 4	Limited channel monitoring of only 1–2 channels (e.g., oximetry).

The severity of OSA is usually determined by the frequency of obstructive respiratory events and defined by the Apnoea Hypopnoea Index (AHI), which is the average number of respiratory disturbances per hour of sleep. OSA has been arbitrarily defined as an AHI ≥ 5 events/hour, and moderate-to-severe OSA is defined as an AHI ≥ 15 events/hour.

The results should be interpreted and reported on by a sleep physician who has established quality assurance procedures for the data acquisition. Safety Critical Workers with a positive result should be examined by the sleep specialist (video link is acceptable) to confirm and explain the diagnosis, to explain treatment options and to explain the monitoring of compliance.

If the sleep study is normal, this should be clearly documented in the worker's medical report so that this information is available for consideration at subsequent health assessments. If high-risk features remain present at subsequent assessments, the specialist should be asked to advise regarding the timing of their next sleep study. Safety Critical Workers with risk factors such as high BMI, high blood pressure and /or diabetes should be managed accordingly, including with referral to their general practitioner and rail transport operator health promotion program as appropriate.

Treatment and monitoring

Safety Critical Workers who are diagnosed with obstructive sleep apnoea syndrome or severe sleep apnoea with or without self-reported sleepiness should be categorised Temporarily Unfit for Duty while treatment is established. They may return to work once satisfactory treatment is confirmed and have annual reviews to ensure that adequate treatment is maintained (Fit for Duty Subject to Review).

Safety Critical Workers diagnosed with moderate sleep apnoea with or without self-reported sleepiness, may be categorised Fit for Duty Subject to Review while treatment is established. They will also require annual review.

In all cases, initial determination of Fit for Duty Subject to Review should be established by the treating specialist. The Chief Medical Officer of a rail transport organisation may determine that subsequent review by the worker's treating general practitioner is sufficient if there is an established pattern of compliance and good response to treatment.

If circumstances change, such as weight gain of 10kg or more, this should trigger a specialist review.

Those treated with Continuous Positive Airway Pressure (CPAP) should use a CPAP machine with a usage meter to allow objective assessment and recording of treatment compliance. Similarly, for those treated with mandibular splints, only splints with compliance detection devices should be used.

Refusal of treatment – role of the Maintenance of Wakefulness Test (MWT)

Safety Critical Workers with moderate sleep apnoea or with other sleep disorders who refuse treatment may be offered a Maintenance of Wakefulness Test (MWT) to objectively assess their daytime sleepiness and establish their fitness for duty. The MWT should include a drug screen and be for 40 minutes. Due to the limitations of the test and the risks to rail safety, it is not an alternative to treatment for Safety Critical Workers with confirmed sleep apnoea syndrome or diagnosed severe sleep apnoea.

Those with a normal MWT may be classified Fit for Duty Subject to Review without sleep apnoea treatment and reviewed annually. A repeat overnight sleep study may be recommended depending on the subsequent clinical review.

Repeated MWT may be conducted 2-yearly unless there is a clinical concern due to symptom changes or a near miss or accident.

Those with an abnormal MWT should remain Temporarily Unfit for Duty until appropriate treatment is able to be initiated and is shown to be effective.

Advice to workers

All workers suspected of having, or found to have, sleep apnoea or other sleep disorders should be advised about potential impact on Safety Critical Work and strategies for maintaining fitness for duty. General advice should include:

- minimising unnecessary activity at times when normally asleep
- allowing adequate time for sleep
- avoiding working after having missed a large portion of their normal sleep
- avoiding alcohol and sedative medications
- resting if sleepy
- ensuring the sleep environment is cool, dark and quiet.

Safety Critical Workers are responsible for:

- notifying management if they are sleepy so safety critical duties may be avoided
- complying with treatment, including management of lifestyle factors
- maintaining their treatment device
- attending review appointments
- honestly reporting their condition to their treating physician and the Authorised Health Professional.

Narcolepsy

Narcolepsy is present in 0.05 per cent of the population and usually starts in the second or third decade of life. Sufferers present with excessive sleepiness and can have periods of sleep with little or no warning of sleep onset. Other symptoms include cataplexy, sleep paralysis and vivid hypnagogic hallucinations.

The majority of sufferers are HLA-DR2 (a serotype) positive. There is a subgroup of people who are excessively sleepy, but do not have all the diagnostic features of narcolepsy.

Diagnosis of narcolepsy is made on the combination of clinical features, HLA typing and multiple sleep latency test (MSLT), with a diagnostic sleep study on the previous night to exclude other sleep disorders and aid interpretation of the MSLT.

Subjects suspected of having narcolepsy should be referred to a respiratory or sleep physician or neurologist for assessment (including a MSLT) and management. If the diagnosis is confirmed, they should be classified Temporarily Unfit for Duty until there have been no symptoms for 6 months. They should have a review at least annually by their specialist.

Sleepiness in narcolepsy may be managed effectively with scheduled naps and stimulant medication. Tricyclic antidepressants and monoamine oxidase (MAO) inhibitors are used to treat cataplexy.

4.9.4 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria is outlined in Table 18.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person’s fitness for duty.

Table 18. Fitness for duty criteria for Safety Critical Workers: sleep disorders

CONDITION	CRITERIA
Sleep disorder risk assessment (sleepiness) (refer Figure 26, Figure 27)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if there is evidence of excessive daytime sleepiness such as: – an ESS score of 16 or greater; or – a history of self-reported sleepiness at work; or – work performance reports indicating excessive sleepiness; or – incident reports plausibly caused by inattention or sleepiness They should be classed Temporarily Unfit for Duty and promptly assessed by a specialist in relation to a possible sleep disorder. If a sleep disorder is diagnosed, see relevant standards below.
Obstructive sleep apnoea (OSA) risk assessment (STOP-Bang) (Refer Figure 28)	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if they are assessed as being at moderate risk (or higher) of obstructive sleep apnoea, as evidenced by a STOP-Bang score of ≥ 3 They should be classed Fit for Duty Subject to Review or Temporarily Unfit for Duty and promptly referred for over-night sleep study. If a sleep disorder is diagnosed, see relevant standards below.
Sleep apnoea	**Category 1 and Category 2 Safety Critical Workers** **Sleep apnoea syndrome** A person is not Fit for Duty Unconditional: • if the person has established sleep apnoea syndrome, defined as excessive daytime sleepiness in combination with sleep apnoea on overnight monitoring. They should be categorised Temporarily Unfit for Duty while treatment is established. Fit for Duty Subject to Review may be determined, subject to annual review, taking into account the nature of the work and information provided by an appropriate specialist* in sleep disorders as to whether the following criteria are met: • the person is compliant with treatment**; and • the response to treatment is satisfactory. **Severe sleep apnoea (with or without excessive daytime sleepiness)** A person is not Fit for Duty Unconditional: • if the person has severe sleep apnoea on a diagnostic sleep study (defined as AHI ≥ X with or without self-reported excessive daytime sleepiness. They should be categorised Temporarily Unfit for Duty while treatment is established. Fit for Duty Subject to Review may be determined, subject to annual review, taking into account the nature of the work and information provided by an appropriate specialist* in sleep disorders as to whether the following criteria are met: • the person is compliant with treatment**; and • the response to treatment is satisfactory. **Moderate sleep apnoea (with or without excessive daytime sleepiness)** A person is not Fit for Duty Unconditional:

CONDITION	CRITERIA
	• if the person has moderate sleep apnoea on a diagnostic sleep study (defined as AHI with or without self-reported excessive daytime sleepiness. They may be categorised Fit for Duty Subject to Review unless excessive daytime sleepiness is suspected, in which case they should be categorised Temporarily Unfit for Duty while treatment is established. Fit for Duty Subject to Review may be determined, subject to annual review, taking into account the nature of the work and information provided by an appropriate specialist* in sleep disorders as to whether the following criteria are met: • the person is compliant with treatment**; and • the response to treatment is satisfactory. *The Chief Medical Officer of a rail transport organisation may determine that review by the worker's treating general practitioner is sufficient if there is an established pattern of continuing compliance and good response to treatment. The initial granting of Fit for Duty Subject to Review must be based on information provided by a specialist. **If a person refuses treatment, they may be offered a Maintenance of Wakefulness Test **only** if they have moderate sleep apnoea (refer text for details). Category 1 Safety Critical Workers who have severe sleep apnoea or confirmed sleep apnoea syndrome should be categorised Temporarily Unfit for Duty if they refuse treatment.
Narcolepsy	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if narcolepsy is confirmed. Fit for Duty Subject to Review may be determined, subject to annual review, taking into account the nature of the work and information provided by a specialist in sleep disorders as to whether the following criteria are met: • a clinical assessment has been made by a sleep physician; and • cataplexy has not been a feature in the past; and • medication is taken regularly; and • there have been no symptoms for 6 months; and • normal sleep latency present on Maintenance of Wakefulness Test (MWT) (on or off medication).
Other causes of excessive daytime sleepiness	Refer to guidelines in the text.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

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4.10 Substance misuse and dependence

(Refer also to Section 1.4.1 Drug and alcohol management programs)

4.10.1 Scope and definitions

This section focuses on diagnosis and management of Category 1 and Category 2 workers who have substance misuse or substance dependence. It is concerned with all substances that can impair cognition in regard to safety.

Substance misuse may be seen as a continuum ranging from mild / occasional use to severe / dependence.

For the purposes of this standard the term substance misuse refers to the use of any substance whether legal or illegal which causes the individual social, psychological, physical or legal problems related to intoxication, binge use or dependence. This includes:

- chronic heavy consumption of alcohol
- misuse of prescription and over the counter medication
- use of illicit drugs
- use of natural unregulated intoxicants e.g., Datura, mushrooms etc.

Substance dependence is a condition that falls within the substance misuse definition and, for the purposes of this standard, is characterised by several of the following features:

- Tolerance, as defined by either a need for markedly increased amounts of the substance to achieve intoxication or desired effect, or a markedly diminished effect with continued use of the same amount of substance.
- Withdrawal, as manifested by either the characteristic withdrawal syndrome for the substance, or the same (or a closely related) substance is taken to relieve or avoid withdrawal symptoms.
- The substance is often taken in larger amounts or during a longer period of time than was intended.
- There is a persistent desire or unsuccessful efforts to cut down or control substance use.
- A great deal of time is spent in activities to obtain the substance, use the substance or recover from its effects.
- Important social, occupational or recreational activities are given up or reduced because of substance use; and the substance use is continued despite knowledge of having a persistent or recurrent physical or psychological problem that is likely to have been caused or exacerbated by the substance (e.g., continued drinking despite worsening a peptic ulcer; single or multiple convictions for drug and alcohol vehicle driving offences; marital discord and domestic violence, etc).

For the purpose of this standard, remission/recovery is attained when there is abstinence from use of illicit drugs or where the use of other substances, such as alcohol, has reduced in frequency to the point where it is unlikely to cause impairment of Safety Critical Work or to result in a positive test at work. Remission must be confirmed by biological monitoring (e.g., urine drug screening, LFT, CDT, hair analysis for drugs) over a period of at least 6 months. At the conclusion of any monitoring a worker with remission may be certified Fit for Duty Subject to Review on a long-term basis (refer Section 4.10.4 General assessment and management guidelines).

4.10.2 Interface with drug and alcohol management programs

The section should be read in conjunction with the requirements of the RSNL and National Regulations regarding drug and alcohol management program requirements, as well as rail SMS guidelines[28]. Regulation 28 identifies a number of requirements, including that rail transport operators identify workers who have alcohol or other drug related problems, and where appropriate, refer those workers to be assessed and treated, counselled or rehabilitated.

The health assessment system for Safety Critical Workers described in this chapter is integral to a rail safety organisation's drug and alcohol management program. For example, it provides a mechanism by which a Safety Critical Worker may be referred for a Triggered Health Assessment if they are found to test positive to a drug and alcohol screen (random or for cause) or there are other circumstances that indicate a potential problem such as recurrent drink driving convictions. The assessment may result in specialist referral and more regular review as part of a rehabilitation / return to work process.

Periodic Health Assessments conducted under the Standard do not routinely include drug and alcohol screening, however the assessment incorporates a behavioural screen for heavy alcohol use (AUDIT) and a clinical assessment, with specialist referral if indicated.

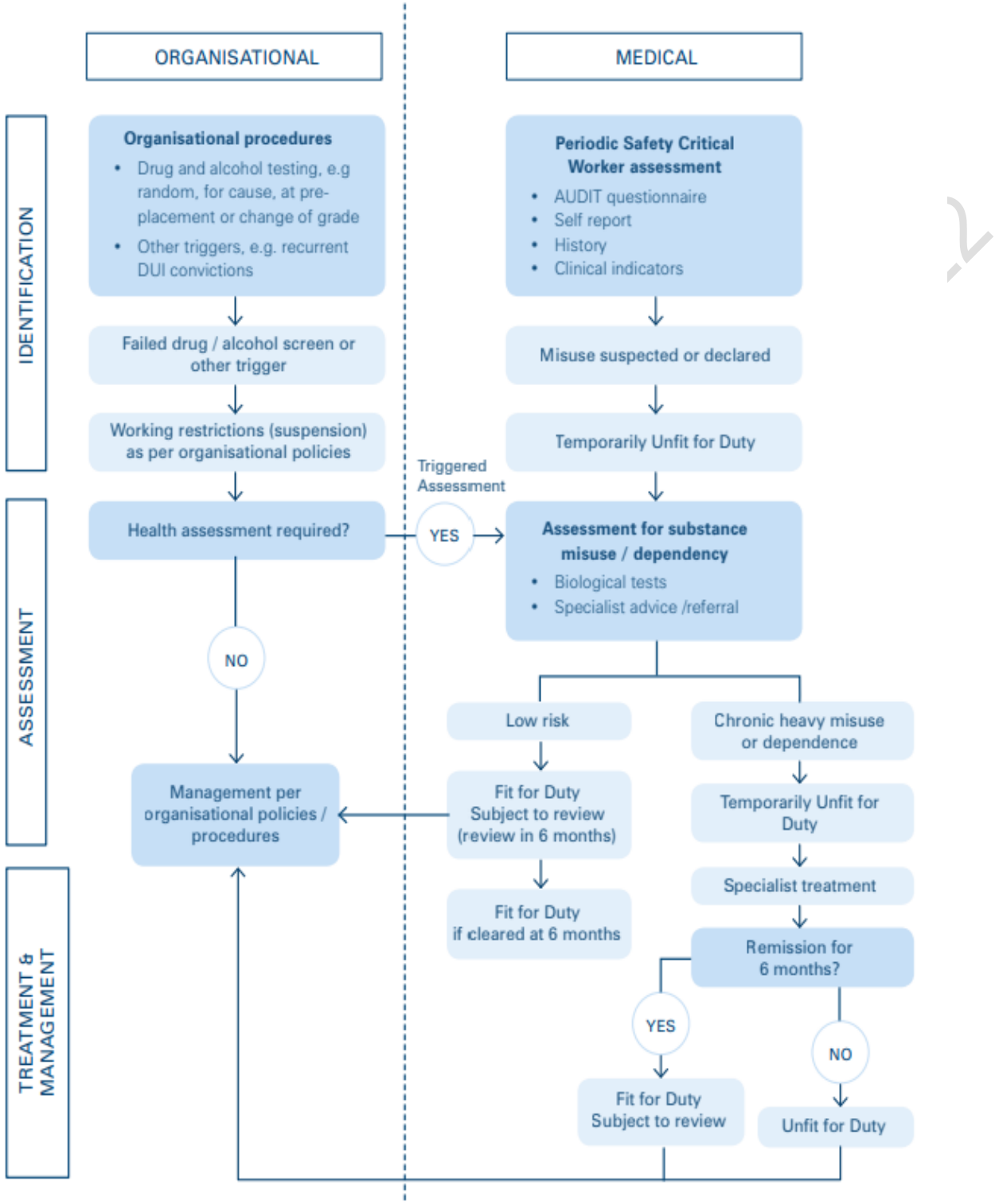
Pre-placement or change of risk category health assessments may include a drug screen, depending on the jurisdiction's legislation and the rail transport operator's requirements.

For all assessments conducted under the Standard, if a person is suspected of being intoxicated by alcohol or drugs at the time of an assessment, the Authorised Health Professional should assess them and enquire about possible reasons for their condition. Under these specific circumstances the doctor may conduct a drug and alcohol test in accordance with relevant legislation. If drug or alcohol intoxication is suspected or confirmed, the Authorised Health Professional should classify the worker as Temporarily Unfit for Duty and notify the employer.

The presence of certain illicit drugs is an offence under RSNL and will be managed accordingly. Working restrictions (i.e., suspension of rail safety duties) following a positive drug screen are imposed as determined by operational procedures governed by RSNL. Medical fitness for duty may only be determined as a result of a medical review process (refer flow chart in Figure 29).

[28] Office of the National Rail Safety Regulator. *Preparation of a rail safety management system*, **https://www.onrsr.com.au/safety-essentials/safety-management-systems** [Accessed 26 July 2022].

Figure 29. Organisational and medical management of drug and alcohol misuse / dependence in Safety Critical Workers



4.10.3 Relevance to Safety Critical Work

Both the acute and chronic effects of substance misuse are relevant to Safety Critical Work.

Alcohol

The acute effects of alcohol are well established; its use is incompatible with the conduct of Safety Critical Work as reflected in the RSNL as described above.

Chronic heavy alcohol use carries a risk of neurocognitive deficits (Wernicke–Korsakoff syndrome) relevant to safe working capability, including:

- Short-term memory and learning impairments, which become more evident as the task difficulty increases.
- Impaired perceptual–motor speed.
- Impairment of visual search and scanning strategies.
- Deficits in executive functions such as mental flexibility and problem-solving skills; difficulty in planning, organising and prioritising tasks; difficulty focusing attention, sustaining focus, shifting focus from one task to another, or filtering out distractions; difficulty monitoring and regulating self-action; or impulsivity.[29]

Peripheral neuropathies experienced as numbness or paraesthesia of the hands or feet may also occur as well as lack of muscle coordination (ataxia).

In the event of the above end-organ effects relevant to safe working, the appropriate requirements should be applied as set out elsewhere in this Standard.

Alcohol-dependent people may experience a withdrawal syndrome (delirium tremens) on cessation or significant reduction of intake, which carries some risk of generalised seizure (refer to ‘Acute symptomatic seizures’), confusional states and hallucinations.

Of relevance to the management of Safety Critical Workers with alcohol dependence is that individuals with alcohol dependence have approximately twice the risk of (motor vehicle) crash involvement as controls. In addition, (vehicle) drivers with alcohol dependency are more likely to drive while intoxicated.

Other substances

Substances (prescribed, over the counter and illicit drugs) can be misused for their intoxicating, sedative or euphoric effects. Workers who are under the acute influence of these drugs, or craving for them or withdrawing from them, are more likely to behave in a manner incompatible with safe working. This may involve, but not be limited to, risk taking, aggression, feelings of invulnerability, narrowed attention, altered arousal states and poor judgement. Acute cannabis consumption is associated with increased road trauma.

The chronic effects of these substances vary and are not as well understood as those of alcohol. Some evidence suggests cognitive impairment is associated with chronic stimulant, opioid and benzodiazepine use. Those misusing these substances may be at risk of brain injury through hypoxic overdose, trauma or chronic illness. Withdrawal seizures may occur (refer to ‘Acute symptomatic seizures’).

[29] Charlton, JL et al. 2021, *Influence of chronic illness on crash involvement of motor vehicle drivers*, 3rd edition, Monash University Accident Research Centre, Melbourne. https://www.monash.edu/__data/assets/pdf_file/0008/2955617/Chronic-illness-and-MVC-risk_Report-MUARC-report-no-353_JUNE2022.pdf > [accessed 13 July 2022].

Withdrawal symptoms can also vary and may include restlessness, insomnia, anxiety, aggression, anorexia, muscle tremor and autonomic effects.

End-organ damage, including cardiac, neurological and hepatic damage, may be associated with some forms of illicit substance use, particularly injection drug use. Cocaine and other stimulant misuse have been linked with cardiovascular pathology. In the event of end-organ effects relevant to Safety Critical Work, the appropriate requirements should be applied as set out elsewhere in this Standard.

Opioid analgesics for pain management

The long-term use of opioid analgesics is generally not accepted as an appropriate approach for chronic musculoskeletal pain management and therefore should be questioned. Workers using these agents or being treated with buprenorphine and methadone for opioid dependency should be referred for assessment by an appropriate specialist such as an addiction medicine specialist or addiction psychiatrist.

Effects of alcohol or drugs on other diseases

People who are frequently intoxicated and who also suffer from certain other medical conditions are often unable to give their other medical problems the careful attention required, which has implications for safe working.

Epilepsy

Many people with epilepsy are quite likely to have a seizure if they miss their prescribed medication even for a day or two, particularly when this omission is combined with inadequate rest, emotional turmoil, irregular meals, and alcohol or other substances. Patients under treatment for any kind of epilepsy are not fit for duty if they are frequently intoxicated.

Diabetes

People with insulin-dependent diabetes have a special problem if they are frequently intoxicated. Not only might they forget to inject their insulin at the proper time and in the proper quantity, but their food intake can also get out of balance with the insulin dosage. This may result in a hypoglycaemic reaction or the slow onset of diabetic coma. Such workers would not be fit for duty.

4.10.4 General assessment and management guidelines

The key consideration is to ensure workers with suspected or confirmed substance misuse problems do not present a risk to safety on the network, either from being acutely affected, or affected by the consequences of chronic use and/ or withdrawal.

The flow chart shows the steps of identification, assessment and treatment in the management of substance misuse and dependence, and also shows the interface between organisational approaches and Safety Critical Worker health assessments.

Identification

Triggered Health Assessments are an important mechanism of identifying and managing Safety Critical Workers with substance misuse disorders, as workers may not be inclined to self-report at Periodic Health Assessments. Substance misuse may be considered, for example, if a worker is referred by the rail transport operator as a result of poor performance or concerns about psychological ill-health.

Biological (urine or blood or saliva or breath) screening for drug or alcohol is not required as part of routine period health assessments. However, in the course of the health assessment clinical

examination the Authorised Health Professional should be alert for indications in the history of substance misuse, such as psychological problems.

For all assessments conducted under the Standard, if a person is suspected of being intoxicated by alcohol or drugs at the time of an assessment, the Authorised Health Professional should assess them and enquire about possible reasons for their condition. Under these specific circumstances the doctor may conduct a drug and alcohol test in accordance with relevant legislation. If drug or alcohol intoxication is suspected or confirmed, the Authorised Health Professional should classify the worker as Temporarily Unfit for Duty and notify the employer.

Screening tests may be useful for identifying substance misuse and dependence disorders. For example, the Alcohol Use Disorders Identification Test (AUDIT) is used to screen for risky of hazardous alcohol use, high risk or harmful alcohol use and alcohol dependence, and is included in the Health Questionnaire (Refer Figure 30 and Table 19). The AUDIT relies on accurate responses to the questionnaire and should be interpreted in the context of a global assessment that includes other clinical evidence.

If the person appears unduly familiar with the AUDIT, other validated questionnaires may be applied (after consultation with the rail transport operator's Chief Medical Officer or equivalent) and clinical judgement may be needed. Additional information on the use, administration and scoring of the AUDIT questionnaire is available in Section 6.1.5 AUDIT questionnaire.

Figure 30. AUDIT questionnaire

Scoring:

	(0)	***(1)***	***(2)***	***(3)***	***(4)***
1. How often do you have a drink containing alcohol?	☐ Never (skip to Q9)	☐ Monthly or less	☐ 2 to 4 times a month	☐ 2 to 3 times a week	☐ 4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	☐ 1 or 2	☐ 3 or 4	☐ 5 or 6	☐ 7, 8 or 9	☐ 10 or more
3. How often do you have 6 or more drinks on one occasion?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
5. How often during the last year have you failed to do what was normally expected from you because of drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
9. Have you or someone else been injured as a result of your drinking?	☐ No		☐ Yes, but not in the last year		☐ Yes, during the last year
10. Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?	☐ No		☐ Yes, but not in the last year		☐ Yes, during the last year

Assessment

Careful individual assessment must be made of workers who misuse or are suspected of misusing alcohol or other substances (prescribed or illicit), even if drug use is occasional. Assessment will require consideration of the worker's substance use history, work attendance and performance records, response to any previous treatment and their level of insight.

During clinical assessment, patients may understate or deny substance use for fear of consequences of disclosure. In addition, the acute and chronic cognitive effects of some substance use also contribute to difficulty in obtaining an accurate history and identification of substance use. Assessment should therefore incorporate a range of indicators of substance use in addition to self-reporting, including, for example, carbohydrate deficient transferrin (CDT) and liver function tests (LFT) for alcohol misuse, or drug metabolites and hair analysis for drug misuse.

Examining health professionals should be mindful that misuse may not be confined to a single drug class, and people may use multiple substances in combination. In addition, people who misuse substances may change from one substance to another. They should also be alert to the complex course of substance misuse; periods of abstinence of a number of months are a feature of dependence and should not be interpreted as sustainable recovery or as evidence that ongoing professional help is not required. Both dependence and recovery are best viewed as fluid rather than fixed states, thus underscoring the need for sustained and assertive recovery management.

Workers who are found to be misusing or are suspected of misusing alcohol or drugs should be classed as Temporarily Unfit for Duty while their condition is being investigated.

Where dependence or chronic, heavy misuse is suspected by the Authorised Health Professional, the worker should be referred to (or discussed with) a doctor experienced in managing substance misuse disorders, for example a psychiatrist specialised in alcohol and drug misuse or an addiction medicine specialist, to assist in determining the level of substance use and the level of safety risk. People with a combined substance misuse disorder and mental illness ('dual diagnosis') often have a level of complexity requiring specialist assessment.

Management and treatment

If the risk of further substance misuse has been assessed as low, a worker should be classified as Fit for Duty Subject to Review subject to further review in 6 months' time and ongoing monitoring as per rail organisation policy. If there is no evidence of substance misuse at the 6-month review, they may not require more frequent review, but their risk of substance misuse should be specifically addressed at subsequent Periodic Health Assessments.

Those assessed as having chronic or heavy substance misuse or dependence, should be classified Temporarily Unfit for Duty. A strong response to treatment and well-documented abstinence and recovery (remission) may enable determination of Fit for Duty Subject to Review. Remission must be confirmed by biological monitoring (e.g., urine drug screening, LFT, CDT, hair analysis for drugs) over a period of at least 6 months. At the conclusion of any monitoring a worker with remission may be certified Fit for Duty Subject to Review on a long-term basis.

Patients with severe substance misuse problems or dependence who have had previous high rates of relapse and fluctuation in stabilisation would not be considered fit to return to Safety Critical Work.

4.10.5 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria is outlined in Table 19.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 19. Fitness for duty criteria for Safety Critical Workers: substance misuse and dependence

CONDITION	CRITERIA
AUDIT questionnaire	**Category 1 and Category 2 Safety Critical Workers** If the person has an AUDIT score of > 8, the person may be classified as Fit for Duty Subject to Review or Temporarily Unfit for Duty while causes are being assessed and managed (refer to Section 6.1.5 AUDIT questionnaire): • Workers with scores of 8–15 may be managed within the consultation by providing simple advice and information on the alcohol guidelines and risk factors. If the risk is assessed as being low, they should be classified as Fit for Duty Subject to Review. • Workers with scores of 16–19 should be managed by a combination of simple advice, brief counselling and continued monitoring. Follow-up and referral to the worker's general practitioner is necessary. They should be classified as Fit for Duty Subject to Review or Temporarily Unfit for Duty pending further assessment. • Workers with scores of 20 or more should be referred to specialist services to consider withdrawal, pharmacotherapy and other more intensive treatments. They should be assessed as Temporarily Unfit for Duty pending further assessment.
Substance misuse	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if there is evidence of substance misuse. The person should be classified Temporarily Unfit for Duty while being assessed and managed. Fit for Duty Subject to Review may be determined, with review in 6 months: • if the risk of further substance misuse is assessed as being low. If there is no evidence of substance misuse at the 6-month review, they may not require more frequent review, but their risk of substance misuse should be specifically addressed at subsequent Periodic Health Assessments. In the case of chronic or heavy substance misuse or substance dependence, Fit for Duty Subject to Review may be determined, subject to at least annual review, taking into account the nature of the work and information provided by an appropriate specialist (such as an addiction medicine specialist or addiction psychiatrist) as to whether the following criteria are met: • the person is involved in a treatment program and has been in remission* for at least 6 months as confirmed by biological monitoring; and • there is an absence of cognitive impairments relevant to safe working; and • there is absence of end-organ effects that impact on safe working (as described elsewhere in this Standard); and • the risk of further substance misuse is assessed as being low. * For the purpose of this Standard, remission/recovery is attained when there is abstinence from use of illicit drugs or where the use of other substances, such as alcohol, has reduced in frequency to the point where it is unlikely to cause impairment of Safety Critical Work or to result in a positive test at work. Remission must be confirmed by biological monitoring (e.g., urine drug screening, LFT, CDT, hair analysis for drugs) over a period of at least 6 months. At the conclusion of any monitoring a worker with remission may be certified Fit for Duty Subject to Review on a long-term basis.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Substance misuse and dependence

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Part 4B: Senses and task-specific requirements

4.11 Hearing

(Refer also to Section 4.6 Neurological conditions: other)

Important

This Standard should be applied on the basis of a risk assessment for hearing and rail safety work whether the job is classified as Category 1 or Category 2 (refer to Section 2.4.6. Step 6: Identify task-specific health requirements).

The Standard assumes alignment with the principles and protocols outlined in the RISSB Safety Critical Communications Code of Practice (2021) including the use of closed-loop communication.

This Standard is designed to identify and manage workers with hearing loss that may affect safety on the network and should be distinguished from audiometric monitoring required for workers who frequently use personal hearing protectors as a control measure for noise that exceeds the exposure standard (background noise greater than 85dB (averaged over 8 hours), or any sound greater than 140dB). The interface between these programs should however be managed by the rail transport organisation.[30]

Workers who are around the track and who require hearing only for their own safety should meet the criteria as set out for Track Safety Health Assessment (Section 5). However, track workers who wear personal protective equipment to protect themselves from the noise of machinery cannot be expected to hear warning sounds such as train horns. They should be under the immediate supervision of a team leader who directs them to stop work and clear the track when appropriate.

4.11.1 Relevance to Safety Critical Work

Hearing loss may affect the ability to perform Safety Critical Work due to the inability to communicate or failure to hear sounds indicating a hazard. The ability to hear radio communication is particularly important for communication of train orders, as well as for managing emergency situations. Closed-loop communication, whereby the essence of a message is repeated back to the sender to ensure correct reception, is recommended for use in rail industry and is assumed to be in place, together with a range of other protocols designed to support safety critical communication.[31]

The World Health Organization (WHO) criteria define ‘disabling’ hearing loss as averaged hearing thresholds at 500, 1000, 2000 and 4000 Hz in the better hearing ear of 35dB or greater, and ‘mild’ hearing loss as hearing thresholds between 20dB and 34dB.[32]

The WHO also identifies that mild hearing loss presents differently in quiet and noisy environments with typically little impact on speech understanding in quiet environments but difficulty following conversation in noisy environments. The hearing standard and assessment approach therefore

[30] Safe Work Australia, 2020, *Managing noise and preventing hearing loss at work: Code of Practice*, https://www.safeworkaustralia.gov.au/sites/default/files/2020-07/model_code_of_practice_managing_noise_and_preventing_hearing_loss_at_work.pdf, accessed 3 October 2022.

[31] Rail Industry Safety and Standards Board (RISSB), 2021, *Safety Critical Communications Code of Practice*.

[32] Olusanya, B. O., K. J. Neumann, and J. E. Saunders, 2014, *The Global Burden of Disabling Hearing Impairment: A Call to Action*, Bulletin of the World Health Organization, vol. 92, no. 5, pp. 367–373, doi:10.2471/BLT.13.128728.

takes into consideration the working environment. The definition of what comprises a noisy working environment is based on the nature of the work rather than the degree of noise per se. According to Safe Work Australia, ideally workplace noise levels should be lower than 50dB A if the work involves high concentration or significant amounts of conversation, and lower than 70dB, if the work is routine, fast-paced and demands attentiveness, and the ability to verbally communicate with others. For the purposes of this Standard, a 'noisy' environment is considered one in which the noise level is greater than 60dB, based on expert advice.

The hearing requirements of safety critical tasks vary and are independent of whether the task is Category 1 or Category 2 and are assesses based on the requirements of the particular task.

Train drivers

The background noise in train cabs varies. Drivers need to be able to hear radio communication from central control, as well as alarm systems and track detonators. Binaural hearing is helpful in distinguishing speech in a noisy environment. Most radios in engine cabs can be amplified to help hearing against the background noise. Drivers also exit the cab from time to time and are required to be on track, and thus need to hear the sound of oncoming trains and other warning sounds.

Other Safety Critical Workers

Workers such as train controllers or shunters may be required to hear and respond to spoken safety critical information. In addition, any rail safety worker who is working in yards or near tracks (e.g., shunters) needs to be able to hear warning sounds such as train horns, whistles or verbal warnings for their own safety. Also refer to Section 2.4.6. Step 6: Identify task-specific health requirements.

Tram drivers

For tram drivers, the main safety requirement is to hear other traffic on the road including emergency vehicles or other warning horns, bells or sirens, as well as signals from passengers regarding stopping. They may also be required to use radio communications.

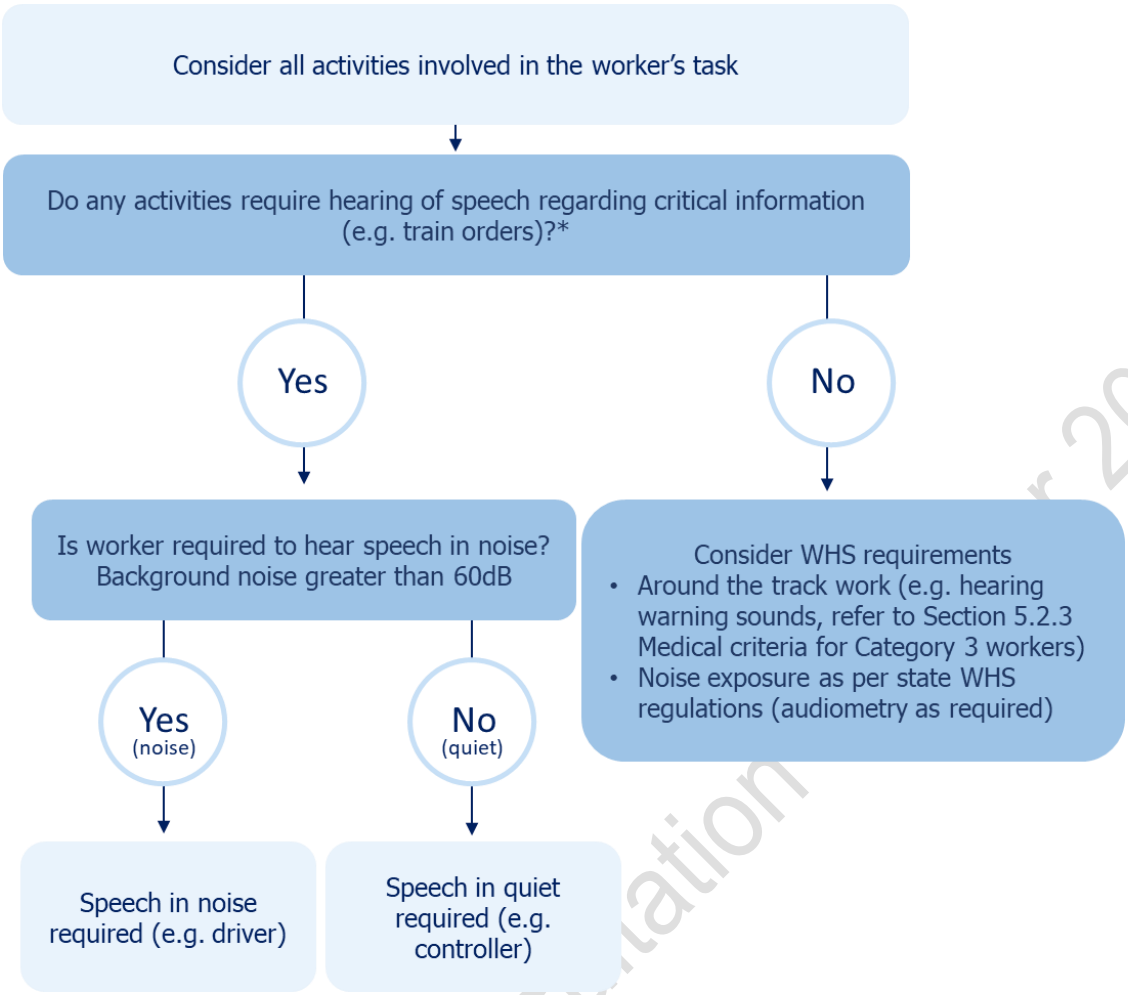
4.11.2 Risk assessment of Safety Critical Workers

All Safety Critical tasks should be assessed in relation to their individual hearing requirements.

Risk assessment of Safety Critical Work divides the hearing task into two categories: 'hearing in quiet', which occurs where hearing takes place in a quiet background (typically indoors such as in a control room); and 'hearing in noise', which occurs where hearing of safety critical speech is required against a continuously or intermittently noisy background (typically drivers in a train cab, or shunters, site controllers, flagmen, etc.). For the purposes of this Standard, a 'noisy' environment is defined as continuous or intermittent noise of 60dB or more.

Rail transport operators should assess the hearing requirements based on the flow chart shown in Figure 31 and communicate these requirements to the Authorised Health Professional.

Figure 31. Hearing and rail safety work—risk assessment



* The Standard assumes alignment with the principles and protocols outlined in the Rail Industry Safety and Standards Board (RISSB) Safety Critical Communications Code of Practice (2021) including the use of closed-loop communication.

4.11.3 General assessment and management guidelines

The requirements for assessment of Safety Critical Workers are summarised in Figure 32.

All Safety Critical Workers who are required to hear speech should be screened at Pre-placement and Periodic Health Assessments using pure tone audiometry at 500, 1000, 1500, 2000, 3000,4000, 6000 and 8000Hz as per Australian Standard AS/ISO 8253:2009 Parts 1-3. Hearing aids should not be worn during pure tone audiometry.

The hearing thresholds (in the better ear) are 35dB hearing loss for workers who typically work in quiet and 20dB hearing loss for those who need to understand speech in noisy environments (greater than 60dB). Workers who meet the criteria without hearing aids should be categorised Fit for Duty Unconditional.

Workers who do not currently wear hearing aids

Workers who do not meet the hearing criteria on screening audiometry must be referred to an audiologist[33], audiometrist[34] or ears, nose and throat specialist (ENT) for a more detailed audiological evaluation, including:

- Diagnostic test of hearing sensitivity.
- Conduct of a speech in quiet or noise test according to the protocols overleaf.
- An evaluation of whether hearing aids would enable the worker to meet the hearing criteria and an assessment of whether the aids are suitable for work in the rail environment.

The Authorised Health Professional should recommend a review period based on the audiologist/ENT report, taking into consideration the degree of hearing loss and likely progression.

Workers who currently wear hearing aids

Safety Critical Workers with established hearing loss and who already have hearing aids will be required to undergo speech in noise or quiet testing. For subsequent reviews, speech in noise or quiet will only be required if their base audiometry has worsened. They should undertake the testing while wearing the hearing aids and the testing should reflect the usual working environment. The testing should be conducted with hearing aid features active.

NOTE: Testing of speech in noise for clients who wear hearing aids requires the audiologist to have calibrated, free field speech in noise testing facilities. This should be ascertained before a worker attends a clinic for testing.

Workers who meet the criteria with hearing aids should undergo periodic review of their hearing and function of their hearing aid. Frequency of review should be determined based on the nature and degree of hearing loss, the potential impact of noise exposure and the advice of the treating audiologist.

*An audiologist should be a member of Audiology Australia. Contacts of members are available at www. audiology.asn.au and/or member of the New Zealand Audiological Society (NZAS www.audiology.org.nz).

Speech discrimination in quiet test[35]

- Speech discrimination in quiet is assessed using phonemically balanced monosyllabic word lists (PBMs). These are 25-word lists, plus 5 practice items.
- As the work environment involves binaural listening to speech in quiet, the test should be binaural free-field PBMs.
- The presentation level should be 70 dB via a calibrated single speaker stationed at 0 degrees azimuth with the candidate seated at approximately one metre from the speaker.

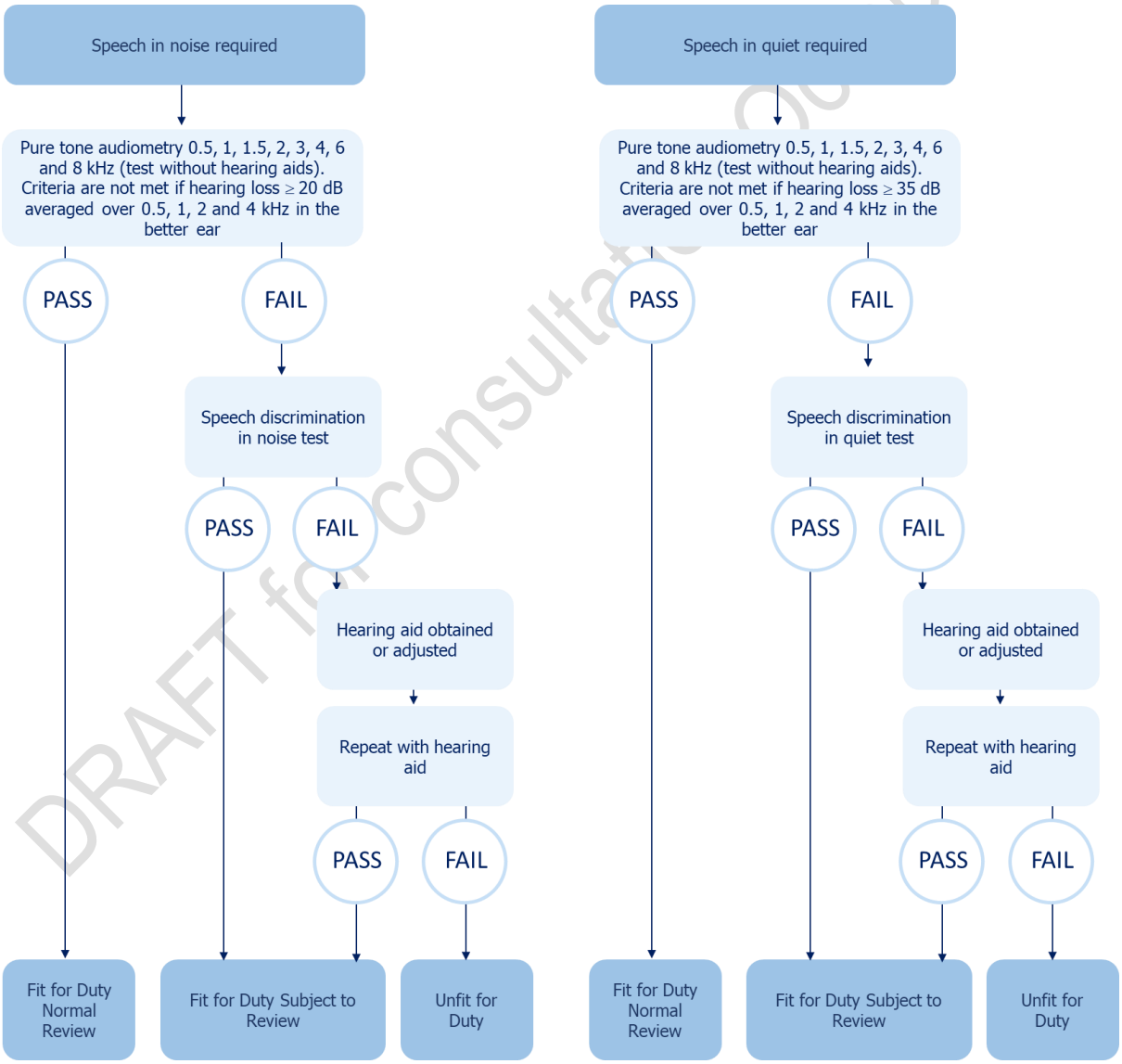
[33] For the purposes of this document an audiologist is a person accredited as such by Audiology Australia (refer to **www.audiology.asn.au**) or the Australian College of Audiology (refer to **www.acaud.org**) or the New Zealand Audiological Society (NZAS) **www.audiology.org.nz**.

[34] For the purposes of this document, an audiometrist is a person accredited as such by the Australian College of Audiology (refer to **www.acaud.org**) or the Hearing Aid Audiology Society of Australia (refer to **www.haasa.org.au**) or the New Zealand Audiological Society (NZAS) **www.audiology.org.nz**..

[35] The speech discrimination in noise/quiet protocols described above are indicative. Other industry approved protocols for speech in noise/quiet could be applied.

- Scoring for PBMs is calculated as: score = percentage words correctly identified, excluding practice items. Therefore, the number of words correct multiplied by 4 per cent correct.
- A pass score should be set at 70 per cent of words accurately identified. This Standard assumes closed-loop communication is practised.
- In jobs where use of hearing aids is permitted, they may be used as long as they are self-contained and fit within or behind the ear.
- Workers using hearing aids must provide evidence from an accredited audiologist using functional-gain or real-ear measurements that the hearing aids meet the stipulated manufacturer's standards.
- Workers using a hearing aid must have aided free-field speech discrimination testing in quiet.
- Workers should be classed as Fit for Duty Subject to Review and reviewed at periods determined by the prognosis of the underlying pathology.

Figure 32. Hearing assessment for Safety Critical Work



Speech discrimination in noise test

- Speech discrimination ability in noise will be assessed using phonemically balanced monosyllabic word lists in noise (PBNs). These are 50-word lists. PBN wordlists are imbedded in noise (at a +10 signal:noise ratio, that is 70:60dB for a presentation level of 70 dB).
- The work environment involves binaural listening to speech in background noise; therefore, the test should be binaural free-field PBN's.
- The presentation level should be 70 dB via a calibrated single speaker stationed at 0 degrees azimuth with the candidate seated at approximately 1 metre from the speaker.
- Scoring for PBNs is calculated as: score = percentage words correctly identified. Therefore, number of words correct multiplied by 2 = per cent correct.
- A pass score should be set at 50 per cent of words accurately identified. This Standard assumes closed-loop communication is practised.
- In jobs where use of hearing aids is permitted, they may be used as long as they are self-contained and fit within or behind the ear (refer Hearing aids).
- Workers using hearing aids must provide evidence from an accredited audiologist using functional-gain or real-ear measurements that the hearing aids meet the stipulated manufacturer's standards.
- Workers using a hearing aid must have aided free-field speech discrimination testing in noise.
- Workers should be classed Fit for Duty Subject to Review and reviewed at periods determined by the prognosis of the underlying pathology.

Hearing aids

The prescription and fitting of hearing aids for Safety Critical Workers should be undertaken by the audiologist with due consideration to the individual needs of the worker, the safety critical nature of their work and the nature of the working environment.

Use in noisy environments or where warning sounds need to be heard warrants particular consideration. An initial report from the audiologist should demonstrate specific understanding of the circumstances of use and the mitigation of any risks to the Safety Critical Worker or the rail environment.

Hearing aids worn in quiet surroundings (e.g., by a train controller) require no specific characteristics. They should be set for optimal hearing in the relevant environment.

Workers who use hearing aids should be advised of the following requirements:

- They should wear the aid at all times at the recommended settings.
- They should carry a supply of batteries.
- They should report the development of any medical condition that may temporarily reduce efficient function of the hearing aid (e.g., ear infection, wax build-up), or if a hearing aid fails or is lost. Monaural aid use, when binaural hearing loss is present, results in reduced ability to localise warning sounds and discriminate speech against background noise.
- They should have their hearing assessed and their hearing aid serviced annually.
- In the event of replacement or upgrading of hearing aids, or further deterioration in hearing, speech discrimination in noise or quiet should be re-examined.

Cochlear implants

Workers with cochlear implants should be assessed on an individual basis by an ENT specialist, who should consider the:

- Characteristics of the implant, including the risk of sudden device failure.
- Nature of the relevant background noise.
- Nature of the duties of Safety Critical Workers, including the need for efficient and reliable use of communication devices, such as mobile phones and radio communication devices, and the need to reliably detect emergency alarms against background noise.

A speech discrimination test in noise or quiet, as appropriate to their job risk assessment, must be passed.

4.11.4 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria is outlined in Table 20.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before making an assessment of a person's fitness for duty.

Table 20. Fitness for duty criteria for Safety Critical Workers: hearing

CONDITION	CRITERIA
Hearing Safety Critical Workers required to hear speech in quiet or in noise	Compliance with the Standard should be initially assessed by audiometry without hearing aids. **For roles requiring hearing in quiet** A person is not Fit for Duty Unconditional: • if hearing loss is ≥ 35 dB averaged over 0.5, 1, 2, and 4 kHz in the better ear. Fit for Duty Subject to Review may be determined, subject to periodic review, taking into account the opinion of an audiologist or ears, nose and throat (ENT) specialist and the nature of the work: • if the person passes an appropriate speech discrimination in quiet test with or without hearing aids. **For roles requiring hearing in noise** A person is not Fit for Duty Unconditional: • if hearing loss is ≥ 20 dB averaged over 0.5, 1, 2, and 4 kHz in the better ear. Fit for Duty Subject to Review may be determined, subject to periodic review, taking into account the opinion of an audiologist* or ears, nose and throat (ENT) specialist and the nature of the work: • if the person passes an appropriate speech discrimination in noise test with or without hearing aids. If hearing aids are required to meet the Standard, they must be worn while working. The use of cochlear implants should be assessed on an individual basis by an ENT surgeon or audiologist. An appropriate speech discrimination test must be passed.
Hearing—tram drivers If hearing speech is required, tram drivers should be managed as per Safety Critical Workers (above)	Compliance with the Standard should be initially assessed by audiometry without hearing aids. A person is not Fit for Duty Unconditional: • if hearing loss is ≥ 35 dB averaged over 0.5, 1, 2, and 4 kHz in the better ear. Fit for Duty Subject to Review may be determined, subject to periodic review, taking

CONDITION	CRITERIA
	into account the opinion of an audiologist or ENT specialist and the nature of the work: • if the person meets the Standard with a hearing aid. If hearing aids are required to meet the Standard, they must be worn while working (refer to page 185) The use of cochlear implants should be assessed on an individual basis by an audiologist or ENT surgeon. An appropriate speech discrimination test must be passed.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Hearing

Austroads Ltd & NTC (National Transport Commission) 2022, *Assessing Fitness to Drive 2022: for commercial and private vehicle drivers*, Austroads Ltd, Sydney.

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4.12 Vision and eye disorders

4.12.1 Relevance to Safety Critical Work

Good vision is essential for Safety Critical Work, including the tasks of driving trains and trams, operating other machinery, train controlling and working about the track.

A worker with significant impairment of visual acuity or visual fields may fail to detect another train or member of the public and will take appreciably longer to perceive and react to signals or a potentially hazardous situation. The predictability of the track and route as well as height of seating above ground provide some compensation for loss of visual fields for train and tram drivers.

Progressive eye conditions are a particular safety concern as changes can occur gradually and the worker may not appreciate the extent or impact of the visual impairment. Detection and regular monitoring of such conditions, including cataract, glaucoma, optic neuropathy, retinitis pigmentosa and diabetic retinopathy is therefore important.

The fitness for duty criteria for visual acuity and visual fields are applicable to workers performing both Category 1 and Category 2 Safety Critical Work. Some flexibility is allowed for train controllers, whose work is not so reliant on full visual fields.

Colour vision is also important for some safety critical tasks. For example, the identification and correct interpretation of red, green and other coloured signals, flags and lights is necessary for the safe operation of trains. Good visual acuity is integral to good colour vision. The colour vision standard should be applied on the basis of the colour vision risk assessment irrespective of the job being classified as Category 1 or Category 2.

4.12.2 Colour vision risk assessment for Safety Critical Workers

Not all safety critical tasks require the ability to differentiate colours, thus risk assessments of the colour vision requirements should be undertaken by rail transport operators as per Figure 33 and communicated to the Authorised Health Professional.

Assessment of a job requires:

- Consideration of whether there is a need for colour differentiation.
- If there is a need for colour differentiation, consideration of whether there is redundancy of information so obviating the need for red-green colour differentiation (e.g., semaphore arms).
- If there is no redundancy, whether the job can be redesigned to eliminate the need for red-green colour differentiation.

If red colour differentiation is required, consideration should then be given as to whether the task requires seeing colour as point sources (typically signals) or flat surfaces (typically flags or screens, or ‘Colour Defective Safe B vision’). Jobs requiring seeing point sources may be further subdivided on the basis of viewing conditions, with the most adverse requiring ‘Normal colour vision’ (typically drivers) and lesser conditions requiring ‘Colour Defective Safe A vision’.

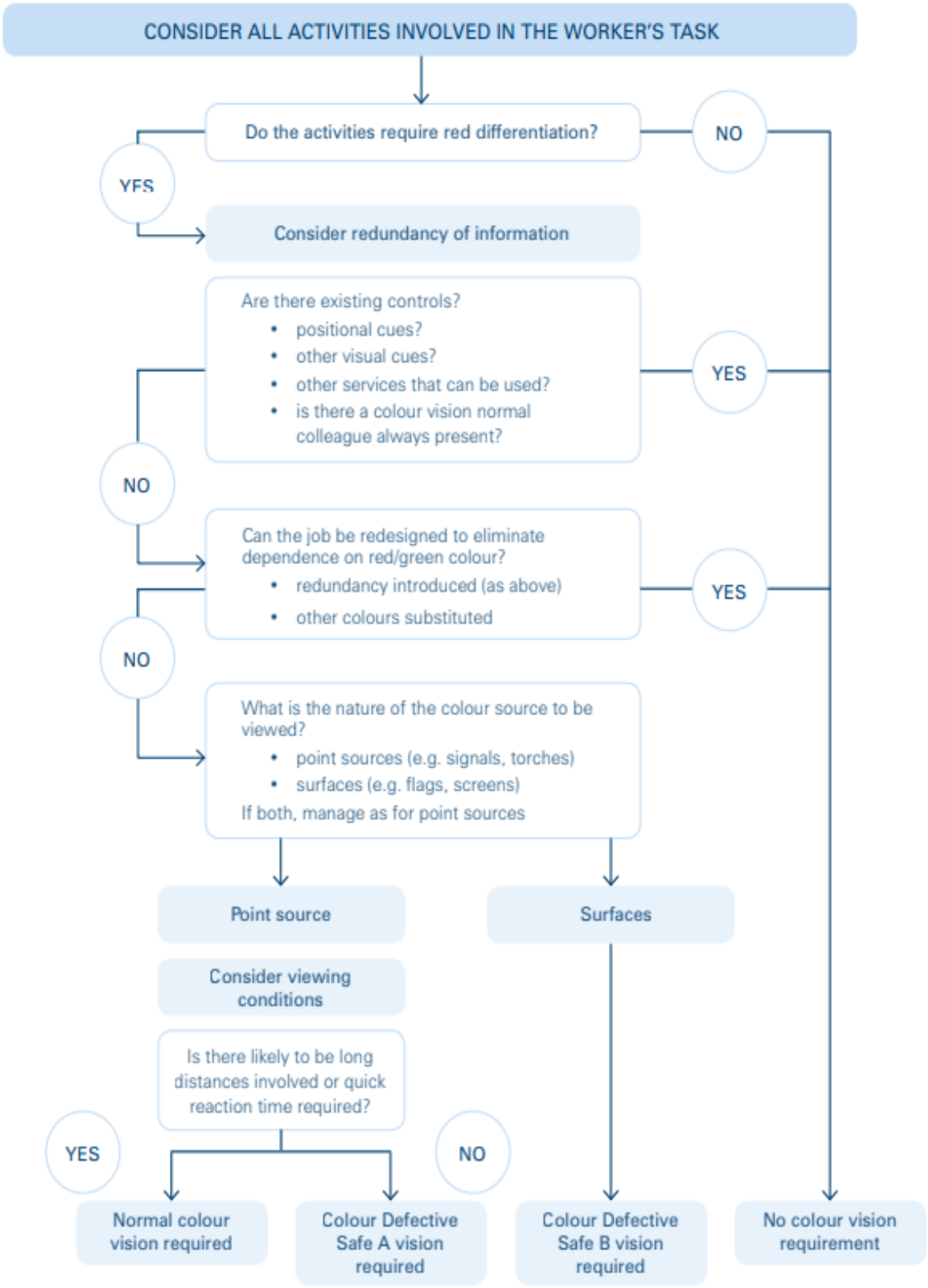
The following descriptions of rail safety jobs illustrate typical colour vision requirements, but they are not necessarily correct for any one network.

- **Around the Track Personnel** do not require colour vision testing.
- **Flagmen** need to identify red/yellow/green flags and be able to interpret signal lights as warning of an oncoming train.

- **Heritage and tourist train drivers** who are not on a main line may have a semaphore arm on a signal that gives a positional cue (redundancy) as well as a red/green light. This only applies for daylight driving. The trains usually travel at low speed.
- **Shunters** may need to identify all colours, including purple in some cases, although the trains they are guiding are generally moving slowly. They may work at night and be required to see red/green signals and use red/green lanterns for signalling.
- **Signal repairers** need to recognise red/green at a distance from a single lens signal to check correctness of their repairs and to ensure safety of the network. However, they are not under time pressure to read the signal.
- **Signallers** required to identify panel lights.
- **Train controllers** who work with multicolour screen-based equipment may need to distinguish colours such as red, magenta, blue and green, which may be difficult for dichromats.
- **Train drivers** must be able to recognise colour signals. Positional cues are not always available because red/green lights often operate from a single lens signal; lights from a signal may have no background or illumination at night to help their identification; there may be dazzle from a low sun behind the signal; and red lights may be shone from a lantern in emergency situations, requiring rapid reaction. Combinations of red/yellow/green signals are used to inform the train driver of a safe speed and routing.
- **Tram drivers** usually have to use traffic lights similarly to vehicle drivers. Traffic lights have positional cues and hence redundancy of information, so colour vision is not required to be tested.

People who are Colour Vision Normal have normal colour vision on testing on the Ishihara tests, whereas those who are Colour Defective Safe A are not normal but can distinguish red/green with time and may work in jobs where, for example, quickness or distance are not crucial in signal recognition.

Figure 33. Colour vision risk assessment



4.12.3 General assessment and management guidelines

History of visual impairment and vision disorders is established via the Health Questionnaire. These should be discussed as appropriate in the context of the visual acuity, visual field and colour vision screening as described below.

Visual acuity

For the purposes of this Standard, visual acuity is defined as a person's clarity of vision with or without glasses or contact lenses. Where a person does not meet the visual acuity criteria at initial assessment, they may be referred for further assessment by an optometrist or ophthalmologist.

Assessment method

Visual acuity should be measured for each eye separately and without optical correction. If optical distance correction is needed, vision should be retested with appropriate corrective lenses.

Acuity should be tested using a standard visual acuity chart (Snellen or LogMAR chart, or equivalent, with 5 letters on the 6/12 line). Standard charts should be placed 6 metres from the person tested; otherwise, a reverse chart can be used and viewed through a mirror from a distance of 3 metres. Other calibrated charts can be used at a minimum distance of 3 metres. More than 2 errors in reading the letters of any line are regarded as a failure to read that line. Refer to the management flow chart (Figure 34: Visual acuity requirements for Safety Critical Workers).

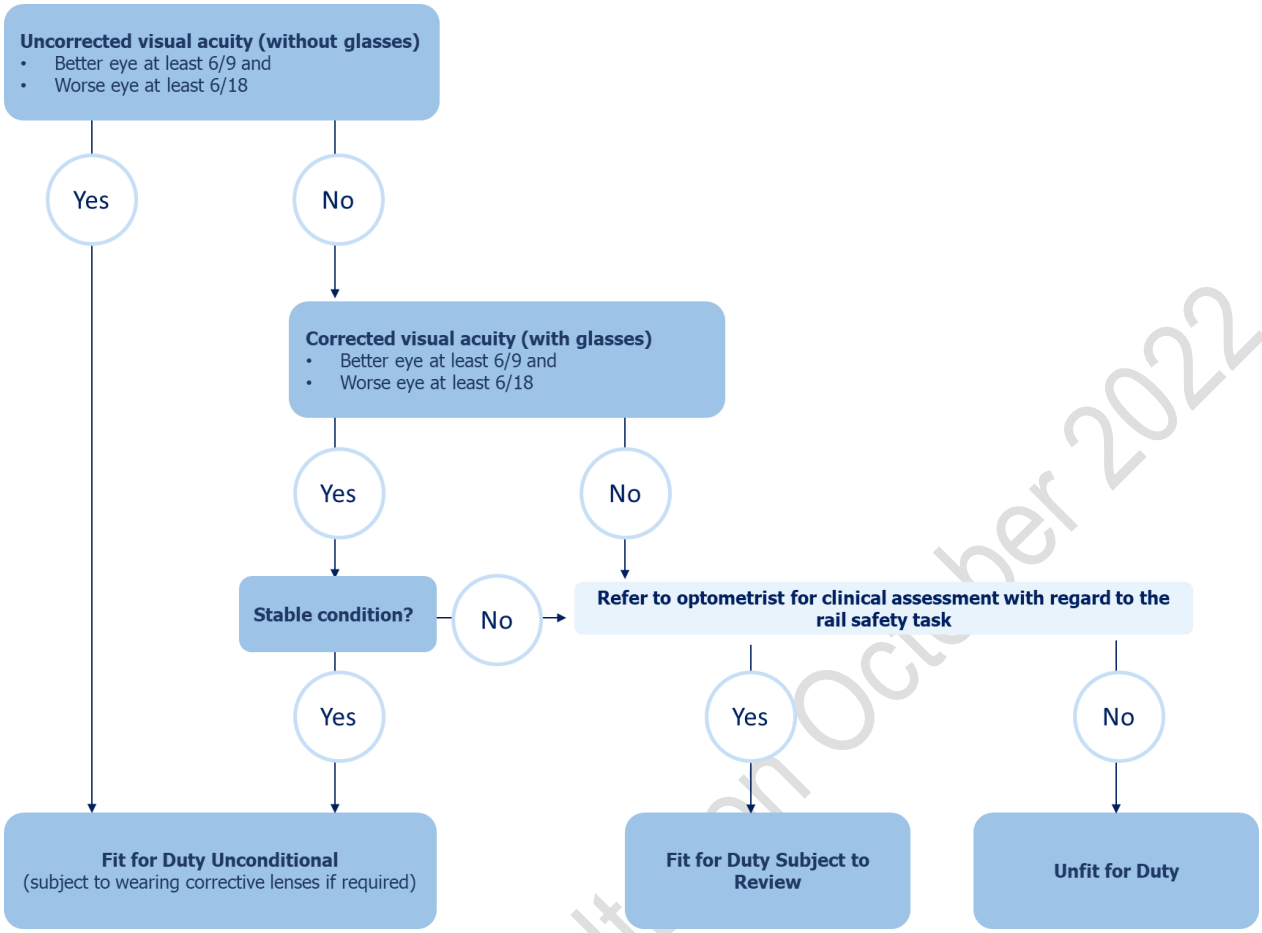
The visual acuity criteria can be met with or without corrective spectacle lenses or contact lenses. Categorisation will depend on the stability of the condition. A person who has a stable visual impairment that is not associated with a progressive condition may be categorised Fit for Duty Unconditional if their corrected vision meets the criteria.

The person must wear the appropriate aids when undertaking Safety Critical Work. The suitability of these aids in meeting the fitness for duty requirements may be monitored by the Authorised Health Professional without reference to an ophthalmologist, optometrist or general practitioner. In appropriate circumstances, a referral may be made.

There is also some flexibility for Safety Critical Work depending on the task, providing the visual acuity in the better eye (with or without corrective lenses) is 6/9 or better.

It is not required that workers carry spare sets of glasses at work. However, people who wear contact lenses must carry a spare set of glasses in case a foreign body enters the eye (requiring removal of the lens).

Figure 34. Visual acuity requirements for Safety Critical Workers



Visual fields

For the purpose of this Standard, visual fields are defined as a measure of the extent of peripheral (side) vision. Visual fields may be reduced as a result of many neurological or ocular diseases or injuries.

Assessment method

Visual fields may be initially screened by confrontation. The tester should sit close to, and directly opposite, the person and instruct them to cover one eye. They should occlude their opposite eye like a mirror image. They then ask the person to fixate on the non-occluded eye and to count the number of fingers held up in each of the 4 corners of the tester's visual field. Other extreme upper, lower and side points may also be tested. This process should be repeated for the other eye. Confrontation is an inexact test. Any person who has, or is suspected of having, a visual field defect should have a formal perimetry-based assessment.

Monocular automated static perimetry is the minimum baseline standard for visual field assessments. If monocular automated static perimetry shows no visual field defect, this information is sufficient to confirm that the standard is met.

Subjects with any significant field defect or a progressive eye condition require a binocular Esterman visual field for assessment. This is classically done on a Humphrey visual field analyser but any machine that can be shown to be equivalent is accepted. This must be performed with fixation monitoring. Alternative devices must have the ability to monitor fixation and to stimulate the

same spots as the standard binocular Esterman. For an Esterman binocular chart to be considered reliable for fitness for duty, the false positive score must be no more than 20 per cent.

Horizontal extent of the visual field

A single cluster of up to three adjoining missed points, unattached to any other area of defect, lying on or across the horizontal meridian will be disregarded when assessing the horizontal extension of the visual field. A vertical defect of only a single point width but of any length, unattached to any other area of defect, which touches or cuts through the horizontal meridian may be disregarded. There should be no significant defect in the binocular field which encroaches within 20 degrees of fixation above or below the horizontal meridian. This means that homonymous or bitemporal defects that come close to fixation, whether hemianopic or quadrantanopic, are not normally accepted.

Central field loss

Scattered single missed points or a single cluster of up to three adjoining points is acceptable central field loss for a person to be fit for duty. A significant or unacceptable central field loss is defined as any of the following:

1. A cluster of four or more adjoining points that is either completely or partly within the central 20-degree area.

2. Loss consisting of both a single cluster of three adjoining missed points up to and including 20 degrees from fixation, and any additional separate missed point(s) within the central 20 degree area.

3. Any central loss that is an extension of a hemianopia or quadrantanopia of size greater than three missed points.

Monocular vision (one-eyed workers)

People with monocular vision may have a reduction of visual fields due to the nose obstructing the medial visual field. They also have impaired depth perception for some months after loss of an eye and may have other deficits in visual functions. However, train and tram drivers often have a good view of the track / road due to the elevation of their seat, as well as large windscreens and wing mirrors (in the case of tram drivers) that may help compensate for loss of visual fields. Their work safety record and driving record should also be considered.

Train controllers usually require only a limited field of vision and may be exempted from this criterion subject to a risk assessment by the Chief Medical Officer or an occupational physician knowledgeable in rail.

Monocularity in either a Category 1 or Category 2 worker does not meet the standard for Fit for Duty Unconditional; however, Fit for Duty Subject to Review may be recommended if the visual field and acuity in the remaining eye meets the standard.

In exceptional circumstances, subject to a risk assessment of the job by an occupational physician or Chief Medical Officer, if an ophthalmologist/ optometrist assesses that the person may be safe for Safety Critical Work, the worker may be classed as Fit for Duty Subject to (annual) Review of the remaining eye. Good rotation of the neck is also necessary to ensure adequate overall fields of vision, particularly for people with monocular vision (refer to Section 4.13 Musculoskeletal conditions).

Sudden loss of unilateral vision

A person who has lost an eye or has permanently lost most of the vision in an eye has to adapt to their new visual circumstances and re-establish depth perception. They should therefore be

classified as Temporarily Unfit for Duty for an appropriate period (usually 3 months) and be assessed for monocularity if need be.

Colour vision

Colour vision defects may be inherited or acquired. Acquired colour vision defects are uncommon but may result from chronic eye conditions such as glaucoma, macular degeneration and retinitis pigmentosa, as well as from chronic illnesses such as Alzheimer's disease, diabetes mellitus, leukaemia, liver disease, chronic alcoholism, multiple sclerosis, Parkinson's disease, and sickle cell anaemia. Colour vision can also be affected by events such as stroke and eye trauma.

Defective colour vision mainly affects perception of red and green colours. Various degrees of colour-defective vision affect up to 5 per cent of men.

Assessment method

Figure 35 summarises the testing procedures for colour vision.

If red colour differentiation is a requirement of the task, colour vision should be screened using Ishihara's plates under good illumination. The worker should be shown the trial plate and the test should be explained to them. The 12 colour plates with numbers should then be shown in a random order, noting any errors.

Colour vision should be screened using 12 Ishihara plates (presented in random order); 3 or more errors out of 12 plates is a fail. No colour lenses or sunglasses should be used when testing. Workers who fail the Ishihara screening test do not meet the criteria for Fit for Duty.

A small number of false positives (incorrect 'fails') occur with the Ishihara test:

- Workers who fail and are required to see point sources may be further tested with the Railway LED lantern test. If found to be Colour Vision Normal (i.e., false positive) they may be classed as Fit for Duty.
- Workers who fail and are required to see red/green colours on flat surfaces (e.g., controllers and workers using screen-based equipment) may be further tested by the Farnsworth D15 test. The Farnsworth D15 test should be applied 3 times. A pass is 2 or more correct trials that identifies 'Colour Defective Safe B'. An incorrect trial is 2 or more errors on the test.

Other eye conditions and treatments

Diplopia

People suffering from all but minor forms of diplopia (double vision) are generally not fit for Safety Critical Work. Any person who reports or is suspected of experiencing diplopia should be referred for assessment by an optometrist or ophthalmologist. They should be classed as Temporarily Unfit for Duty Subject to Review. Fit for Duty Subject to Review may be determined if the standard is met with suitable treatment.

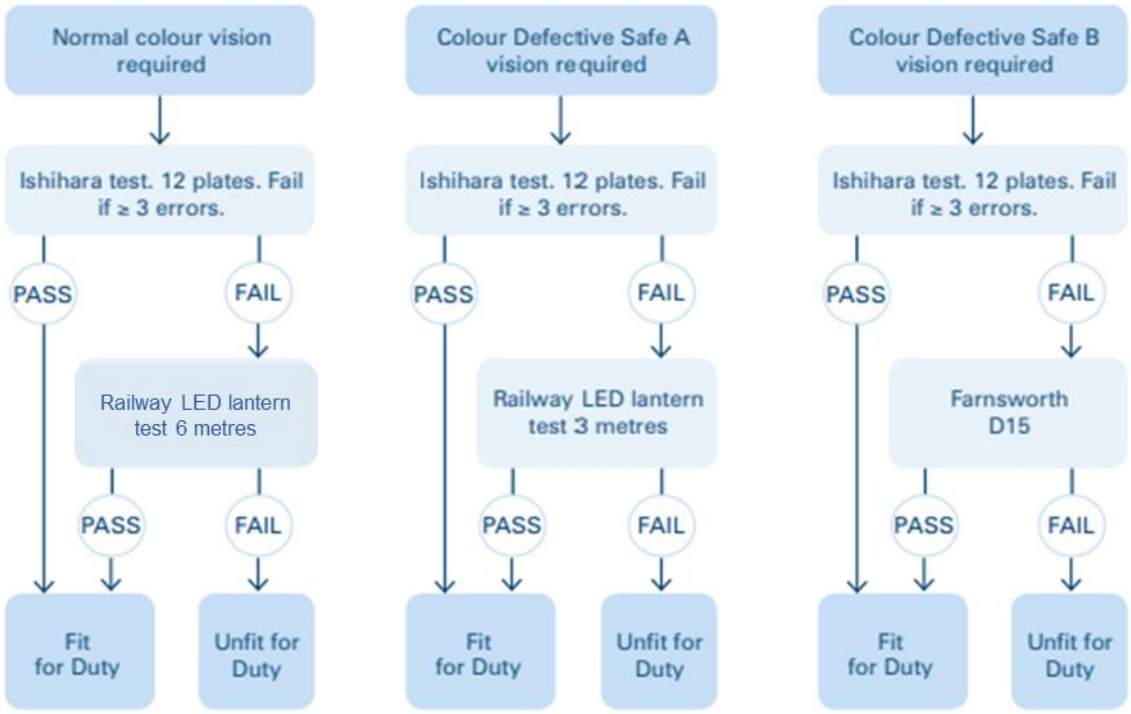
Progressive eye conditions

People with progressive eye conditions, such as cataract, glaucoma, optic neuropathy and retinitis pigmentosa, should be monitored regularly and should be advised in advance regarding the potential future impact on their working ability and possible alternative employment. Depending on the condition and the rate of progression, and subject to at least annual review, they may be categorised Fit for Duty Subject to Review if they meet the vision fitness for duty criteria.

Because persons with cataract suffer loss of contrast sensitivity and greater sensitivity to glare, they may have more difficulty seeing when working than is indicated by their visual acuity.

Workers with diabetes are categorised Fit for Duty Subject to Review and will have an eye assessment at their annual review.

Figure 35. Colour vision clinical assessment



Congenital and acquired nystagmus

Nystagmus may reduce visual acuity. Safety Critical Workers with nystagmus must meet the visual acuity standard. Any underlying condition must be fully assessed to ensure there is no other issue that relates to fitness to work. Those who have congenital nystagmus may have developed coping strategies that are compatible with safe working and should be individually assessed by an appropriate specialist.

Telescopic lenses (bioptic telescopes) and electronic aids

Bioptic telescopes are devices used to compensate for reduced visual acuity. They are miniature telescopes typically mounted on the upper part of a person's glasses. Bioptics are used momentarily and intermittently; the person drops their chin slightly to view through the telescope for magnification, then lifts their chin to view through their standard corrective lens.

At present, there is insufficient information from human factors and safety research to set standards for bioptics. As such, and due to the increased risk associated with Safety Critical Work these devices should not be used to meet the visual acuity fitness for duty criteria.

4.12.4 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria is outlined in Table 21.

There may be a degree of flexibility allowed at the optometrist's or ophthalmologist's discretion for workers who barely meet visual criteria but who are otherwise alert, have normal reaction times and good muscular coordination.

Specialist review is not required for stable ophthalmic conditions. More frequent review may also not be required for stable impairments of visual acuity and visual fields if there is absence of a progressive eye condition.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before making an assessment of a person's fitness for duty.

Table 21. Fitness for duty criteria for Safety Critical Workers: vision and eye disorders

CONDITION	CRITERIA
Acuity	**Category 1 and Category 2 Safety Critical Workers** Category 1 and Category 2 workers are required to meet the following visual acuity criteria (uncorrected or corrected): • better than or equal to 6/9 in the better eye; or • better than or equal to 6/18 in the worse eye. Categorisation will depend on the stability of the condition (see below). ***Stable conditions*** A person who has a stable visual impairment that is not associated with a progressive condition may be categorised Fit for Duty Unconditional if their corrected vision meets the above criteria. If the person's vision is worse than 6/18 in the worse eye, Fit for Duty Subject to Review may be determined, provided the visual acuity in the better eye is 6/9 (with or without corrective lenses). The person must wear the appropriate aids when undertaking rail safety work. The suitability of these aids in meeting the fitness for duty requirements will be monitored by the Authorised Health Professional at each Periodic Health Assessment. ***Progressive conditions*** A person is not Fit for Duty Unconditional: • if the person has a progressive eye condition that may affect visual acuity. Fit for Duty Subject to Review may be determined subject to at least annual review, and taking into account the nature of the work and the opinion of the treating optometrist or ophthalmologist as to: • the progression of the condition and the response to treatment; • whether the visual acuity standard is met, with or without corrective lenses; and • whether other criteria are met per this standard, including visual fields.
Visual fields	**Category 1 and Category 2 Safety Critical Workers** Category 1 and Category 2 workers are required to meet the following visual field criteria: • the binocular visual field must have an extent of at least 140° within 10° above and below the horizontal midline; and • they must have no significant visual field loss (scotoma, hemianopia, quadrantanopia) that is likely to impede work performance. NOTE: Safety Critical Workers who do not work on or around the track (e.g., train controllers) usually require only a limited field of vision and may be exempted from this criterion. ***Stable conditions*** A person who has a stable visual field loss that is not associated with a progressive condition may be categorised Fit for Duty Unconditional if their vision meets the above criteria. ***Progressive conditions***

CONDITION	CRITERIA
	A person is not Fit for Duty Unconditional: • if the person has a progressive eye condition that may affect visual fields. Fit for Duty Subject to Review may be determined subject to at least annual review, and taking into account the nature of the work and the opinion of the treating optometrist or ophthalmologist as to whether: • the person meets the visual field criteria as stated above; and • the visual field loss is unlikely to progress rapidly.
Monocular vision	A person is not Fit for Duty Unconditional: • if the person is monocular. Fit for Duty Subject to Review may be determined, subject to review, taking into account the nature of the work and information provided by the treating optometrist or ophthalmologist, as to whether the following criteria are met: • the visual acuity in the remaining eye is 6/9 or better, with or without correction; and • the visual field in the remaining eye has a horizontal extent of at least 140 degrees within 10 degrees above and below the horizontal midline; and • there is no other significant visual field loss that is likely to impede Safety Critical Work. In exceptional circumstances, the Chief Medical Officer may classify a worker with less than that visual field in the remaining eye as Fit for Duty Subject to Review if an ophthalmologist or optometrist with expertise in visual fields assesses that the person may be safe for Safety Critical Work. Safety Critical Workers who do not work on or around the track (e.g., train controllers) usually require only a limited field of vision and may be exempted from this criterion.
Colour vision	**Colour vision requirements are determined by a risk assessment and communicated by the rail transport operator to the Authorised Health Professional.** Colour vision should be screened using Ishihara's plates; 3 or more errors out of 12 plates is a fail. In the event of a fail, further assessment may be done as per the text and flow chart in Figure 35.
Diplopia	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if the person experiences any diplopia (other than physiological diplopia) within 20 degrees from central fixation. Fit for Duty Subject to Review may be determined, taking into account the nature of the work and the opinion of the treating optometrist or ophthalmologist as to whether the following criteria are met: • the standard can be met with suitable treatment; and • other criteria are met as per this section, including visual fields.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be

confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

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4.13 Musculoskeletal conditions

4.13.1 Relevance to Safety Critical Work

Musculoskeletal disorders may affect the ability to perform Safety Critical Work due to the inability to carry out the prescribed work tasks or respond appropriately to emergency situations, thus placing the network at risk.

Chronic impairment of musculoskeletal functions may arise from numerous disorders and trauma (e.g., amputations, arthritis, ankylosis, deformities and chronic lower back pain). Issues related to muscle tone, spasm, sitting tolerance and endurance, as well as the effects of medications, may also need to be considered (refer to Section 3.5.8 Prescription drugs and Safety Critical Work).

Acute and chronic pain associated with musculoskeletal conditions may also impact the cognitive aspects of Safety critical Work, with evidence that it affects attention and concentration, as well as emotional responses. This is an important consideration for the overall management of Safety Critical Workers with musculoskeletal conditions.

This Standard is not designed for meeting a duty of care regarding the work health safety of workers.

4.13.2 Risk assessment of Safety Critical Workers

It is not possible to make generic statements regarding the musculoskeletal capacity required for Safety Critical Work because the nature of such work can vary widely. All jobs, whether Category 1 or Category 2, need to be assessed regarding their inherent requirements and hence the necessary musculoskeletal capacities to do them. Most Category 1 Safety Critical Workers require soundness of limbs, neck, back and good balance. For example:

- Train driving requires good musculoskeletal capacity to:
  - sit and drive the train using the arms and legs
  - walk about the train on uneven track and ballast. A fault in a wagon may involve sustained effort for it to be shunted out of the train.
  - join heavy couplings, bend and check bogies
  - enter and exit the cab to and from the ground routinely and in an emergency. In an emergency, there may be quite a drop between the lowest step and the ground.
  - move rapidly from the path of an oncoming train.
- Flagman (hand signaller) duties require good musculoskeletal capacity to:
  - move quickly over uneven track and ballast
  - place detonators quickly and accurately on the track
  - signal to trains
  - move rapidly from the path of an oncoming train.
- Shunting requires good musculoskeletal capacity to:
  - move over uneven track and ballast
  - rapidly board or a light trucks or carriages
  - open or close stiff, large coupling mechanisms
  - switch points
  - move rapidly from the path of an oncoming train.
- Train controlling requires only limited musculoskeletal capacity:
  - controllers typically work in an indoor environment and do not have to access the track

  - they require musculoskeletal capacity to work with computer screens and keyboards, paper records and telephones.
- Tram driving requires good musculoskeletal capacity to:
  - sit for long periods
  - operate master control
  - board and alight from tram for operational purposes including emergency situations.

4.13.3 General assessment and management guidelines

The aim of the health assessment is to detect those Safety Critical Workers who may have difficulty in performing their duties due to a musculoskeletal condition, or who may be at increased risk of injury, and to identify those workers who would benefit from job modification. The assessment should therefore be individualised based on their defined functional requirements, together with the associated impacts of their condition and treatment.

The examining doctor should take a thorough history, noting information such as:

- the person's day-to-day functional capacity
- performance in other roles
- history of injuries, the circumstances of any injuries, their severity and recovery time

The examination should evaluate the following in regard to the anticipated tasks as per risk assessment for the job:

- Gait—the ability to walk on flat and uneven surfaces.
- Spine—the strength and range of movement of the cervical and lumbar–sacral spine.
- Limbs—the power and range of movement of the upper and lower limbs.
- Balance—the person's sense of balance, which may be assessed using the Romberg test.
- Pain—the presence of musculoskeletal pain that may impede movement, concentration or attention and its adequacy of treatment.
- The potential impairment from prescription medications balanced against the worker's improvement in function and health more generally.
- The likely progression of the condition/disability.
- The person's current use of adaptive strategies and equipment, including impacts on functionality and outcomes such as endurance on safety critical task.
- Exacerbating and relieving factors.
- The impact of comorbidities and age-related change.

In some cases, the treating doctor may also be contacted to discuss the worker's condition and fitness.

The clinical examination may need to be supplemented by a functional assessment or practical demonstration that the worker can meet particular requirements (refer to Section 3.6.1 Functional and practical assessments). Such practical assessment tasks (PATs) cannot override the medical standards, they can only supplement the doctor's decision about the ability to perform rail safety tasks where the Standard is imprecise.

Chronic pain associated with musculoskeletal conditions

Assessment and management of chronic pain should consider the functional and cognitive impacts on Safety Critical Work. This includes whether pain or pain treatments are likely to affect attention,

concentration or decision making, or the person's ability to respond appropriately in the working environment. The functional and cognitive impacts may fluctuate.

Fitness for duty will depend on the demands of the task and whether these can be managed or modified. It will also depend on self-management and compensatory strategies and the worker's insight into the impact of their chronic pain. A practical or functional assessment may assist in some cases to evaluate the impact of chronic pain on Safety Critical Work (refer to Section 3.6.1 Functional and practical assessments.)

Job modification

Fit for Duty Subject to Job Modification may be determined (as a subcategory of Fit for Duty Subject to Review), taking into consideration the nature of the work (refer to Section 2.3 Standard reporting framework). However, modification to cabs and other equipment is usually impractical because operators may be expected to drive different trains on different shifts. The decision on whether a proposed job modification can be accommodated rests with the rail transport operator. A worksite visit or functional assessment may also be considered (refer to Section 3.6.1 Functional and practical assessments).

4.13.4 Fitness for duty criteria for Safety Critical Workers

Fitness for duty criteria for Safety Critical Workers are outlined in Table 22. It is not possible to detail all the tasks of Safety Critical Workers and the musculoskeletal criteria to be met in this Standard. The Authorised Health Professional should be familiar with the job, or at least be provided with a position description, task analysis or job dictionary so as to conduct the examination with insight when matching demands and musculoskeletal capacities, such as given in the examples above.

A rail transport operator may develop its own standards appropriate to the risk assessment of a job and with advice from an occupational physician. Such standards may incorporate functional assessments that are based on the job demands of the position in question.

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 22. Fitness for duty criteria for Safety Critical Workers: musculoskeletal disorders

CONDITION	CRITERIA
Musculoskeletal disorders	**Category 1 and Category 2 Safety Critical Workers** A person is not Fit for Duty Unconditional: • if lack of range of movement, pain, weakness, instability or another impairment from a musculoskeletal condition results in either of the following – inability to perform the inherent job requirements of the rail safety work in question – increased risk of exacerbation of a pre-existing injury. The person may be determined to be Fit for Duty Subject to Review, if, after taking into account the opinion of the treating doctor and the nature of the work: • the condition can be adequately treated, and function can be restored; and • treatments do not impair capacity for safe working. Conditions that are stable, such as amputations, do not need to be reviewed more frequently than the usual Periodic Health Assessment.

	The person may be determined to be Fit for Duty Subject to Review, Fit for Duty Subject to Job Modification, after taking into consideration the nature of the work. It is the employer's decision whether any job modifications can be accommodated. A functional assessment or practical assessment at the workplace may also be considered.

Temporary illnesses. This Standard does not deal with the many conditions that may affect health on a short-to-medium-term basis and for which a Safety Critical Worker may be referred for assessment regarding fitness to resume duty. Clinical judgement is usually required on a case-by-case basis, although the text in each section gives some advice on the clinical issues to be considered.

Undifferentiated illness. A Safety Critical Worker may present with symptoms that could have implications for their job, but the diagnosis is not clear. Referral and investigation of the symptoms will mean that there is a period of uncertainty before a definitive diagnosis is made, and before the worker and employer can be confidently advised. Each situation will need to be assessed individually, with due consideration being given to the probability of a serious disease that will affect Safety Critical Work. Generally, workers presenting with symptoms of a potentially serious nature should be classified as Temporarily Unfit for Duty until their condition can be adequately assessed. However, they may be suitable for alternative duties, including duties at a lower risk category (e.g., Category 2 or Category 3). Workers who are fit to continue work while being investigated should be classified as Fit for Duty Subject to Review.

Specialist review. This Standard generally requires Safety Critical Workers who are assessed as Fit for Duty Subject to Review to be seen by a specialist leading up to their review appointment with the Authorised Health Professional. Exceptions are specifically described in the Standard where appropriate.

References and further reading – Musculoskeletal conditions

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5 Assessment and management of health conditions for Category 3 workers

5.1 Introduction

Rail safety workers who work on or near the track but not in a Controlled Environment (Category 3 workers) require a Track Safety Health Assessment.

These workers also receive track safety awareness training on a regular basis, which is another key aspect of their ability to protect their own safety and that of fellow workers.

The health requirements for Category 3 work are based on the principle of a worker being able to:

- see a train
- hear a train, and
- move out of the way for their own safety.

These workers are therefore required to undergo clinical assessment of their hearing, vision and mobility at Pre-placement and periodically during their employment.

This section provides detailed guidance for Authorised Health Professionals in relation to the clinical assessment, management and determination of fitness for duty for these aspects. The clinical assessment includes audiometry, testing of visual acuity and visual fields and a general musculoskeletal assessment (refer to Section 5.2 Hearing, Section 5.3 Vision, and Section 5.4 Musculoskeletal function).

It is also acknowledged that health conditions that cause loss of attention or loss of consciousness can prevent a person from seeing, hearing and/or moving out of the path of an oncoming train. These are also addressed in this section and include:

- blackouts
- cardiovascular conditions
- diabetes
- neurological conditions, including cognitive impairment, seizures and epilepsy and other neurological conditions
- psychiatric conditions
- substance misuse.

Identification of these conditions at Pre-placement and Periodic Health Assessment is generally by worker self-report via the Health Questionnaire. Unlike Category 1 workers, there is no active screening for these conditions other than by self-report.

These conditions may arise between Periodic Health Assessments. Rail transport operators should ensure that workers are advised to notify their supervisor and/or request a Triggered Health Assessment if they:

- develop a condition that could lead to collapse on track cardiovascular conditions
- incur serious injury or illness to their eyes, hearing or limbs
- suffer a serious brain injury; or
- develop a cognitive or psychiatric disorder.

Substance abuse should also be declared in accordance with the rail transport operator's drug and alcohol management program. Workers making such notifications should be referred for a Triggered Health Assessment to assess implications for safety around the track and action taken should be taken accordingly, including job modification as required.

Determining review periods for Category 3 workers

Review periods for Category 3 workers who are diagnosed with conditions described in this part of the Standard are generally not specifically prescribed. This includes impairments of hearing, vision and mobility, as well as conditions that might impact these attributes. The Authorised Health Professional should advise on requirements for more frequent review based on a consideration of the stability of the condition, the job requirements and the potential risks to rail safety.

5.2 Hearing

5.2.1 Relevance to safety around the track

There are appreciable risks from moving trains, which can be surprisingly quiet even at high speed, so the ability to hear a train horn is important. A horn is intended to emit about 88 decibels (dB) at 200 metres in the country and 85dB at 100 metres in towns. The fitness for duty criteria has been set with a margin of safety to allow for adverse environmental conditions and the worker facing away from the train. The need is to hear (warning) sounds, rather than speech, in noise.

Note: This Standard is designed to identify and manage workers with hearing loss that may affect safety on the network and should be distinguished from audiometric monitoring required for workers who frequently use personal hearing protectors as a control measure for noise that exceeds the exposure standard. The interface between these programs should however be managed by the rail transport operator.[36] When working with hearing protection, the worker should not be expected to hear warning sounds but should be communicated with by gesture or touch by the gang supervisor.

5.2.2 General assessment and management guidelines

Pure tone audiometry may be performed with or without hearing aids, and the standard applies to the better ear. If the standard is not met with hearing aids, the audiogram may be repeated once the aids have been upgraded. Fit for Duty Subject to Review may also be recommended if a sound discrimination in noise test has been passed. Practical on-site tests are not recommended due to issues with validity and reproducibility.

Fit for Duty Subject to Review (Job Modification) may also be recommended, for example, if the worker is to be escorted at all times when around the track. Workers who meet the criteria with hearing aids should undergo periodic review of their hearing and function of their hearing aid. Frequency of review should be determined based on the nature and degree of hearing loss, the potential impact of noise exposure and the advice of the treating audiologist.

The prescription and fitting of hearing aids for Category 3 workers should be undertaken by the audiologist with due consideration to the individual needs of the worker, the nature of their work and the nature of the working environment.

Use in noisy environments or where warning sounds need to be heard warrants particular consideration. An initial report from the audiologist should demonstrate specific understanding of the circumstances of use and the mitigation of any risks to the worker or the rail environment.

Workers who use hearing aids should be advised of the following requirements:

- They should wear the aid at all times at the recommended settings.
- They should carry a supply of batteries.
- They should report the development of any medical condition that may temporarily reduce efficient function of the hearing aid (e.g., ear infection, wax build-up), or if a hearing aid fails or is lost. Monaural aid use, when binaural hearing loss is present, results in reduced ability to localise warning sounds.
- They should have their hearing assessed and their hearing aid serviced annually.

[36] Safe Work Australia, 2020, *Managing noise and preventing hearing loss at work: Code of Practice*, https://www.safeworkaustralia.gov.au/sites/default/files/2020-07/model_code_of_practice_managing_noise_and_preventing_hearing_loss_at_work.pdf, accessed 3 October 2022.

5.2.3 Fitness for duty criteria for Category 3 workers

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 23. Fitness for duty criteria for Category 3 workers: hearing

CONDITION	CRITERIA
Hearing	Compliance with the Standard should be initially assessed by audiometry without hearing aids. A person is not Fit for Duty Unconditional: • if hearing loss is ≥ 35 dB averaged over 0.5, 1, 2 and 4 KHz in the better ear with or without hearing aids. Fit for Duty Subject to Review may be recommended if the standard is met with hearing aids. If a rail safety worker requires hearing aids, the aids should be fitted by an audiologist with due consideration to the individual needs of the worker, the nature of their work and the nature of the working environment. Fit for Duty Subject to Review (Job Modification) may be considered; for example, if the worker is to be escorted at all times when around the track.

5.3 Vision

5.3.1 Relevance to safety around the track

Good visual acuity and fields are important to sense an oncoming train.

There are no requirements for colour vision unless the specific task requires it (refer to Section 2.4.6 Step 6: Identify task-specific health requirements). If colour vision is required, refer to assessment and management guidelines in Section 4.12 Vision and eye disorders.

5.3.2 General assessment and management guidelines

Visual acuity

The standard for visual acuity relates to the better eye. This includes workers who are monocular. Visual acuity should be measured for each eye separately and without optical correction. If optical correction is needed, vision should be retested with appropriate corrective lenses.

Acuity should be tested using a standard visual acuity chart (Snellen or LogMAR chart or equivalent) with 5 letters on the 6/12 line. Standard charts should be placed six metres from the person tested, or a reverse chart can be used and viewed through a mirror from a distance of three metres. Other calibrated charts can be used at a minimum distance of three metres. More than two errors in reading the letters of any line are regarded as a failure to read that line. The visual acuity standard can be met with or without corrective spectacle lenses or contact lenses.

A person who has a stable visual impairment that is not associated with a progressive condition may be categorised Fit for Duty Unconditional if their corrected vision meets the standard. The person must wear the appropriate aids when working.

If workers meet the criteria with corrective lenses, they should be able to be passed by the Authorised Health Professional without reference to an ophthalmologist, optometrist or general practitioner. In appropriate circumstances, a referral may be made.

It is not required that workers carry spare sets of glasses at work. However, people who wear contact lenses must carry a spare set of glasses in case a foreign body enters the eye (requiring removal of the lens).

People with progressive eye conditions, such as cataract, glaucoma, optic neuropathy and retinitis pigmentosa, should be monitored regularly and should be advised in advance regarding the potential future impact on their working ability and possible alternative employment. Depending on the condition and the rate of progression, and subject to periodic review, they may be categorised Fit for Duty Subject to Review if they meet the vision fitness for duty criteria.

Because persons with cataract suffer loss of contrast sensitivity and greater sensitivity to glare, they may have more difficulty seeing when working than is indicated by their visual acuity.

Workers with diabetes are categorised Fit for Duty Subject to Review and will have an eye assessment at their annual review.

Visual fields

Visual fields may be initially screened by confrontation. The tester should sit close to, and directly opposite, the person and instruct them to cover one eye. They should occlude their opposite eye like a mirror image. They then ask the person to fixate on the non-occluded eye and to count the number of fingers held up in each of the 4 corners of the tester's visual field. Other extreme upper, lower and side points may also be tested. This process should be repeated for the other eye.

Confrontation is an inexact test. Any person who has, or is suspected of having, a visual field defect should have a formal perimetry-based assessment.

Monocular automated static perimetry is the minimum baseline standard for visual field assessments. If monocular automated static perimetry shows no visual field defect, this information is sufficient to confirm that the standard is met.

Subjects with any significant field defect or a progressive eye condition require a binocular Esterman visual field for assessment. This is classically done on a Humphrey visual field analyser but any machine that can be shown to be equivalent is accepted. This must be performed with fixation monitoring. Alternative devices must have the ability to monitor fixation and to stimulate the same spots as the standard binocular Esterman. For an Esterman binocular chart to be considered reliable for fitness for duty, the false positive score must be no more than 20 per cent.

Monocular vision (one-eyed worker)

People with monocular vision may have a reduction of visual fields due to the nose obstructing the medial visual field. They also have no stereoscopic vision for some months after loss of an eye and may have other deficits in visual functions.

Fit for Duty Subject to Review may be recommended if the visual field and acuity in the remaining eye meets the standard. In borderline cases, subject to a risk assessment of the job by an occupational physician, if an ophthalmologist or optometrist assesses that the person may be safe for around the track, the worker may be classed as Fit for Duty Subject to Review, with annual review of the remaining eye. Good rotation of the neck is also necessary to ensure adequate overall fields of vision particularly for people with monocular vision.

5.3.3 Fitness for duty criteria for Category 3 workers

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 24. Fitness for duty criteria for Category 3 workers: vision and eye disorders

CONDITION	CRITERIA
Visual acuity	A Category 3 worker is required to meet the following visual acuity criteria (uncorrected or corrected): • better than or equal to 6/12 in the better eye. Categorisation will depend on the stability of the condition (see below). ***Stable conditions*** A person who has a stable visual impairment that is not associated with a progressive condition may be categorised Fit for Duty Unconditional if their corrected vision meets the above criteria. The person must wear the appropriate aids when undertaking rail safety work. The suitability of these aids in meeting the fitness for duty requirements will be monitored by the Authorised Health Professional at each Periodic Health Assessment. ***Progressive conditions*** A person is not Fit for Duty Unconditional: • if the person has a progressive eye condition that may affect visual acuity. Fit for Duty Subject to Review may be determined subject to periodic review, and taking into account the nature of the work and the opinion of the treating optometrist or ophthalmologist as to: • the progression of the condition and the response to treatment;

CONDITION	CRITERIA
	• whether the visual acuity standard is met, with or without corrective lenses; and • whether other criteria are met per this standard, including visual fields.
Visual fields	A Category 3 worker is required to meet the following criteria for visual fields: • the binocular visual field (or the visual field in the remaining eye in the case of monocular vision) must have an extent of at least 110° within 10° above and below the horizontal midline; and • they must have no significant visual field loss (scotoma) within a central radius of 20° of the foveal fixation or other scotoma likely to affect work performance); and • they must have no significant visual field loss (scotoma) with more than four contiguous spots within a 20-degree radius from fixation. ***Stable conditions*** A person who has a stable visual field loss that is not associated with a progressive condition may be categorised Fit for Duty Unconditional if their vision meets the above criteria. ***Progressive conditions*** A person is not Fit for Duty Unconditional: • if the person has a progressive eye condition that may affect visual fields. Fit for Duty Subject to Review may be determined subject to periodic review, and taking into account the nature of the work and the opinion of the treating optometrist or ophthalmologist as to whether: • the person meets the visual field criteria as stated above; and • the visual field loss is unlikely to progress rapidly. Fit for Duty Subject to Review (Job Modification) may be considered; for example, if the worker is to be escorted at all times when around the track.

5.4 Musculoskeletal function

5.4.1 Relevance to safety around the track

Track safety requires sufficient soundness of limb function to permit rapid movement away from an oncoming train.

5.4.2 General assessment and management guidelines

The musculoskeletal standard only relates to a person's ability to move quickly from the path of an oncoming train; it is not intended to cover all of the inherent job requirements and job demands that individuals may undertake on track as part of their jobs. Where a rail transport operator or contracting company wish advice in relation to such issues, a more comprehensive assessment would need to be requested.

Moving rapidly from the path of an oncoming train may require a worker to negotiate steep and unstable ballast shoulders in order to reach a safe area. The standard relates to any rheumatological, neurological or chronic pain condition that affects musculoskeletal function. Acute and chronic pain associated with musculoskeletal conditions may also impact the cognitive aspects of rail safety work, with evidence that it affects attention and concentration, as well as emotional responses. This should also be considered for the overall management of the workers with musculoskeletal conditions.

5.4.3 Fitness for duty criteria for Category 3 workers

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 25. Fitness for duty criteria for Category 3 workers: musculoskeletal function

CONDITION	CRITERIA
Musculoskeletal function	A person is not Fit for Duty Unconditional: • if pain, weakness, instability or other impairment from a musculoskeletal or medical condition results in interference with the ability to walk on coarse ballast and/or move rapidly from the path of an oncoming train. Fit for Duty Subject to Review may be determined, taking into consideration the opinion of the treating doctor and the nature of the work if the condition is adequately treated and function is restored. Fit Duty Subject to Review (Job Modification) may be considered, for example, if the person is to be accompanied at all times when around the track.

5.5 Other conditions that may impact safety around the track

5.5.1 Relevance to safety around the track

Conditions that cause loss of attention or loss of consciousness can prevent a person from seeing, hearing and/or moving out of the path of an oncoming train and are therefore addressed in this Standard. They include:

- blackouts
- cardiovascular conditions
- diabetes
- neurological conditions, including cognitive impairment, seizures and epilepsy and other neurological conditions
- psychiatric conditions
- substance misuse.

5.5.2 General assessment and management guidelines

Identification of these conditions at Pre-placement and Periodic Health Assessment is generally by worker self-report via the Health Questionnaire. Between Periodic Health Assessments, where a worker declares a condition or symptoms that are likely to impact on their safety around the track, they will be subject to a Triggered Health Assessment as described earlier. The rail transport operator may also initiate a Triggered Health Assessment if concerned about a worker's safety.

Review periods for Category 3 workers who are diagnosed with conditions identified in this Standard are generally not prescribed and should be determined by the Authorised Health Professional. They should take into consideration the severity and degree of instability of a condition when determining if a worker should be reviewed earlier than 5 years.

In the case of younger workers, who may not otherwise be reviewed until age 40, consideration should be given to an earlier Triggered Health Assessment if a serious medical condition is present. Where an earlier review is assessed as being necessary, the Triggered Health Assessment should focus on the condition as opposed to repeating the entire Category 3 assessment. A Triggered Health Assessment can involve a review of documents obtained from the treating doctor and need not necessarily require a face-to-face assessment of the worker.

5.5.3 Fitness for duty criteria for Category 3 workers

It is important that health professionals familiarise themselves with both the general information above and the tabulated fitness for duty criteria before assessing a person's fitness for duty.

Table 26 contains fitness for duty criteria and guidance regarding fitness for duty worker categorisation.

Table 26. Fitness for duty criteria for Category 3 workers: other conditions likely to impact safety around the track

CONDITION	CRITERIA
Blackouts: episodes of impaired consciousness of uncertain nature **(For blackouts associated with a known cause see criteria below)**	A person is not Fit for Duty Unconditional: • if the person has experienced blackouts of an unknown cause that cannot be diagnosed as syncope, seizures or other recognised medical causes of loss of consciousness. Fit for Duty Subject to Review may be recommended taking into account the opinion of the treating doctor and the nature of the work: • In the case of blackouts that were confined to a single 24-hour period, where there have been no further blackouts for at least 6 months. • If there have been 2 or more blackouts separated by at least 24 hours, where there have been no further blackouts for at least 12 months. Fit for Duty Subject to Job Modification or Fit for Duty Subject to Review following a lesser period without further blackouts may be considered on a case-by-case basis following discussion with the Chief Medical Officer of the rail transport operator and consideration of the duties that will be performed.
Cardiovascular conditions	**Unstable angina, angina on mild exertion or heart failure** A person is not Fit for Duty Unconditional if: • the person has a history of unstable angina, angina on mild exertion or heart failure that could interfere with their capacity to move quickly from the path of an oncoming train. Fit for Duty Subject to Review may be recommended taking into consideration the opinion of the treating doctor and the nature of the work if: • satisfactory treatment has been instituted; and • the person's exercise tolerance has improved such that they can reliably move from the path of an oncoming train. **Syncope** A person is not Fit for Duty Unconditional if: • the person has a history of episodes of syncope without warning due to any medical condition. Fit for Duty Subject to Review may be recommended taking into consideration the opinion of the treating doctor and the nature of the work if: • the underlying cause has been identified; and • satisfactory treatment has been instituted; and • the person has been symptom-free for at least four weeks.
Diabetes	A person is not Fit for Duty Unconditional if: • the person has had a recent 'severe hypoglycaemic event' (within 6 weeks) and/or is subject to recurrent episodes of severe hypoglycaemia. Fit for Duty Subject to Review may be recommended taking into consideration the opinion of the treating doctor and the nature of the work if: • any recent 'severe hypoglycaemic event' has been satisfactorily treated; and • the person is following a treatment regimen that minimises the risk of recurrent hypoglycaemia; and • the person experiences early warning symptoms (awareness) of hypoglycaemia or has a documented management plan for lack of early warning symptoms.

CONDITION	CRITERIA
Neurological conditions (Cognitive Impairment)	A person is not Fit for Duty Unconditional if: • the person has cognitive impairment. Fit for Duty Subject to Review may be recommended taking into consideration information provided by the treating doctor regarding the level of impairment of visuospatial perception, insight, judgement, attention, reaction time and memory, and the likely impact of any impairments on the person's capacity to reliably detect and move rapidly from the path of an oncoming train.
Neurological conditions – **Seizures and Epilepsy**	A person should be categorised Temporarily Unfit for Duty following a seizure. A person is not Fit for Duty Unconditional if they have ever experienced a seizure. Fit for Duty Subject to Review may be recommended following an appropriate seizure-free period and provided the person follows medical advice including adherence to medication if prescribed or recommended. **The default non-working seizure-free period is 12 months.** The default criteria apply except in the following circumstances. Fit for Duty Subject to Review may be recommended taking into consideration the opinion of the treating doctor and the nature of the work: • In the case of a ***first seizure*** if there have been no further seizures (with or without medication) for at least 6 months. • In the case of ***epilepsy treated for the first time***, if the person has been treated for at least 6 months, there have been no seizures in the preceding six months, if any seizures occurred after the start of treatment, they happened only in the first six months after starting treatment and not in the last six months, and the person follows medical advice including adherence to medication. • In the case of ***acute symptomatic seizures*** if there have been no further seizures for at least 6 months. If there have been two or more separate transient disorders causing acute symptomatic seizures the default criteria apply. • In the case of ***safe seizures*** with no loss of consciousness, if 'safe' seizures have been present for at least 2 years, there have been no seizures of any other type for at least 2 years, and the person follows medical advice with respect to medication if prescribed. • In the case of ***sleep only seizures***: – there have been no previous seizures while awake, the first sleep-only seizure was at least 12 months ago, and the person follows medical advice including adherence to medication if prescribed; or – there have been previous seizures while awake but not in the preceding 2 years, sleep-only seizures have been occurring for at least 2 years, and the person follows medical advice including adherence to medication if prescribed. • In the case of a seizure in a person whose ***epilepsy was previously well controlled***: – the seizure was caused by an identified provoking factor that can be reliably avoided and that has not caused previous seizures, there have been no seizures for at least 4 weeks and the person follows medical advice including adherence to medication; or – no cause was identified, there have been no seizures for at least 3 months and the person follows medical advice including adherence to medication. – If the person has experienced one or more seizures during the 12 months leading up to the last seizure, there is no reduction, and the default criteria applies. ***Exceptional circumstances:*** Fit for Duty Subject to Job Modification or Fit for Duty Subject to Review following a lesser seizure-free period may be considered on a

CONDITION	CRITERIA
	case-by-case basis following discussion with the Chief Medical Officer of the rail transport operator and consideration of the duties that will be performed.
Psychiatric conditions	A person is not Fit for Duty Unconditional if: • the person has psychiatric disorder that is likely to impair insight, judgement, perception, behaviour or cognitive function and affect the person's capacity to move rapidly from the path of an oncoming train. Fit for Duty Subject to Review may be recommended taking into consideration the opinion of the treating doctor and the nature of the work if: • the condition is well controlled • the person has been compliant with treatment • there are no adverse medication effects that may affect the person's ability to move rapidly from the path of an oncoming train, and • the impact of co-morbidities has been considered (e.g., substance abuse).
Substance Misuse	A person is not Fit for Duty Unconditional if: • there is evidence of substance misuse. Fit for Duty Subject to Review may be recommended taking into account the opinion of the treating doctor and the nature of the work if the worker has been assessed and managed and the risk of further substance misuse has been assessed as being low. In the case of workers with more severe substance use problems a longer period of demonstrated remission should be considered. Remission is attained when there is abstinence from use of illicit drugs or where the use of other substances, such as alcohol, has reduced in frequency to the point where it is unlikely to cause impairment or to result in a positive test at work. The workers substance use history, response to treatment and level of insight should be considered, as well as the drug and alcohol management program and rehabilitation policies of the rail transport operator. Remission must be confirmed by biological monitoring.

6 Clinical tools, forms and transition arrangements

6.1 Clinical tools

6.1.1 Clarke hypoglycaemia awareness survey

Use of the Clarke hypoglycaemia awareness survey for screening Safety Critical Workers

The Clarke hypoglycaemia awareness survey was developed by a team of researchers at the Department of Paediatrics and Psychiatric Medicine at the University of Virginia Health Sciences Centre in 1995.[37] The original study was designed to evaluate prospectively the frequency, severity and consequences of reduced awareness of hypoglycaemia. The study found that subjects who believed they had reduced hypoglycaemia awareness were generally correct.[38]

The purpose of the Clarke hypoglycaemia awareness survey in the Standard is to screen for impaired hypoglycaemic awareness in workers.

Nature and administration of the Clarke hypoglycaemia awareness survey

The Clarke hypoglycaemia awareness survey comprises eight questions characterising the worker's exposure to episodes of moderate to severe hypoglycaemia (refer to Figure 36). It also examines the glycaemic threshold for, and symptomatic responses to, hypoglycaemia. A score of four or more implies impaired awareness of hypoglycaemia.

For workers with existing diabetes, the Authorised Health Professional will confirm a score less than 4 'R' responses in Section 2.2 of the Record for Health Professional for Category 1 and 2 workers (refer to Section 6.2.4).

Scoring the Clarke hypoglycaemia awareness survey and managing Safety Critical Workers

The Clarke hypoglycaemia awareness survey is scored by counting the 'U', 'R' and 'A' responses.

- 'U' responses indicate hypoglycaemia unawareness
- four or more 'R' responses imply reduced hypoglycaemia awareness
- 'A' response implies hypoglycaemia awareness.

[37] Clarke, W, Cox, D.J., Gonder-Frederick, L.A, Julian, D, Schlundt, D & Polonsky, W, 1995, *Reduced Awareness of Hypoglycemia in Adults With IDDM: A prospective study of hypoglycemic frequency and associated symptoms*, Diabetes Care, vol. 18, no. 4, pp/ 517–522, https://doi.org/10.2337/diacare.18.4.517.

[38] ibid.

Figure 36. Clarke hypoglycaemia awareness survey[39]

The survey is useful to administer to assess hypoglycaemia awareness including:

- For people who have been on insulin for many years
- After a severe hypoglcycaemic event
- After a crash

SCORING

- Four or more "R" responses implies reduced awareness
- For Question 5 and 6, one "R" response is given if the answer to question 5 is less than the answer to question 6.
- "A" responses imply awareness
- "U" response (12 or more severe hypoglycaemic episodes in the last 12 months) indicates unawareness.

1. Check the category that best describes you: (check one only)

☐ I always have symptoms when my blood sugar is low (A)
☐ I sometimes have symptoms when my blood sugar is low (R)
☐ I no longer have symptoms when my blood sugar is low (R)

2. Have you lost some of the symptoms that used to occur when your blood sugar was low?

☐ Yes (R) ☐ No (A)

3. In the past six months how often have you had moderate hypoglycaemia episodes?
(Episodes where you might feel confused, disoriented, or lethargic and were unable to treat yourself)

☐ Never (A) ☐ Every other month (R) ☐ More than once a month (R)
☐ Once or twice (R) ☐ Once a month (R)

4. In the past year how often have you had severe hypoglycaemic episodes?
(Episodes where you were unconscious or had a seizure and needed glucagon or intravenous glucose)

☐ Never (A) ☐ 1 to 11 times (R) ☐ 12 or more times (U)

5. How often in the last month have you had readings <3.8mmol/L with symptoms?

☐ Never ☐ 1 time / week ☐ 4-5 times / week
☐ 1 to 3 times ☐ 2-3 times / week ☐ Almost daily

(R = answer to 5 < answer to 6, A = answer to 5 ≥ answer to 6)

6. How often in the last month have you had readings <3.8mmol/L without any symptoms?

☐ Never ☐ 1 time / week ☐ 4-5 times / week
☐ 1 to 3 times ☐ 2-3 times / week ☐ Almost daily

(R = answer to 5 < answer to 6, A = answer to 5 ≥ answer to 6)

7. How low does your blood sugar need to go before you feel symptoms?

☐ 3.3-3.8mmol/L (A) ☐ 2.2 – 2.7mmol/L (R)
☐ 2.7-3.3mmol/L (A) ☐ <2.2mmol/L (R)

8. To what extent can you tell by your symptoms that your blood sugar is low?

☐ Never (R) ☐ Often (A) ☐ Rarely (R)
☐ Always (A) ☐ Sometimes (R)

Note: Units of measure have been converted from mg/dl to mmol/L as per. http://www.onlineconversion.com/blood_sugar.htm.

[39] **http://www.onlineconversion.com/blood_sugar.htm**.

6.1.2 K10 questionnaire for anxiety/depression

Use of the K10 for screening Safety Critical Workers

The purpose of applying the K10 is to screen for mental health disorders that may affect attentiveness and thus the ability to safely perform Safety Critical Work.

Research has revealed a strong association between high scores on the K10 and the diagnosis of anxiety and affective disorders. There is a lesser but significant association between the K10 and other mental disorder categories, and with the presence of any current mental disorder.

Sensitivity and specificity data analysis also supports the K10 as an appropriate screening instrument to identify likely cases of anxiety and depression in the community, and to monitor treatment outcomes.

Thus, the K10 is widely recommended as a simple measure of psychological distress and as a means to monitor progress following treatment for common mental health disorders such as anxiety and depression.

Nature and administration of the K10

The K10 should be administered by interview due to the potential for dishonest completion in an occupational setting.

The K10 scale is based on 10 questions about negative emotional states experienced during the 4-week period leading up to the assessment (refer to K10 questionnaire overleaf).

For each item, there is a 5-level response scale based on the amount of time the respondent reports experiencing the particular problem. The response options are ‘none of the time’, ‘a little of the time’, ‘some of the time’, ‘most of the time’ and ‘all of the time’.

Each item is scored from 1 for ‘None of the time’ to 5 for ‘All of the time’. Scores for the 10 items are then summed, yielding a minimum possible score of 10 and a maximum possible score of 50.

Questions 3 and 6 do not need to be asked if the response to the preceding question was ‘None of the time’. In such cases, questions 3 and 6 will automatically receive a score of 1.

Scoring the K10 and managing Safety Critical Workers

The K10 is a screening instrument, thus examining health professionals are required to apply clinical judgement in the interpretation of the score and the action required.

The examining health professional evaluates the responses to the questionnaire in conjunction with supporting information provided by the organisation, such as absenteeism and accident history, which may provide indications of a mental health problem. The examining health professional should also form a clinical impression of the worker and consider if this is consistent with the score on the K10.

The examining health professional may also feel it is appropriate to contact a worker’s GP practitioner to discuss their history. Based on these inputs, the examining health professional will form a view as to whether they believe there is a significant current risk that the worker might be impaired at work.

A total score of 50 is possible. Low scores indicate low levels of psychological distress, and high scores indicate high levels of psychological distress.

The table overleaf provides a guide for managing workers according to their K10 score. Examining health professionals should also consider supporting information such as accident/incident history and sick leave, as well as the clinical examination when selecting the appropriate intervention.

As a general rule, workers who rate most commonly ‘Some of the time’ or ‘All of the time’ categories are in need of a more detailed assessment and may not be fit to continue Safety Critical Work. Workers who rate most commonly ‘A little of the time’ or ‘None of the time’, generally do not require further assessment; however, the clinical examination may indicate otherwise and will guide the final decision in this regard.

It is important to note that high scores may be the result of acute distress brought on by domestic or work stress or may be due to endogenous causes. Interventions appropriate to the particular situation will therefore need to be identified.

Where work stress is identified as a factor in a raised score, the examining health professional is in a good position to constructively intervene and advise on remedial steps regarding workload, job re-organisation, training, conflict resolution and so on.

K10 questionnaire

Please tick the answer that is correct for you:	All of the time (Score 5)	Most of the time (Score 4)	Some of the time (Score 3)	A little of the time (Score 2)	None of the time (Score 1)
10. In the past 4 weeks, about how often did you feel tired out for no good reason?	☐	☐	☐	☐	☐
11. In the past 4 weeks, about how often did you feel nervous?	☐	☐	☐	☐	☐
12. In the past 4 weeks, about how often did you feel so nervous that nothing could calm you down?	☐	☐	☐	☐	☐
13. In the past 4 weeks, about how often did you feel hopeless?	☐	☐	☐	☐	☐
14. In the past 4 weeks, about how often did you feel restless or fidgety?	☐	☐	☐	☐	☐
15. In the past 4 weeks, about how often did you feel so restless you could not sit still?	☐	☐	☐	☐	☐
16. In the past 4 weeks, about how often did you feel depressed?	☐	☐	☐	☐	☐
17. In the past 4 weeks, about how often did you feel that everything was an effort?	☐	☐	☐	☐	☐
18. In the past 4 weeks, about how often did you feel so sad that nothing could cheer you up?	☐	☐	☐	☐	☐

Risk Zone I — K10 scores between 10 and 18

Scores below 19 indicate that the worker is likely to be well but should be considered in the context of the overall clinical impression of the worker. Although no formal intervention is required, reference to the importance of mental health for Safety Critical Work is appropriate. Information and resources may also be provided to highlight symptoms and sources of support.

Risk Zone II — K10 scores between 19 and 24

Scores in this zone indicate that the worker is likely to have a mild disorder (specificity greater than 90 per cent). The examining health professional should explore possible reasons including domestic or work stress, and provide brief counselling as required. The examining health professional should identify sources of support or guidance that may be helpful to the worker, including work-based employee assistance programs, community support services or the worker's general practitioner. The examining health professional may assess the worker as Fit for Duty Subject to Review to flag the issue for attention at subsequent assessments. The period of review may be earlier or in line with normal periodic frequencies, depending on the clinical assessment and other indicators.

Risk Zone III — K10 scores between 25 and 29

This zone indicates the worker is likely to suffer from a moderate mental disorder (specificity greater than 98 per cent). Again, the examining health professional should explore possible reasons and consider the supporting information and clinical picture. Workers in this zone should be managed by a combination of brief counselling, referral to the worker's general practitioner and continued monitoring. The examining health professional may assess the worker as Fit for Duty Subject to Review and should refer for external assessment via the worker's general practitioner. Alternatively, the examining health professional may classify the worker as Temporarily Unfit for Duty if there are immediate concerns for safe working.

Risk Zone IV — K10 scores equal to or greater than 30

Scores in this zone indicate that the worker is likely to have a severe mental disorder (specificity greater than 99 per cent). They should be assessed as Temporarily Unfit for Duty pending further assessment and referred to their general practitioner in the first instance.

Risk levels	K10 score	Intervention	Assessment conclusion for Safety Critical Work
Zone I *(Low levels of psychological distress)*	**10–18**	No formal intervention. Consider the consistency of the clinical impression with the score. General advice about the importance of mental health for Safety Critical Work and alert to further information and resources.	Fit for Duty Unconditional
Zone II *(Moderate levels of psychological distress)*	**19–24**	Brief counselling and reference to self-help materials and support services as applicable to the situation.	May be assessed as Fit for Duty Subject to Review. Review period may be in line with normal periodic review periods, or more frequently if the situation warrants it.
Zone III *(High levels of psychological distress)*	**25–29**	Brief counselling, referral to general practitioner and continued monitoring.	May be assessed as Fit for Duty Subject to Review or Temporarily Unfit for Duty, depending on the situation. The review period will depend on the individual situation.
Zone IV *(Very high levels of psychological distress)*	**30–50**	Refer for diagnostic evaluation and treatment. Review as appropriate.	Should be assessed as Temporarily Unfit for Duty while being evaluated and while treatment is initiated. Return to work will depend on the effectiveness of treatment.

6.1.3 Epworth Sleepiness Scale

Use of the ESS for screening Safety Critical Workers

The ESS was developed by the Sleep Disorders Unit at the Epworth Hospital in Melbourne in 1991.[40] The original and subsequent studies have reported a reasonably high level of reliability for ESS scores in measuring persistent daytime sleepiness in adults.[41] The ESS has been noted as being conceptually unique in measuring the whole range of sleep propensities, from very high to very low.[42]

The purpose of the ESS is to measure daytime sleepiness in adults. The ESS is used in the Standard to screen for potential sleep disorders in Safety Critical Workers.

Nature and administration of the ESS

The ESS is a self-administered eight-item questionnaire that asks the worker about the likelihood of dozing in various circumstances during the day, irrespective of the cause (refer to Figure 37). Category 1 and 2 workers are required to complete the ESS as part of the Worker Notification and Health Questionnaire (refer to Section 6.2.3 Worker Notification and Health Questionnaire).

Figure 37. Epworth Sleepiness Scale questions and scoring

How likely are you to doze off or fall asleep (rather than just feeling tired) in the following situations:	would never doze off **(0)**	slight chance of dozing **(1)**	moderate chance of dozing **(2)**	high chance of dozing **(3)**
Sitting and reading	☐	☐	☐	☐
Watching TV	☐	☐	☐	☐
Sitting inactive in a public place (e.g., a theatre or a meeting)	☐	☐	☐	☐
As a passenger in a car for an hour without a break	☐	☐	☐	☐
Lying down to rest in the afternoon when circumstances permit	☐	☐	☐	☐
Sitting and talking to someone	☐	☐	☐	☐
Sitting quietly after a lunch without alcohol	☐	☐	☐	☐
In a car, while stopped for a few minutes in the traffic	☐	☐	☐	☐

SCORING:

- The ESS is scored by summing the numeric values in the boxes in the questionnaire; the maximum possible is 8 x 3 = 24.
- A score of between 0 and 10 is within the normal range.
- A score of between 11 and 15 indicates mild to moderate sleepiness.
- A score of between 16 and 24 indicates moderate to severe sleepiness.

**** The Epworth Sleepiness Scale is under copyright to Dr Murray Jones 1991 – 1997. It may be used by individual doctors without permission, but its use on a commercial basis must be negotiated.***

[40] Johns, M, 1991, *A new method for measuring daytime sleepiness: the Epworth sleepiness scale*, American Sleep Disorders Association and Sleep Research Society, vol. 14, no. 6, https://pubmed.ncbi.nlm.nih.gov/1798888/.

[41] Johns, M, 1992, *Reliability and Factor Analysis of the Epworth Sleepiness Scale*, American Sleep Disorders Association and Sleep Research Society, vol. 15, no. 4, https://academic.oup.com/sleep/article-pdf/15/4/376/13659687/sleep-15-4-376.pdf.

[42] ibid.

Scoring the ESS and managing Safety Critical Workers

The ESS is scored by summing the numeric values in the boxes in the questionnaire; the maximum possible is 8 x 3 = 24.

- A score of between 0 and 10 is within the normal range.
- Mild to moderate self-reported sleepiness (ESS score of 11 to 15) may be associated with a significant sleep disorder, although the degree of increased risk of sleepiness-related (motor vehicle) accidents is unknown.
- Scores of 16 to 24 are consistent with moderate to severe sleepiness and are associated with an increased risk of sleepiness-related accidents.

If a worker receives a score of $\geq$ 16 they will be classified as Temporarily Unfit for Duty until a sleep study is arranged (refer to Figure 26).

6.1.4 STOP-Bang questionnaire

Use of the STOP-Bang questionnaire for screening Safety Critical Workers

The STOP-Bang questionnaire was developed by Professors at the University of Toronto as an OSA screening tool[43]. The STOP-Bang questionnaire has high sensitivity of 93 per cent and 100 per cent to detect moderate to severe OSA.[44]

The STOP-Bang questionnaire is used in the Standard to screen for potential OSA in Safety Critical Workers. The STOP-Bang questionnaire is a new screening tool under the 2023 Standard and has been included to reduce reliance on self-reported sleepiness to identify workers at high risk of OSA.

Nature and administration of the STOP-Bang questionnaire

The STOP-Bang questionnaire is a validated 8-item screening tool specifically for OSA. It comprises four questions (STOP) and four objective criteria (Bang), with the questions/criteria scored (refer to Figure 38).

The STOP-Bang questionnaire is completed by the Authorised Health Professional in Section 6.3 of the Record for Health Professional for Category 1 and 2 workers (refer to Section 6.2.4).

Figure 38. STOP-Bang questionnaire

	Score for YES
Snoring? Do you Snore Loudly (loud enough to be heard through closed doors or your bed-partner elbows you for snoring at night)?	**1**
Tired? Do you often feel Tired, Fatigued, or Sleepy during the daytime (such as falling asleep during driving or talking to someone)?	**1**
Observed? Has anyone Observed you Stop Breathing or Choking/Gasping during your sleep?	**1**
Pressure? Do you have or are being treated for High Blood Pressure?	**1**
Body Mass Index more than 35 kg/m2?	**1**
Age older than 50?	**1**
Neck size large? (Measured around Adams apple) Is your shirt collar 16 inches / 40cm or larger?	**1**
Gender = Male?	**1**
SCORING: • The STOP-Bang is scored (1) per each YES response OSA – Low Risk: Yes to 0 to 2 questions OSA – Intermediate Risk: Yes to 3 to 4 questions OSA – High Risk: Yes to 5 to 8 questions	

[43] The NTC is in the process of receiving approval from the University of Toronto to reproduce the STOP-Bang questionnaire content in the Standard.

[44] Chung F, Abdullah HR, Liao P, 2016, *STOP-Bang Questionnaire: A Practical Approach to Screen for Obstructive Sleep Apnea*. Chest. Vol. 149, no. 3, pp. 631-8.

Scoring the STOP-Bang questionnaire and managing Safety Critical Workers

The STOP-Bang questionnaire is scored by summing the numeric values in the boxes in the questionnaire; the maximum possible is 8.

- A score of between 0 and 2 indicates low risk of OSA and the worker will be classified as Fit for Duty Unconditional.
- A score $\geq$ 3 indicates medium to high risk of OSA and the worker will be classified as Fit for Duty Subject to Review until a sleep study is arranged (refer to Figure 26).

If the worker is diagnosed with OSA and requires treatment, they will be classified as Temporarily Unfit for Duty until they can demonstrate compliance with treatment.

6.1.5 AUDIT questionnaire

The Alcohol Use Disorders Identification Test (AUDIT) was developed by the World Health Organisation (WHO) as a simple method of screening for excessive alcohol consumption. It provides a framework for intervention to help at-risk or high-risk drinkers to reduce or cease their alcohol consumption. It also helps to identify alcohol dependence.

The AUDIT is included in the Health Questionnaire to help identify patterns of alcohol use that may impact on Safety Critical Work. Identification of harmful alcohol consumption, as well as indicators of alcohol dependence, is therefore particularly important. The Periodic Health Assessment also provides an opportunity to counsel Safety Critical Workers about hazardous drinking patterns.

The AUDIT provides an accurate measure of risk across gender, age and cultures. Its validity, brevity and flexibility make it the most widely used screening instrument around the world.

The standard AUDIT has 10 questions to which there is a choice of up to 5 answers in a tick-a-box format.

The questions are designed to seek information in 3 domains as shown overleaf.

AUDIT questionnaire

Please tick the answer that is correct for you:

Scoring:

	(0)	***(1)***	***(2)***	***(3)***	***(4)***
1. How often do you have a drink containing alcohol?	☐ Never (skip to Q9)	☐ Monthly or less	☐ 2 to 4 times a month	☐ 2 to 3 times a week	☐ 4 or more times a week
2. How many drinks containing alcohol do you have on a typical day when you are drinking?	☐ 1 or 2	☐ 3 or 4	☐ 5 or 6	☐ 7, 8 or 9	☐ 10 or more
3. How often do you have 6 or more drinks on one occasion?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
4. How often during the last year have you found that you were not able to stop drinking once you had started?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
5. How often during the last year have you failed to do what was normally expected from you because of drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
6. How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
7. How often during the last year have you had a feeling of guilt or remorse after drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
8. How often during the last year have you been unable to remember what happened the night before because you had been drinking?	☐ Never	☐ Less than monthly	☐ Monthly	☐ Weekly	☐ Daily or almost daily
9. Have you or someone else been injured as a result of your drinking?	☐ No		☐ Yes, but not in the last year		☐ Yes, during the last year
10. Has a relative or friend or a doctor or other health worker been concerned about your drinking or suggested you cut down?	☐ No		☐ Yes, but not in the last year		☐ Yes, during the last year

Domains and item content of the AUDIT

Domains	Question No.	Item content
Risky or hazardous alcohol use	1	Frequency of drinking
	2	Typical quantity
	3	Frequency of heavy drinking
Dependence symptoms	4	Impaired control over drinking
	5	Increased salience of drinking
	6	Morning drinking
High-risk or harmful alcohol use	7	Guilt after drinking
	8	Blackouts
	9	Alcohol-related injuries
	10	Others concerned about drinking

Definitions

Risky or hazardous alcohol use

Hazardous drinking is a pattern of alcohol consumption that increases the risk of harmful consequences for the user or others, including the risk of accidents, injuries and social problems.

High-risk or harmful alcohol use

Harmful use refers to alcohol consumption that results in long-term consequences to physical and mental health (e.g., gastritis, liver damage or depression).

Alcohol dependence

Alcohol dependence is a cluster of behavioural, cognitive and physiological phenomena that may develop after repeated alcohol use. Typically, these include a strong desire to consume alcohol, impaired control over use, persistent drinking despite harmful consequences, a higher priority given to drinking than to other activities and obligations, increased alcohol tolerance and physical withdrawal reaction.

Use of the AUDIT

The purpose of applying the AUDIT to Safety Critical Workers is to ensure that individuals are not impaired at work, either by the direct effects of alcohol or the health and/or social problems associated with alcohol use.

The examining health professional is required to evaluate the responses to the questionnaire in conjunction with results of the clinical examination and form a view as to whether they believe there is a significant current risk that the worker might be impaired at work, either by the direct effects of alcohol, or by associated health or social problems.

Note that it is possible to accumulate 8 or more points as a result of binge drinking on days off, or highlight excessive drinking in the past, without necessarily being at risk of being impaired at work. The health assessment does, however, provide a valuable opportunity to provide brief advice about risky alcohol consumption.

Also note that through separate drug and alcohol policies and procedures, workers may be subject to random testing. Workers are also liable for testing following incidents.

Administering the AUDIT

In the workers' health assessment, the AUDIT questionnaire is administered in a self-report format; however, it can also be administered by interview if necessary. The level of cooperation or defensiveness of the worker should be considered in selecting the appropriate format.

Dishonest completion may be an issue, so review of the responses with the worker is desirable. It may be helpful to reassure the worker that all responses are confidential and are not forwarded to the operator.

Scoring the AUDIT and managing workers

Each of the questions has a range of responses, and each response has a score ranging from 0 to 4. Questions are scored for the response from left to right. A total score of 40 is possible.

Higher scores indicate a greater likelihood of hazardous or harmful drinking and reflect a greater severity of alcohol problems and dependence, as well as a greater need for more intensive treatment.

AUDIT results are categorised into particular risk levels (or 'zones') to guide the appropriate intervention. The table overleaf shows the general guidelines for WHO assignment of risk levels based upon AUDIT scores and describes the intervention appropriate to that level.

AUDIT risk levels

Risk level	Intervention	AUDIT score
Zone I	Alcohol education	0–7
Zone II	Simple advice	8–15
Zone III	Simple advice plus brief counselling and continued monitoring	16–19
Zone IV	Refer for diagnostic evaluation and treatment	20–40

Risk Zone I — AUDIT scores between 0 and 7

This score generally indicates low-risk drinking. Although no formal intervention is required, alcohol education is appropriate for the following reasons:

- It contributes to the general awareness of alcohol risks and the relevance to Safety Critical Work.
- It may be effective for workers who have experienced alcohol problems but who have already reduced their drinking levels, or whose circumstances may change.
- It could be effective for those workers who have minimised the extent of their drinking on the AUDIT questions.

Risk Zone II — AUDIT scores between 8 and 15

Scores in this zone are likely to be recorded by a significant proportion of workers. They indicate alcohol use in excess of the low-risk guidelines.

People in Zone II would generally be drinking at risky or hazardous levels and would be at moderate risk of alcohol-related harm. This zone, however, may also include workers experiencing

actual harm and low levels of dependence. Generally, simple advice and information on the alcohol guidelines and risk factors, and the importance of attentiveness for Safety Critical Work, would be an appropriate intervention.

The examining health professional may assess the worker as Fit for Duty Subject to Review to flag the issue for attention at subsequent assessments. The period of review may be earlier than or in line with normal periodic frequencies, depending on the clinical assessment and other indicators.

Risk Zone III — AUDIT scores between 16 and 19

This zone indicates risky drinking and problems related to higher levels of consumption. This score indicates a pattern of consumption that is already causing harm to the drinker who may also have symptoms of dependence. Workers in this zone should be managed by a combination of simple advice, brief counselling, and continued monitoring. Follow-up and referral to the worker's general practitioner is necessary.

The examining health professional should assess the worker as Fit for Duty Subject to Review and should refer for external assessment via the worker's general practitioner. They may also classify as Temporarily Unfit for Duty if there are immediate concerns for safe conduct of safety critical tasks.

Risk Zone IV — AUDIT scores in excess of 20, and where combined scores on questions 4, 5 and 6 are $\geq$ 4

Scores in this zone indicate that the person falls into the high-risk category of alcohol-related harm. Workers in this zone are likely to be alcohol dependent and require more intensive intervention. Health professionals should note that dependence varies along a continuum of severity and might be clinically significant at lower AUDIT scores.

Workers in this zone should be referred to specialist services to consider withdrawal, pharmacotherapy, and other more intensive treatments. They should be assessed as Temporarily Unfit for Duty pending further assessment and referred in the first instance to their general practitioner.

Steps in identifying a drinking problem

If a person has a total score of $\geq$ 8 on the AUDIT questionnaire, the following additional steps are recommended:

1. Check the accuracy of the high scoring questions with the worker.
2. Ask some additional questions to help determine the person's potential for alcohol dependence. The following question may be helpful to confirm accuracy and obtain more information:

   How many drinks did you have on your last drinking day—and on the previous occasion? (this is a good guide to the usual intake).

6.2 Model forms

This section contains the model forms and explanations for completion.

The forms for conducting the health assessments may be downloaded from the NTC website at www.ntc.gov.au.

Note that the forms are model forms and may be modified by rail transport operators to suit their circumstances provided that the content relevant to the implementation of the Standard is preserved. Rail transport operators may use the model forms as a template for developing 'fillable' or online forms.

6.2.1 Risk assessment template

This template may be used to guide conduct of the risk assessment, which guides determination of the worker's risk category and health assessment requirements.

National Standard for Health Assessment of Rail Safety Workers (2023)

RISK ASSESSMENT TEMPLATE

RAIL SAFETY WORKER TASK:		
ASSESSMENT RECORD:		
WORKSITE INSPECTION	Date:	Completed by:
JOB DESCRIPTION	Date:	Reviewed by:
CONTEXT:		

ACTIVITIES AND WORKING CONDITIONS:	**HEALTH ATTRIBUTES:** ***Health attributes relating to the safety of the rail network:*** ***Health attributes relating to the safety of the rail worker (OHS):***
ENGINEERING AND PROCEDURAL ENVIRONMENT:	

RISK ANALYSIS AND CATEGORISATION:	**CATEGORY**
HEALTH ASSESSMENT REQUIREMENTS:	

6.2.2 Request and Report Form

The Request and Report Form is the key means of communication between the rail transport operator and the Authorised Health Professional.

The form is used as follows:

- **Part A.** The rail transport operator completes Part A, encloses copies of relevant supporting information (e.g., a previous health assessment report, sick leave summary, relevant workers compensation reports or critical incident reports) and a copy of the health professional record, and forwards them to the Authorised Health Professional.
- **Part B.** Upon completion of the assessment, the Authorised Health Professional completes Part B of the form. The worker/applicant gives permission to the portability of the Health Assessment Report.

The original form is sent to the rail transport operator. The Authorised Health Professional retains a copy on file and a further copy is provided to the worker/applicant.

Rail worker's name:

Name of rail transport operator:

Rail Safety Worker Health Assessment
Category 1, 2, and 3
Request and Report Form

CONFIDENTIAL:

THE COMPLETED FORM SHOULD BE RETURNED TO THE RAIL TRANSPORT OPERATOR
A COPY SHOULD BE RETAINED BY THE AUTHORISED HEALTH PROFESSIONAL

Instructions to the Authorised Health Professional

- You are requested to conduct a health assessment to assess the rail safety worker's fitness for duty according to the details provided in PART A of this form and according to the *National Standard for Health Assessment of Rail Safety Workers*.
- You must sight photo identification of the rail safety worker/applicant (e.g., driver's licence).
- Please perform the assessment, complete PART B of this form and return the whole form to the rail transport operator according to contact details in PART A below, within 7 days of the assessment, OR should the worker be assessed Unfit for Duty, please contact the operator immediately by phone so that appropriate rostering changes may be made. Please keep a copy of this form for your own records.
- Before presenting for the appointment, Category 1 Safety Critical Workers are required to present total cholesterol and HDL, HbA1c and an ECG for Preplacement, Change of Risk Category and Periodic Health Assessments. Results should have been forwarded to you prior to this examination. Requirements for triggered assessments will be individually determined.
- Requirements for audiometry are noted in PART A of the form. This will be arranged separately if audiometry facilities are not available at your practice.
- You may need to contact the worker's nominated doctor to discuss conditions that may affect their fitness for duty. Such contact should be made with the worker's signed consent (see Record for Health Professional).
- Details of the examination should be recorded on the Record for Health Professional. This record is confidential and should be retained by you, not returned to the operator.
- For more detailed information about the conduct of health assessments for Safety Critical Workers see the *National Standard for Health Assessment of Rail Safety Workers*.

PART A. Request for Health Assessment – Rail transport operator to complete

A health assessment is requested to assess fitness for rail safety duty.

Date requested:

1. Rail transport operator details

Rail transport operator:

Supervisor / contact:

Phone:	Facsimile:

Email:

Account and report to be sent to Supervisor at the following address *(please insert postal address or fax no.)*

PART A (continued)

2. Worker / Applicant details

Family name:	First names:
Employee no. (if applicable):	Date of birth:

3. Worker's health assessment appointment details

Doctor / practice:	
Address:	Phone:
Appointment date:	Time:

4. Assessment requirements

4.1 Risk Category / Level of assessment

☐ Category 1 ☐ Category 2 ☐ Category 3

4.2 Description of duties (or see attached Job Description or Task Risk Assessment)

4.4 Type of assessment required *(tick one)*

☐ Pre-placement / Change of Risk Category Health Assessment

☐ Periodic Health Assessment

☐ Triggered Health Assessment *(provide details below)*

Initiated by:

☐ Rail transport operator ☐ Authorised Health Professional (Fit for Duty Subject to Review) ☐ Worker

☐ Other *(provide details below)*

Please provide details of reasons for Triggered Health Assessment and/or any other assessment requirements

4.5 Task specific requirements *(Category 1 and 2 workers)*

Colour vision

☐ Normal

☐ Colour Defective Safe A

☐ Colour Defective Safe B

☐ No colour vision requirements

Hearing

☐ Speech – In Noise

☐ Speech – In Quiet

Musculoskeletal *(note specific requirements)*

PART A (continued)

4.6 Specific tests required

The following tests are required for Pre-placement, Change of Risk Category and Periodic Health Assessments. They are not routinely required for Triggered Health Assessments.

☐ Total cholesterol and HDL (fasting is not required) *(Category 1 only)*

☐ HbA1c *(Category 1 only)*

☐ Resting ECG *(Category 1 only)*

☐ Audiometry *(Category 1, 2, and 3)*

Audiometry ordered from:

☐ Drug Screen *(Pre-placement / Change of Risk Category only) unless required for Triggered Health Assessment*

Pathology ordered from:

5. Supporting information relevant to the assessment *(tick information provided)*

☐ Most recent health assessment:
Completed by *(insert AHP name)* on *(insert date)* .

☐ Previous relevant Health Assessment Report(s) attached (provide details)

☐ Aids required to be worn (specify) ☐ Corrective lenses ☐ Hearing aids ☐ Other (specify)

☐ Job modifications currently in place (*provide or attach details*)

☐ Relevant sick leave for last 12 months (Number of days, not details):

☐ Relevant Workcover history

☐ Relevant Critical Incident episodes

☐ Positive drug and alcohol assessment reports

☐ Record of involvement in serious rail safety incidents

☐ Other *(specify)*

Rail transport operator to complete after the assessment

6. Action taken as a result of health assessment *(tick as appropriate and record details)*

☐ Periodic health assessment scheduled as per Standard

☐ Alternative duties / Re-deployment

☐ Job modification

☐ Drug assessment (Pre-placement only)

☐ Triggered review scheduled (e.g., Fit for Duty Subject to Review)

PART B. Health Assessment Report – Authorised Health Professional to complete

Worker's name:	Worker's job title:
Date of birth:	RIW number:

Worker Category	**Current aids required**[1]	**Worker Identification**
☐ Category 1 ☐ Category 2 ☐ Category 3	☐ Corrective lenses ☐ Hearing aid ☐ Other condition – specify:	☐ I have sighted the worker's photo ID (e.g., driver's licence, passport) ID type and number:

This report is:

☐ An interim report pending further investigation (see review date below)

☐ A final report of the worker's fitness for duty status

I certify that I have examined the worker in accordance with the medical standards contained in the *National Standard for Health Assessment of Rail Safety Workers* and in my opinion the worker is *(tick one box only in left hand column):*

☐ **Fit for Duty Unconditional** The worker meets all criteria for Fit for Duty Unconditional. They are not subject to any restrictions or conditions and should be reviewed in line with the normal periodic health assessment schedule (refer section 2.3.1).	**Next Periodic Health Assessment** To be completed by (insert date):
☐ **Fit for Duty Subject to Review** The worker does not meet all the criteria for Fit for Duty Unconditional. The worker's condition is sufficiently controlled to permit current rail safety duties under certain conditions (refer section 2.3.2).	**Review requirements (as applicable)** **Date of next review** A review appointment with AHP should be scheduled by: **Nature of review assessment** ☐ Full medical assessment ☐ Assessment for specific medical condition(s) ☐ Review of aids (hearing or vision) **Reports and/or tests required** ☐ Local doctor report ☐ Specialist report/s ☐ Test results **Additional requirements for review, management** ☐ CMO review ☐ Other (provide detail below)
☐ **Temporarily Unfit for Duty** ***Please notify the Rail Transport Operator immediately if worker assessed as temporarily unfit for duty*** The worker does not meet the criteria for Fit for Duty Unconditional or Fit for Duty Subject to Review and cannot presently perform current rail safety duties (refer section 2.3.3). May return to full duty pending: improvement in condition; response to treatment; confirmed diagnosis of undifferentiated illness.	
☐ **Permanently Unfit for Duty** ***Please notify the Rail Transport Operator immediately if worker is assessed as permanently unfit for duty*** The worker has a permanent and/or progressive condition that is predicted to render them unfit for their current rail safety duties for 12 months or more (refer section 2.3.4).	

Job Modification (Fit for Duty Subject to Review)	**Alternative duties (Temporarily Unfit for Duty)**
In most cases job modification may not be practicable but alternative duties such as office work may be available (refer opposite and categorise Temporarily Unfit for Duty). I recommend the following job modifications and timeframes .... ☐ As per WorkCover Certificate	☐ Unfit for Cat 1 and Cat 2 work, but fit for Cat 3 ☐ Unfit for Cat 1, 2 and 3 work, but fit to work outside the danger zone ☐ Has a condition which may have an effect on non-safety tasks. ☐ Other ....

[1] This is not associated with a category of fitness for duty.

Drug and alcohol screening (if required)	**Neg**	**Pos**
Drug test	☐	☐
Alcohol breath test	☐	☐

Colour vision

☐ Colour Vision Normal ☐ Colour Vision Safe A

☐ Colour Vision Safe B ☐ Not assessed

☐ Unfit for Colour Critical Work

Portability of Assessment Result - Worker to complete

I, ...

Give permission for the self-assessment to be forwarded to another rail transport operator as confirmation of fitness for duty

Signature: ……
Date……./……./…….

Authorised Health Professional	**Reviewing Physician**
Name:	Name: .....
Address:	Address:.....
Signature:…….. Date:…../…../…..	Signature:…….. Date:…../…../…..

6.2.3 Worker Notification and Health Questionnaire

This form contains the Worker Notification and Health Questionnaire. There is a version of this form for Category 1 and Category 2 workers, and a version for Category 3 workers.

The self-administered questionnaire in the Category 1 and Category 2 form is a screening tool to help identify conditions that might affect the performance of Safety Critical Work. The questionnaire is not a diagnostic tool, and no decision can be made regarding the worker's fitness for duty until the full clinical examination is performed.

The Authorised Health Professional may need to guide or assist with completion of the questionnaire if literacy or cultural background presents a barrier to self-administration by the worker. The health professional will also need to review the answers with the worker to determine relevant detail. There is space on the form for the health professional to make relevant notations.

Dishonest completion of the questionnaire may be an issue. Workers are required to sign the completed questionnaire in the presence of the Authorised Health Professional and the Authorised Health Professional should countersign.

The form is used as follows:

- **Part A:** The rail transport operator completes PART A including appointment details and instructions to the worker/applicant.
- **Part B:** The worker/applicant completes PART B and presents it to the Authorised Health Professional.
- **Part C:** The rail transport operator requests that the worker/applicant sign the end of the form to indicate that they have read and understood the statements concerning the health information to be provided at the beginning of the form. The worker/applicant signs the form as a true statement and the Authorised Health Professional countersigns.

The rail transport operator discusses the results with the worker/applicant. The form is retained by the Authorised Health Professional and filed in the worker's medical record.

Rail Worker's Name:

Name of rail transport operator:

Rail Safety Worker Health Assessment Category 1 and 2

Worker Notification and Health Questionnaire

CONFIDENTIAL:

FOR PRIVACY REASONS THE COMPLETED FORM MUST BE RETAINED BY THE AUTHORISED HEALTH PROFESSIONAL (AHP) AND NOT RETURNED TO THE RAIL TRANSPORT OPERATOR (RTO) OR CONTRACTING FIRM

Instructions to the worker / applicant

- You are required to attend a health assessment as part of your employment, to assess your fitness for rail safety work. The health assessment must be completed by *(date)* to ensure that you are able to carry out/commence normal duties. The assessment will be conducted by an Authorised Health Professional (AHP).
- Please complete the enclosed questionnaire and provide it to the AHP. The last page of the questionnaire must be signed by you in the presence of the AHP.
- Please take to the appointment: glasses, hearing aid or any other aids required for conduct of your work; all medications that you are currently taking or a list of such medications; and photo identification.
- If you are a Category 1 Safety Critical Worker, you will be required to have a blood test as part of your assessment. This test should take place at least 48 hours before the appointment with the AHP so that they have the results.
- The health assessment may include a drug and alcohol test (at Pre-employment or Triggered Health Assessment if indicated). If you return a positive drug or alcohol test you will be certified Temporarily Unfit until such time as you have complied with your RTO's drug and alcohol policy requirements.
- The AHP may ask your permission to speak to your general practitioner or treating specialist. If you agree, the AHP will ask you to sign a document providing written consent to such contact.
- If the AHP finds or suspects something is wrong with your health that you did not know about, they will ask your permission to inform your own doctor. The examining doctor will not treat any medical condition but will give you a letter to take to your own doctor.
- If the AHP finds that you do not meet all relevant medical criteria, your supervisor at the RTO or contracting firm will discuss with you the appropriate actions to be taken.

Disclosure of health information – please read carefully and sign the declaration at the end of the form to indicate you understand how health information is reported, stored and accessed.

In line with privacy and health records legislation, the AHP retains and keeps confidential all detailed medical information relating to your health assessment including your test results and the completed record of clinical findings. They do not disclose this information to your RTO or contracting firm unless you provide specific written authorisation to do so. The AHP only sends the completed health assessment report to indicate your fitness for rail safety work.

The exception to the above is that the Chief Medical Officer (CMO) or a person authorised by the CMO may access your full medical records and test results to aid in the management of your health in relation to your work, or for audit purposes, or to compile statistics. The CMO or authorised representative must maintain the confidentiality of these records and ensure they are not made available to, or discussed with, any person within your RTO or contracting firm.

Other than the above, your personal information will not be disclosed to any other person or organisation without your written permission, except:

- a notifiable disease is diagnosed which must by law, be reported to the State authorities, or
- a report is subject to subpoena or a statutory disclosure requirement, or
- the rail safety regulator (or another person) is required to conduct an inquiry into a railway accident or incident, or
- a person or organisation is appointed to conduct an audit of the AHP's compliance with the National Standard for Health Assessment of Rail Safety Workers, or
- de-identified statistical information related to your health assessment is compiled for research purposes, or
- there is another lawful purpose.

You have the right to access your health records including those held by the AHP and the reports held by the rail transport operator.

Please sign the declaration at the end of the form to indicate your understanding of how your health information will be managed.

PART A – Rail transport operator to complete

Date of request:

Worker / Applicant details

Family name:

First names:

Employee no:

Date of birth:

Risk Category: ☐ Category 1 ☐ Category 2

Health assessment appointment details

Doctor / practice:

Address:

Phone:

Appointment date:

Time:

PART B Health Questionnaire – Worker / Applicant to complete

This questionnaire must be completed to help assess your fitness for rail safety duties. Please answer the questions by ticking the appropriate box and providing the detail requested. If you are not sure, leave the question blank and ask the Authorised Health Professional (AHP) what it means. The AHP will ask you more questions during the assessment.

Your health since your last assessment		Doctor comments
1.	Since your last assessment, have you experienced difficulty completing any tasks required for your work (e.g. concentrating, making decisions, seeing signals, walking on ballasts, hearing train instructions)? If yes, please describe: ☐ No ☐ Yes	
2.	Since your last assessment, have you experienced persistent symptoms such as feeling tired, drained or exhausted? If yes, please describe: ☐ No ☐ Yes	
3.	Since your last assessment, have you been involved in any accidents or near misses at work? If yes, please describe: ☐ No ☐ Yes	
4.	Since your last assessment, have you tested positive for drugs or alcohol (at work or elsewhere e.g., driving)? If yes, please describe: ☐ No ☐ Yes	

5. Your current health management		Doctor comments
5.1 Are you currently attending a health professional for any illness or injury?	☐ No ☐ Yes	
5.2 Are you currently taking any medications? If so, please list.	☐ No ☐ Yes	

6. Do you have or have you ever had:		Doctor comments
Blackouts or fainting	☐ No ☐ Yes	
High blood pressure	☐ No ☐ Yes	
Heart disease	☐ No ☐ Yes	
Chest pain, angina	☐ No ☐ Yes	
Any condition requiring heart surgery	☐ No ☐ Yes	
Abnormal shortness of breath or chest disease	☐ No ☐ Yes	
Palpitations / irregular heartbeat	☐ No ☐ Yes	
Diabetes	☐ No ☐ Yes	
Memory loss or difficulty with attention or concentration	☐ No ☐ Yes	
Head injury, spinal injury	☐ No ☐ Yes	
Stroke	☐ No ☐ Yes	
Seizures, fits, convulsions, epilepsy	☐ No ☐ Yes	
Dizziness, vertigo, problems with balance	☐ No ☐ Yes	
Neurodevelopmental disorder such as attention deficit hyperactivity disorder (ADHD) autism spectrum disorder (ASD) or other neurodevelopmental disorder	☐ No ☐ Yes	
Psychiatric or psychological disorder	☐ No ☐ Yes	
Sleep disorder, sleep apnoea or narcolepsy	☐ No ☐ Yes	
Hearing loss or deafness or had an ear operation or are using a hearing aid	☐ No ☐ Yes	
Double vision, difficulty seeing, or difficulty adapting to changing light conditions	☐ No ☐ Yes	
Vision disorder, including cataract, glaucoma, optic neuropathy and retinitis pigmentosa	☐ No ☐ Yes	
Colour blindness	☐ No ☐ Yes	
Neck, back or limb disorders	☐ No ☐ Yes	

7. History of serious illness/injury		Doctor comments
Have you ever had any other serious injury, illness, operation, or been in hospital for any reason? Please describe briefly below.	☐ No ☐ Yes	

8. The following questions relate to your intake of alcohol. Please circle the answer that is correct for you:

		(0)	(1)	(2)	(3)	(4)
8.1	How often do you have a drink containing alcohol?	☐ Never (go to Q5)	☐ Monthly or less	☐ 2 to 4 times per month	☐ 2 to 3 times per week	☐ 4 or more times per week
8.2	How many drinks containing alcohol do you have on a typical day when you are drinking?	☐ 1 or 2	☐ 3 to 5	☐ 5 to 6	☐ 7 to 9	☐ 10 or more
8.3	How often do you have six or more drinks on one occasion?	☐ Never	☐ Monthly or less	☐ 2 to 4 times per month	☐ 2 to 3 times per week	☐ 4 or more times per week
8.4	How often during the last year have you found that you were not able to stop drinking once you had started?	☐ Never	☐ Monthly or less	☐ 2 to 4 times per month	☐ 2 to 3 times per week	☐ 4 or more times per week
8.5	How often during the last year have you failed to do what was normally expected from you because of drinking?	☐ Never	☐ Monthly or less	☐ 2 to 4 times per month	☐ 2 to 3 times per week	☐ 4 or more times per week
8.6	How often during the last year have you needed a first drink in the morning to get yourself going after a heavy drinking session?	☐ Never	☐ Monthly or less	☐ 2 to 4 times per month	☐ 2 to 3 times per week	☐ 4 or more times per week
8.7	How often during the last year have you had a feeling of guilt or remorse after drinking?	☐ Never	☐ Monthly or less	☐ 2 to 4 times per month	☐ 2 to 3 times per week	☐ 4 or more times per week
8.8	How often during the last year have you been unable to remember what happened the night before because you had been drinking?	☐ Never	☐ Monthly or less	☐ 2 to 4 times per month	☐ 2 to 3 times per week	☐ 4 or more times per week
8.9	Have you or someone else been injured as a result of your drinking?	☐ No		☐ Yes, but not in the last year		☐ Yes, during the last year
8.10	Has a relative or friend, or a doctor or other health worker been concerned about your drinking or suggested you cut down?	☐ No		☐ Yes, but not in the last year		☐ Yes, during the last year

Doctor comments

9. The following questions are about your sleeping patterns:		Doctor comments
9.1	Have you ever been told by a doctor that you have a sleep disorder, sleep apnoea or narcolepsy? ☐ No ☐ Yes	
9.2	Has anyone noticed that your breathing stops or is disrupted by episodes of choking during your sleep? ☐ No ☐ Yes	
9.3	Have you experienced sleepiness at work? ☐ No ☐ Yes	

Please use the following scale (Epworth Sleepiness Scale) to choose the most appropriate description for each situation. The questions refer to your usual way of life in recent times. Even if you haven't done some of these things recently try to work out how they would have affected you.

9.4 How likely are you to doze off or fall asleep (rather than just feeling tired) in the following situations:	would never doze off (0)	slight chance of dozing (1)	moderate chance of dozing (2)	high chance of dozing (3)
• Sitting and reading	☐	☐	☐	☐
• Watching TV	☐	☐	☐	☐
• Sitting inactive in a public place (e.g. a theatre or a meeting)	☐	☐	☐	☐
• As a passenger in a car for an hour without a break	☐	☐	☐	☐
• Lying down to rest in the afternoon when circumstances permit	☐	☐	☐	☐
• Sitting and talking to someone	☐	☐	☐	☐
• Sitting quietly after a lunch without alcohol	☐	☐	☐	☐
• In a car, while stopped for a few minutes in the traffic	☐	☐	☐	☐

Doctor comments

10. Do you smoke or have you ever been a smoker?	
☐ No	
☐ Ex-smoker	Quit date:
☐ Yes	Number of cigarettes per day:

Doctor comments

11. Have you ever used illicit drugs? ☐ No ☐ Yes

Doctor comments

PART C – Worker's declaration

Worker's declaration – management of health information

I,	*(print name)*

certify that I have read and understood the above statement concerning the health information provided in this document.

Signature:	Date:

(To be completed by the worker in the presence of the health professional after completing the questionnaire)

I,	*(print name)*

certify that to the best of my knowledge the information provided by me is true and correct.

Signature of worker:	

Signature of doctor:	Date:

Rail Worker's Name:

Name of rail transport operator:

Rail Safety Worker Health Assessment
Category 3
Worker Notification and Health Questionnaire

CONFIDENTIAL:
FOR PRIVACY REASONS THE COMPLETED FORM MUST BE RETAINED BY THE AUTHORISED HEALTH PROFESSIONAL (AHP) AND NOT RETURNED TO THE RAIL TRANSPORT OPERATOR (RTO) OR CONTRACTING FIRM

- You are required to attend a health assessment as part of your employment, to assess your fitness for rail safety work. The health assessment must be completed by *(date)* to ensure that you are able to carry out/commence normal duties. The assessment will be conducted by an Authorised Health Professional (AHP).
- Please complete the enclosed questionnaire and provide it to the AHP. The last page of the questionnaire must be signed by you in the presence of the AHP.
- Please take to the appointment: glasses, hearing aid or any other aids required for conduct of your work; all medications that you are currently taking or a list of such medications; and photo identification.
- The health assessment may include a drug and alcohol test (at Pre-employment or Triggered Health Assessment if indicated). If you return a positive drug or alcohol test you will be certified Temporarily Unfit until such time as you have complied with your RTO's drug and alcohol policy requirements.
- The AHP may ask your permission to speak to your general practitioner or treating specialist. If you agree, the AHP will ask you to sign a document providing written consent to such contact.
- If the AHP finds or suspects something is wrong with your health that you did not know about, they will ask your permission to inform your own doctor. The examining doctor will not treat any medical condition but will give you a letter to take to your own doctor.
- If the AHP finds that you do not meet all relevant medical criteria, your supervisor at the RTO or contracting firm will discuss with you the appropriate actions to be taken.

Disclosure of health information – please read carefully and sign the declaration at the end of the form to indicate you understand how health information is reported, stored and accessed.

In line with privacy and health records legislation, the AHP retains and keeps confidential all detailed medical information relating to your health assessment including your test results and the completed record of clinical findings. They do not disclose this information to your RTO or contracting firm unless you provide specific written authorisation to do so. The AHP only sends the completed health assessment report to indicate your fitness for rail safety work.

The exception to the above is that the Chief Medical Officer (CMO) or a person authorised by the CMO may access your full medical records and test results to aid in the management of your health in relation to your work, or for audit purposes, or to compile statistics. The CMO or authorised representative must maintain the confidentiality of these records and ensure they are not made available to, or discussed with, any person within your RTO or contracting firm.

Other than the above, your personal information will not be disclosed to any other person or organisation without your written permission, except:

- a notifiable disease is diagnosed which must by law, be reported to the State authorities, or
- a report is subject to subpoena or a statutory disclosure requirement, or
- the rail safety regulator (or another person) is required to conduct an inquiry into a railway accident or incident, or
- a person or organisation is appointed to conduct an audit of the AHP's compliance with the National Standard for Health Assessment of Rail Safety Workers, or
- de-identified statistical information related to your health assessment is compiled for research purposes, or
- there is another lawful purpose.

You have the right to access your health records including those held by the AHP and the reports held by the rail transport operator.

Please sign the declaration at the end of the form to indicate your understanding of how your health information will be managed.

PART A – Rail transport operator to complete

Date of request:

Worker / Applicant details

Family name: | First names:

Employee no: | Date of birth:

Risk Category: ☐ Category 1 ☐ Category 2 ☐ Category 3

Health assessment appointment details

Doctor / practice:

Address: | Phone:

Appointment date: | Time:

PART B – Health Questionnaire – Worker / Applicant to complete

This questionnaire must be completed to help assess your fitness for rail safety duties. Please answer the questions by ticking the appropriate box and providing the detail requested. If you are not sure, leave the question blank and ask the Authorised Health Professional (AHP) what it means. The AHP will ask you more questions during the assessment.

			Doctor comments
1.	Since your last assessment, have you experienced difficulty completing any tasks required for your work (e.g. walking on ballasts, hearing train instructions)? If yes, please describe:	☐ No ☐ Yes	
2.	Since your last assessment, have you experienced persistent symptoms such as feeling tired, drained or exhausted? If yes, please describe:	☐ No ☐ Yes	
3.	Since your last assessment, have you been involved in any accidents or near misses at work? If yes, please describe:	☐ No ☐ Yes	
4.	Since your last assessment, have you tested positive for drugs or alcohol (at work or elsewhere e.g., driving)? If yes, please describe:	☐ No ☐ Yes	

5. Illness / injury	Doctor comments
Have you ever suffered a blackout or loss of consciousness?	☐ No ☐ Yes
Do you have any heart disorder?	☐ No ☐ Yes
Do you have diabetes?	☐ No ☐ Yes
Do you have epilepsy or have you ever experienced a seizure or fit?	☐ No ☐ Yes
Have you had any cognitive disorder or head injury?	☐ No ☐ Yes
Have you had any psychiatric or psychological disorder?	☐ No ☐ Yes
Do you have any loss of hearing?	☐ No ☐ Yes
Do you have any difficulty seeing or any vision disorder?	☐ No ☐ Yes
Do you have any limitation walking?	☐ No ☐ Yes
Do you drink alcohol? If yes, how many days per week do you drink alcohol and how many standard drinks do you have on each occasion?	☐ No ☐ Yes
Have you ever used illicit drugs?	☐ No ☐ Yes
Have you had any other serious illnesses? Please describe	☐ No ☐ Yes
List all medications that you take	

PART C – Worker's declaration

Worker's declaration

I, *(print name)*

certify that I have read and understood the above statement concerning the health information provided in this document.

Signature: Date:

(To be completed by the worker in the presence of the health professional after completing the questionnaire)

I, *(print name)*

certify that to the best of my knowledge the information provided by me is true and correct.

Signature of worker:

Signature of doctor: Date:

6.2.4 Record for Health Professional

The Record for Health Professionals is a tool that guides the health assessment process. It provides a standard format for recording the results of the assessment, which should then be filed by the Authorised Health Professional in the worker/patient's medical history. There is a version of this form for Category 1 and Category 2 workers, and a version for Category 3 workers.

The form should be used as follows:

- **Part A.** The rail transport operator completes Part A and includes the form with the Request and Report Form (Section 6.2.2) and forwards it to the Authorised Health Professional.
- **Part B.** The worker/patient is able to provide signed consent for the Authorised Health Professional to contact their treating doctor.
- **Part C & D.** The Authorised Health Professional records the results of the clinical examination.
- **Part D** summarises the findings and actions.

The completed Record for Health Professionals is not to be forwarded to the rail transport operator for reasons of privacy. The Authorised Health Professional should summarise the results in terms of fitness for duty on the Request and Report Form (Section 6.2.2).

Rail Worker's Name:

Name of rail transport operator:

Rail Safety Worker Health Assessment
Category 1 and 2
Record for Health Professional

CONFIDENTIAL:
FOR PRIVACY REASONS THE COMPLETED FORM SHOULD BE RETAINED BY THE AUTHORISED HEALTH PROFESSIONAL AND NOT RETURNED TO THE RAIL TRANSPORT OPERATOR

PART A – Rail transport operator to complete

1. Worker / Applicant details

Family name: First names:

Employee no: Date of birth:

Risk Category: ☐ Category 1 ☐ Category 2

2. Category 1 pathology tests

Conducted at:

Date of appointment:

PART B – Patient consent – Worker to complete

(If required to consult with general practitioner or other treating doctor)

I, *(print name)* ☐ give ☐ do not give *(please indicate)*

permission for the examining health professional to contact my treating doctor(s) to discuss or clarify information relating to my current health status.

Signature:

(1) Name of doctor: (2) Name of doctor:

Phone: Phone:

Rail Worker's Name:

PART C – Examination record – Authorised Health Professional to complete

1. Cardiovascular system *(refer Section 4.2)*

Medical comments

Including comments regarding:
- *management of existing cardiovascular conditions and*
- *further investigations (record all requirements for further investigations in Section 12)*

1.1 Cardiovascular issues identified in Health Questionnaire or general history? ☐ Yes ☐ No

1.2	Blood pressure	Repeated (if necessary)	**Acceptable***
	Systolic	Systolic	< 170 mmHg
	Diastolic	Diastolic	< 100 mmHg
1.3	Pulse rate	bpm ☐ Regular	☐ Irregular
1.4	Heart sounds	☐ Normal	☐ Abnormal
1.5	Peripheral pulses	☐ Normal	☐ Abnormal
1.6	Resting ECG (LVH) (Category 1 only)	☐ Normal	☐ Abnormal

1.7 **Calculation of Cardiac Risk Level** (refer Cardiovascular chapter) (Category 1 only) (www.cvdcheck.org.au)

Medical comments

Including other considerations e.g., physical activity, diet, symptoms, family history and past history, comorbidities, work conditions.

Risk data:

Age / sex		
Smoker: Y / N		
Blood pressure (systolic)		
Cholesterol	- TOTAL	
	- HDL	
HbA1c (diabetes) initial (greater than 48 mmol/mol (6.5%) regard as diabetic		
HbA1c repeat (if required)		
Resting ECG (LVH)		

Further investigation:

Does cardiac risk level warrant further investigation? (StressEchoCG or CAC Score) ☐ Yes ☐ No

2. Diabetes *(refer Section 4.3)*

Medical comments

Including comments regarding:
- *management and control of existing diabetes*
- *further investigations (record all requirements for further investigations in Section 12)*

2.1 Diabetes identified in Health Questionnaire or general history ☐ Yes ☐ No

2.2 **Diabetes screen – Category 1** *(see below for existing diabetes)*

Diabetic based on HbA1c (above) ☐ Yes ☐ No

Diabetic based on self-report ☐ Yes ☐ No

2.3 **Existing diabetes**

Satisfactory control? ☐ Yes ☐ No

Clarke questionnaire: Less than 4 'R' responses ☐ Yes ☐ No

3. Neurological system *(refer Sections 4.4, 4.5 and 4.6)*

Medical comments

Including comments regarding:
- *nature and management of existing neurological conditions*
- *further investigations (record all requirements for further investigations in Section 12)*

3.1 Neurological issues or cognitive impairment identified on Health Questionnaire or general history? ☐ Yes ☐ No

3.2 Is there any presence of tremor? ☐ Yes ☐ No

3.3 Balance (Romberg's test) ☐ Normal ☐ Abnormal

(A pass requires the ability to maintain balance while standing with shoes off, feet together side by side, eyes closed and arms by side, for thirty seconds)

Rail Worker's Name:

4. Neurodevelopmental disorders *(refer Section 4.7)*

Medical comments

4.1 Neurodevelopmental issue (ADHD, autism or other developmental condition) identified on Health Questionnaire or general history? ☐ Yes ☐ No

Including comments regarding:

- *management of existing neurodevelopmental disorders and*
- *further investigations (record all requirements for further investigations in Section 12)*

5. Psychological health *(refer Section 4.8)*

Medical comments

5.1 Psychological issue identified on Health Questionnaire or general history? ☐ Yes ☐ No

5.2 Anxiety & depression screen – K10 questionnaire

Administer verbally

In the past 4 weeks about how often did you:	None of the time **(1)**	A little of the time **(2)**	Some of the time **(3)**	Most of the time **(4)**	All of the time **(5)**
Feel tired out for no good reason?	☐	☐	☐	☐	☐
Feel nervous?	☐	☐	☐	☐	☐
Feel so nervous that nothing could calm you down?	☐	☐	☐	☐	☐
Feel hopeless?	☐	☐	☐	☐	☐
Feel restless or fidgety?	☐	☐	☐	☐	☐
Feel so restless you could not sit still?	☐	☐	☐	☐	☐
Feel depressed?	☐	☐	☐	☐	☐
Feel that everything was an effort?	☐	☐	☐	☐	☐
Feel so sad that nothing could cheer you up?	☐	☐	☐	☐	☐
Feel worthless?	☐	☐	☐	☐	☐

K10 questionnaire Score:

☐ Zone I (10-18)	☐ Fit for Duty
☐ Zone II (19-24)	☐ Fit for Duty
☐ Zone III (25-29) – Refer to GP and/or counselling	☐ Fit for Duty Subject to Review
	☐ Temporarily Unfit for Duty
☐ Zone IV (35-50) – Refer for assessment	☐ Temporarily Unfit for Duty

5.3 Is attitude, speech and behaviour appropriate? ☐ Yes ☐ No

Rail Worker's Name:

6. Sleep *(refer Section 4.9)*

6.1 Sleep disorder identified on Health Questionnaire or general history? ☐ Yes ☐ No

6.2 Sleep apnoea risk assessment

Clinical Measures

Calculate BMI (*kg*) / (*m*)^2 = kg/m2

Neck circumference cm

STOP-Bang questionnaire

	Questions to be delivered verbally			*SCORE*
S	Does the worker snore?	☐ Yes	☐ No	
T	Does the worker often feel tired, fatigued or sleepy during the daytime?	☐ Yes	☐ No	
O	Has anyone observed the worker stop breathing or choking/gasping during sleep?	☐ Yes	☐ No	
P	Is the workers under treatment for high blood pressure? (see above)	☐ Yes	☐ No	
B	BMI ≥ 35? (see above)	☐ Yes	☐ No	
A	Age ≥ 50?	☐ Yes	☐ No	
N	Neck circumference ≥ 40cm?	☐ Yes	☐ No	
G	Gender male?	☐ Yes	☐ No	

TOTAL SCORE

☐ STOP-Bang score < 3	☐ Fit for Duty
☐ STOP-Bang score ≥ 3	☐ Fit for Duty Subject to Review OR
	☐ Temporarily Unfit for Duty evidence of sleepiness

6.3 Assessment of daytime sleepiness – Epworth Sleepiness Scale

ESS Score *(From Q9.3 of the Health Questionnaire)*

☐ Score 0-10		
☐ **No** other symptoms / risk factors (STOP-Bang <3) / incidents	☐ Fit for Duty	
☐ **Plus** other symptoms / risk factors (STOP-Bang ≥3) / incidents	☐ Fit for Duty Subject to Review OR	
	☐ Temporarily Unfit for Duty	
☐ Score 11-15		
☐ **No** other symptoms / risk factors (STOP-Bang <3) / incidents	☐ Fit for Duty	
☐ **Plus** other symptoms / risk factors (STOP-Bang ≥3) / incidents	☐ Fit for Duty Subject to Review OR	
	☐ Temporarily Unfit for Duty	
☐ Score ≥ 16	☐ Temporarily Unfit for Duty	

Medical comments

Including comments regarding:

- *management of existing sleep disorders and*
- *further investigations including polysomnography, specialist referral, MWT if indicated (record all requirements for further investigations in Section 12)*

Rail Worker's Name:

7. Substance misuse *(refer Section 4.10)*

Medical comments

Including comments regarding:

- *management of existing substance misuse and*
- *further investigations (record all requirements for further investigations in Section 12)*

7.1 Substance misuse issue identified on Health Questionnaire or general history? ☐ Yes ☐ No

7.2 Alcohol misuse screening

AUDIT Score *(From Q8 of the Health Questionnaire)*

☐	Zone I (0-7)	☐	Fit for Duty
☐	Zone II (8-15)	☐	Fit for Duty
☐	Zone III (16-19) – Brief counselling	☐ ☐	Fit for Duty subject to Review OR Temporarily unfit
☐	Zone IV (20-40) – Diagnostic evaluation and treatment	☐	Temporarily unfit

7.3 Drug screen

Not to be routinely conducted for Periodic Health Assessments. May be conducted as per relevant Australian standard for change of risk category, all new applicants and for triggered assessments if specifically ordered.

7.4 Existing substance misuse issue or other clinical findings? ☐ Yes ☐ No

Senses and task specific requirements

8. Hearing *(refer Section 4.11)*

Medical comments

Including comments regarding:

- *management of existing hearing issues and*
- *further investigations (record all requirements for further investigations in Section 12)*

8.1 Hearing issues identified on Health Questionnaire or general history? ☐ Yes ☐ No

8.2 Are hearing aids worn? ☐ Yes ☐ No

8.3 Results for pure tone audiometry

Category 1 or 2 workers with hearing aids to be tested as per Section 4.11

	0.5 kHz	1.0 kHz	1.5 kHz	2.0 kHz
Right				
Left				

	3.0 kHz	4.0 kHz	6.0 kHz	8.0 kHz
Right				
Left				

Hearing loss averaged over 0.5, 1, 2 and 4 kHz in better ear

Further investigation:

Is hearing speech in noise required? ☐ Yes ☐ No

Refer if hearing loss is ≥ 20 dB averaged over 0.5, 1, 2 and 4 kHz in better ear

Is hearing speech in quiet required? ☐ Yes ☐ No

Refer if hearing loss is ≥ 35 dB over 0.5, 1, 2 and 4 kHz

Rail Worker's Name:

9. Vision *(refer Section 4.12)*

9.1 Vision issues identified on Health Questionnaire or general history? ☐ Yes ☐ No

9.2 Visual aids

Are glasses worn? ☐ Yes ☐ No

Are contact lenses worn? ☐ Yes ☐ No

9.3 Visual acuity assessment

Uncorrected		Corrected	
R	**L**	**R**	**L**
6 /	6 /	6 /	6 /

Acceptable Better eye 6/9 Worse eye 6/18

9.4 Visual fields *(Confrontation to each eye)* ☐ Normal ☐ Abnormal

9.5 Colour vision ☐ Required ☐ Not required

If required conduct Ishihara (≥ *3 errors / 12 screening plates is a fail)* ☐ Pass ☐ Fail

If fail *(as appropriate for task):*

RailCorp Lantern (Point sources) OR ☐ Pass ☐ Fail

Farnsworth D15 (Flat surfaces) ☐ Pass ☐ Fail

Medical comments

Including comments regarding:

- *management of existing vision issues and*
- *further investigations (record all requirements for further investigations in Section 12)*

10. Musculoskeletal *(refer Section 4.13)*

10.1 Musculoskeletal issues identified on Health Questionnaire or general history? ☐ Yes ☐ No

10.2 Musculoskeletal assessment

Cervical spine movements	☐ Normal	☐ Abnormal
Back movements	☐ Normal	☐ Abnormal
Upper limbs		
Appearance	☐ Normal	☐ Abnormal
Joint movements	☐ Normal	☐ Abnormal
Lower limbs		
Appearance	☐ Normal	☐ Abnormal
Joint movements	☐ Normal	☐ Abnormal
Gait	☐ Normal	☐ Abnormal

10.3 Functional / practical assessment required? ☐ Yes ☐ No

Medical comments

Note musculoskeletal requirements are task dependent.

Including comments regarding:

- *management of existing musculoskeletal conditions and*
- *further investigations (record all requirements for further investigations in Section 12)*

Rail Worker's Name:

PART D – Relevant clinical findings and action

Note comments on any relevant findings detected in the questionnaire or examination, making reference to the requirements of the standard.

11. Significant findings

12. Further investigations / referral required

13. Fitness for duty classification and explanation

Tick the appropriate box coinciding with the conclusion of your assessment and provide appropriate details in the box below.

- ☐ Fit for Duty Unconditional
- ☐ Fit for Duty Subject to Review (describe the reasons and nominate date for review)
- ☐ Temporarily Unfit for Duty (describe reasons, contact the rail transport operator immediately)
- ☐ Permanently Unfit for Duty (describe the reasons)

14. Consent

Was the worker's GP contacted (with their consent)?

☐ Yes ☐ No

Provide brief notes regarding discussion with the GP

15. Other clinical notes

Name of Doctor	Signature of Doctor	Date

Rail Worker's Name:

Name of rail transport operator:

Rail Safety Worker Health Assessment
Category 3
Record for Health Professional

CONFIDENTIAL:
FOR PRIVACY REASONS THE COMPLETED FORM SHOULD BE RETAINED BY THE AUTHORISED HEALTH PROFESSIONAL AND NOT RETURNED TO THE RAIL TRANSPORT OPERATOR

PART A – Rail transport operator to complete

1. Worker / Applicant details

Family name: | First names:

Employee no: | Date of birth:

PART B – Patient consent – Worker to complete

(If required to consult with general practitioner or other treating doctor)

I, *(print name)* ☐ give ☐ do not give *(please indicate)*

permission for the examining health professional to contact my treating doctor(s) to discuss or clarify information relating to my current health status.

Signature:

(1) Name of doctor: | (2) Name of doctor:

Phone: | Phone:

Rail Worker's Name:

PART C – Examination record – Health professional to complete

1. Hearing (Audiometry results) *(refer Section 5.2)*

1.1 Hearing issues identified on Health Questionnaire or general history? ☐ Yes ☐ No

1.2 Are hearing aids worn? ☐ Yes ☐ No

1.3 Results for pure tone audiometry

	0.5 kHz	1.0 kHz	1.5 kHz	2.0 kHz
Right				
Left				

	3.0 kHz	4.0 kHz	6.0 kHz	8.0 kHz
Right				
Left				

Hearing loss averaged over 0.5, 1, 2 and 4 kHz in better ear

Refer if hearing loss is ≥ 35 dB over 0.5, 1, 2 and 4 kHz

Medical comments

Including comments regarding:

- *management of existing hearing issues and*
- *further investigations (record all requirements for further investigations in Section 6)*

2. Vision *(refer Section 5.3)*

2.1 Vision issues identified on Health Questionnaire or general history? ☐ Yes ☐ No

2.2 Visual aids

Are glasses worn? ☐ Yes ☐ No

Are contact lenses worn? ☐ Yes ☐ No

2.3 Visual acuity

Uncorrected		Corrected	
R	**L**	**R**	**L**
6 /	6 /	6 /	6 /

Acceptable Better eye 6/12

2.4 Visual fields *(Confrontation to each eye)* ☐ Normal ☐ Abnormal

Medical comments

Including comments regarding:

- *management of existing vision issues and*
- *further investigations (record all requirements for further investigations in Section 6)*

3. Mobility *(refer Section 5.4)*

3.1 Musculoskeletal issues identified on Health Questionnaire or general history? ☐ Yes ☐ No

3.2 Musculoskeletal assessment

Cervical spine movements	☐ Normal	☐ Abnormal
Back movements	☐ Normal	☐ Abnormal
Lower limbs:		
Appearance	☐ Normal	☐ Abnormal
Joint movements	☐ Normal	☐ Abnormal
Gait	☐ Normal	☐ Abnormal
Romberg's test	☐ Normal	☐ Abnormal

(A pass requires the ability to maintain balance while standing with shoes off, feet together side by side, eyes closed and arms by side, for thirty seconds)

Medical comments

Including comments regarding:

- *management of existing mobility issues and*
- *further investigations (record all requirements for further investigations in Section 6)*

4. Other conditions likely to affect safety around the track *(refer to responses in Health Questionnaire, refer Section 5.5)*

Provide details regarding other conditions present that may impact of safety, including blackouts, cardiovascular conditions, diabetes, neurological conditions, psychiatric and substance misuse.

PART D – Relevant clinical findings and action

Note comments on any relevant findings detected in the questionnaire or examination, making reference to the requirements of the standard.

5. Significant findings

6. Further investigations / referral required

7. Fitness for duty classification and explanation

Tick the appropriate box coinciding with the conclusion of your assessment and provide appropriate details in the box below.

- ☐ Fit for Duty Unconditional
- ☐ Fit for Duty Subject to Review (describe the reasons and nominate date for review)
- ☐ Temporarily Unfit for Duty (describe the reasons and contact the rail transport operator immediately)
- ☐ Permanently Unfit for Duty (describe the reasons)

8. Consent

Was the worker's GP contacted (with their consent)?

☐ Yes ☐ No

Provide brief notes regarding discussion with the GP

9. Other clinical notes

Name of Doctor	Signature of Doctor	Date

6.3 Transition arrangements

This section will be drafted following input from the public consultation process.

7 Index

To be included in the final version.

National Transport Commission
Level 3/600 Bourke Street
Melbourne VIC 3000
Ph: (03) 9236 5000
Email: enquiries@ntc.gov.au
www.ntc.gov.au