ENERGY SAFETY CANADA

FIT FOR DUTY

A Program Development Guideline

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Setting the standard in oil and gas safety

ENDORSEMENT

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- Petroleum Services Association of Canada (PSAC)

ABOUT ENERGY SAFETY CANADA

Energy Safety Canada is the oil and gas industry's advocate and leading resource for the continuous improvement of safety performance. Our mission is to help companies achieve their safety goals by providing practices, assessment, training, support, metrics and communication.

AVAILABILITY

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DISCLAIMER

This document is intended to be flexible in application and provide guidance to users rather than act as a prescriptive solution. Recognizing that one solution is not appropriate for all users and situations, it presents generally accepted guidelines that apply to industry situations, as well as recommended practices that may suit a company's particular needs. While we believe that the information contained herein is reliable under the conditions and subject to the limitations set out, Energy Safety Canada does not guarantee its accuracy. The use of this document or any information contained will be at the user's sole risk, regardless of any fault or negligence of Energy Safety Canada and the participating industry associations.

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PREFACE

PURPOSE

A program development guide provides assistance on how companies can build their own program. As such, every company's fit for duty program may be slightly different to reflect their work environment and associated risks and challenges but should take into consideration the various components of a fit for duty program discussed in this guide.

HOW TO USE THIS GUIDELINE

This guideline is intended for health and safety, human resources, occupational nurses and physicians and other company personnel that require assistance in the development, maintenance and on-going improvement of fit for duty within their respective companies.

Fit for duty includes a variety of components that may already be addressed in a company's programs such as Fatigue Management and Alcohol and Drug Management. As such, fit for duty is an umbrella approach that encompasses all these various components. It is not the approach of this guideline to re-work these various components, but rather to bring them all together into a comprehensive approach to managing fit for duty.

PROJECT SCOPE AND LIMITATIONS

This guide has been prepared to provide general guidance. Fit for duty is an evolving concept and therefore this guideline should not be viewed as a complete repository of information on fit for duty, but rather as a good place to start in the development of a comprehensive program.

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1.0 Introduction

This guideline is designed to assist employers in the development of their fit for duty program. Fit for duty refers to employees' ability to safely undertake the demands of their jobs. Fit for duty focuses a collaborative effort by employers and employees to ensure the worker is fit for the job and the work environment is fit for the worker. When employees are not fit for duty, a variety of terms can be used to describe this such as impaired, unfit for work and not fit for duty. For the purposes of clarity this guideline will use "unfit for work" throughout the remainder of the guideline as appropriate.

Fitness for work can affect behaviour and the ability to perform job tasks safely. Although not captured in data such as Workers Compensation Board injury and illness data, fitness for work is a known causal factor in incidents. For example, an employee may show up for work distracted, upset, groggy or uncoordinated for any of a number of reasons, such as the effects of substance use from the night before; side effects of medication for a physical injury, illness or psychological disorder (e.g., depression); fatigue caused by caring for a new baby or a sick child; or distress because a spouse has just been diagnosed with cancer.

To reduce this impact, workplaces should have appropriate mechanisms in place to ensure that workers have the capacity to safely conduct work, provide clear guidance to all parties, and apply policies and programs fairly and consistently.

1.1 Definition

Fit for duty is defined as a condition in which an employee's physical, physiological and psychological state enables them to continuously perform assigned tasks safely.

This definition includes:

- Physical requirements - physical demands, strength, vision, hearing, etc.
- Physiological conditions - fatigue, stress, alcohol and drugs, workplace exposures, etc.
- Psychological condition - commitment, risk tolerance, emotional state, culture, phobias, etc.

Fit for duty can be thought of as a house with physical, physiological and psychological pillars all supported by a base of effective communication (see Figure 1).

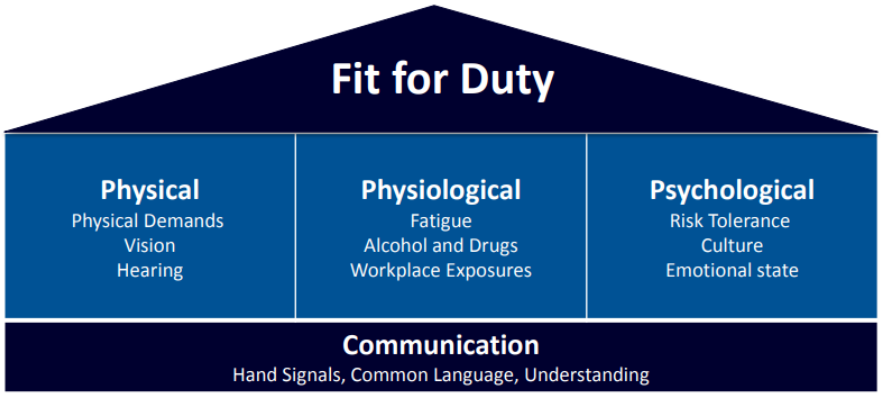

Figure 1: Fit for Duty House and Pillars

1.2 Physical

The physical pillar refers to the body itself and includes physical health, body weight and height, medical conditions such as high blood pressure, diabetes, vision and hearing.

1.3 Physiological

The physiological pillar refers to how the body functions and includes fatigue, use of alcohol and drugs and workplace exposures. This pillar is about interaction and effects that occur in the complex systems of the body.

1.4 Psychological

The psychological pillar is about a worker's mental state and includes a variety of factors such as risk tolerance, culture, emotional state and mental focus. This is about what is going on in the worker's mind, including distractions, stressors, violence and harassment.

1.5 Communication

Communication is the foundation of fit for duty because without it, workers and employers cannot manage the risks (threats) to fitness for work. Programs need to be communicated to workers and supervisors so that these risks can be managed in accordance with company expectations and legal requirements. Often, communication is an integral component of the identification of an unfit worker. This is particularly true for risks that are more difficult to measure such as stress, mental health, etc. In addition, collection of fit for duty leading and lagging indicators should be used as part of a continuous improvement effort.

2.0 Regulations and Standards

The majority of jurisdictions across Canada have enacted legislation around the protection of the worker. However, this legislation may or may not be specific to any one aspect of fit for duty.

2.1 Human Rights Legislation

Each province determines which rights are covered under their legislation based on the Canadian Act. In general, the legislation is intended to ensure equal opportunity to all persons such that no one is discriminated against based on protected grounds; these include sex, sexual orientation, age, marital status, race, creed, colour, disability, politics and religious beliefs.

2.1.1 Safety Sensitive

The *Canadian Model* for Providing a Safe Workplace (Canadian Model) Version 6.0, a best practice guide from the Construction Owners Association of Canada and Energy Safety Canada discusses safety sensitive.

Safety sensitive is used in the Canadian Model to identify job positions that, due to the hazardous nature of their work through activities or environment, have greater risk of resulting in a loss. Examples of loss may include: fatalities, lost time or life-altering injuries, equipment damage, environmental impact, financial loss, reputation harm.

Workers in such positions are held to a higher standard and need to be fit for duty or there could be serious consequences for themselves, other workers, the organization, the environment and the public.

It is the responsibility of the organization to identify which positions are safety sensitive. Appendix C in the *Canadian Model* guides employers through the process of identifying and summarizing safety sensitive positions. If employers choose to use an alternate method of assessment, it should meet the same level of thoughtfulness, reasonableness and defensibility.

Knowing which positions are safety sensitive is important for situations when an employee notifies their employer/supervisor they may be unfit for work (for example, taking a medication that may affect their ability to perform the job safely). The employer needs to assess the worker's ability to work safely, and in the short-term, may re-assign the individual to a non-safety-sensitive position or establish conditions and limitations while the worker remains unfit for duty.

2.1.2 Duty to Accommodate

Employers have a duty to accommodate employees who are not fit for duty up to the point of undue hardship to the company. Accommodation means making changes to certain rules, standards, policies, workplace cultures and physical environments to ensure they do not have a negative effect on a person because of the person's mental or physical disability (medical condition) religion, gender or any other protected ground.

Accommodation is a way to balance the diverse needs of individuals and employers. For example, a person may be unable to work on a particular day because it conflicts with his or her religious beliefs. In such cases, the employer must try to resolve the conflict in a way that is agreeable to both parties

Accommodation can be initiated through a request from the employee or through the employer's duty to inquire if an accommodation is needed (e.g. assess this need for a worker with chronic absenteeism). Accommodation is developed based on restriction and limitations specific to a case (preferably as recommended by an attending physician if for medical concerns) and requires the active participation and agreement of all involved parties such as employee, employer, employee representative (if applicable), etc.

2.1.3 Bona fide Occupational Requirement

Fit for duty must be applied so that requirements of the program are essential to the job, or what are referred to as bona fide occupational requirements. Creating a requirement that is not directly linked with the work can place companies in a precarious position relative to various laws, in particular, human rights laws.

2.2 Duty of Care

Duty of care is a general legal concept relating to the level of care that individuals and organizations owe to one another. Duties are often connected to legislated requirements; however, the duty of care is not a static concept and a specific duty of any one individual or group can change depending on the circumstances. For example, the duty of care expected of a large, sophisticated organization may be more onerous than that expected of a small company. As such, all companies should assess their fit for duty program in accordance with what duty of care is required of them and manage accordingly.

2.3 Privacy Legislation

Privacy law is complex and involves several Federal Acts and sometimes Provincial Acts depending on the province and context. As it pertains to the oil and gas industry, the relevant legislation is the Federal Personal Information Protection and Electronics Documents Act (PIPEDA) and the following acts within the two Western provinces that have their own legislation:

- Alberta's Personal Information Protection Act
- British Columbia's Personal Information Protection Act

In general, information and documentation collected in relation to a worker's fitness for work, such as medical records, are confidential and must be protected. Organizations must obtain an individual's consent to collect, use or disclose that personal information and can only use it for the purposes for which it was collected. Individuals also have the right to access their personal information and challenge its accuracy.

Within the Western provinces such as Alberta, Saskatchewan and Manitoba, there are specific acts in relation to the protection of health information such as:

- Alberta Health Information Act (HIA)
- Saskatchewan Health Information Protection Act (HIPA)
- Manitoba Personal Health Information Act

2.4 Occupational Health and Safety Legislation

Various jurisdictions have fit for duty requirements either explicitly stated or implied; however, when they do explicitly state these requirements, they are often limited to alcohol and drugs and violence and harassment. A brief summary of some of these jurisdictional requirements is provided below. It is worth noting that every company has to assess the various legislative requirements applicable to their area and adjust their fit for duty program accordingly.

2.4.1 Alberta

Alberta does not specifically cite fit for duty or impairment within the Alberta Occupational Health and Safety Act, but does require employers, workers and supervisors to take reasonable care to protect the health and safety of the worker and other persons at or in the vicinity of the work site while the worker is working.

2.4.2 British Columbia

Within the British Columbia Occupational Health and Safety Regulation, there is a specific section (4.19) on impairment which indicates that workers with a physical or mental impairment which may impact their ability to safety perform assigned work must notify their supervisor and not conduct work. Specific to alcohol, drugs and other substances, Section 4.20 indicates similar language as in 4.19, but also indicates that a person must not enter or remain at a work site while their ability to work is affected by alcohol, drugs or other substances.

2.4.3 Saskatchewan, Manitoba and the Canadian Labour Code

Similar to Alberta, the jurisdictional requirements for Saskatchewan, Manitoba and the Canadian Labour Code have general duty requirements that require workers to protect their health and safety as well as that of other workers.

2.5 Life Saving Rules – Industry Accepted Standard

In the fall of 2018, Energy Safety Canada released an industry accepted standard on Life Saving Rules. This standard consists of 10 rules, one of which is fit for duty.

The fit for duty Life Saving Rule consists of the following:

- I will be physically and mentally in a state to perform my assigned duties
- I commit to not being under the influence of alcohol or drugs
- I will inform a supervisor immediately if I or a co-worker may be unfit for work

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Within Energy Safety Canada's *Life Saving Rule Explanation Guide* more clarity on this rule is provided in the form of additional guidance and roles and responsibilities of supervisors and workers.

3.0 Roles and Responsibilities

Fit for duty responsibilities span a large and diverse group within organizations and industry in general. As a result, human resources, occupational nurses, health and safety departments, legal counsel, etc. all have responsibilities in relation to fit for duty beyond the more traditionally viewed roles of workers, employers, supervisors, etc.

3.1 Prime Contractor/Owner

The prime contractor is responsible for:

- Developing and implementing a fit for duty policy and associated program in accordance with their duty of care legislative requirements.
- Communicating potential hazards and fit for duty requirements (pre-qualification, contract and work planning requirements, etc.) to employers and self-employed persons, including those that may impact fitness to work.
- Ensuring compliance with the applicable Occupational Health and Safety legislation.
- Maintaining confidentiality in accordance with privacy laws.

3.2 Employer

The employer is responsible for:

- Developing and implementing a fit for duty policy and associated program.
- Ensuring compliance with the applicable Occupational Health and Safety legislation.
- Identifying and assessing the risks associated with hazards that may result or contribute to an unfit worker.
- Implementing a hierarchy of controls for elimination or control of hazards.
- Communicating potential hazards, including those that may impact fitness to work.
- Providing adequate training and guidance to workers and supervisors on how to manage fitness for work.
- Maintaining confidentiality in accordance with privacy laws.

3.3 Supervisor

Supervisors are responsible for:

- Knowing how to recognize the signs of a worker who is not fit for duty.
- Intervening if they have reason to believe a worker may be unfit for work.
- Ensuring workers are capable of completing the assigned duties and have the necessary communication skills.
- Ensuring workers under their supervision are not subject to harassment or violence, as that may impact their fitness for work.
- Ensuring all incidents, including harassment or violence, are investigated and corrective action is taken.
- Being competent in the company programs, including the Employee Assistance Program, that are designed to support workers.
- Maintaining confidentiality in accordance with privacy laws.

3.4 Worker

Workers have a duty to themselves, other workers, members of the public and their employer. As such, workers are responsible for:

- Being fit for duty at the beginning of and throughout their workday or shift, including when scheduled for on-call work.
- Notifying their employer of any physical, physiological or psychological state that may influence their ability to perform work safely.
- Ensuring they are not under the influence of legal or illegal drugs, alcohol, or substances that influence their ability to perform their assigned duties.
- Ensuring they do not participate in harassment or violence and notify their supervisor if they observe these unacceptable behaviours.
- Participating in various fit for duty assessments, such as pre-placement or pre-assignment, on-going, post-incident and random as required in accordance with company policies.

3.5 Human Resources, Occupational Health and Health and Safety

With violence and harassment being included in occupational health and safety legislation, some subjects that were traditionally thought of as human resources or occupational health (nurses and physicians) issues may now be managed by health and safety professionals within their respective organizations. As such, the following responsibilities may be assigned to different groups depending on company structure, etc.

Human Resources, Occupation Health (nurses and physicians) and Health and Safety are responsible for:

- Ensuring the fit for duty program is developed, implemented and maintained.
- Working collaboratively with other parties in the successful operation of the fit for duty program, such as providing health assessments as required by the fit for duty program.
- Responding to questions or concerns related to the interpretation of the fit for duty program.
- Working with the Joint Workplace Health and Safety Committee to share learnings, implement corrective actions and maintain confidentially.
- Assisting in the investigation and reporting of incidents.
- Collecting and tracking fit for duty key performance indicators (KPIs).
- Maintaining confidentiality in accordance with privacy laws.

3.6 Legal Counsel

Legal Council is responsible for:

- Providing advice to the employer on compliance with existing regulatory requirements such as Human Rights legislation, Privacy legislation, OHS legislation, etc.

3.7 Unions

Unions are responsible for:

- Work co-operatively with all stakeholders to promote the health protection and health promotion of their members.
- Establishing collective agreements that are inclusive of fit for duty.
- Establishing processes for resolving differences (arbitration).

3.8 Energy Safety Canada

Energy Safety Canada is responsible for:

- Developing and maintaining a fit for duty guideline and associated tools and resources.
- Supporting industry in fit for duty efforts.

4.0 Physical

The physical aspects of fit for duty can be thought of as the worker's body and includes: the physical demands of the job and whether a worker can meet them; body weight and height; and medical conditions such as high blood pressure, diabetes, vision and hearing. Workers' jobs and associated tasks may result in a variety of physical fit for duty challenges such as the following:

- Does not possess the strength to lift or move equipment.
- Does not have the cardiovascular strength (stamina) to meet the job requirements.
- Has uncontrolled or newly diagnosed high blood pressure or diabetes.
- Has degraded vision but has not identified it or is not willing to obtain assistance.
- Has not identified his or her deficient hearing, is not willing to obtain assistance such as use a hearing aid or cannot use the device for safety reasons.
- Uses an insulin pump (affixed to the worker's body under garments) and works in areas that could contain potentially flammable atmospheres.

The Construction Owners Association of Alberta (COAA), has published a best practice guideline that can provide additional insight into the more ergonomically related aspects of a functional capacity evaluation (FCE). This best practice guideline is entitled *Physical Demands Analysis, A Best Practice Guideline for Fitness Testing*.

5.0 Physiological

Physiological refers to how the body functions and includes fatigue, use of alcohol and drugs and workplace exposures. This pillar is about interaction and the effects that occur on the complex systems of the body.

5.1 Alcohol and Drug

Alcohol and drugs, both legal and illegal, can have profound impacts both on a worker's physical ability to perform work safely as well as their mind and, therefore, are categorized in the physiological pillar of fit for duty.

The Canadian Model, provides a common approach both for the construction and oil and gas industries.

A variety of prescriptive medicines can impact performance. Prescriptive medication can cause side-effects that may include:

- Drowsiness
- Nervous system stimulation
- Altered cognition
- Bleeding risks
- Vision changes
- Behaviour and judgement changes.

5.2 Fatigue

Energy Safety Canada has a program development guide on *Fatigue Risk Management*. Fatigue is defined as a state of reduced mental and physical alertness or functioning caused by sleep disruption or deprivation as a result of extended work hours, insufficient sleep, or the effects of sleep disorders, medical conditions or pharmaceuticals which reduce sleep or increase drowsiness.

Fatigue has a significant influence on health and safety both at work and at home. It slows reaction times and can result in poor decisions, more mistakes, decreased performance, and dangerous memory lapses. No one is immune to fatigue, and its effects have an impact on the fatigued person's workplace, family and community.

5.3 Workplace Exposures

Workplace contaminants and existing controls result in exposures that may affect workers health in different ways due to their physical condition and health. Not all workers are the same. Some workers have health or medical conditions that can make them more vulnerable to some workplace conditions.

A variety of exposure-related hazards and issues may exist in the workplace that impact a worker's fitness to work. These could include the following:

- Chemical exposures
- Biological hazards
- Physical health hazards

Energy Safety Canada provides a resource on *Controlling Chemical Hazards.* For additional information on types of exposure as they relate to fit for duty work please refer to Appendix A in this Fit for Duty Guideline.

5.4 Nutrition and Hydration

Inadequate nutrition and hydration can lead to low blood sugar and dehydration, which can have implications for a worker's ability to function such as interfering with cognitive ability, tremors, unconsciousness, etc.

6.0 Psychological

Psychological relates to the state of the mind, including emotional well-being. These aspects are often less definitive, but can be observed by everyone and include mental illness, stress, distraction, violence and harassment, respectful workplaces, executive functioning, etc.

6.1 Violence and Harassment

Violence and harassment in the workplace are unacceptable and illegal. Violence and harassment can have significant fit for duty impacts in the workplace. Workers who are subjected to violence or harassment will likely be guarded, on edge, have difficulty focusing and be at a higher risk of being in a workplace incident because their minds are not on task.

6.2 Respectful Workplace

To create a safe and respectful workplace, efforts must be consciously and deliberately planned and continuously monitored, and organizations must engage in quick responses when incidents occur. Studies show that when a company provides a full range of interventions and resources, the likelihood of negative workplace behaviour is reduced and damage to individuals when incidents do occur is minimized. Energy Safety Canada has a Program Development Guide on *Respect in the Workplace*.

6.3 Remote Work and Living

Working and living in a remote environment, such as a camp, can have psychological impacts on workers. Captive workers, like those in camps, may not have consistent access to their families because of limitations on access to reliable telecommunications in a private space. There may also be limitations to recreational and social activities that are typically part of a balanced lifestyle.

Working alone also presents a variety of risks, many of which are connected to existing health and safety legislation. However, psychological risks exist when working alone for prolonged periods; workers can develop overwhelming feelings of isolation, loneliness, or what is often referred to as “cabin fever”. All workers are at risk when working alone for prolonged periods; however, some workers are better suited to this type of work than others.

6.4 Culture

The culture of workers, groups of workers, a company or a country is a factor in the overall psychological health of the workplace. Culture is values, beliefs, risk tolerance and other often unwritten components that pervade attitudes and interactions within a group of individuals. If a worker is not a “good fit” for a specific culture, conflict will result.

It is important to note that culture differences are part of a diverse workforce and are therefore encouraged. Companies need to manage these differences thoughtfully in line with a respectful workplace program and human rights legislation.

6.5 Phobias

Phobias are extreme fears that cannot be rationally explained. Examples include fear of heights (acrophobia) or a fear of tight and cramped spaces (claustrophobia). These fears can impact a worker's ability to stay focused and safely conduct work, and can have physiological implications as well such as an upset stomach, fainting, etc.

6.6 Stress

Excessive stress levels or long periods of elevated stress can result in a variety of physical, physiological and psychological illnesses and behaviours. Every person responds to stress differently and some levels of stress are needed to provide motivation.

6.7 Executive Functioning

Executive functions are a set of cognitive (thinking) processes necessary for control of behaviour, including emotions, impulse control, problem solving, planning and organizing skills, self-awareness and self-control. Elevated emotions reduce the processing capacity of the brain. This can result in poor perception, processing and decision-making resulting in errors that may lead to incidents.

6.8 Understanding Human Error

Workers and supervisors make errors for a variety of reasons and it is important to categorize those errors so that effective strategies can be implemented. The Health and Safety Executive (HSE), a national regulator within the United Kingdom provides a resource entitled *Reducing Error and Influencing Behaviour*. It places errors into several categories. Those related to fit for duty are: slips in action, lapses of memory and rule-based mistakes.

Slips and lapses are made by competent and motivated people. Slips are described as "actions-not-as-planned". They involve doing the wrong thing, such as using the wrong wrench or picking the wrong part. Lapses involve not doing something, such as forgetting to carry out an action. Rule-based mistakes involve errors where the person believes they were doing the right thing. Rule-based mistakes occur when a person applies a rule or procedure that is not adequate for the situation. Often this could be the use of a rule-of-thumb that is not appropriate, and this type of error is often conducted in fast-thinking mode.

Fast thinking[1] is relying on habits or intuition; and this type of thinking is not always rational in that we often make fast decisions which make no sense to outside observers. When functioning in this head space, the brain is on autopilot and is making decisions unconsciously, which is sometimes referred to as fast thinking. Conversely, slow thinking is rational and methodical, and decisions are more likely to be conscientious, thoughtful and deliberate.

6.9 Mind on Task

Distraction in the workplace is a serious concern and can present in a variety of ways both within the worker and within the work environment. Traditionally, the focus has been on the work environment (such as not talking on your cell phone or texting while driving) and the design of workspaces so that complex and cognitively demanding work can be conducted.

There has been less focus on what is happening within the worker's head and situational awareness. A worker's focus can be clouded by family challenges, money problems or routine, mundane tasks.

7.0 Communication

Lack of communication is routinely identified as a causal factor in many health and safety incidents. Communication is the foundation of the fit for duty house because without it, the other pillars of physical, physiological, and psychological will not be effective.

7.1 Ability to Communicate

Most jobs require a base of communication skills. As such, understanding the nuances of the language in use at the work site is important when performing activities that could result in injury to a worker. In some situations, verbal or written communication is not practical and hand signals may be a more effective, provided those signals are agreed to and understood.

7.2 Common Language and Understanding

Even if workers can fluently speak, read and write in a commonly shared language, they may have difficulty communicating because they are not familiar with the specialized language, or jargon, being used.

[1] Kahneman, Daniel, Thinking, Fast and Slow. New York: Farrar, Straus and Giroux, 2011

Unfamiliarity with industry jargon and tribal knowledge -what is understood by most workers but is not captured in programs - can create significant barriers to effective communication. Examples of jargon in the oil and gas industry include “tripping pipe” in the drilling industry where pipe is being brought out of the hole or added to the hole, or “pigging” a pipeline where a device is used to clean or inspect the inside of the pipeline. Often this jargon is not part of the formal programs, and new workers can have difficulty understanding what is being said.

7.3 Signs and Symptoms of an Unfit Worker

Communication is an important tool for recognizing possible signs of an unfit individual. This includes both body language, what is said, and how it is said. Additional resources are available from the Canadian Centre of Occupational Health and Safety (CCOHS) on Impairment at Work. Possible signs of an unfit worker include the following:

Physical

- Deterioration in appearance or personal hygiene
- Unable to conduct the assigned work or it hurts to do so

Physiological

- Difficulty staying awake or persistent and excessive yawning
- Dizziness, slurred speech or inability to stand or walk straight

Psychological

- Irritability, inappropriate responses or behaviours
- Forgetfulness, judgement errors, difficulty staying focused

7.4 Responding to Indications of an Unfit Individual

It is not the role of the supervisor/employer to diagnose a medical issue, possible substance use or dependency problem. Their role is to identify reasonable signs that a worker may not be fit for duty and take the appropriate steps as per the company’s policy.

When an effective fit for duty policy is in place, supervisors are freed from taking on the role of drug enforcement police, medical experts or counsellors. If an employee arrives at work looking or behaving oddly, it is not the responsibility of supervisors to figure out why. Instead, they can focus simply on whether the employee is fit to perform their duties.

By using the fit for work approach, the employer can assist the employee in getting help and support the worker in the workplace. The end result is that the employee receives support and confidentiality is maintained.

This way of thinking makes it much easier for employers to intervene based on a worker's inability to do their job in a healthy and safe manner. Diagnosing the cause is left to professionals, such as physicians, counsellors, occupational health nurses, employee assistance programs (EAP) or employee and family assistance programs (EFAP). When a supervisor is notified that an employee may not be fit for duty, the first step is to enquire about or confirm the concern with the employee. This way, the supervisor can filter out any erroneous information, misunderstandings and other factors that may not be related to fit for duty.

Potential issues that could be identified range from alcohol and drug use, injury or illness, anxiety because of increased stress, personality conflicts between workers or supervisors, family conflict and other personal issues that distract the worker, and more.

Employees should be encouraged to self-identify fit for duty issues to their supervisor. When an employee identifies a potential fit for duty issue, discretion and thoughtfulness are required to properly address it. A flow chart of the steps in the identification and management of an unfit person (worker, supervisor, etc.) are detailed below in Figure 2. A variety of scenarios are provided in Appendix B that can be used to help supervisors understand some of the issues and how to navigate interventions.

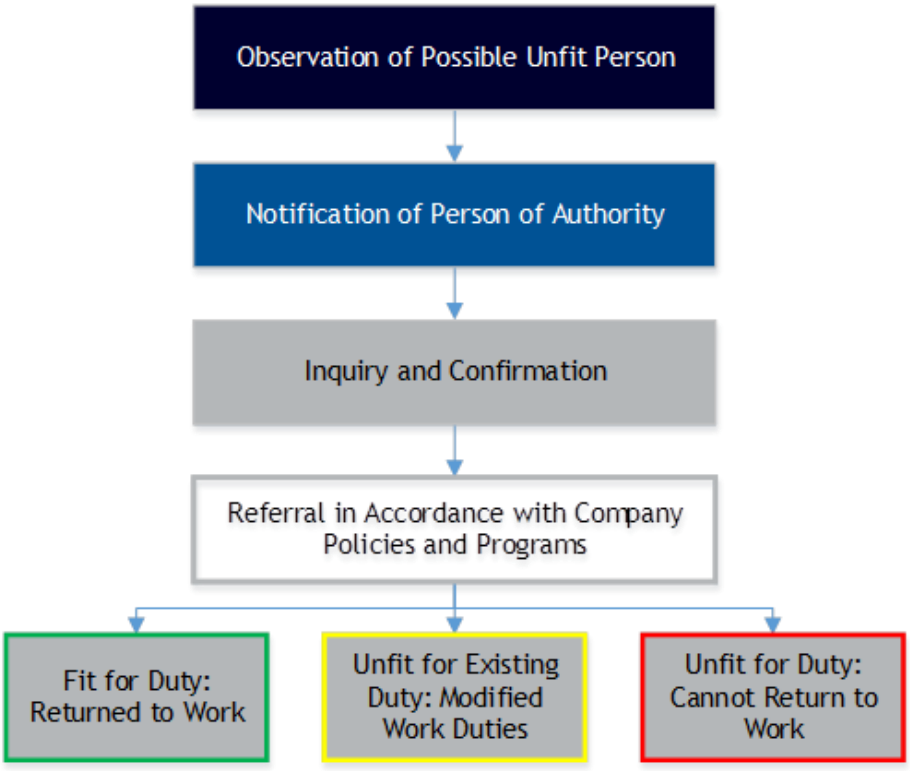


Figure 2: Identification and Management of an Unfit Person

8.0 Hazard Assessment

As has been discussed in the previous sections, fit for duty is an expansive topic. As a result, a risk-based approach is recommended to balance the benefits with the costs and efforts of a fit for duty program. Companies are encouraged to use this section of the guideline to guide the creation of their fit for duty program. It is important to recognize that a one-size-fits-all approach is not adequate, as an effective fit for duty program must capture and manage risks that are relevant or unique to each company.

8.1 Formal Hazard Assessment

A list of risk factor questions is provided in Appendix C to help guide your program development. Where work conditions, situations or hazards exist, companies should strongly consider at least one of the possible mitigation strategies. The best mitigation strategies for a company should be determined by several factors such as company sophistication, risk tolerance and duty of care. Each company must assess and apply the mitigation strategies that are most appropriate for their organization or business area. A bowtie of possible fit for duty threats and consequences is provided in Appendix D.

When assessing which mitigation strategies should be selected to address a specific risk factor, consider the following:

- Risks
- Legal requirements
- Cost, including person hours to build and implement
- Capacity of existing teams to conduct work
- Capacity for change within company
- On-going sustainment cost and effort requirements
- Risk reduction benefits

8.2 Project Hazard Assessment

During the planning phase of a project, consider which workers and supervisors are best suited for it. What are their skill sets? How do they get along/work with one another? Are there workers who require accommodations for injuries or illnesses, or who have other restrictions that may not make them a good fit for a project?

8.3 Field Level Hazard Assessment

Field level hazard assessments (FLHAs) are a review of hazards for a planned activity and the identification of anything unique to the work site that may not be captured within formal hazard assessments. Despite the best planning possible, fit for duty issues can materialize anytime. Therefore, all personnel in the field or directing the work of those in the field need to be on guard for signs or symptoms of an unfit individual.

A FLHA should include a discussion of personnel's fitness for work and is best conducted by the employee's supervisor. Companies are discouraged from creating a checklist or document to sign as they will not add value in the medium to long term.

Specifically, supervisors and workers should be discussing the following:

Physical
- Know the physical demands of your job.
- Able to meet the physical demands.
- Require any assistance with the planned work.

Physiological
- Rested and ready to work.
- Free from the influence of alcohol or drugs.
- Concerns about workplace exposures (chemicals, heat, etc.)?

Psychological
- Concerns about the work?
- Distracted by something on your mind?
- Would you like someone to talk to today?

A Fit for Duty Wallet Card captures the above information along with signs or symptoms and is available at [EnergySafetyCanada.com.](EnergySafetyCanada.com)

Figure 3: Fit for Duty Wallet Card

Companies using the fit for duty Life Saving Rule can ask the following:
- Are you physically and mentally in a state to perform your assigned duties?
- Do you commit to being free from the influence of alcohol and drugs?
- Will you inform your supervisor immediately if you or a co-worker may be unfit for work?

9.0 Mitigation Strategies

The mitigation strategies discussed here may be applied in a variety of contexts such as pre-hire, on-going, return to work, for cause, post incident and wellness programs.

9.1 Program Types

9.1.1 Policy

Any programs that relate to fit for duty should be connected to a fit for duty policy. The policy should set out expectations and rules and be signed by senior executive, and reviewed on a regular basis. The Canadian Centre for Occupational Health and Safety (CCOHS) provides a *Guide to Writing an OHS Policy Statement* that may help with creating a fit for duty policy. The Alberta Government provides a policy template entitled *Workplace Impairment Prevention Policy Template*.

9.1.2 Pre-Placement

Having a pre-placement fit for duty program is one component of managing fit for duty. It enables the employer and worker to be well-informed of each other's needs and requirements. This type of program can involve acknowledgement of the job requirements and tasks, a medical questionnaire or a physical demands assessment that may vary in depth and breadth depending on the risks of the position.

9.1.3 On-Going Program

A program that is conducted on an on-going basis to evaluate workers either at fixed intervals such as every year or three years, or on a risk-based model where certain jobs are evaluated on a frequency and depth depending on the risks. Program components that most companies are familiar with are hearing and vision testing.

9.1.4 Return to Work Program (Modified Work)

Return to work programs are well-known within the oil and gas industry and are designed to integrate workers back into the workforce as soon as possible while accommodating any limitations due to injury. Statistics show workers are more likely to fully recover when they return to work sooner, and it reduces lost-time claims and workers compensation costs.

The Alberta Workers Compensation Board provides a resource on Formalizing a Modified Work Program. Additionally, the Canadian Standards Association (CSA) has standard Z1011 entitled *Workplace Disability Management System* that can provide assistance.

9.1.5 For Cause and Post-Incident Programs

In general, these are thought of in relation to drug and alcohol testing, where a worker is either suspected of being impaired or is tested following an incident. But for cause and post-incident programs can also include a variety of other fit for duty aspects such as vision testing, hearing testing, cognitive testing, and more.

9.1.6 Wellness Programs

Wellness programs are an integral part of ensuring workers have resources to maintain their bodies and minds at optimal performance level. Wellness programs often include access to fitness facilities, smoking cessations programs, encouraging alternative modes of transport (bicycling, etc.), yoga classes, ensuring access to healthy foods and snacks, etc. It is important to have some form of a wellness program that helps employees achieve a balanced lifestyle.

9.1.7 Employee Assistance Programs

Employee assistance programs (EAP) or employee and family assistance programs (EFAP) offer, among other things, access to professional counselling services to help workers manage a variety of personal and work-related issues and, as indicated in the *Canadian Model* relieve supervisors of having to diagnose workers' conditions.

Councillors should be trained in treating trauma, bullying/harassment-related issues, as well as assessing and treating substance use issues. Many workers often require at least five to six counselling sessions and, as a result, companies should ensure that adequate coverage is provided in their programs to prevent the development of more serious issues, incidents and worker compensation claims.

Often employee assistance programs are not designed to engage with the employer. Provided processes are in place to meet legal requirements such as regarding privacy there is no reason why these programs cannot facilitate this information exchange.

9.2 Job Description and Task/Hazard Signoff

Understanding the job description, associated tasks, demands and hazards is the first step in communicating and managing risk, both for the employer and the worker. The job description should include details such as the following:

- Worker status (full-time or part-time employee, self-employed person, etc.)
- National Occupational Code Classification (NOC Code)
- Educational requirements
- Remoteness of the work

- Residency or work camp living
- Work-shift requirements
- Degree of supervision
- Availability of assistance such as colleagues
- Emergency callout or on-call work requirements
- Exposure to stressful or emotional situations
- Job demands
- Hazards of the work

To determine the above information a detailed task, demands and hazard inventory is required through conducting interviews of the workers and supervisors, conducting tours of the work environment, conducting worker observations and reviewing health and safety risk/hazard registries, incident investigation reports, etc. Once this information is known workers should be required to sign off on their understanding of their job, associated tasks, demands and hazards and whether their job is classified as safety or risk sensitive.

9.3 Medical Questionnaire

You may also choose to have workers complete a health questionnaire and involve a third-party, such as an occupational nurse, to handle any issues flagged by the questionnaire. Medical questionnaires are not standard, as they need to be created relative to the hazards and unique requirements of the work. As such, the advice of medical professionals is needed both in the creation of and follow-up to medical questionnaires. One medical questionnaire that industry personnel may be familiar with is the medical fitness to wear a respirator questionnaire in the CSA Standard Z94.4-18 Selection, Use and Care of Respirators.

9.4 Functional Capacity Evaluation – Physical Components

A functional capacity evaluation (FCE) that is focused on the physical components is conducted by a variety of professionals such as physicians, registered occupational nurses, physiotherapists, chiropractors, etc. It begins with an evaluation by medical professionals consisting of a review of the job description and associated tasks, hazards and demands, a medical questionnaire, examination and possible testing. Similar to taking a car to a mechanic for evaluation prior to purchase, an FCE is a way to understand the risks and potential performance limitations of a new employee prior to placement. The FCE can be customized to each organization's risks and risk tolerance.

The physical aspects of an FCE typically consists of the following:

- Anthropometric measurements
- Musculoskeletal review
- Strength and mobility testing
- Cardiovascular testing
- Pulmonary function testing
- Vision and hearing testing

For more information on these aspects please refer to Appendix E.

9.5 Automated External Defibrillator (AED)

In addition to understanding and managing individual worker's risk factors for heart disease, access to an automated external defibrillator (AED) can save lives. Although not a preventative mitigation, companies should assess the cost-benefit and regulatory requirements in having AEDs available both in office and work site settings. The Government of Alberta has a resource on AEDs that may be of assistance.

9.6 Workplace Warm-up and Stretching

A warm-up and stretching routine may decrease musculoskeletal injuries such as muscle and ligament strains and tears and has been shown to improve workforce morale and climate. This is especially important prior to periods or inactivity such as at the start of a work shift when a worker's muscles are cold and tight. Warm-up and stretching routines should be in keeping with workers' physical abilities and any restrictions or accommodations. WorkSafe New Brunswick provides a *Warm-Up and Stretch Companion Guide* that may be of assistance.

9.7 Work in an Unfamiliar Environment or Country

Work in an unfamiliar environment can have fit for duty implications, such as the need for vaccinations or cultural sensitivity education.

9.7.1 Vaccinations

Vaccinations for a variety of preventable illnesses are required, depending on what country you are working in. For a complete list of vaccination requirements please refer to *Health Canada's Travel Vaccinations site*.

9.7.2 Cultural Sensitivity Education

Cultural sensitivity education may be a component of respectful workplace programs, but often specifically address cultural differences when working in foreign countries. These include values, beliefs, religion, race, ethnicity, laws, etc. By making personnel aware of cultural differences, an employer can improve the integration of workers.

A useful resource that highlights some cultural differences from country to country is *Hofstede Insights Country Comparison*. Ideally, education on customs and other societal cultural differences should be provided by personnel who are familiar with that country, or even the specific region within a country.

9.8 Remote Living or Working

Living or working in a remote area can pose risks to a worker's physical, physiological and psychological fitness for work. Aspects to focus on are camp design and operation and access to washroom facilities.

Camp design and operation are integral to maintaining the mental health of workers. This topic is extensive and cannot be adequately addressed here but, as an overview, companies should consider areas of camp life that impact worker health including:

- Social areas (TV and games rooms)
- Fitness facilities
- Onsite security and controlled access
- Availability of telecommunication access (video conferencing, computer, phone, internet access, etc.)
- Alcohol and drug policies and programs
- Quiet hours and areas
- Sleeping quarters that are free of light pollution

Limited access to adequate washroom facilities can have fit for duty implications both physically and psychologically when workers are distracted by the need to relieve themselves and do not have their mind on the task at hand. This applies to all workplaces but is more often an issue with remote work sites. There are regulatory requirements regarding adequate washroom facilities. Failure to meet these requirements can lead to fit for duty implications such as errors with significantly more risk to the company and workers than non-compliance with washroom facility regulations.

9.9 Nutritional Food and Adequate Hydration

Access to food and water is a necessity of life and, at times, can be difficult to provide in remote work environments, especially when projects experience unexpected delays. Employers should be aware of this risk factor and either encourage workers to have snacks and drinks or provide these in the work site.

Fasting (the reduction or elimination of food or drink) may be conducted for a variety of reasons including lifestyle or religion. Restricting consumption of food and water can have fit for duty implications on a worker's ability to perform mentally and physically, such as an inability to focus or reduced stamina. Workers who are conducting fasting should inform their employer if they are in a safety sensitive position so that any potential risks can be managed accordingly.

Workers should have access to nutritional foods in accordance with *Canada's Food Guide.*

9.10 Alcohol and Drug Program

The *Canadian Model*, provides a common approach to providing a safe workplace for both construction and oil and gas industries. It outlines minimum expectations while recognizing that some companies may require higher or alternative standards based on the specific nature of their operations. Because it is a framework, some companies may use the model as-is, while others may modify and adapt some clauses to better fit their needs.

The *Canadian Model* is focused on protecting workers and the public against safety risks, respecting the dignity and privacy of the workers, and assisting individuals afflicted by substance abuse disorders.

Several factors need to be assessed in relation to the use of prescription medication that may impact performance including the duration of the prescription, whether the medication is new to the worker and how long the substance stays within the body (half-life). Several medications are generally regarded as unacceptable for use by workers in safety sensitive positions:

- Opioids
- Medical cannabis
- Anxiolytics
- Stimulants
- Sleep aids
- Antihistamines
- Anticoagulants
- Anticonvulsants
- Muscle relaxants
- Certain antidepressants
- Mood regulators

It may be possible to obtain clearance from a physician, switch to another medication or accommodate the worker with non-safety sensitive work depending on the duration of the medication use.

9.11 Fatigue Management Program

Energy Safety Canada's *Fatigue Risk Management Program Development Guide* and associated resources provide companies with information on the design and implementation of an effective fatigue risk management program to reduce fatigue-related incidents and injuries among workers.

9.12 Exposure Management

Exposure to occupational health hazards must be a component of every company's risk and hazard assessment program. Energy Safety Canada provides a resource on *Controlling Chemical Hazards*. This guideline and supporting resources can assist employers in managing many of the chemical-related exposures that may impact fit for duty.

It is worth noting that although all exposure should be adequately controlled in accordance with the hierarchy of controls, companies may want additional verification or risk mitigation with those exposures where fit for duty impact may occur, as these situations are likely to be accompanied by elevated risk to the worker and the company.

Health assessments such as chest x-rays and pulmonary function testing are legislative requirements for some jurisdictions for certain hazards such as asbestos, silica, coal dust and lead. In addition, biological monitoring for active contaminants or metabolites may be legislatively required and should be evaluated in relation to fit for duty applicability. For assistance on biological monitoring please review the *American Conference of Governmental Industrial Hygienists Biological Exposure Indices* and associated documentation.

9.13 Psychological Health and Safety Program

The Canadian Standards Association (CSA) has a standard on psychological health and safety in the workplace, CSA-Z1003-13. This standard is free from the CSA and provides guidance on the prevention, promotion and staged implementation of a documented system program.

According to the CSA, the 13 organizational factors that impact organizational health, the health of individual employees and the financial bottom line, including the way work is carried out and the context in which work occurs, are:

1. Organizational Culture
2. Psychological and Social Support
3. Clear Leadership & Expectations
4. Civility & Respect
5. Psychological Demands
6. Growth & Development
7. Recognition & Reward
8. Involvement & Influence
9. Workload Management
10. Engagement
11. Balance
12. Psychological Protection
13. Protection of Physical Safety

Guarding Minds at Work provides a set of resources that can help support companies implement a psychological health and safety program.

9.14 Respect in the Workplace Program

Most organizations have at least some components of a respectful workplace process in place such as a non-harassment policy, as this has been law for a significant period of time. However, policy alone is not enough to successfully implement and manage respect in the workplace. Research shows that a management system is necessary for a successful implementation of respect in the workplace. A policy includes input from all levels in policy development, dialogue at all levels, support from senior management, training and support.

An effective management system can be visualized as a repeating process of prevention activities, monitoring strategies, responding and investigating processes and repairing interventions for injury/damage caused by incivility, harassment and bullying (Figure 3). Ideally, employees will feel safe to identify situations in which they feel uncomfortable. They will also understand the processes for addressing individuals involved, sources of support, and more formal processes of complaint.

Figure 4: Management System Components

Energy Safety Canada has a program development guide on *Creating an Effective Management System For Respect In The Workplace.*

9.15 Stress Management

The *Copenhagen Psychosocial Questionnaire* provides a good basis of understanding of how stressed a person is by evaluating factors such as cognitive demands, influence at work, role clarity, organization justice, threats of violence, and conflicts and quarrels.

The Canadian Centre for Occupational Health and Safety (CCOHS) has a downloadable app entitled “Measure Workplace Stress” that workers can use to help manage stress. In addition, the Canadian Mental Health Association has a *stress quiz* that may be useful.

9.16 Questionnaires and Checklists

Cognitive testing involves looking at several factors such as decision making, degree of supervision, literacy, memory, self-control, and self-awareness (need for rest, water, food etc.). This type of testing is typically used for those with neurological conditions, other brain trauma, mental health conditions, dementia, etc.

Often this involves work observations and questionnaires. A well-known cognitive test is the Montreal Cognitive Assessment (MOCA), which tests factors such as attention and concentration, executive functions, memory, language, conceptual thinking and orientation.

Mental health questionnaires have value but must be used under the direction of a qualified professional. In addition, they must be directly linked to the cognitive demands of the job and other indicators, such as medical questionnaire responses. Examples include the Generalized Anxiety Disorder and the Post Traumatic Stress Disorder (PTSD) checklist/orientations.

9.17 Conscientiousness

Conscientiousness is a personality trait that could be described as being organized, deliberate and following through on what you say you are going to do. As a result, this relates to the fit for duty definition and inclusion of risk tolerance. Personnel that are less conscientious may be more likely to not follow company programs such as fit for duty or others around the management of risk. Conscientious employees tend to be more successful, cautious and trusted. Conscientiousness is well-studied and can be reliably tested by way of the *Big Five Personality test*.

9.18 Cognitive Assessment

Several tests can be used for cognitive assessments. These tests are typically based on the psychomotor vigilance test (PVT). They typically ask a worker to visually identify something that is different in a series of images and track response time and other metrics to make an overall determination as to how cognitively alert a worker is.

When using such tests, it is important to understand that they are not necessarily a one-size-fits-all solution that encompasses fit for duty. Instead, they are another tool in the fit for duty toolbox. In general, they should be used as tools for workers to self-identify reduced fitness for work or be used in relation to a quick check prior to conducting a critical task. The use of these tests as a substitution for program elements like alcohol and drug testing or fatigue management is not advised.

9.19 Human Error

Humans make errors and, as a result, companies need to have a robust strategy that plans for human failure such that when an error is made it does not result in a catastrophic incident or serious injury or fatality. The HSE Executive has a *Leadership and Worker Involvement Toolkit on Understanding Human Failure*. It outlines strategies that can be used to address several types of human error.

It is important to recognize that the majority of errors made are rooted in system failures that can often only be understood by looking at the context of "how work gets done" verses "how work is imagined". How work gets done is about the reality of how work is executed. How work is imagined is about how work is prescribed in rules and procedures. Ideally these should be the same, but most often they are not, and organizations need to understand these differences and the context under which they occur to manage error.

9.20 Mind on Task

In the case of mind on task or situational awareness, a few simple techniques can help workers stay focused. These strategies are more worker-focused than work environment-focused, and while they can be initiated by a supervisor, individual workers can use certain strategies when it is safe to do so.

Use cues to signal that increased focus is required such as during a critical task:

- Visual cues like tracking a small moving object (e.g. coin toss)
- Auditory cues like a supervisor clapping hands or a whistling
- Verbal motivational cues like "Go Team!"
- Stop and think moments – pause and review risks and job steps prior to safety-critical tasks
- Fit for duty wallet card – questions and signs to watch for
- Breathing exercises - take three deep slow breathes while counting to five both on inhalation and exhalation. Focused breathing clears the mind, regulates unhealthy stress and oxygenates the body.

10.0 Education and Training

To be successful in the management of fitness for work, workers and supervisors need to be trained in the expectations and how to meet them. A good fit for duty program has a comprehensive training component that identifies the following:

- Policy
- Roles and responsibilities
- A description of fit for duty
- Legal requirements, including privacy laws
- Fit for duty expectations
- What to do when you identify someone who may be unfit for work.

A series of toolbox talks, safety bulletins and a fit for duty wallet card are available at EnergySafetyCanada.com.

11.0 Incident Causation Model

Incidents should be investigated taking into consideration how the incident occurred and if there is any fit for duty causation. As such, there should be collaboration with other teams such as health and safety, industrial hygiene, occupational nurses and human resources. This approach allows investigators to understand all the relevant factors and ensure confidentiality is maintained where that is required.

Fit for duty aspects should be part of incident investigations. Specifically, once the field data such as interviews, personnel statements, photos, etc. have been collected, the Investigation Checklist in Appendix F should be completed. This may highlight fit for duty aspects of the incident that were not previously evident or result in additional inquiries to obtain more information.

When fit for duty is identified as a causal factor it is recommended that companies classify it into physical, physiological or psychological categories and subcategories as appropriate. These key performance indicators will allow for more meaningful data analysis over time.

It is important to note that this is just one strategy among many for data collection and categorization. Another strategy that aligns well with the three pillars and is commonly used in the oil and gas industry is the *DNV Systematic Cause Analysis Technique (SCAT®)*.

12.0 Continuous Improvement

To ensure continuous improvement, companies are encouraged to use the plan-do-check-act cycle as part of their management of fit for duty. They should conduct internal inspections, verifications, observations and audits as appropriate in accordance with their internal health and safety management system.

Appendix A: Workplace Exposures

The following is not meant to be an all-encompassing list of all possible connections between fit for duty and exposures, but rather a list of the more common ones.

Chemical Hazards

Narcosis is the depression of the central nervous system as a result of being “high” on hydrocarbons. For instance, the 15-minute short-term exposure level to gasoline, which has a similar composition to many natural gas condensates, is 500 parts per million and is intended to protect against narcosis. A worker driving a car or piloting a helicopter who has just had unprotected overexposures to gasoline-like hydrocarbons may be under the influence of those hydrocarbons, resulting in unfit work performance.

Workplace exposures to certain hazards can be potentiated by the presence of other compounds. An example is toluene and alcohol where a worker, overexposed to toluene but not experiencing any narcosis side effects of the exposure, consumes an acholic beverage after work and is intoxicated by one beverage because of the potentiated effects of toluene.

Oxygen deficiency, defined as atmospheres below 19.5% oxygen, can result in a variety of symptoms depending on the oxygen level and the duration of exposure. Those symptoms may include headaches, impaired cognitive function, decreased coordination, unconsciousness and death.

Carbon monoxide is a complex asphyxiant that binds to hemoglobin in the blood, reducing the oxygen-carrying capacity of the blood. This results in becoming easily fatigued at lower levels, poor judgement, confusion and, at higher levels, unconsciousness and death.

Exposure to methylene chloride, a chlorinated solvent used as paint stripper, is metabolised in the liver resulting in the formation of carboxyhemoglobin and the effects of exposure to carbon monoxide.

Trichloroethylene and tetrachloroethylene, found in chlorinated brake clean products, can impact the central nervous system making a worker dizzy and sleepy.

Biological Hazards

Personnel with open cuts or sores on any part of their body should ensure they do not come into contact with materials that represent a biological hazard such as blood-borne hazards, sewage or wastewater. An example would be a worker with an open sore handling wastewater.

Allergies and Sensitization

Allergies that span across biological and chemical hazards are not often thought of in relation to fit for duty; however, some allergies can be severe and, in some instances, life-threatening. A drilling example is nut allergies when walnuts shells are added to the drilling fluid to reduce fluid loss. A facility example is the use of isocyanate-based spray foams as insulation materials on vessels and tanks. Repeated exposure to sensitizers such as isocyanates can result in the worker becoming sensitized such that any exposure, regardless of how small, can result in life-threatening reactions.

Sensitized individuals typically cannot work in or near operations that involve that sensitizer. This aspect should be covered off in the medical questionnaire as part of the physical demands analysis (PDA).

Other potential severe allergies include animals, mould and scents (perfumes and fragrances in personal hygiene products), etc.

Physical Health Hazards

Acclimation to Heat or Cold Stress

Unacceptable cold or heat exposure is defined as exposure that could cause a worker's core body temperature to rise or fall more than 1°C below the normal 37°C, or exposure that results in pain or tissue damage.

Acclimation is a physiological change (e.g. increased sweat production) that occurs when workers are repeatedly exposed to heat or cold stress. These metabolic changes enable the worker to better tolerate the stress. It takes at least five days for workers to become acclimated to the work environment's heat stress and, as such, a worker may not be fit for duty during these first few days of new work. Workers will lose their heat stress acclimation if they have been away from the work environment for three weeks or more.

Magnetic Fields

Workers who have a pacemaker to regulate the beating of their heart must limit exposure to magnetic fields. In general, this is not a concern for everyday work environments and equipment but can be a concern for specialized equipment such as magnetically driven pumps often referred to as "mag pumps". Magnetic pumps do not have a shaft that must be sealed and, therefore, are often selected as a safer design for more hazardous liquids, because they are less prone to leakage and possible chemical exposure to workers. The American Conference of Governmental Industrial Hygienists (ACGIH) has an exposure limit of 0.5 milli-tesla (mT) for workers with medical devices such as pacemakers.

Reproductive Hazards and Pregnancy

A fetus is vulnerable to exposure from a variety of hazards. This is especially true during the early stages of pregnancy, which presents challenges because the woman may not be aware she is pregnant, or has not disclosed that she is pregnant. A pregnant woman should minimize all exposure to reproductive hazards such as ionizing radiation, toluene and carbon monoxide. In addition, extreme noise (>105 dBA) can damage a fetus's ears while in the uterus during the later stages of pregnancy.

Pregnancy in the third trimester has significant impacts on a woman's body, such as joint relaxation and increased body weight, which can increase the likelihood and severity of an injury to the worker and fetus.

Reproductive hazards are discussed in resources from the National Institute of Occupational Safety and Health (NIOSH): *The Effects of Workplace Hazards on Female Reproductive Health* and *The Effects of Workplace Hazards on Male Reproductive Health*.

Diseases and Illnesses

A variety of diseases can cause adverse impacts on a worker in the presence of certain hazards, such as chemical exposures. Respiratory illnesses (e.g. asthma, chronic obstructive pulmonary disorder (COPD), bronchitis and emphysema) can make a worker much more susceptible to airborne hazards like dust, mist, vapours and fumes. Certain diseases such as those of the kidney and liver can reduce the body's ability to filter out or metabolize contaminants thereby potentially increasing the degree and length of potential fit for duty impacts.

Appendix B: Example Scenerios

1. Physical: Fit for Duty Scenario

Description on Situation	A supervisor (Jill) observes a worker (Bill) limping up and down the stairs while conducting work. (**Observation of Possible Unfit Person**)
Factors	Company has 30 employees and has been in business for five years.
Supervisor Action	• The supervisor asks to speak with the worker in a private area. Jill tells Bill what she has observed and inquires as to Bill's physical condition. (**Inquiry and Confirmation**) • Bill indicates that he fell on the weekend when riding a horse but thinks he will probably be okay to work. • Jill notifies HR/H&S who suggest that the medic on site should look at Bill. Bill agrees to this course of action. • The medic assesses Bill and advises him that the pain and swelling may be consistent with a more serious injury. Bill is transported to the local medical facility where his leg is identified as fractured. (**Referral in Accordance with Company Policies and Programs**)
HR/H&S Action	HR/H&S person verifies that this incident is not work related. Bill is **unfit for duty** and returns in a week with a cast on his leg where he conducts **modified work**.

2. Physiological: Fatigue Scenario

Description on Situation	A worker (Samantha) indicates to a co-worker (Jim) during the morning safety meeting that she did not sleep last night because of a family emergency and does not know how she is going to get through the work day. (**Observation of Possible Unfit Person**)
Factors	Company has 1,000 employees and has been in business for over 50 years.
Co-worker Action	• Jim indicates to Samantha that for everyone's health and safety they should discuss this with their supervisor (Paul). Jim asks if Samantha would like to be part of this conversation and she agrees to participate. • Jim approaches supervisor (Paul) and indicates to him that Samantha may need some help and may not be fit for duty. (**Notification of Person of Authority**)
Supervisor Action	Paul thanks Jim for helping Samantha and speaks to Samantha. Samantha is removed from the work site and referred to HR and Health and Safety. Paul meets with the team to discuss work allocation and the team comes up with a plan to move forward in the absence of Samantha. (**Referral in Accordance with Company Policies and Programs**)
HR/H&S Action	• HR and Health and Safety have a phone call with Samantha to discuss her family issues. It is decided she will take time away from work and she is referred to the EAP. (**Unfit for Duty**). • Before Samantha returns to work, HR contacts her and verifies that she can resume work. Samantha returns to work. (**Fit for Duty**).

3. Psychological: Respectful Workplace Scenario

Description on Situation	A worker (Bill) is behaving in an erratic manner and has made some rude and offensive comments over the last week both in meetings and in the hallway. (**Observation of Possible Unfit Person**)
Factors	Company has 100 employees and no EAP.
Supervisor Action	• A co-worker (John), present during one of Bill's rude comments, tells Bill's supervisor (Sally) what has occurred. **(Notification of Person of Authority**) • Sally invites Bill out for a coffee to see how things are going. At coffee, Bill indicates that he and his wife have decided to separate. Sally listens to Bill's story and indicates how difficult the situation is and how sorry she is that Bill is going through this. • Sally lets Bill know that others in the office felt uncomfortable with some of his behaviours and reminds Bill of their respectful workplace program and its expectations. (**Inquiry and Confirmation)**
HR and H&S	• Sally meets with HR and H&S to discuss the situation. They ask Bill to seek professional support. (**Referral in Accordance with Company Policies and Programs)** • They decide to lighten Bill's workload for the next month to reduce his stress levels and schedule weekly meetings with Bill to assess how he is doing. (**Unfit for Existing Duty: Modified Work**)
Worker	• Bill thinks over in his mind the events of the previous week and at the next group meeting apologizes for his behaviour. • With the reduction in workload and closer support from his supervisor, HR and H&S, Bill slowly returns to his previous workload over the next month. (**Fit for Duty**)

4. Physiological: Workplace Exposure Scenario

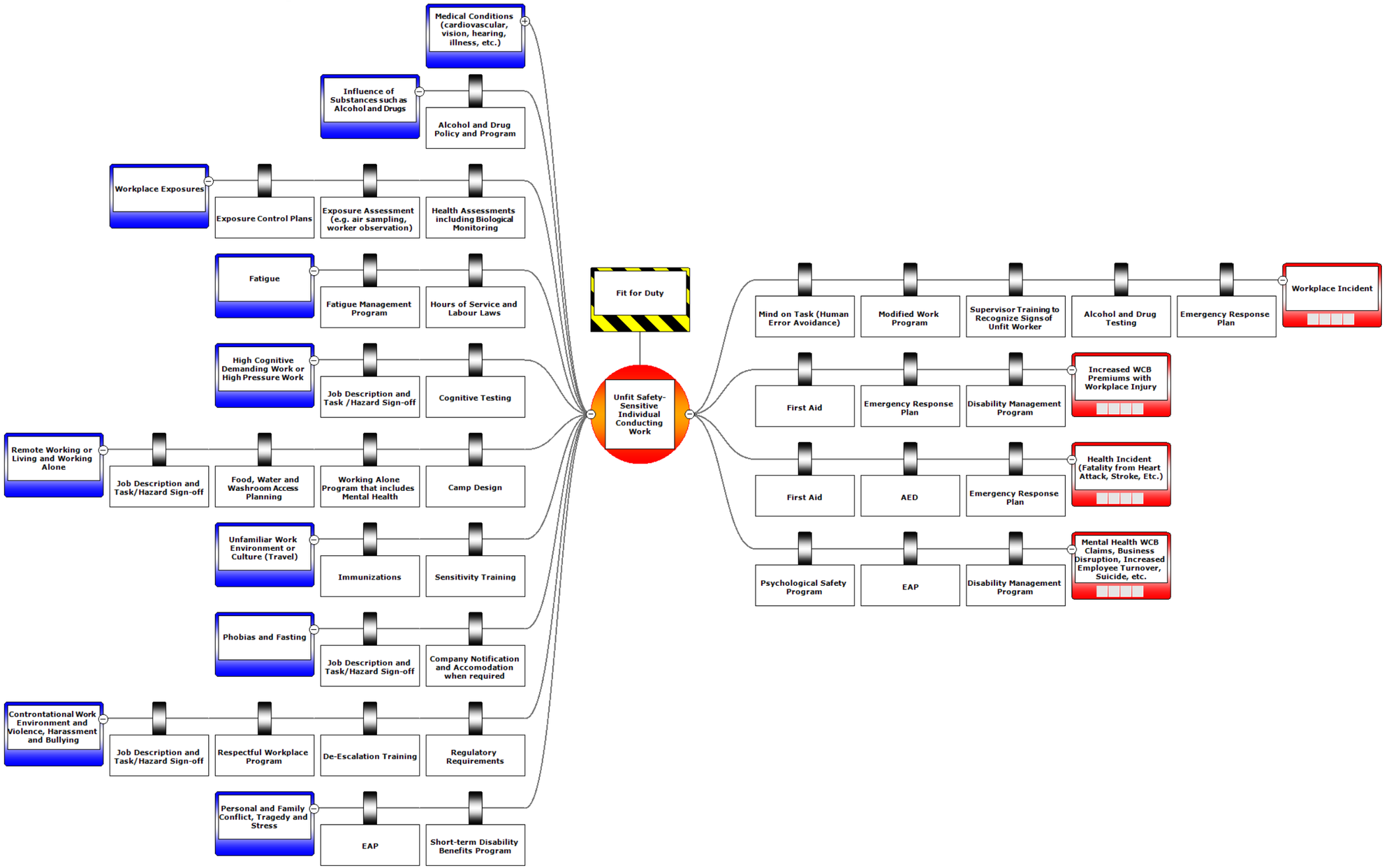
Description on Situation	• A worker (Michelle) is behaving erratically and her behaviour is noticed by a service provider (Pat) working in the area. (**Observation of Possible Unfit Person**)
Factors	Company is a large, sophisticated employer
Service Provider Action	• Pat stops what she is doing, goes into the permit office and asks to speak to the facility superintendent (Cally). Pat tells Cally what she observed. **(Notification of Person of Authority**)
Supervisor Action	• Cally then proceeds outside and looks for Michelle who appears to be confused and is trying to unlock her truck. Cally confirms that something is not right with Michelle and convinces her to not drive and to sit down in her office. (**Inquiry and Confirmation)** • Cally notifies HR and H&S. Cally speaks to Michelle who indicates that she started not feeling well after she drained chemicals from process equipment. (**Referral in Accordance with Company Policies and Programs)**
HR and H&S	• H&S notifies Occupational Health who has Michelle assessed by local medical professionals. • H&S initiates an investigation, which reveals that an upset in the process occurred and resulted in Michelle being exposed to significant chemicals that are known to have fit for duty impacts. (**Unfit for Duty**) • H&S, Engineering and Operations meet and implement a series of corrective actions to prevent a re-occurrence at this facility as well as other facilities in the company.
Occupation Health (Nurses and Physician)	Occupational health recommends a follow-up assessment of Michelle, including blood work to ensure there are no lasting health impacts from the chemical exposure and to verify that she is fit for duty. Testing is acceptable and Michelle returns to work (**Fit for Duty**). The test results are secured in accordance with company policies on confidential records.

Appendix C: Risk Factor Questions

Fit for Duty Risk Factor Questions	Relevant (Yes/No)	Applicable Fit for Duty Pillars	Details	Potential Mitigation Strategies
Is work safety sensitive?		Physical, Physiological and Psychological	See definition in the *Canadian Model*	• Risk Assessment in accordance with *Canadian Model*
Do workers have the capacity to perform the work?		Physical, Physiological and Psychological	Applies to all jobs and could include heart disease, diabetes, PTSD, running, lifting, pushing, etc.	• Job Description with Tasks/Hazards and Worker Signoff • Medical Questionnaire • Functional Capacity Evaluations including Physical Demands Analysis
Does work involve driving?		Physical and Psychological	Vision and hearing, ability to enter and exit vehicle, sit for extended periods, situational awareness, etc.	• Job Description with Tasks/Hazards and Worker Signoff • Vision and audiometric testing as per regulatory requirements • Vision and hearing testing in accordance with risk assessment • Physical Demands Analysis
Are exposure hazards present that may impact fit for duty?		Physical and Physiological	Chemical exposures, heat stress, allergens, radiation, etc.	• Job Description with Tasks/Hazards and Worker Signoff • Medical Questionnaire/Pulmonary Function Testing* • Exposure Control Plans/Health Assessments/Biological Monitoring
Is fatigue a risk? (shift work, extended hours, call outs, etc.)		Physiological	Shift work, extended work shifts, emergency on call, access to sleeping facilities, etc.	• Work Schedule Management • Fatigue Management Program
Are confrontational work environments reasonably anticipated?		Psychological	Dealing with difficult situations where tempers may rise.	• Violence and Harassment Policy • Respectful Workplace Program • De-escalation Training
Does the job involve high cognitive demands and pressures (stress)?		Psychological	Jobs that require sustained levels of concentration and demanding high-pressure work environments.	• Mind on Task Strategies • Copenhagen Psychosocial Questionnaire • Cognitive Assessment • Physical Demands Analysis
Does the job involve working alone?		Psychological	Working alone for extended periods can impact a worker's mental health.	• Job Description with Tasks/Hazards and Worker Signoff • Wellness Programs including EAP • Cognitive Assessment • Physical Demands Analysis
Does the job involve remote working or living?		Psychological and Physiological	Captive work environments can impact workers' mental health and remote working or living can introduce barriers to food, water and access to adequate washroom facilities.	• Communication Network (phone, computer access, etc.) • Camp Practice • Wellness Programs including EAP
Is access to food and water limited?		Physical and physiological	Water and proper nutrition are required for workers to properly function on an on-going basis.	• Job Planning • Nutritional Planning • Accommodation Strategies (Duty to Accommodate)
Does the job involve work in an unfamiliar environment or country?		Physical, Physiological and Psychological	Unfamiliar environments or countries can introduce new hazards such as high altitude, heat/cold, microbes, different risk tolerances, societal differences.	• Immunizations • Modified Work • Physical Demands Analysis • Sensitivity Education
Could violence, harassment and bullying be present?	Yes*	Psychological	Violence and harassment can impact mental health, ability to focus, etc. It is a legislative requirement in most jurisdictions.	• Policy on Violence and Harassment • Respectful Workplace Program • Psychological Health and Safety in the Workplace Program
Are work requirements legitimate (bona fide)?		Physical, Physiological and Psychological	The use of job requirements that are not bona fide cannot be a condition for employment.	• If "No", then these cannot be a condition of employment, but may be appropriate to be resources available to workers.

*Managing the risks of violence, harassment and bullying is a regulatory requirement in most jurisdictions as is the requirement to evaluate medical fitness to use a respirator.

Appendix D: Bowtie Example



*Threats are represented in blue on the left with the event in the middle and consequences on the right in red. Barriers are represented by the black-outlined boxes.

Appendix E: Physical Components of a Functional Capacity Evaluation

The following are provided as examples of possible components and criteria. Consult with a professional when determining what components and criteria are appropriate.

Anthropometrics

Anthropometrics, the measurements and capabilities of the human body, typically consist of oxygen level of the blood (SpO2 <93%), blood pressure (<160/100 mmHg), heart rate maximum (220-age or 207-(0.7 X age)), height, weight and body composition (ectomorph, endomorph, mesomorph).

Musculoskeletal

Musculoskeletal includes both the muscles and skeleton and how they function together. Assessment includes whether the joints are stable, whether there are balance or movement restrictions, and any evidence of past injuries or undisclosed surgeries.

Strength and Mobility

Strength and mobility involves a review of the job description and tasks to assess the job demands and simulate a range of requirements experienced by the worker throughout the day. A range of systems and tests are available, but a common one is the Matheson FCE system, which includes 20 essential tasks such as carrying, walking, sitting, climbing, etc. This typically takes four to six hours and also involves a qualitative assessment of cardiovascular fitness such as maintaining heart rate under maximum and not overly fatigued.

Cardiovascular

Cardiovascular testing is more involved and requires more time and money to conduct. As such, some may choose not to use this test. In general, the majority of workers are unable to work at their maximum for an entire day. This maximum is defined as their metabolic equivalent of task (MET) and is determined by measuring the VO_2 max of the worker while they run on a treadmill or conduct various other physical tasks such as stairs. The VO_2 max is a measure of the oxygen uptake and overall aerobic endurance of the worker. A workload of 33% of the MET is what most workers can sustain over an entire workday. MET levels are defined for various physical demand levels ranging from sedentary at 1.5 to 2.1 METS to very heavy at greater than 7.5 METS.

Pulmonary Function Testing

There are numerous lung function tests, but the most common is the spirometry, which measures the rate and volume of air inhaled and exhaled. This test can help diagnose breathing problems, like asthma, and is recommended for workers who have to use a respirator.

Vision

Vision must be appropriate for the job tasks, such as acuity when tasks require a worker to distinguish fine details. In general, vision testing involves the Snellen chart to evaluate the worker's ability to see both near and far. Other aspects of testing that are often included are colour blindness, conducted with the Ischihara's test for colour deficiency, and contrast sensitivity by way of the Hamilton-Veele test.

In many instances' workers will identify their reduced vision and seek out assistance. However, workers may not identify the vision loss or may not be willing to manage it (such as wanting to avoid wearing glasses). This can put them and others at risk. This is particularly an issue as it pertains to driving. Various provinces have vision requirements typically associated with first obtaining your license and some later when the driver reaches a certain age, such as 65. These requirements are designed for non-commercial drivers from the general public. Driving as a requirement for business involves different risks and duties of care, both from the worker and the company.

Hearing

The ability to hear is an important aspect of almost every worker's job. Hearing loss can occur because of chronic exposure to noise, acute drastic injury (such as exposure to an explosion or blunt trauma to the inner ear), or because of a medical condition. The use of hearing aids may alleviate some of the communication challenges, but also have other limitations.

Workers may identify their reduced ability to hear and seek out assistance. However, workers may not identify the hearing loss or may not be willing to manage it (such as wanting to avoid wearing hearing aids). This can put them and others at risk.

Hearing testing, or audiometry, involves measuring a worker's ability to hear sounds at different frequencies and intensities and produces an audiogram report that can identify the degree, type and specific ears that have hearing loss.

Inner Ear (Balance)

The inner ear is responsible for balance, which is critical to a worker's ability to function. Vertigo is a loss of balance and the feeling you are going to fall. There are numerous types of vertigo, but the most common is caused by otolith crystals in the semi-circular canals. Workers who have vertigo often will not be fit to drive or operate machinery.

Appendix F: Investigation Checklist

Fit for Duty Risk Factor	Yes/No
Physical	
Were the physical demands of the job a factor?	
Was vision or hearing a potential factor?	
Physiological	
Was fatigue a factor (shift length, number of work shifts leading up to day of incident, etc.)?	
Were alcohol and drug use a factor?	
Were there any workplace exposures that could be a factor in fitness for work?	
Was lack of access to food and water a factor?	
Psychological	
Was workplace violence and harassment a potential factor?	
Was a confrontational work environment a factor?	
Were work load, stress and high cognitive demands a factor?	
Was working alone or a remote work environment a factor?	
Did the job involve communication challenges?	
Were distractions in the workplace or mind-not-on-task factors?	

Glossary

Term	Description
ACGIH	American Conference of Governmental Industrial Hygienists (ACGIH)
Anthropometrics	Anthropometrics is the measurements and capabilities of the human body.
Cardiovascular	Relates to the heart and blood vessels.
FLHA	Field level hazards assessment (FLHA) are a review of the hazards for the planned activity and identification of anything unique to the work site that may not be captured in formal hazard assessments.
Impairment	Describes an unfit worker but is often thought off in relation to alcohol and drugs.
MET	This maximum is defined as the metabolic equivalent of task (MET) and is determined by measuring the VO_2 max of the worker while they run on a treadmill or conducts other physical tasks such as stairs.
Musculoskeletal	Musculoskeletal is the muscles and skeleton and how they function together.
Physiological	Physiological refers to how the body functions and includes fatigue, use of alcohol and drugs and workplace exposures. This pillar of fit for duty is about interaction and effects that occur on the complex systems of the body.
Psychological	Psychological refers to a worker's mental state and includes factors such as risk tolerance, culture, emotional state and mental focus. This is about what is going on in the worker's mind and includes distractions, stressors, violence and harassment.
PTSD	Post-Traumatic Stress Disorder is defined by the American Psychiatric Association as a psychiatric disorder that can occur in people who have experienced or witnessed a traumatic event such as a natural disaster, serious accident, terrorist act, war/combat, rape or other violent personal assault.
Pulmonary function testing	Tests that evaluate lung function by measuring rates of airflow during inhalation and exhalation and lung volumes.
VO2 Max	The VO_2 max is a measure of the oxygen uptake and overall aerobic endurance of the worker

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