DEFINING WORK-RELATED HARM

IMPLICATIONS FOR DIAGNOSIS, REHABILITATION, COMPENSATION AND PREVENTION

NOHSAC TECHNICAL REPORT 11

ALLEN AND CLARKE
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EXECUTIVE SUMMARY

In New Zealand, and internationally, there are no consistent definitions of work-related harm. The definitions used reflect the purposes of the different systems they sit in: rehabilitation and compensation cover, notification under health and safety law, and enforcement under health and safety law. The effects of inconsistent definitions are inconsistent coverage and the absence of an effective surveillance system for work-related harm. This impacts on our understanding of work-related harm and our identification of it for treatment, rehabilitation, compensation and prevention purposes.

Objectives and methodology

The objectives of this review were to:

• analyse concepts of work-related harm and the implications of how the definitions are applied in practice for diagnosis, rehabilitation, compensation and prevention
• compare and contrast how work-related harm is currently defined in New Zealand and selected other countries
• develop recommendations for harmonising the varying definitions of harm currently used in New Zealand with a view to providing more effective and efficient diagnosis, rehabilitation, compensation and prevention for work-related harm.

This report was developed on the basis of interviews with key informants involved in occupational health and safety in New Zealand and a search of literature and legislation relating to definitions of work-related harm in New Zealand, Australia, the United Kingdom, the Netherlands, Finland and the United States of America.

Concepts of work-related harm

Concepts of work-related harm are continually evolving internationally. This report discusses the characteristics of definitions of work-related harm and recommends a set of principles that could be used as the basis of a definition of work-related harm for surveillance purposes. These principles are also used to evaluate the New Zealand and international definitions reviewed in this report. The principles are as follows:

• Purpose: The purpose of any definition must be very clear in order to ensure that the data used are fit for the purpose and the definitions are appropriately used by others. The varying purposes include identifying the nature of work-related harm (surveillance); ensuring that those who suffer from work-related harm receive appropriate treatment, rehabilitation or compensation; and ensuring that criminal behaviour is appropriately addressed to encourage safe employer practices, the overarching purpose of which is prevention.
• Who should be included: All groups that fall within the definition should be clearly distinguished to provide for clarity and to better target interventions. In particular, it is helpful to identify workers, bystanders and third parties, and students and volunteers in work-like situations.
• Types of harm: Work-related harm falls into several categories including harm in the workplace, motor vehicle harm and commuting harm. Fatal and non-fatal harm also need to be separately identified.

• Work-related injury: Work-related injury, often assumed to be acute, can also be chronic. Both acute and chronic injury should be identified.

• Work-related disease/illness: Similarly, definitions of work-related disease/illness should include both acute and chronic disease/illness.

• Burden of proof: Harm should be generally identified as work-related when “on the balance of probabilities” (more likely than not) it is related to work.

• Classification systems: Classification systems should also reflect the above principles to allow for effective surveillance across a range of data sets.

New Zealand’s definitions of work-related harm

There are a variety of mechanisms that provide for the recognition of work-related harm in New Zealand, which can lead to confusion, particularly for employers. The key pieces of legislation that help form the recognition of work-related harm in New Zealand are as follows:

• The Health and Safety in Employment Act 1992 (HSE Act), which establishes a set of duties for employers and others to ensure the safety of employees and others and defines serious harm for reporting purposes.

• The Injury Prevention, Rehabilitation, and Compensation Act 2001 (IPRC Act), which governs New Zealand’s no-fault insurance scheme that covers all personal injuries, including those sustained in the workplace, and work-related gradual process, disease or infection.

• The Employment Relations Act 2000, which provides a framework for employees to take personal grievances against employers, including those relating to mental and emotional work-related harm.

• The Sentencing Act 2002, which provides for the courts to order reparations or payments to be made for causing emotional harm, and loss or damage consequential on any emotional or physical harm. While this provision is not limited to work-related harm, it is often used in this context and thereby forms a part of how New Zealand recognises work-related harm.

The common law also provides a series of principles and duties that may provide a legal remedy for work-related harm where it is not expressly covered or excluded by statute.

Assessed against the principles set out above, the key findings regarding New Zealand’s definitions of work-related harm are as follows:

Purpose

• There is no clear comprehensive framework for identifying work-related harm for the purpose of surveillance, and there is a lack of clarity regarding the purposes of the varying definitions of work-related harm in New Zealand generally.
Who is covered

• The HSE and IPRC Acts have comparatively broad coverage of traditional workers, the self-employed, contractors, bystanders, commuters, volunteers and students, with a high degree of conformity between HSE Act and IPRC Act coverage.

• New Zealand’s broad coverage is, in part, due to the Accident Compensation Corporation’s (ACC) universal coverage for acute injury, which means that, while these groups may be covered for rehabilitation and compensation purposes, the harm may not be identified or recorded as work-related.

• Gaps in coverage for compensation purposes for work-related gradual process, disease or infection include bystanders, third parties, volunteers and students. Commuting accidents are recognised as work-related in very limited situations only (for example, when the employer is driving the vehicle).

Coverage of acute injury

• The HSE Act’s reporting requirements for acute injury were unclear and confusing for employers at the time this report was developed. This may be addressed by the agreed new definition of serious harm.

• Acute work-related injury is covered very well for compensation purposes, and there is a high level of awareness and uptake.

• The ease of obtaining cover for acute injury may mean, however, that underlying chronic conditions are not addressed.

Coverage of chronic injury

• There is under-reporting of chronic harm to the Department of Labour generally, which may be addressed, in part, by the agreed new definition of serious harm.

• The work-relatedness of chronic injuries, particularly musculoskeletal injuries, is often difficult to determine due to the variability of diagnosis by medical practitioners and the need for standard diagnostic terminology for chronic musculoskeletal injuries.

• Work-related pain conditions that are not considered to stem from an injury are not covered by ACC.

Coverage of acute disease/illness

• Work-related acute diseases are generally well recognised and covered, although there can be difficulties attributing common illness to work.

Coverage of chronic disease/illness

• There is little notification of work-related chronic disease to the Department of Labour, and very low numbers of claims to ACC, resulting in poor surveillance.

• While there is the potential under the HSE Act, to date in New Zealand, no prosecutions have been taken in regard to work-related chronic disease or illness, with the exception of stress.
• There is poor coverage of occupational disease for ACC purposes. Schedule 2 of the IPRC Act does not cover many diseases that have a clear link to work due to the presumptive nature of the schedule, and the IPRC Act definitions of work-related chronic conditions that may be covered where Schedule 2 does not apply are not considered easily understood.

• The work-relatedness of chronic disease, particularly common diseases, is often difficult to determine due to poor understanding of occupational causes by medical practitioners, a lack of scientific evidence in some emerging areas, a lack of New Zealand-specific scientific evidence and poor memory where exposures happened years before.

• There may be a possible bias towards diagnosing acute conditions for the ease of obtaining ACC cover, which masks the true nature of the problem and may prevent accurate treatment and compensation.

Coverage of mental harm

• Mental harm can be an injury that is acute, as in the case of a single traumatic event, or chronic in the case of the impact of a series of traumatic events over time. It can also be an illness that develops in response to acute or chronic exposures.

• Mental injury is only covered under the ACC scheme where it is the result of a physical injury or a single traumatic event.

• There is confusion amongst employers and a need for greater clarity, because stress, which generally manifests as a chronic illness, is covered under the HSE Act but not by ACC. Many employers do not realise that they have civil liability in this area, particularly in the context of employment law.

• The lack of coverage of work-related mental harm by ACC may be supplemented to an unknown degree by employment, sentencing and common law. Anecdotal comment from key informants is that the use of these avenues is increasing.

Burdens of proof

• Most key informants considered that ACC’s burden of proof for work-relatedness should be simplified to “on the balance of probabilities”, with other tests – such as the ability for ACC to decline the claim if it finds that the risk of suffering the personal injury is not significantly greater for persons who perform the employment task than it is for persons who do not perform it – removed.

Classification of work-related harm

• New Zealand does not have an integrated system for recording and classifying work-related harm.

• For notification purposes, the HSE Act defines work-related harm in a much more limited fashion than for its general duties. Even in light of the recently revised definitions for reporting purposes, given the fear of enforcement action, this is not seen as a useful mechanism for surveillance purposes.
• While ACC has the most robust system for recording work-related harm in theory, in practice, there are a number of limitations including its definitions and inaccurate coding.

**International definitions of work-related harm**

The international review highlights that the kinds of problems identified in New Zealand are experienced internationally and emphasises the potential difficulty of establishing a common framework for defining work-related harm. In particular:

• none of the countries examined in this review has an overarching definition of work-related harm

• with the exception of Finland, none of the countries examined in this review has a comprehensive method for collecting work-related harm data

• all of the occupational health and safety systems examined suffer from under-reporting of work-related harm, particularly work-related disease/illness – this indicates that they are unlikely to be a useful tool for surveillance, although they have other useful purposes, particularly for investigations and other prevention activities such as education

• all of the countries examined face challenges in the attribution of chronic conditions to work, due to the difficulties of identifying causation where there has been long latency, the often poor knowledge of general practitioners and/or the lack of relevant research.

In comparison to the countries examined in this review, New Zealand:

• is similar in its division of occupational safety and health regulation and compensation functions

• generally has broader coverage of particular groups of people other than those in a traditional work environment for compensation and regulation purposes, notably the self-employed and those in non-traditional employment relationships; however, reporting requirements are generally not as broad.

There are, however, a number of areas, where, in light of the principles for defining work-related harm set out above, New Zealand could learn lessons from the countries examined. In particular:

• all of the countries examined, with the exception of the United States, provide for more straightforward criteria for rehabilitation and compensation cover of work-related chronic injury and work-related chronic disease and illness

• several jurisdictions provide for clearer, more explicit reporting requirements, with broader coverage, including, for example, near-misses – this may reduce confusion for employers which would increase notification and may help focus investigations on preventative action

• each of the countries examined provides compensation for work-related mental harm, albeit with some limitations

• the Netherlands, Finland and several states in Australia recognise commuter accidents as work-related
• Australia, the United Kingdom, Finland and the United States all provide examples of data collection methods that draw on multiple sources to provide more accurate data on work-related harm than single sources alone.

Implications for diagnosis, rehabilitation, compensation and prevention

The key findings were as follows:

Diagnosis

• Work-related chronic illness and work-related chronic injury are currently considered to be under-identified for a number of reasons, primarily limitations with the IPRC Act’s section 30, inadequate medical diagnosis based on inadequate medical training and the lack of commonly agreed diagnostic terminology.

• Key informants considered that the most important interventions to improve diagnosis were establishing systems to ensure that ACC claims are investigated by people with the appropriate expertise, improving the occupational medicine training of general practitioners and improving access to occupational medical specialists in the public health system.

Rehabilitation and compensation

• Current definitions exclude those suffering from chronic work-related mental harm, work-related pain conditions, work-related third party disease (such as that contracted by dust brought home in clothes) and work-related gradual process, disease or infection suffered by volunteers or students in work-like situations. The limitations of the current definitions have implications for the ability of those affected to recover and return to work, and to receive appropriate compensation.

• The current definitions are also considered to lead to inappropriate or delayed interventions, in some cases, and perceptions of inequalities between those who may access ACC only and those who may access other avenues of compensation through the courts.

• The benefits of more comprehensive rehabilitation of work-related harm are likely to be quicker return to work, reduced compensation costs, greater productivity and all the benefits of improved health outcomes generally. There would be costs, particularly to employers, in running a broader scheme.

• Full coverage of work-related harm has been dismissed on the basis of the cost that would fall to employers through increased levies. This assumption needs to be evaluated in light of the broader costs to employers, the economy and society of reduced productivity and the burden on public health and other social services, and the gains to be made from increased awareness of the problems and increased prevention activities.

Prevention

• The fundamental impact of the lack of an overarching definition of work-related harm and a co-ordinated system for gathering work-related harm data
is the inability to know the true nature of the problems and where to target prevention activities.

- Establishing a reliable surveillance mechanism with a comprehensive definition of work-related harm is the first step in establishing an effective prevention system.

- ACC’s prevention function in regard to work-related harm is seen to be limited by its requirement to reduce levies and its predominant focus on injury. There is also a perceived lack of clarity around the purpose of the Department of Labour’s reporting requirement.

- In spite of the Workplace Health and Safety Strategy and the New Zealand Injury Prevention Strategy, there is a general concern that prevention activities are not co-ordinated, particularly between ACC and the Department of Labour. There appears to be continuing concern that there is no agency taking full responsibility for the prevention of work-related harm.
SUMMARY OF RECOMMENDATIONS

Recommendations

On the basis of the findings of this review, we strongly recommend establishing responsibility for developing a surveillance system for work-related harm. We recommend a set of principles for defining work-related harm that could be used as the basis of a definition of work-related harm for surveillance purposes, with the intention of ensuring that all aspects of work-related harm can be clearly identified. Finally, we recommend a set of practical steps that include reviewing New Zealand’s current definitions in light of these principles, their own purposes and the broader framework for recognising work-related harm in New Zealand, as well as improving medical training and employer education.

A system for surveillance

Recommendation 1

1.1 NOHSAC’s recommendations in Surveillance of occupational disease and injury in New Zealand\(^1\) should be implemented, in particular, establishing an expert group to advise on the development of an effective system of occupational disease and injury surveillance.

1.2 The roles of the expert group should be to:

a) develop a broad definition of work-related harm for surveillance purposes based on the principles outlined below

b) develop an ongoing surveillance method based on the recommendations in the NOHSAC report Surveillance of occupational disease and injury in New Zealand\(^1\)

c) make recommendations for adjustments to existing definitions of work-related harm to improve the data collection for surveillance purposes

d) make recommendations to improve the use of operational classification systems for work-related harm in New Zealand, including the development of ICD-11, which is currently underway.

Principles for defining work-related harm for surveillance purposes

Recommendation 2

2. The definition of work-related harm must identify its purpose(s).

Recommendation 3

3.1 The definition of work-related harm should specifically identify:

- workers
- bystanders and third parties
- students in work-like situations
• volunteers in work-like situations.

3.2 The definition of work-related harm should specifically identify:
• harm in the workplace
• motor vehicle harm
• commuting harm.

3.3 Fatal and non-fatal harm should be separately identified.

Recommendation 4

4.1 The definition of work-related injury should include both acute and chronic injury.

4.2 The definition of work-related disease/illness should include both acute and chronic disease/illness.

Recommendation 5

5.1 Harm should be identified as work-related when “on the balance of probabilities” it is considered work-related, other than in the case of a criminal prosecution.

5.2 Certain specified conditions that have a strong correlation with work exposures should be considered work-related unless proven otherwise, as with the current Schedule 2 of the IPRC Act.

Further work towards a common approach

Recommendation 6

6 NOHSAC should commission a major cost/benefit analysis of the implications of a more comprehensive ACC scheme covering all work-related harm as set out in the principles for defining work-related harm recommended in this report, factoring in the broader costs to employers, the economy and society of reduced productivity; the burden on public health and other social services; and the gains to be made from increased awareness of the problems, increased rehabilitation and increased prevention activities.

Recommendation 7

7 The definitions of work-related harm in the IPRC Act should be reviewed in light of the multiple purposes of the IPRC Act; the broader definitions of work-related harm employed in Finland, Victoria and New South Wales; the principles for defining work-related harm outlined above; and the recommended cost/benefit analysis.

Recommendation 8

8 The definition of work-related harm for reporting purposes should be reviewed in light of the purpose of the notification requirement under the HSE Act and the principles outlined above. Particular consideration should be given to requiring near-misses with the potential for serious harm to be notified.
Recommendation 9

9.1 The Department of Labour should establish a working group with the Ministry of Health and representatives from each of New Zealand’s medical schools and the Medical Council to look at ways to improve medical training in the recognition and identification of work-related harm, particularly work-related chronic harm.

9.2 The Department of Labour and ACC should continue their efforts to educate employers about work-related harm, particularly work-related disease and the recent additions to Schedule 2 of the IPRC Act.
CHAPTER 1: INTRODUCTION AND METHODOLOGY

1.1 Scope of this review

In 2008, the National Occupational Health and Safety Committee (NOHSAC)\(^1\) commissioned Allen and Clarke, Policy and Regulatory Specialists, to develop a comprehensive technical report on the definition of work-related harm and its implications for diagnosis, rehabilitation and compensation.

NOHSAC required the report to:

- compare and contrast how work-related harm is currently defined in New Zealand and other countries and the subsequent implications for diagnosis, rehabilitation and compensation
- review concepts of work-relatedness of disease and injury and compare and contrast these with the definitions used by regulatory and compensation agencies responsible for occupational health and safety internationally
- review the criteria used in the same countries to diagnose and differentiate between acute injury, acute disease/illness, chronic injury and chronic disease/illness
- review the classification systems that are used to operationalise the concepts of work-relatedness in the same countries
- show how harm, as defined, impacts on policy development related to occupational health and safety, the relationship between the diagnosis of work-related harm and its impacts on compensation and subsequent prevention programmes, differing burdens of proof between various Acts and regulations, and occupational disease and the relationship with public health
- provide recommendations for harmonising the varying definitions of harm currently used in New Zealand with a view to providing more effective and efficient diagnosis, rehabilitation and compensation for work-related harm.

This report is designed to provide a thorough understanding of international concepts of work-related harm and the legal frameworks in which work-related harm is recognised in New Zealand and five other countries. The report discusses the implications of definitions of work-related harm for diagnosis, rehabilitation, compensation and prevention, and makes recommendations to help inform future decisions in this area.

The other five countries examined in this review are Australia, the United Kingdom, the Netherlands, Finland and the United States of America. They were chosen following discussion with NOHSAC based on the findings of previous NOHSAC work.

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\(^1\) NOHSAC is responsible for providing independent advice to the Minister of Labour on major occupational health and safety issues in New Zealand.
The information and key informant views presented in this report are not new. The report summarises existing literature, and the issues raised by key informants in this project have been raised in numerous other contexts.\(^2\)

This project builds on previous NOHSAC reports, in particular:

- *The burden of occupational disease and injury in New Zealand*\(^4\)
- *The surveillance of occupational disease and injury in New Zealand*\(^1\)
- *The national profile of occupational health and safety in New Zealand.*\(^2\)

The intended audience for this report is NOHSAC. Other audiences may include the Ministers and officials from a range of government departments, researchers and health and safety professionals.

### 1.2 Objectives of this review

The specific objectives of this report were to:

- analyse concepts of work-related harm and the implications of how the definitions are applied in practice for diagnosis, rehabilitation, compensation and prevention
- compare and contrast how work-related harm is currently defined in New Zealand and selected other countries
- develop recommendations for harmonising the varying definitions of harm currently used in New Zealand with a view to providing more effective and efficient diagnosis, rehabilitation, compensation and prevention for work-related harm.

### 1.3 Terminology

The key terms used in this report are explained below. Appendix 1 sets out a glossary of abbreviations used in this report.

**Work-related harm** is a broad concept that encompasses all work-related health effects including occupational fatalities, occupational disease and occupational injury, as well as fatalities, diseases or injuries that are caused by work but may not be considered occupational, such as bystander injury. It includes both mental and physical harm and encompasses each of the four subsets explained below: acute injury, chronic injury, acute disease/illness and chronic disease/illness.

**Acute injury** refers to an injury that happens suddenly or in a short space of time, such as a fall.

**Chronic injury** refers to an injury that happens over a longer period of time, such as epicondylitis.

**Acute disease/illness** refers to illness or disease that happens suddenly, such as the contraction of an infectious disease.

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\(^2\) See, for example, Pearce, Dryson, Gander, Langley and Wagstaffe (2007)\(^3\) or Malcolm, Wilson, Baker and Weinstein (1998).\(^3\)
**Chronic disease/illness** refers to illness or disease that has long latency or develops slowly over time, such as lung cancer.

### 1.4 Methodology

This report was developed on the basis of:

- interviews with key informants involved in occupational health and safety in New Zealand – a list of the key informants involved in this project is set out in Appendix 2.

- a search of literature relating to definitions of work-related harm in New Zealand, Australia, the United Kingdom, the Netherlands, Finland and the United States of America – a reference list is set out at the end of this report.

- a search of legislation relating to definitions of work-related harm in New Zealand, Australia, the United Kingdom, the Netherlands, Finland and the United States of America. A case law search was conducted for New Zealand only. A list of legislation by country is set out in Appendix 3.

#### 1.4.1 Key informant interviews

The purposes of the key informant interviews were to:

- identify who was using the current definitions of work-related harm and for what purposes.

- identify key informants’ views on the implications of current definitions of work-related harm for diagnosis, rehabilitation, compensation and prevention.

In total, the project team conducted semi-structured interviews with 43 key informants including government agencies, employer organisations, employee representatives, research institutions, occupational health practitioners, occupational health and safety and ACC litigation specialists, and safety organisations and services.

Key informants were asked to comment on a range of issues including:

- when an illness or injury should be considered to be work-related.

- how effectively New Zealand’s current definitions ensure work-related harm is recognised.

- specific problems experienced with New Zealand’s current definitions of work-related harm, particularly in regard to the Health and Safety in Employment Act 1992 (HSE Act) and the Injury Prevention, Rehabilitation, and Compensation Act 2001 (IPRC Act).

- the implications of the application of these definitions for diagnosis, rehabilitation, compensation and prevention.

- the criteria used to diagnose and differentiate between acute injury, acute disease/illness, chronic injury and chronic disease/illness.

- the systems used to classify work-related harm in New Zealand.
• the impact of the current definitions on the development of occupational health and safety policy
• the impact of the differing burdens of proof applied in regard to different legislative definitions of work-related harm
• the impact of the current definitions of work-related harm on occupational disease and the relationship with public health
• the impact of the current definitions of work-related harm on the surveillance of occupational disease and injury
• the need, if any, to harmonise the varying definitions of work-related harm currently used in New Zealand.

Key informants were also asked to identify any particular research, literature or case law that they may consider to be relevant to this project based on their experience.

Efforts were made by email to identify key informants in each of the five other countries examined in this review. However, possibly due to the lack of a co-ordinated approach to defining work-related harm in the countries examined, no responses were received.

The project team gratefully acknowledges the participation and co-operation of all key informants.

1.4.2 Literature review

The literature search was jointly undertaken by the Department of Labour’s library staff and the project team. Once the search results were returned, the project team selected materials for inclusion according to the selection criteria outlined in the terms of reference. Methodological rigour was assessed using a critical appraisal checksheet. The final list was reviewed by NOHSAC to ensure that all relevant literature had been identified.

The majority of the material selected was original research. This material was supplemented by information collected through the key informant process and through internet searches on relevant organisations’ websites.

The project team gratefully acknowledges the assistance of the Department of Labour library.

1.4.3 Legislation and case law review

The legislation and case law review was undertaken by the Wellington District Law Society library and the project team. All relevant legislation from the five countries examined was identified. The case law review was limited to New Zealand. This material was supplemented by information collected on relevant case law through the key informant process and through internet searches on relevant organisations’ websites.

The project team gratefully acknowledges the assistance of the Wellington District Law Society library.
1.5 Assumptions and limitations

Firstly, it should be noted that none of the countries examined in this review, including New Zealand, has a single definition of work-related harm. There are numerous definitions of work-related harm established for different purposes, both in New Zealand and internationally. Based on the objectives of the project, Allen and Clarke have assumed that the project should review definitions of work-related harm that are designed for:

- surveillance
- rehabilitation
- compensation
- reporting for health and safety prevention
- enforcement.

Secondly, in many cases, legal frameworks that do not define work-related harm provide for the recognition of work-related harm. For example, in the Netherlands, work-related harm is not defined for compensation purposes, but it is compensated through a generic health care and income support system. This project has included discussion of legal frameworks that recognise work-related harm, even where there is not an explicit definition of work-related harm.

Thirdly, the project team has taken “harmonisation” to mean greater consistency within New Zealand’s definitions rather than a single definition of work-related harm, which is unlikely to be achievable given the different purposes of the current definitions and the complexities of the systems in which they sit.

In New Zealand (and internationally), there are separate frameworks for compensation and enforcement purposes. In most cases, the different definitions of work-related harm examined are integral to one of these particular legislative structures. New Zealand would need to make fundamental changes to the structure and organisation of its occupational health and safety, rehabilitation and compensation legislation if it wanted to apply a single definition of work-related harm. Recommendations on the government’s structure and organisation of managing work-related harm go beyond the scope of this report and would require a much broader investigation than definitions alone. This project has, therefore, limited its recommendations to principles for defining work-related harm that could be used to assess definitions of work-related harm established for different purposes.

Fourthly, there are many stakeholders in New Zealand (and internationally) with experience and understanding of the implications of New Zealand’s definitions of work-related harm. While the project team sought to interview a representative range of stakeholders, the authors accept that this report does not represent a comprehensive survey of all issues in this area. However, they are confident that they have addressed the main issues, which arose as key themes repeated by all their sources.

Fifthly, the legislative definitions of work-related harm continue to evolve internationally. In New Zealand, key definitions of work-related harm were
amended by the Injury Prevention, Rehabilitation, and Compensation Act 2008, which came into force on 1 August 2008. In October 2008, the Department of Labour announced a revision of the definition of serious harm under the Health and Safety in Employment Act 1992 to be implemented by the end of 2008. In both cases, while the new provisions have been considered in this review, it is too early to assess their impact.

Finally, the recommendations in this report are based on the information collected through the key informant interviews and literature, legislation and case law reviews. The recommendations themselves have not been subject to consultation with stakeholders.
CHAPTER 2: CONCEPTS OF WORK-RELATED HARM

2.1 Chapter overview

Chapter 2 reviews the concepts and principles of defining work-related harm, without reference to current legislative constructs. The findings in Chapter 2 form the basis of a set of principles that are used to evaluate current definitions of work-related harm in New Zealand (in Chapter 3) and internationally (in Chapter 4).

In summary, the key characteristics of definitions of work-related harm identified in the literature review and key informant interviews are as follows:

- Purpose: Definitions of work-related harm have different purposes, which include surveillance, treatment, rehabilitation, compensation, enforcement of health and safety regulations and broader prevention programmes.

- Who is included: Definitions of work-related harm generally define who is a worker, for example, employees and the self-employed, and others who may be harmed in a workplace, such as members of the public, students or volunteers.

- Concepts of injury: Definitions of work-related harm generally define injury, which may or may not include both acute and chronic injury.

- Concepts of disease: Definitions of work-related harm generally define disease, which may or may not include both acute and chronic disease.

The review also looks at operational concepts of work-related harm as seen in classification systems used for recording purposes.

2.2 Introduction

The underlying theme in the concepts discussed in this chapter is identifying the degree of connection between the harm that has occurred and work. Most key informants talked about the importance of a causative, intrinsic relationship between the injury or illness and the work. One key informant expressed their view as follows: “Were it not for performing this work in this environment, would the employee have suffered the illness or injury: at all, to the same degree, or as soon as this? Has the employment had an effect on the employee’s health that has decreased their earning ability?”

The International Labour Organisation (ILO) definitions of work-related harm provide a useful point of reference when discussing concepts of work-related harm and definitions used internationally. The ILO, in regard to the Occupational Safety and Health Convention 1981, defines “workers” as all employed persons; “workplace” as all places where workers need to be or to go by reason of their work and that are under the direct or indirect control of the employer; and “health”, in relation to work, as not merely the absence of disease or infirmity, but the physical and mental elements affecting health that are directly related to safety and hygiene at work. This framework reflects, to varying degrees, occupational safety and health legislation around the world. It does not define
work-related harm, but establishes a framework that creates obligations on an employer to maintain a safe and healthy work environment.

In contrast, the ILO Protocol of 2002 to the Occupational Safety and Health Convention 1981 defines work-related harm for notification and publication purposes. The Protocol distinguishes occupational injury, occupational disease, near-misses and commuting accidents as follows:

- The term “occupational accident” covers an occurrence arising out of, or in the course of, work that results in fatal or non-fatal injury.
- The term “occupational disease” covers any disease contracted as a result of an exposure to risk factors arising from work activity.
- The term “dangerous occurrence” covers a readily identifiable event, as defined under national laws and regulations, with potential to cause an injury or disease to persons at work or to the public.
- The term “commuting accident” covers an accident resulting in death or personal injury occurring on the direct way between the place of work and:
  - the worker's principal or secondary residence, or
  - the place where the worker usually takes a meal, or
  - the place where the worker usually receives his or her remuneration.

The 2002 Protocol was introduced in the face of frustration with the inconsistency around the world of definitions of work-related harm for reporting purposes. The aim of the Protocol is to promote the harmonisation of recording and notification systems of work-related harm internationally to better identify their causes and establish preventive measures. On the basis of the international comparison in this review (Chapter 4), however, there remains broad inconsistency in the reporting of work-related harm. For example, commuting accidents are not regularly recorded.

2.3 **What is the purpose of a definition of work-related harm?**

The first principle when defining work-related harm, or evaluating an existing definition, is that the purpose of the definition must be very clear in order to ensure that the data used are fit for the purpose and the definitions are appropriately used by others. This principle is reflected in the small but growing body of literature focused on the implications of how work-related harm is defined in any given context. As summarised by Cryer and Langley:

> ... if authors use (implicitly or explicitly) inappropriate definitions, then misleading descriptions of the epidemiology of injury are likely to ensue, with potential downstream effects on priority setting, policy making, prevention, and control.

The definitions of work-related harm used by regulatory and compensatory agencies, although used in practice for broader surveillance purposes, are generally designed for a more limited purpose: occupational safety and health law enforcement (prevention), rehabilitation and/or compensation. For example, for
the purposes of surveillance and prevention, it is likely to be useful to know about all aspects of work-related harm including near-misses, which is not necessary for the purpose of compensation. Existing legislative definitions all have boundaries that limit their effectiveness as tools for monitoring the overall burden of work-related harm.

NOHSAC’s *The burden of occupational disease and injury in New Zealand* highlighted the implications of relying on data collected for compensation purposes for surveillance purposes. The report estimated that, each year in New Zealand, there are:

- about 700–1,000 deaths from occupational disease
- about 100 deaths from occupational injury
- 17,000–20,000 new cases of work-related disease
- about 200,000 occupational injuries.

These estimates contrast with regularly reported official statistics from Statistics New Zealand, based on ACC claims. In the most recent official statistics, there were 231,300 ACC claims for work-related injuries or illness that occurred in 2007. Of those, 67 were lodged for work-related fatalities. While ACC data include both work-related injury and work-related disease/illness, the figures most closely reflect NOHSAC’s estimates for occupational injury and, as explained in Chapter 3, are likely to undercount work-related disease/illness and fatalities. The statistics reflect ACC’s emphasis on physical injury, with three industries – agriculture, forestry and fishing; manufacturing; and construction – accounting for approximately 36 percent of all claims for work-related injuries.

Many key informants talked about the need for different definitions for different purposes. Many noted that the purpose of any definition of work-related harm must be very clear and that the definition may need to be different depending on the purpose.

The main purposes for defining work-related harm that were identified can be summarised as about either prevention, or rehabilitation and compensation. The specific purposes identified included:

- surveillance – to get a complete picture of the actual nature of work-related harm, the overarching purpose of which is prevention
- identification for rehabilitation and compensation purposes – to ensure that those who suffer from work-related harm receive appropriate assistance or compensation
- enforcement – to ensure that criminal behaviour is appropriately addressed to encourage safe employer practices, the overarching purpose of which is prevention.

Some key informants considered that there needs to be a wider definition of work-related harm, with a lower burden of proof, for surveillance and prevention purposes than for compensation purposes. This argument was generally made on the basis of the importance of investigating trends and possible causation at the surveillance level, ensuring the sustainability of a rehabilitation/compensation
scheme and the acceptability of an employer taking responsibility for rehabilitation and compensation. One key informant stressed the importance of a high degree of certainty for effective rehabilitation. For example, moving a person out of employment should only be done if there is certainty.

2.4 Who should be included in a definition of work-related harm?

2.4.1 The changing nature of work

Definitions of work-related harm need to consider the current types of work relationships and ensure that those who are working are actually captured. NOHSAC’s new report on the changing nature of work in New Zealand shows that there have been changes such as downsizing, outsourcing, subcontracting, growing job insecurity and the re-emergence of home-based work and temporary employment. These changes are posing new challenges for the safety, health and well-being of workers, which means their capture is important. The concerns include long-established ergonomic and other physical risk factors as well as psychological factors:

Contemporary work-life is shaped by patterns of globalisation, increased economic liberalisation and the subsequent growth of free trade. Improved technologies have created new fields of work, and we are seeing an increase in the service economy. Strong competition between companies results in non-traditional employment practices such as outsourcing, contract labour hire, casual, seasonal and sessional work, part-time work and flexible work practices. These employment practices can create work intensification, a poor work-life balance, and high emotional demands which can all lead to increased risk of sustaining injury or disease in the workplace.

In New Zealand, particularly notable changes have been the significant increase of nearly half a million people entering or re-entering the paid labour force (a growth of nearly 30 percent) and the increase of women and older workers. The New Zealand population has also undergone substantial changes with regard to gender, ethnicity and age, which have implications for health and safety in the workplace.

ACC’s statistics also show the impact of the changing demographics of the workforce, with workers aged 65 years and over sustaining work-related injuries at a rate considerably higher than any other age group. Although workers aged 65 years and over made only 4 percent of all claims (9,200 claims) in 2007, this age group had the highest incidence rate of 177 claims per 1,000 FTEs. In 2006, workers in this age group accounted for almost 30 percent of the 81 claims lodged for work-related fatalities. They were also over represented among the more serious injury claims (those requiring weekly compensation or rehabilitation payments) at a rate almost three times higher than any other age group.

This New Zealand information mirrors similar international research. In a 2007 report, the European Agency for Safety and Health at Work identified a number of
emerging risks related to occupational safety and health. These included, for example, risks related to:

- new precarious contracts (temporary or on-call contracts) and the trend in companies towards lean production and outsourcing where workers usually carry out the most hazardous jobs, work in poorer conditions, often receive less training and have less job security, which may augment levels of work-related stress
- the ageing work-force due to the ageing population and the higher retirement age
- work intensification (high workload and work pressure) as a consequence of the new forms of employment mentioned above and also of the growing amount of information to handle at work resulting most commonly in health problems such as backache, muscular pains, fatigue and stress
- high emotional demands at work, particularly in the health care and service sectors, and as a result of violence and bullying in the workplace
- poor work-life balance due to irregular working hours, more women at work, single parents and households with dual careers, less family support and, in some cases, more dependent older relatives.

In this context, it is clear that definitions of work-related harm need to capture the appropriate range of working relationships, including casual work, and people working, including older workers.

2.4.2 Non-worker impacts of work-related harm

A small number of largely New Zealand and Australian-based studies on work-related fatalities, discussed below, have focused on the importance of identifying specific groups of people who should be identified in a definition of work-related harm.

Australia’s major study of work-related fatalities from 1989 to 1992 was based on coronial files and has formed the basis of a significant amount of research in this area. The study was influential in its separation of categories of persons, allowing workers at work, workers on the road, commuters, bystanders, volunteers, students, persons performing home duties and persons fatally injured on farms not due to obvious farm work to be separately identified.

This Australian study was used as a benchmark to assess the robustness of occupational safety and health (OSH) and workers’ compensation scheme data, showing that 65 percent of work-related deaths were not covered by OSH data, 43 percent of work-related deaths were not covered by compensation data and 34 percent of work-related deaths were not covered by either. The definitions used in this study are set out in Table 2.1.

Table 2.1: Definitions of work-related injury used to identify work-related fatalities in Australia

<table>
<thead>
<tr>
<th>Definition</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>A person who suffered a non-suicide traumatic death, that occurred in</td>
<td></td>
</tr>
<tr>
<td>Australia or to</td>
<td></td>
</tr>
</tbody>
</table>
Australian-based workers, to which workplace exposures contributed as a necessary factor and which can be attributed, as an individual death, to those exposures.”

The study excluded all persons who:

- died as a primary result of diseases, such as cancers and heart attacks
- committed suicide, even if there appeared to be some direct connection with work
- did not die as a result of their injuries.

**Workers** were defined as persons who were injured while performing some kind of activity for pay, profit or kind (including commuting to or from work) and were further defined as either work-road or workplace.

**Work-road** were workers killed in motor vehicle incidents on public roads in the course of their work.

**Workplace** comprised all other workers fatally injured as a result of work activity.

**Commuters** were persons killed whilst travelling to or from work.

**Bystanders** were persons who were not working but who were killed directly as a result of someone else’s work activity and were further defined as either workplace bystanders or road bystanders.

**Workplace bystanders** were any persons not working and fatally injured as a result of workplace activities usually not associated with public roads or public transport.

**Road bystanders** were persons not working and fatally injured in a motor vehicle incident on a public road (or on public transport) as a result of other people’s work, where the working vehicle was primarily “at fault” in the incident.

The study also identified a number of other groups whose death was related to work in a more indirect way, such as volunteers, students, persons performing home duties and persons fatally injured on farms but not due to obvious farm work.

By way of comparison to the Australian study, Table 2.2 sets out the similar, but slightly different, definitions of work-related harm used in studies of work-related fatal injuries undertaken in New Zealand and the United States. In the New Zealand study, traffic crashes on public roads were excluded. The US study excludes commuters and students.

**Table 2.2: Definitions of work-related injury used to identify work-related fatalities in New Zealand and the United States**

<table>
<thead>
<tr>
<th>Definitions of work-related injury used to identify work-related fatalities in New Zealand (^{15})</th>
</tr>
</thead>
<tbody>
<tr>
<td>All deaths that occurred:</td>
</tr>
</tbody>
</table>
• unintentionally, or due to homicide
• when people were working for pay, profit or payment in kind, including, for example, unpaid family assisting with a family business
• when people were assisting with a work activity in an unpaid capacity as official volunteers or students
• away from the workplace or in a non-work period, but to which work contributed
• due to incidents that were in New Zealand waters
• due to injuries on public roads that did not involve traffic
• due to traffic accidents on private roads, for example, accidents involving vehicles on private access roads to farms or quarries.

Deaths to which work exposures may have contributed but that were specifically excluded were those that occurred:
• due to traffic crashes on public roads
• one year or longer after the injury
• due to suicide
• due to occupational diseases and non-discrete events
• due to injuries to the military or involving the military that did not occur in New Zealand territory
• due to unpaid home duties
• through medical misadventure or complications
• for individuals less than 15 years of age or greater than 84 years of age
• due to the commission of a crime by the victim.

Definitions of work-related injury used to identify work-related fatalities in the United States

The National Institute of Occupational Safety and Health (NIOSH), in a 1999 study, used the following guidelines for determination of fatal injury at work in the United States:

On employer premises

Engaged in work activity, apprentice, vocational training Yes
On break, in hallways, rest room, cafeteria, storage area Yes
In employer parking lots while working, arriving or leaving Yes
Engaged in recreational activities on employer-controlled facilities (games etc.) for personal enjoyment No
As a visitor for non-work purposes, not on official business No
### Off employer premises

<table>
<thead>
<tr>
<th>Activity</th>
<th>Yes/No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working for pay or compensation, including at home</td>
<td></td>
</tr>
<tr>
<td>Working as a volunteer EMS, firefighter, or law enforcement officer</td>
<td>Yes</td>
</tr>
<tr>
<td>Working in a family business, including family farm – activity should be clearly related to a profit-oriented business</td>
<td>Yes</td>
</tr>
<tr>
<td>Travelling on business, including to and from customer/business contacts</td>
<td>Yes</td>
</tr>
<tr>
<td>Engaged in work activity where vehicle is considered the work environment (for example, taxi driver, truck driver etc.)</td>
<td>Yes</td>
</tr>
<tr>
<td>Homemaker working at homemaking activities</td>
<td>No</td>
</tr>
<tr>
<td>Working for self – non-profit, i.e., mowing lawn, repairing own roof, hobby or recreation activities</td>
<td>No</td>
</tr>
<tr>
<td>Student engaged in school activities</td>
<td>No</td>
</tr>
<tr>
<td>Operating vehicle (personal or commercial) for non-work activities</td>
<td>No</td>
</tr>
<tr>
<td>Commuting to or from worksite</td>
<td>No</td>
</tr>
</tbody>
</table>

The above studies have highlighted the impact that identifying categories of persons such as commuters and bystanders can have on our understanding of work-related harm.

The Australian study showed that there were about 200 bystander deaths per year – about 40 percent occurring in connection with some sort of formal workplace (often children on farms) and the remainder being bystander deaths resulting from collisions with working vehicles (at fault). Another 400 deaths per year occurred in similar motor vehicle incidents where the non-worker’s vehicle was considered at fault. There were an additional 150 commuter deaths per year, some of which clearly related to work exposures such as end of shift drinking, fatigue from long shifts and travel at night for shift workers.\(^{13}\)

These findings have led to recommendations that work-related injury definitions must clearly identify particular groups such as bystanders, commuters, students and volunteers, which may otherwise be ignored when considering the problem of work-related harm. Definitions that separately identify specific groups of people allow the broader impact of work to be more fully understood and allow for more targeted prevention interventions.\(^{17}\) In another example, research into paediatric farm injuries involving non-working children has shown that these “non-work” injuries occur because farm children are exposed to an occupational worksite with known hazards.\(^{18}\)

Similar basic definitions to the Australian coronial study were used by McNee, Langley and Feyer\(^{19}\) in a study identifying work-related fatal traffic crashes in New Zealand. The McNee et al. study identified 241 working fatalities and 192 commuting fatalities on the public roads in New Zealand between 1985 and 1998. In addition, although not engaged in work themselves, 1,447 people died in the process of another person’s work activity on a public road (bystanders). Work-related traffic fatalities contributed to 29 percent of all fatal injuries in the workplace in New Zealand during the time period studied.\(^{20}\)
This study highlighted that bystanders represented approximately 75 percent of the work-related fatal traffic crash injury problem in New Zealand. The researchers estimate that (on average) approximately 115 bystanders were killed each year, representing approximately 52 percent of the total work-related fatality problem. They concluded that work-related bystander deaths are a major contributor to work-related injury in New Zealand, the majority occurring in the context of road traffic crashes. In another New Zealand study, Ameratunga has drawn particular attention to the importance of identifying commuter harm.

Unpaid work at home is included in the classification of work in the ICD-10 classification system (discussed below), but is not included in any of the legislative definitions of work-related harm examined in this review. It is worth noting that a study based on the examination of coronial files identified fatal injury of persons engaged in unpaid domestic work activities as a significant cause of death. Being able to identify this group of people is important in terms of prevention – particularly if, as suggested by the researcher, there are overlaps with the kinds of causes of death from paid work.

Clearly, the impacts of work-related harm go beyond traditional workplace situations. Feyer, Lilley and Langley highlight the importance of considering a wide range of scenarios: work-related motor vehicle traffic crash injuries (both where the vehicle is the workplace and when commuting to and from work), intentional injury (homicide and suicide), injuries to non-employed people undertaking work (for example, family members involved in farm work), injuries to bystanders (those injured in the course of someone else’s work), self-employed, unpaid family members in for-profit operations and those who die from work-related injuries some time after the causal incident (up to one year).

2.4.3 Implications of differing definitions

Because of inconsistencies between data sets, comparative research commonly excludes at least some of the groups discussed above, which, in effect, reduces our ability to judge the true extent of work-related harm and to address prevention activities in these areas. For example, New Zealand’s most recent major study making quantitative estimates of work-related harm in New Zealand specifically included primary work-related injury or disease but excluded injury or disease that happened to a bystander or workplace visitor.

To illustrate the impact of these definitions, a study of fatal occupational injury in New Zealand, Australia and the United States that harmonised the case definitions set out above obtained different results to a study that relied on published omnibus statistics. This study highlighted how easily study results can be distorted and can be ultimately misleading where particular attention is not paid to how “work-relatedness” is defined.

The study highlighted a high level of agreement between the coding of working status, reasonable agreement on students, volunteers or suicides, but only moderate agreement for classifying bystanders and commuters: “Domestic violence at work, volunteer workers, business trips, social functions connected with work, hobby farmers and some possible bystander incidents that occurred on farms or on the roads were areas where coding was most variable between the
countries.” The authors attributed the disparities largely to different interpretations of the responsibilities of the employer: "... in the United States definition, bystanders, commuters, and farm no-work are all considered ‘not work-related’ and are not separately distinguished.”

Generally, there is little argument that, in principle, bystander harm caused by a workplace exposure where the employer or company was at fault should be identified as work-related harm. There is less consensus where there was no fault on the part of the workplace, or where the bystander was at fault. Identifying these incidents, may, however, provide useful information about previously unidentified hazards that workers face. In addition, knowing about the similarities between work and non-work-related harm may help better target prevention strategies.

Many key informants talked about “grey areas” where it is either contentious or difficult to relate harm to work. Examples of “grey areas” cited in interviews included commuter accidents on the way to work, exposures to family through dust being brought home in clothes, unpaid employment, interfaces between environmental exposures and unpaid employment, trainees, members of the public, contractors, self-employed, volunteers, when a person is away from their principal place or work (either working from home or in the community), when it isn’t clear whose workplace it is or whether it is anybody’s and when a person is involved with work people but not necessarily for work purposes.

Some key informants were of the view that these types of harm should be classified as work-related to ensure that the broader consequences of work activity are acknowledged and preventive actions can be taken. Several expressed concern that bystander deaths are not always investigated for employer culpability, unless the incident is obviously work-related. Others were of the view that these types of harm should not be classified as work-related, generally due to a concern that the ACC scheme must be limited to be sustainable.

Who is captured in a definition of work-related harm clearly has consequences for use of the definition, be it surveillance, rehabilitation or compensation. Any definition must be clear in its purpose(s) when determining who should be included. For surveillance purposes, the capture of a wide range of particular groups is particularly useful in highlighting the size and nature of work-related harm problems.

2.5 Concepts of work-related injury

Generally, the concept of what is an injury is often taken for granted. For example, the New Zealand Injury Prevention Strategy does not define injury. Most key informants noted that any harm that takes place in the workplace during work time is work-related and that, on this basis, identifying work-related acute injury is straightforward. While the distinction between injury and illness/disease may seem straightforward, there are common crossovers and confusions. For example, in some cases, harm can be classified as either or both injury and illness, as in the case of chemical exposure or psychological harm. The reality is that jurisdictions around the world use different concepts of work-
related injury and have different constraints in their information gathering mechanisms.

Injury is commonly defined as damage to the body produced by an energy exchange and an acute exposure. For example, Castillo, Pizatella and Stout describe occupational injuries as injuries caused by acute exposure in the workplace to physical agents, such as mechanical energy, electricity, chemicals and ionising radiation, or from sudden lack of essential agents, such as oxygen or heat. Examples of events that can lead to worker injury include motor vehicle crashes, assaults, falls, being caught in parts of machinery, being struck by tools or objects and electrocutions. Resultant injuries include fractures, lacerations, abrasions, burns, amputations, poisonings and damage to internal organs.  

In contrast, disease tends to be used for pathologies such as cancer that manifest over a long time. The Australian/New Zealand Comparative Performance Monitoring Report effectively defines injury as an acute condition, and disease as a chronic condition:

- Occupational injuries are defined as all employment-related injuries which are the result of a single traumatic event, occurring while a person is on duty, or during a recess period, and where there was a short or non-existent latency period. This includes injuries which are the result of a single exposure to an agent(s) causing an acute toxic effect.

- Occupational diseases are defined as all employment-related diseases which result from repeated or long-term exposure to an agent(s) or event(s), or which are the result of a single traumatic event where there was a long latency period (for example, the development of hepatitis following a single exposure to the infection).  

These definitions do not acknowledge, however, that some injuries manifest over a long period of time, such as many musculoskeletal disorders, and some diseases, particularly infectious diseases, may manifest suddenly. Mental harm can fall into either category, resulting from a traumatic event (injury) or a chronic illness.

Conceptual clarity on chronic injury is still emerging. Chronic injuries are excluded from the World Health Organisation’s theoretical definition of injury, where an injury is considered to be “caused by acute exposure to physical agents”, and they are generally considered to be excluded from chapter XIX of the ICD-10 on injury, although Langley and Brenner have highlighted that there are no guidelines to indicate that all the strains and sprains within the injury chapter of the ICD must have occurred acutely and therefore question this assumption.

In a recent analysis of New South Wales hospitalisation data for work-related injuries, the importance of identifying acute and non-acute injuries was identified on the basis that non-acute injuries represented a significant proportion of work-related injury hospitalisations for New South Wales during 2000/01–2004/05.

While commonly considered to be straightforward, clearly differing definitions or assumptions of injury are commonplace. In light of the emerging literature on this subject and the size of the problem of chronic injury discussed further in
Chapter 3, there appear to be clear advantages in identifying both acute and chronic injury.

2.6 Concepts of work-related illness/disease

Historically, the concept of work-related disease was limited to diseases that were very clearly associated with a particular occupation, such as coal miners’ pneumoconiosis. Identifying the links between particular diseases and particular occupations, while still vitally important, is limited in the current environment of diverse work practices. Identifying work-related disease, particularly where there has been a long latency since the exposure, is a difficult task. This is the case not only with new, less frequent or more unusual diseases, which may not have been well studied, but also very common diseases, like asthma, which may have many possible causes.

The concept of work-related illness is generally now based on the likelihood of work being a causative factor for the illness or disease in any given situation. In legal terms, this is referred to as “the burden of proof” – the common thresholds being civil burden “the balance of probabilities” (or “more likely than not”) and the criminal burden “beyond all reasonable doubt”. As discussed further in Chapters 3 and 4, legislation may add additional questions that specify who bears the burden of proof or may require additional hurdles to be met. For example, legislation may require non-occupational exposures to be taken into consideration.

There is a lack of academic discussion on the appropriate level of proof required for establishing a work-related causation. Dryson, Walls, McLean and Pearce used two simple thresholds in a study where notified cases of adult bladder cancer were interviewed to determined work-relatedness. A probability of greater than 50 percent was recorded as “probable occupational cancer”, and a probability of less than 50 percent but greater than 0 percent was recorded as “possibly occupational cancer”. Those who had no occupational exposures were registered as “not occupational cancer”.

The authors noted that non-occupational exposures are unlikely to affect the probability of causation by occupational factors. For example, the probability of occupational causation being greater than 50 percent is not altered by the presence of non-occupational exposures.

This study highlights the importance of this kind of investigation for identifying accurate estimates of occupational causation. Based on the study’s findings, one could expect up to 600 cases of occupational cancer to occur in New Zealand each year. However, excluding asbestos, only 11 cases of occupational cancer had been notified to the Department of Labour between 1992 and 1996.

Several key informants recommended that the common definition for determining work-related disease be: “any disease occurring that is more likely than not related to work”. A “more likely than not” approach to determining work-related disease allows for situations where there is significant scientific research as well as situations where there is not. It does not, however, overcome the hurdle of making appropriate links between harm and illness where there is a lack of information.
As with injury, it is also important to ensure that both acute and chronic conditions are recognised.

2.7 Operational concepts of work-related harm

It is not only the theoretical or policy definition that impacts on the identification of work-related harm. Estimates of the incidence of harm can vary substantially depending on the operational definition or classification system employed.

Chapters 3 and 4 show that none of the countries examined in this review have comprehensive definitions of work-related harm or national systems for recording work-related injuries, illnesses and fatalities. There is also considerable inconsistency in the classification of work-related harm within the various systems used for surveillance internationally.

Internationally, researchers have attempted to rectify the inadequacies of occupational safety and health, and workers’ compensation data through a number of different methods. These include estimating work-related disease through applying attributable fractions based on epidemiological studies and estimating work-related injury through the examination of coronial and hospitalisation data, using the International Statistical Classification of Diseases and Related Health Problems (ICD).

Classification systems need to be developed and utilised in such a way that robust surveillance of work-related harm is possible. Ideally, systems recording work-related harm would use identical or compatible classification systems internationally. The ICD has the greatest potential in this regard as it is broadly used and continues to be developed with improvements in the ability to identify work-related harm.

The ICD is the World Health Organisation’s classification system for injury and disease. It is currently in its 10th revision (ICD-10) and is the international standard diagnostic classification for general epidemiological and many health management purposes. These purposes include analysis of the general health situation of population groups and monitoring of the incidence and prevalence of diseases and other health problems in relation to other variables such as the characteristics and circumstances of the individuals affected. It is used to classify diseases and other health problems recorded on many types of health and vital records including death certificates and hospital records.

Chapter XX External causes of morbidity and mortality of ICD-10 classifies types of accidents (for example, fall), place of occurrence (which includes a wide range of possible workplaces) and activity code. One activity code is “While working for income/Paid work (manual) (professional)/Transportation (time) to and from such activities/Work for salary bonus and other types of income”. The other activity codes include sports, leisure activity (which includes volunteer work), other types of unpaid work (such as domestic duties, education) and vital activities (resting, sleeping or eating). The activity code “While working for income” was a new introduction with the 10th revision of the ICD and allowed the identification of work-related harm from hospital records and other data sets classified according to the ICD for the first time.
The International Classification of External Causes of Injuries (ICECI) is a system of classifications to enable systematic description of how injuries occur, designed especially to assist injury prevention. ICeci has been developed as a related classification with respect to ICD-10 Chapter XX; ICECI does not replace this chapter because it includes the external causes and not just a description of the injury itself.

The primary purpose of a classification system is to build up robust data for prevention purposes. Robust, consistent classification systems are important, but need to be considered within the context in which they are applied. For example, ACC claims and hospital records may both be coded according to a robust classification system, but the work-related harm identified will still represent only a portion of actual work-related harm in the community. The classification systems examined in Chapters 3 and 4 will be considered within the context of the surveillance or reporting systems that they sit in.

While the ICD is the most common classification system used internationally, it currently provides limited detail on work-related harm. In practice (for example, in Australia, as discussed in Chapter 4), other classification systems have been developed to more fully support the analysis of work-related harm. Classification systems should be developed to reflect the principles discussed in this chapter, to allow for effective surveillance across a range of data sets.

2.8 Chapter conclusion

The actual nature of work-related harm experienced is constantly changing as new exposures and risks emerge and better protections and knowledge develop. There is significant international commentary on the changing nature of the work environment, in particular, less structured or formal working conditions, and the changing gender, age and ethnic make-up of the workforce. In this context, the need to identify harm caused by work becomes increasing complex and increasingly important.

The theoretical concepts of work-related injury and illness are not straightforward. They continue to evolve in response to weakness and failures in the incumbent systems of occupational health and safety and compensation. Clearly describing differences in approaches where it is not possible to use standardised data is vital. However, the next step would be to employ common definitions of work-related harm. This would allow for a much clearer understanding of the nature of the problem and a clearer platform from which to make policy decisions. As discussed in the next chapters, however, this would be a significant challenge in the face of current disparate systems and structures.

On this basis, the following set of principles for defining work-related harm could be used as the basis of a definition for surveillance purposes, as well as a tool for evaluating existing definitions with a view to developing a common approach to recognising work-related harm:

Purpose

- The purpose of any definition must be very clear in order to ensure that the data used are fit for the purpose and the definitions are appropriately used by
others. The varying purposes include identifying the nature of work-related harm (surveillance); ensuring that those who suffer from work-related harm receive appropriate treatment, rehabilitation or compensation; and ensuring that criminal behaviour is appropriately addressed to encourage safe employer practices, the overarching purpose of which is prevention.

**Who should be included**

- All groups that fall within the definition should be clearly distinguished to provide for clarity and to better target interventions. In particular, it is helpful to identify workers, bystanders and third parties, and students and volunteers in work-like situations.

**Types of harm**

- Work-related harm falls into several categories including harm in the workplace, motor vehicle harm and commuting harm. Fatal and non-fatal harm also need to be separately identified.

**Work-related injury**

- Work-related injury, often assumed to be acute, can also be chronic. Both acute and chronic injury should be identified.

**Work-related disease/illness**

- Similarly, definitions of work-related disease/illness should include both acute and chronic disease/illness.

**Burden of proof**

- Harm should be generally identified as work-related when “on the balance of probabilities” (more likely than not) it is related to work.

**Classification systems**

- Classification systems should also reflect the above principles to allow for effective surveillance across a range of data sets.
CHAPTER 3: NEW ZEALAND’S DEFINITIONS OF WORK-RELATED HARM

3.1 Chapter overview

There are no overarching definitions of work-related harm, or work-related injury or disease, in New Zealand. As this chapter shows, there are a variety of mechanisms that provide for the recognition of work-related harm, which can lead to confusion, particularly for employers.

Chapter 3 describes the statutory framework that provides for the recognition of work-related harm in New Zealand and analyses it in comparison to the principles for defining work-related harm identified in Chapter 2.

The key pieces of legislation that help form the recognition of work-related harm in New Zealand are as follows:

- The Health and Safety in Employment Act 1992 (the HSE Act), which establishes a set of duties for employers and others to ensure the safety of employees and others and defines serious harm for notification purposes. A number of other statutes such as the Hazardous Substances and New Organisms Act and energy legislation cross-refer to or use similar definitions of serious harm to the HSE Act.

- The Injury Prevention, Rehabilitation, and Compensation Act 2001 (the IPRC Act), which governs New Zealand’s no-fault insurance scheme that covers all personal injuries including those sustained in the workplace and work-related gradual process, disease or infection.

- The Employment Relations Act 2000, which provides a framework for employees to take personal grievances against employers. Mental and emotional work-related harm, including stress, while not defined in statute, are dealt with in the context of this framework.

- The Sentencing Act 2002, which provides for the courts to order reparations or payments to be made for causing emotional harm, and loss or damage consequential on any emotional or physical harm. While this provision is not limited to work-related harm, it is often used in this context and thereby forms a part of how New Zealand recognises work-related harm.

- Finally, the common law provides a series of principles and duties that may provide a legal remedy for work-related harm where it is not expressly covered or excluded by statute, particularly the IPRC Act. Because of New Zealand’s no-fault compensation system, however, there is less common law litigation than countries with torts-based systems such as the United Kingdom.

The summary in this chapter reflects legislation current at December 2008. It includes the Injury Prevention, Rehabilitation, and Compensation Amendment Act 2008, all parts of which were in force by 1 October 2008. It also includes changes
to the definition of serious harm announced by the Department of Labour in October 2008.

An overview of the coverage of the concepts discussed in Chapter 2 in New Zealand’s statutory framework is set out in Table 3.1 below:
<table>
<thead>
<tr>
<th></th>
<th>HSE Act – general duties</th>
<th>HSE Act – notification</th>
<th>IPRC Act</th>
<th>Employer</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Purpose of relevant parts of Act</strong></td>
<td>Prevention of work-related harm.</td>
<td>Investigation of serious harm.</td>
<td>Prevention, rehabilitation, compensation.</td>
<td>Remedies personal gri including me emotional har</td>
</tr>
<tr>
<td><strong>Who is covered by relevant parts of Act</strong></td>
<td>Employees, self-employed, principals, volunteers, students, not commuters.</td>
<td>Employees, self-employed, contractors.</td>
<td>For work-related harm, anyone working for pecuniary gain or reward (not commuters). For acute injury, anyone whether or not working.</td>
<td>Employees o</td>
</tr>
<tr>
<td><strong>Injury</strong></td>
<td>Any injury.</td>
<td>Trauma injury, acute injury requiring treatment, chronic injury following hospitalisation or confirmed medical diagnosis.</td>
<td>Acute injury. Chronic injury with tighter test.</td>
<td>No definition</td>
</tr>
<tr>
<td><strong>Illness/disease</strong></td>
<td>Any illness.</td>
<td>Acute illness requiring treatment, chronic illness following hospitalisation or confirmed medical diagnosis.</td>
<td>Acute or chronic disease with tighter test than acute injury.</td>
<td>No definition</td>
</tr>
<tr>
<td><strong>Classification systems</strong></td>
<td>N/A</td>
<td>Specified serious harm. Voluntary reporting of disease.</td>
<td>Classification according to Read Codes.</td>
<td>N/A</td>
</tr>
</tbody>
</table>
3.2 The Health and Safety in Employment Act 1992

3.2.1 Purpose

The purpose of the HSE Act is to promote the prevention of harm to people at work or in the vicinity of a workplace. The Act includes a very broad definition of harm (illness or injury) but the primary focus is on a performance-based framework that requires an employer to take “all practicable steps to ensure safety”. In this context, there is no distinction between the purpose of the Act generally and the purpose of the definition of harm.

In line with the preventative focus of this Act, the Act potentially allows for enforcement action to be taken where harm has not yet occurred, but all practicable steps to ensure safety have not been taken. In other words, work-related harm may include potential harm under this framework.

While the HSE Act’s definitions of work-related harm are broad, there is only a small body of case law on the work-relatedness of injury and illness. With the exception of stress and harm in the vicinity of a workplace, cases have generally not been taken that challenge the scope of the Act beyond traditional workplace injuries. For example, no cases have been taken regarding work-related disease.

One key informant commented that role of the HSE Act in taking prosecutions regarding harm in the vicinity of a workplace has become particularly significant because the ACC scheme has ruled out most torts-based actions in New Zealand. The only avenue for remedies for accidents in the vicinity of a workplace is through the HSE Act, which has covered incidents such as Cave Creek, canyoning deaths, mountaineering accidents and work-related harm that takes place in hospitals, public spaces, stadiums and on the sports field. This extends the Department of Labour’s sphere of work into public safety associated with work.

3.2.2 Who is included

Table 3.2: Who is covered under the HSE Act?

| The HSE Act sets out the general duties of employers to take all practicable steps to ensure the safety of employees at work (section 6). |
| The Act also: |
| • requires employers to take all practicable steps to ensure that no action or inaction of an employee harms another person (section 15) |
| • requires persons who control places of work to take all practicable steps to |

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4 See, for example, Department of Labour v. the Fletcher Construction Company Limited, Leighton Contractors Pty Limited [2007] and Martin Simmons [2008].

5 Key informant interview with Department of Labour Legal.
ensure that no hazard harms people in the vicinity of the place, including people in the vicinity for recreation or leisure, people lawfully at work in the place and customers or consumers (section 16).

“Place of work” means a place (whether or not within or forming part of a building, structure or vehicle) where any person is to work, is working, for the time being works, or customarily works, for gain or reward; and in relation to an employee, includes a place, or part of a place, under the control of the employer (not being domestic accommodation provided for the employee):

- where the employee comes or may come to eat, rest, or get first-aid or pay, or
- where the employee comes or may come as part of the employee’s duties to report in or out, get instructions, or deliver goods or vehicles, or
- through which the employee may or must pass to reach a place of work.

The HSE Act applies to all New Zealand workplaces and places duties on employers, the self-employed, employees, principals and others who are in a position to manage or control hazards. The Act provides protection for people receiving on-the-job training and volunteers, as well as people in the vicinity of a workplace and customers or clients.

The provisions in section 16 of the HSE Act requiring a person who controls a place of work to take all practicable steps to ensure that people in the vicinity of a workplace are not harmed by hazards arising from the place of work extend the scope of the Act beyond harm suffered by employees. This provision has, for example, been used to prosecute:

- a quarry company after damage was caused to neighbouring cars and property
- horticultural fumigators on the basis that the company had failed to take all practicable steps to ensure that chloropicrin did not harm nearby residents who consequently suffered harm and serious harm.41

The section 16 provisions requiring a person who controls a place of work to take all practicable steps to ensure that customers and clients are not harmed by hazards in or arising from the place of work have been used, for example, to prosecute:

- a hotel, after a patron tripped over a hand rail and died of his injuries
- a supermarket, after falling cartons injured a customer
- an engineering contractor, after a visiting student fell through a hole on a hydro dam.41

The definition of “place of work”, while broad, limits the liability of employers in regard to traffic accidents that may happen while an employee is travelling to or from work, assuming this place is not under the control of the employer.
3.2.3 Coverage of acute and chronic injury and disease/illness

3.2.3.1 The HSE Act’s duties provisions

Under the HSE Act, harm:

- is defined as illness, injury or both
- includes physical or mental harm cause by work-related stress.

The Act’s general coverage of work-related harm is broad including injury and disease and explicitly covering both mental and physical harm caused by work-related stress. There have been successful prosecutions, such as Department of Labour v. Naider & Biddle (Nelson) Limited 2005, where the harm suffered was work-related stress.

The 2002 amendment to the definition of hazard in the HSE Act highlighted employers’ potential liability for workplace bullying. The amendment provided that hazard includes “a situation where a person’s behaviour may be an actual or potential cause or source of harm to the person or another person”. Harbord v. Waste Management Limited unreported, D Asher, 23 February 2005, WA 30/05 referred specifically to the employer’s obligations under the HSE Act and said that the hazard alleged by the applicant was personal harassment and potential violence from another employee. The Authority commented that violence could be physical or non-physical and that the bullying endured by the applicant amounted to psychological assault.\(^{42}\)

In contrast to the IPRC Act (discussed below), there is nothing in the HSE Act to limit the employer’s general duties in regard to chronic injuries and disease/illness. An employer could be prosecuted for failing to take all practicable steps to ensure the workplace is safe where a person is suffering from a work-related chronic injury or disease/illness, but they may not be covered under ACC for that injury. As noted above, however, to date, no prosecutions have been taken by the Department of Labour in regard to employer liability for chronic injury or disease/illness.

In addition to liability under the HSE Act’s provisions, the HSE Act’s duties may be used by an employee to support a claim for constructive dismissal, unjustified disadvantage or breach of contract under employment law. This avenue is discussed more fully at section 3.4 below.

The HSE Act’s recognition of mental harm was generally seen as positive by key informants. However, a number of key informants commented on the importance of clear definitions and thresholds in the area of mental harm, for example: “There are grey areas, especially with stress. The English Court of Appeal came out with a really good set of points to decide if it was work-related. One of them was that the employer had to know about it – because you can’t do anything unless you know about it.”

One key informant commented that there is less clarity on what is work-related harm in New Zealand because there is not a strong body of health and safety case law as in Australia or the UK and because there is a lot less enforcement action generally in New Zealand. When cases are taken, they are not defended,
and as a consequence, there is not a lot of guidance from the courts around what work-related harm means. Key informants considered that it would be helpful to have more expansive definitions or improved publications by the Department of Labour on how business and employers should be interpreting their obligations under the HSE Act.

The coverage of acute and chronic injury and disease/illness, and mental harm, in regard to reporting requirements, is discussed in more detail below.

3.2.3.2 The HSE Act’s reporting provisions

For notification purposes, the HSE Act defines work-related harm in a more limited fashion. The Department of Labour announced a revised definition of serious harm for reporting purposes in October 2008, subsequent to the key informant interviews undertaken for this report. Prior to this revision, the definition of serious harm required the notification of specific acute and chronic injuries and disease where they resulted in permanent or temporary severe loss of bodily function. The broad coverage of the principal parts of the Act of, for example, bystanders and mental harm (acute or chronic) was not replicated in the reporting requirements. The agreed new definition of serious harm is set out at Table 3.3.6

Table 3.3: The HSE Act’s definition of work-related harm for reporting purposes

<table>
<thead>
<tr>
<th>The agreed new definition of serious harm will contain three main categories, which are:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• trauma injury, being physical harm arising from a single accident or event and defined by the degree of physical incapacity</td>
</tr>
<tr>
<td>• acute illness or injury caused by exposure to certain workplace hazards and requiring treatment by a medical practitioner</td>
</tr>
<tr>
<td>• chronic or serious occupational illness or injury, being physical or mental harm requiring hospital admission, in-patient surgery, or able to be confirmed by a specialist medical diagnosis.</td>
</tr>
</tbody>
</table>

The definition of serious harm is used to define:

• “significant hazards” that employers have a duty to manage according to sections 7–10

• occurrences in which harm must be notified and when an accident scene must be protected until investigated (sections 25 and 26)

• employees’ rights to refuse to do dangerous work (section 28A)

• the degree of harm that creates the most serious offences under the HSE Act (section 49)

• inspectors’ powers to issue prohibition notices (section 41).

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6 At the time of writing, this definition was agreed but not yet passed as regulations or implemented.
The definition of serious harm is also linked to accident and incident notification requirements under energy and maritime legislation and the HSNO Act.

Prior to the revision, most key informants found the definition of serious harm confusing for employers:

- Most key informants recommended altering the definition to make it objectively simple for employers to understand. One lawyer noted that, in comparison to other countries, there is very little guidance from the courts in this area, resulting in the need for simplicity in the definition.

- Several key informants considered that poor understanding flows into poor notification, or that employers use the lack of understanding of the definition as an excuse not to report, for example: “The general purpose is to have triggers that are objective, not subjective, on the basis that employers are not experts in terms of diagnosis and disease.”

- Several key informants recommended that the definition be simply based on an agreed period of time away from work.

While both the previous and new definitions of serious harm encompass chronic injury and chronic disease/illness, this has not translated into robust reporting of these conditions. Several key informants commented that often these conditions arise after an employee has left a job and there is no obligation on an employer to report a condition caused by previous employment, which prevents investigation. It was also noted that the Ministry of Health does not have any mandate or tool to identify work-related chronic conditions even though they are the main agency that deals with people with chronic conditions.

The agreed new definition attempts to address these concerns. It ensures coverage of acute and chronic injury and illnss, and mental harm, and does not exclude harm to bystanders or visitors. The definition may, however, still create confusion for some employers, given the three overlapping categories and requirements for each category to be met.

### 3.2.4 Burden of proof

The burden of proof for prosecutions under the HSE Act is the standard threshold for criminal prosecutions of “beyond reasonable doubt”, which differs from the civil burden of “more likely than not” under the IPRC Act and employment law. Most key informants considered the difference in the burdens of proof between the HSE Act, the IPRC Act and employment law to be appropriate and fair.

One key informant expressed it this way: “If someone is facing criminal action, they need to meet the criminal law standard in terms of proving beyond reasonable doubt. It is right and proper that there is a difference between that and a presumptive approach taken in relation to diagnosis. It should be more widely appreciated that there is a difference for very different reasons. Equally, you would want to take a presumptive approach in terms of encouraging injury prevention. There are two sides of the HSE legislation – the starting point for managing risk should be presumptive, but if we can be taken to court if we fail to do it, then it has to be more provable.”
3.2.5 The Department of Labour’s classification systems

The Department of Labour has a number of mechanisms for recording work-related harm, which have been designed, in part, to align with international classifications. The limitations of these systems are their reliance on reporting – both compulsory and voluntary – and the lack of reporting due, in part, to fears of the possible negative consequences of enforcement action. Key informants particularly stressed the lack of reporting of occupational disease.

The Department of Labour records notifications of serious harm in a database called Workbench (formerly HAZARD). The Department of Labour also maintains a scheme called the Notifiable Occupational Disease System (NODS) and specialist panels for investigating particular occupational diseases.

3.2.5.1 Workbench (formerly HAZARD)

The instances of serious harm reported to the Department of Labour are mostly occupational injuries. There is no systematic coding of the notifications made, and the system is generally used for internal investigation purposes only. Consequently, serious harm notifications to the Department of Labour tend to contribute to the prevention of the recurrence of harm through the identification of lessons from individual investigations rather than the identification of trends from aggregated data.

Key problems include under-reporting of serious harm by employers, a system design that does not lend itself well to the aggregation of data for surveillance purposes, a low state of readiness of the data set for integration with other collections and work practices that are intended to support efficient investigations and do not always support the recording of high-quality data.

3.2.5.2 Notifiable Occupational Disease System (NODS)

The Notifiable Occupational Disease System (NODS) is a voluntary reporting scheme whereby health professionals and other individuals can notify a health-related condition that is suspected to arise from work. NODS was designed to supplement the statutory requirement for employers to notify serious harm and fatalities, by providing a vehicle for voluntary notification of suspected occupational diseases.

The key strengths of NODS are that it was introduced specifically to record occupational diseases and that anybody can make a notification. NODS currently has low potential to contribute to the surveillance of occupational disease due to poor diagnosis and under-reporting of occupational diseases to the Department of Labour. For this reason, NODS notifications tend to contribute to the prevention of the recurrence of harm through the identification of individual cases rather than aggregated data. NODS data is recorded in Workbench.

3.2.5.3 Disease panels

There are nine panels (not all of which are active at any one time), comprising medical and non-medical specialists, that review and monitor specific occupational diseases and extend the evidence bases relating to the occupational origins of these diseases. These panels investigate or have investigated cancer,
respiratory diseases, solvents, chemicals, infectious diseases, dermatology, musculoskeletal conditions, physical hazards (noise, thermal environment, vibration, electricity, technological) and psychosocial conditions (stress, bullying, fatigue in shift work, depression, anxiety). These panels are linked to the NODS system, and cases of occupational disease identified by these panels are entered into the NODS system.

The cancer panel has demonstrated the greatest success in providing useful information on work-related cancer because, unlike the other panels, it is not solely reliant on notifications. Instead, it has access to New Zealand Cancer Registry data, covering all new cancers diagnosed in New Zealand. This represents a significantly different approach in that the panel takes a “top down” approach and starts with all cases of the cancer sites under review and then determines which cases are work-related (and which are not). Thus, it can, in theory, identify all of the work-related cases for these sites. This differs from the other panels, and the rest of the NODS system, which uses a “bottom up” approach that is reliant on individual voluntary notifications. The demographic and diagnostic information provided by the Cancer Registry is combined with detailed occupational and exposure histories gathered through interviews with individual patients. The cancer panel has successfully demonstrated that the incidence of cancers from occupational causes in New Zealand is similar to that in other Western countries.¹

3.2.5.4 Other departments

The Civil Aviation Authority and Maritime New Zealand also collect notifications of serious harm made under their respective statutes, but these data are not routinely shared.

3.2.6 Other related legislation

The Hazardous Substances and New Organisms Act 1996 (the HSNO Act) uses the same definition of “serious harm” as the HSE Act for reporting purposes.

The Maritime Transport Act 1994, which regulates maritime transport in New Zealand, requires the notification of accidents involving serious harm (which could occur in the workplace). The Maritime Transport Act defines “serious harm” as death or harm as defined in the HSE Act. Its definition of harm is the same as that of the HSE Act.

The Gas Act 1992, the Electricity Act 1992, the Maritime Transport Act 1994 and the Plumbers, Gasfitters, and Drainlayers Act 2006 all contain definitions of work-related serious harm for reporting purposes. These definitions are closely related to, or cross-refer to, the definitions of harm and serious harm in the HSE Act. They all include death, various types of incapacitation and serious harm as defined in the HSE Act, but differ in the degree and type of incapacitation.
3.3 The Injury Prevention, Rehabilitation, and Compensation Act 2001

3.3.1 Purpose

The purpose of the IPRC Act is to provide “for a fair and sustainable scheme for managing personal injury that has, as its overriding goals, minimising both the overall incidence of injury in the community, and the impact of injury on the community” (section 3). There is no difference between the purpose of the Act and the purpose of its definitions of work-related harm.

The Act sets out to achieve its purposes by creating a framework focused on:

• promotion of preventative measures
• good information collection and analysis
• rehabilitation
• fair compensation during rehabilitation and for permanent impairment
• codifying claimants’ rights.

The IPRC Act provides a no-fault 24-hour insurance scheme for personal injuries in New Zealand. It provides cover for personal injuries sustained in the workplace, which include work-related gradual process, disease or infection. The Act prevents common law proceedings being brought where cover is provided under the Act.

Clearly, the IPRC Act has multiple purposes, including injury prevention, rehabilitation, compensation and information gathering. A number of key informants raised concerns about the purpose of the ACC scheme. Some commented that the primary purpose of the current ACC system appears to be identifying who pays, and not on rehabilitation as they consider it should be. Many key informants considered that establishing work-related causation should not affect the level of health care, rehabilitation and compensation available to a person. Comments included that the current system is grossly unfair in this regard, and that it is in the employer’s interests to return a person to being a healthy productive member of staff regardless of causation.

It was also noted that the current system encourages people to try to establish a work-related cause for chronic conditions, regardless of true causation. This was considered particularly apparent in the case of noise-induced hearing loss where there has been no other method to get a free hearing aid to date.

3.3.2 Who is included

The ACC scheme is unique in its broad coverage of all personal injuries that take place in New Zealand and even certain injuries that take place outside New Zealand where a person is ordinarily resident in New Zealand. This means that, in regard to acute injury, work-related harm, in its broadest sense, is covered for all of the major groups of people discussed in Chapter 2, even if it is not recorded as such – workers at work, workers on the road, commuters, bystanders, volunteers, students and even unpaid workers at home.
However, while injured bystanders, volunteers and commuters will be covered by ACC, the harm will not generally be recognised as work-related because the definitions of work-related harm focus on the person themselves being engaged in employment at the time. There are tight checks and balances to ensure that employers, who pay for work-related harm through their levies, are only covering harm that is genuinely work-related.

In addition to acute injury, work-related gradual process, disease and infection are also covered in certain circumstances discussed below. For the purposes of this broader coverage, the definition of employment is key. Employment is defined as “work engaged in or carried out for the purposes of pecuniary gain or profit”. This means that a broad range of employment relationships are covered, such as contractors and the self-employed, but it excludes volunteers, students and bystanders.

Commuting accidents are recognised as work-related only when the person is an employee and the transport:

- is provided by the employer
- is provided for the purpose of transporting employees
- is driven by the employer or, at the direction of the employer, by another employee of the employer or of a related or associated employer.

### 3.3.3 Coverage of acute and chronic injury and disease

#### 3.3.3.1 ACC’s key definitions

ACC cover is determined by a set of definitions, the most relevant of which are the definitions of personal injury; work-related personal injury; personal injury caused by work-related gradual process, disease or infection; mental injury; and work-related mental injury. These definitions are set out in Appendix 4.

ACC covers all acute injuries, regardless of work-relatedness. The key definitions for the coverage of acute injury are included in the definitions of accident and personal injury. Accident includes several specific incidents including, for example, the application of force, the inhalation or ingestion of a substance and burns. A personal injury includes death, physical injury and mental injury due to physical injury or a single traumatic event. An important exclusion from the coverage of all personal injuries is that “caused wholly or substantially by the ageing process”.

For a personal injury to be recognised as work-related, it must meet the definition of work-related personal injury. The key features of this definition are that the person must be at a place for the purposes of employment, or having a break at the place of employment or, in limited circumstances where the employer is in control of the vehicle, travelling to or from the place of employment.

Personal injury caused by gradual process, disease or infection is only covered where it is work-related and is governed by the definitions at section 30 of IPRC Act. Section 30 sets out a three-part test for determining work-relatedness, being that:

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DEFINING WORK-RELATED HARM: IMPLICATIONS FOR DIAGNOSIS, REHABILITATION, COMPENSATION AND PREVENTION. NOHSAC TECHNICAL REPORT 11
• the person performs an employment task that has a particular property or
characteristic or is employed in an environment that has a particular property
or characteristic, and

• the particular property or characteristic causes, or contributes to the cause of,
the personal injury and may or may not be present throughout the whole of
the person’s employment, and

• if the particular property or characteristic is present in both the person’s
employment tasks or environment and non-employment activities or
environment, it is more likely that the person’s personal injury was caused as
a result of the employment tasks or environment rather than the non-
employment activities or environment.

Importantly, even if it is established that a claimant’s personal injury was caused
in the circumstances set out in this three-part test, ACC may decline the claim if
it establishes that the risk of suffering the personal injury is not significantly
greater for persons who:

• perform the employment task than it is for persons who do not perform it, or

• are employed in that type of environment than it is for persons who are not.

In determining causation, the courts generally draw on expert opinion from
occupational medical specialists and must determine that each strand of the
section 30 test (set out above) is met to allow the decision.7 The first two limbs of
the test rely on evidence of causation. On the matter of causation, in Cochrane
is whether the evidence as a whole justifies a conclusion that the necessary nexus
between injury and incapacity exists…”.

The greatest obstacle in determining the first limb is the availability of evidence
to support an argument of causation. Many conditions are classified as idiopathic,
or without known cause. A lack of clear medical evidence decreases the chances
of the court finding the necessary nexus.

Under the Injury Prevention, Rehabilitation, and Compensation Amendment Act
2008, the previous requirement for the causal property or characteristic to be not
found to any material extent in the non-employment activities or environment of
the person was repealed. Now, if the particular property or characteristic is
present in both the person’s employment tasks or environment and non-
employment activities or environment, it must be more likely that the person’s
personal injury was caused as a result of the employment tasks or environment
rather than the non-employment activities or environment.

The intent of the amendment was to ensure that, if a person would have
developed a disease or condition regardless of their non-work exposure, they are
not excluded from cover on the basis of that non-work exposure.44 It is too early

7 See, for example, District Court decisions Michael Hurren v. ACC (199/2008), Richardson v. ACC
(84/2008).
for commentary on case law based on these provisions of the 2008 Amendment Act, which came into force on 1 August 2008.

In addition to this general framework for establishing work-relatedness, personal injury caused by a work-related gradual process, disease or infection includes the occupational diseases set out in Schedule 2 of the Act if they are suffered by a person who is or has been in employment:

- that involves exposure, or the prescribed level or extent of exposure, to agents, dusts, compounds, substances, radiation, or things (as the case may be) described in that schedule in relation to that type of personal injury, or

- in an occupation, industry, or process described in that schedule in relation to that type of personal injury.

Cases where the disease is listed in Schedule 2 of the IPRC Act only require the question of causation to be established and do not require the other limbs to be met. Schedule 2 was updated with 24 new diseases in early 2008.

In addition to section 30, a work-related personal injury includes a cardiovascular or cerebrovascular episode suffered by a person if the episode is caused by physical effort or physical strain, in performing his or her employment, that is abnormal in application or excessive in intensity for the person.

Mental injury is defined as a clinically significant behavioural, cognitive or psychological dysfunction and is covered only where it is suffered because of physical injuries or as a result of a single traumatic event.

3.3.3.2 Coverage of acute injury

As noted, acute injury is covered regardless of work-relatedness under ACC. The no-fault ACC scheme encourages people to seek ACC cover for any injury, which provides for a reliable mechanism of recording injury. Generally, a person simply has to declare than an acute injury is work-related or not, which determines the ACC account that cover is paid from. Therefore, acute injury is generally considered to be covered very well for compensation purposes, and there is a high level of awareness and uptake.

One key informant noted, however, that chronic problems that result in acute injury are often left unaddressed under the current system, giving the example of alcohol and drug impairment in the workplace that leads to an accident. He noted that ACC may cover the costs of dealing with the injury but that ACC will not address the underlying health issues, which would be more appropriate for the individual.

3.3.3.3 Coverage of chronic injury

In contrast to acute injury, there are significant concerns regarding ACC’s definitions and coverage of chronic injury. Most key informants talked about problems with the recognition of gradual process injuries for ACC purposes due to

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8 Houpa v. ACC (283/2006).
the narrowness of the legislative definition. Comments included that section 30 of
the IPRC masks the incidence of injuries caused by gradual process at work and
creates difficulty with even straightforward injuries such as repeated twisting and
lifting.

Some key informants commented that the 2008 Amendment Act changes to the
gradual process definition may make it easier to get cover and that the impact
will be more accepted claims.

The key areas of concern were:

• the difficulty of receiving cover for chronic musculoskeletal injuries
• the need for better diagnosis
• pain conditions

The difficulty of receiving cover for chronic musculoskeletal injuries

Chronic musculoskeletal injuries, or musculoskeletal gradual process injuries, are
a significant component of work-related harm. An employee organisation
identified that gradual process injury, and its lack of recognition by ACC, is the
single biggest health issue for them. It was noted that musculoskeletal limits
internationally are vague in comparison to chemical exposure limits, which makes
links to causation difficult. One key informant noted that, because gradual
process definitions are vague, intervention may not start soon enough, and the
person may not be rehabilitated fully because of that.

The need for better diagnosis

One particular problem with chronic musculoskeletal injuries has been changing
and inconsistent terminology. A number of key informants talked about the
importance of identifying appropriate terminology in this area to pinpoint
conditions, identify their work-relatedness and improve the epidemiology. The
problem identified with labels like occupational overuse syndrome (OOS) and
chronic fatigue was that they do not specifically refer to the condition. From an
ACC perspective, ACC then needs to work with the diagnosis until they get
something more specific.

One key informant noted that the current research is trying to get more commonality between what physicians are reporting and what ACC are
documenting: “If you can't get commonality or agreement, you have a grey
muddy picture... We've got to get this right first before the epidemiology follows.
We can pick out what is a high-risk exposure and what interventions are
appropriate, but until we get agreement on a classification system, our exposure
measures are going to be quite crude.”

Another problem with diagnostic terminology in this area was identified as
labelling, particularly regarding OOS: “If someone is diagnosed with OOS, this
stays with them – a later injury may be dismissed because they have had OOS in
the past. This impacts on treatment and care, and preventative factors. If you
don't have good diagnoses at the beginning, you don't have good prevention
interventions.”

Pain conditions
The courts now broadly accept that pain conditions do not constitute a personal injury under the IPRC Act.\textsuperscript{9} Cases involving chronic pain must show a causative link to an injury to receive ACC cover. Both Jones (242/02) and Teen (244/02) are frequently cited as cases that established this point.

As stated in Brown (316/05) at 26-26:

It is now clear in this jurisdiction that symptoms reflective of a gradual process repetitive strain or overuse condition do not provide a basis for cover, unless they are the consequence of a physical injury.

Symptoms are not themselves an injury, but are indications from which a suitably qualified and experienced medical practitioner can decide that an injury exists or has brought about a consequential impairment. There are some fairly frequently encountered conditions that appear to a patient to be a physical injury, but which cannot be shown to be so in light of current medical knowledge. For a while in the 1990s, OOS or RSI were given cover on the basis that they were injuries. Overwhelming medical opinion now negates the assumption that the symptoms naturally designate the existence of an injury. Cover is still available in cases where an injury can be shown to have occurred, leading to symptoms of the kind suffered by the appellant.

This issue is highly contentious, and many consider this position will not hold in the face of current and emerging medical understanding of injury and pain. For example, Silverstein and Evanoff describe work-related musculoskeletal disorders as soft-tissue disorders of non-traumatic origin that are caused or exacerbated by interactions with the work environment.\textsuperscript{45} Unlike ACC’s definition, this definition does not require there to have been an injury.

This issue was raised in submissions on the 2008 Amendment Bill, and the Department of Labour\textsuperscript{10} noted in its response: “Providing ACC cover for pain where there is no physical injury has been considered extensively in the past. There are significant implications in terms of establishing causation, and potential cost.”\textsuperscript{44}

Many key informants expressed concern that chronic pain conditions were not recognised as chronic injuries. For example, one noted that ACC should be looking at the incapacity; the impact on the person, the workplace and the community; and productivity to determine cover. One key informant highlighted that, if these types of conditions are not covered by ACC, the person can then sue the employer through common law processes, but that this is not widely known.

3.3.3.4 Coverage of acute disease/illness

Work-related acute disease or illness is less commonly claimed for than acute injury or chronic conditions. This may be due, in part, to a general assumption

\textsuperscript{9} Brown 316/05, Kay Pattison 169/2008, John Cable 97/2008.

\textsuperscript{10} The Department of Labour is responsible for providing policy advice to the government on ACC matters.
that common infections and viruses – even where it is highly likely that they are transmitted at work or caused by work conditions – need not be attributed to work.

Few key informants commented on work-related acute disease/illness. Those that did generally considered that they were generally well diagnosed and well identified, although not as well as injury.

Two concerns were raised in key informant interviews on the identification of work-related acute disease/illness – the difficulty of identifying work-relatedness regarding common infections and the lack of acknowledgement of the work-relatedness of hospital-acquired infections:

- The example was raised of the Environmental Science and Research scientist who contracted meningococcal septicaemia caused by meningococcal B disease and, as a result, had both legs, her left arm and the digits of her right hand amputated. The initial finding was that the disease was no more likely to have been contracted in the laboratory than in the community, but this finding was subsequently reversed and her ACC claim accepted. This case has shown that determining the work-relatedness of acute disease/illness can be difficult, particularly in the case of commonly acquired infections or infections that are not usually considered to be work-related.

- In a second area of concern, one key informant commented that there is no indication that hospital-acquired infections that may result from inappropriate practices by health care professionals are considered as work-related. He noted that they may be classed as medical misadventure but that research in the UK indicates that such infections mostly arise from poorly controlled practices amongst staff, staff are often the vector for infections and that such infections are better dealt with from a prevention point of view rather than trying to prove the infection was transmitted through a specific work-related cause.

3.3.3.5 Coverage of chronic disease/illness

NOHSAC’s *The burden of occupational disease and injury in New Zealand* and the Dryson et al. study into bladder cancer have both highlighted the under-recognition of work-related chronic conditions in ACC statistics. This is likely to be for a combination of reasons, including the under-attribution of chronic conditions to work by general practitioners, the lack of public awareness that ACC covers work-related chronic conditions and the more difficult process for obtaining ACC cover for chronic conditions.

Around 70 percent of work-related gradual process, disease or infection claims are accepted compared to approximately 95 percent of all claims received. There was a strong perception among key informants that it is much harder to have a claim accepted for a chronic condition or acute illness than an acute injury. There is a significant body of case law on what constitutes a work-related

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11 Information provided by ACC: ACC accepted an average of approximately 95 percent of all claims received (for all injury types) for the period from 2000 to 2007.
personal injury, including work-related gradual process, disease and infection, under the IPRC Act. In contrast, the vast majority of work-related acute injury claims are straightforward and are simply allowed.

Most key informants considered there are significant problems with recognising work-related disease in New Zealand. Several key informants considered that the IPRC Act definitions for cover for chronic conditions are not considered easily understood. Other problems highlighted by key informants regarding ACC’s coverage of chronic injury included the following:

• Identifying causative factors is dependent on the general practitioner’s knowledge and enquiry. The need for general practitioners to both ask more questions about past occupations and improve their knowledge of occupational causes of disease was noted, as was the need for more occupational health specialists. Some noted that investigations are often hampered by a person’s poor memory or knowledge of past exposures. Another noted that degeneration is not recognised in older workers even though the person may have been asymptomatic for another 10 years or more but for the employment activity, and the result is that they will end up on a benefit.

• The difficulty of attributing common diseases to work: “They could be common diseases, not necessarily rare diseases, but the knowledge of work processes amongst treating physicians is limited. There is very low level awareness of occupational disease in the community of treatment providers.”

• The availability of scientific evidence, especially New Zealand-specific evidence. ACC is reliant on emerging research to better identify disease/illness from work exposures. One key informant noted that cases that have to link chronic disease/illness to work are the most expensive ACC cases because of the need for extremely detailed reports, even where the diagnosis is not disputed. Some key informants noted that, under the 2008 Amendment Act, which requires the ACC to bear the onus of proof where it is more likely than not that the illness is related to work, some of this cost will shift to ACC.

• Concern was expressed that there may be a bias towards diagnosing acute conditions, where there is really an underlying chronic condition, for the ease of obtaining ACC cover. This means that the chronic condition is not treated. One key informant noted that, around the world, 70 percent or more of back conditions are not considered related to accidents, but in New Zealand, most back conditions are regarded as an accident. Another example given was the difference in the treatment for fractures whether caused by an accident or osteoporosis. In cases such as this where there may be a combination, there will be tendency to diagnosis the acute condition for ACC purposes: “There is a disparity between acceptance of a one-off work-related accident and gradual process injuries (hit and miss) – there is fairly good understanding of this, which can be problematic when a person presents for treatment because they won’t necessarily give you the true picture. They can distort the mechanism of the injury.”

• The marked difference in health care where a work-related chronic condition is not recognised: “For example, the public health system will only pay for a
motorised wheelchair for a full-time worker. ACC will pay for one even if the person is only working two hours a day. Return to work is so important for good rehabilitation outcomes. Returning for small portions of time can even be helpful for people dealing with terminal illnesses.”

In light of the definitional concerns, many key informants commented that the definition of work-related harm should be the same for chronic and acute conditions – that it was more likely than not to have been caused by work.

Several key informants saw Schedule 2 of the IPRC Act as a positive tool that makes attribution to work much easier for chronic disease and places the financial burden of investigation on the party with the greatest resources (ACC).

3.3.3.6 Coverage of mental harm

Mental harm can be an injury that is acute, as in the case of a single traumatic event, or chronic in the case of the impact of a series of traumatic events over time. It can also be an illness that develops in response to acute or chronic exposures.

The IPRC Act covers mental injury suffered by a person because of physical injuries suffered by the person and, since the 2008 Amendment Act, covers mental harm due to a single traumatic event. Mental harm that falls outside of these parameters is not covered by ACC.

The 2008 Amendment Act introduced cover for mental injury caused by exposure to a sudden traumatic event in the course of employment. This provides cover for clinically significant mental injuries, rather than temporary distress that constitutes a normal reaction to trauma. The event must be seen, heard or experienced by the person directly (and not, for example, seen on television) and be one that could reasonably be expected to cause mental injury. It does not introduce cover for mental injury caused by non-physical stress or gradual onset in the workplace. Providing cover is intended to ensure appropriate treatment is given and to facilitate rehabilitation, including an early and sustainable return to work.  

The Department of Labour’s Departmental Report on the 2008 Amendment Bill explained the intent of the changes regarding mental injury as follows:

The intent behind the requirement that the event be one that could “reasonably be expected to cause mental injury” is to ensure that cover for work-related mental injury does not extend to injuries caused by minor events or by gradual process. Costs for the introduction of cover for work-related mental injury will be borne directly by employers via the Work Account. Consequently, it is also necessary to ensure that only work-related injuries are gaining cover under this provision. It is necessary to ensure that the cause of the injury can be clearly identified, and that it is not the result of work-related stress, or an event that is the “final straw” in a series of events (work or non-work-related) that would not, in itself, usually cause a mental injury. The intent is that the event must be one that could reasonably be expected to cause mental injury in the general population.
The Department of Labour noted that extending the proposed cover for work-related mental injury to mental injuries arising from gradual or cumulative exposure to work tasks or characteristics would have significant financial implications (levy increases for employers) and policy implications. The policy issues included:

• difficulties in determining causation and, in particular, establishing that the mental injury was caused by factors directly associated with the work environment

• difficulties in isolating non-work factors that may have caused the mental injury (which would be inherently problematic given the current information indicating a high prevalence of mental illness in the general population).  

A number of key informants were positive about the 2008 Amendment Act on the basis that it is a move in the right direction, but several were concerned with its limitations. Some noted that, where harm is not recognised as work-related, not a lot of effort is made to address the problem, as can be seen with work-related stress, and those who suffer continue to be unproductive or less productive employees. On the flip side, it was noted that the cost of ACC covering work-related stress would be significant.

Some key informants noted that there is confusion amongst employers and a need for greater clarity, because stress, which generally manifests as a chronic illness, is covered under the HSE legislation but not by ACC. Many employers do not realise that they have civil liability in this area.

3.3.4 Burden of proof

The burden of proof for establishing cover for a work-related gradual process, disease or infection under the IPRC Act is found under the third part of the section 30 test – if the particular property or characteristic is present in both the person’s employment tasks or environment and non-employment activities or environment, it is more likely that the person’s personal injury was caused as a result of the employment tasks or environment rather than the non-employment activities or environment.

While this standard is in line with the principles discussed in Chapter 2, ACC may overturn this finding if it establishes that the risk of suffering the personal injury is not significantly greater for persons who:

• perform the employment task than it is for persons who do not perform it, or

• are employed in that type of environment than it is for persons who are not.

This means that vulnerable workers (those with a disposition towards a particular illness) may be unfairly disadvantaged. Some claimants may also be disadvantaged if they have a new or emerging condition that is not well researched.

The burden of proof is a legal threshold and does not apply to medical diagnosis. In practice, the level of certainty a medical practitioner will require before settling on a diagnosis varies. According to key informants, however, doctors tend
towards a higher threshold of proof before confirming a diagnosis, which conflicts with the legal principle in ACC cases of “balance of probabilities”.

One lawyer considered that the difficulties with obtaining the necessary medical or scientific evidence mean that the balance of probabilities test is actually very hard to meet: “We’re trying to say judges should take a more robust inference of causation in these workplace cases. Even where there isn’t a lot of scientific evidence about particular fumes, for example, the judge could say these fumes caused this person’s brain damage because no scientist has come along and said it’s impossible for this to happen. It’s taking a long time for that robust view of causation to percolate down from the Court of Appeal. There is another case where the court says you should have a generous and unnuiggardly approach to giving cover under ACC – this would help also.”

One key informant noted that, where the medical link is clearly established, the case is generally accepted. Given the frequent difficulty in establishing a medical link, as discussed above, many key informants were in favour of the Schedule 2 approach of listing diseases that are covered unless proven otherwise. Schedule 2 requires ACC to do the research to prove that a listed disease is not occupational in any given case. In contrast, where a disease is not listed in Schedule 2, the onus sits on the applicant who has very few resources and very little access to workplaces to get the data that they need. Under Schedule 2, if ACC wants to decline, they have to investigate and show why the disease is not work-related. This would stimulate a lot more research because of the demand from ACC for it. It would also stimulate ACC to do more prevention activity around those diseases that are listed. One key informant noted that listing asthma and dermatitis in Schedule 2 in early 2008 has already forced ACC to look at them in a different way.

3.3.5 ACC’s classification systems

The ACC claims database provides a record of all cases that meet the criteria for treatment costs and compensation and for which a claim is made. Several key informants commented that ACC definitions are generally used as a benchmark for work-related harm, which has masked the true incidence of work-related harm.

The ACC database records the ACC claim number and, where available, the claimant’s National Health Index (NHI) number, facilitating record linkage to Ministry of Health databases. Occupation and industry are coded according to the standard Statistics New Zealand classification systems. There is a specific indicator for work-relatedness, although its usage is incomplete, for example, this allows for some identification of work-related motor vehicle traffic crash injuries. Work-related injuries (excluding motor vehicle traffic crash injury) can be identified as they are paid from the Employer and Self-Employed Accounts. The diagnosis field accommodates both ICD-10 and Read Codes, and ACC routinely maps Read Codes to ICD-10.1 Concerns with the misuse of Read Codes are discussed further below. ACC also has its own internal coding system for causation, which is not easily comparable with other classification systems.

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DEFINING WORK-RELATED HARM: IMPLICATIONS FOR DIAGNOSIS, REHABILITATION, COMPENSATION AND PREVENTION. NOHSAC TECHNICAL REPORT 11
The ACC claims database provides the most complete coverage of most types of injury and is the only major source of statistics on minor occupational injury. As discussed, cover for occupational disease is very specific. Although there is a financial incentive for individuals to submit claims, it is unclear how comprehensively the database reflects the true incidence of diseases and injuries covered by the scheme.¹

The structure and coding systems of the ACC database are, in many respects, well suited to the surveillance of occupational disease. However, the overriding functions of the ACC database have been administrative, such as:

- determining eligibility for a claim
- determining which ACC account should fund the claim
- facilitating case management
- providing data to inform the setting of levies.

These administrative objectives are not always consistent with surveillance imperatives. In particular, these objectives do not always require complete and accurate data on occupation.¹

The 2008 independent ACC scheme review was reasonably positive about ACC monitoring and evaluation. Suggestions for how data collection and reporting could be extended included:

- monitoring claimant outcomes, in particular, for serious injury claimants
- longitudinal data collection
- improved monitoring of prevention activities and at-risk population groups in collaboration with other agencies
- improved monitoring of injury data and access to the scheme by those injured
- increased sophistication and more targeted monitoring for non-entitlement claims
- monitoring of key external drivers of scheme experience
- improved strategic reporting.⁴⁷

3.3.5.1 Read Coding

The Read Code is a coding system for injury and illness based on the ICD and easily translatable to it. ACC requires all medical practitioners to lodge claims with a Read Code and generally relies on the code provided. Developed in the UK, Read is a multi-level system of diagnosis coding that aims to help general practitioners, primary care providers and funders in managing clinical practice. For example, by using Read Codes, a general practitioner can keep track of all patients who suffer low back strains and implement health management strategies accordingly.⁴⁸ The Ministry of Health is the New Zealand agent for the codes and provides the system free of charge to providers and agencies. The Ministry of Health encourages general practitioners to adopt the system for their own benefit as well as to provide accurate reports to the Ministry for planning and funding purposes.⁴⁸
ACC bases the standard number and cost of treatments on the Read Code. Where a generic code is used, there could be great variance in the types of treatment required, which means, for example, that a physiotherapist may routinely have to apply for an extension to the number of treatments required.

General practitioners generally have easy access to an abbreviated list of most commonly used Read Codes. Most practitioners, including physiotherapists, do not have software with the full range of Read Codes. Many key informants considered that, because general practitioners generally use the most common Read Codes only, ACC has a poor record of the actual diagnosis of injury and misclassification. It was also noted that ACC’s database is not updated with revised Read Codes following subsequent investigations and refined diagnoses. This means that ACC has an inaccurate database, and this has flow-on implications for surveillance and prevention programmes.

One key informant considered that there was more likely to be a problem with musculoskeletal conditions than disease. Another commented that general practitioners would need an incentive to improve their familiarity and use of Read Codes.

One key informant commented that, if medical practitioners were required to use accurate Read Codes, it would result in more accurate data flowing into ACC, and it would force people to think about what is really going on. He noted that the national rate of bicipital tendonitis appears to be huge, which it isn’t. “For example, someone with bilateral forearm pain gets written down as bicipital tendonitis – a common one. The diagnosis on ACC claims is not particularly systematic, and very few people make a proper ICD or Read Code diagnosis.”

The problem was described as a lack of using what is there: “The Read Codes are excellent... The Read Code... interfaces with ICD – the international code... The problem is people don’t use it and ACC don’t insist on it enough, neither do the Department of Labour. We’d be far better off if time was taken to get the Read Code right... ACC have put out guides to using the Read Codes which are very good. Using those is simple.”

A 2008 study that involved follow-up interviews with a sample of ACC claimants coded as being involved in a work-related motor vehicle traffic crash (WR MVTC) found that a third were found not to have been in a WR MVTC, indicating problems with the accuracy of the work-related indicator.22

3.4 The Employment Relations Act 2000

The Employment Relations Act 2000 gives all employees the right to pursue a personal grievance and effectively allows for certain kinds of work-related mental and emotional harm to be recognised by the Employment Relations Authority or the Employment Court.

While mental harm and stress-related cases can be brought under the HSE Act as discussed above, these cases are more commonly dealt with under employment law. This may be due to the criminal burden of proof under the HSE Act (beyond all reasonable doubt), compared with the civil burden under the Employment Relations Act (more likely than not). In effect, employment law provides an
avenue for redress that is not available under ACC. Some key informants noted that awareness of this avenue is growing.

3.4.1 Who is included

In the Employment Relations Act 2000, unless the context otherwise requires, “employee”:

- means any person of any age employed by an employer to do any work for hire or reward under a contract of service, and
- includes a homeworker or a person intending to work, but
- excludes a volunteer who does not expect to be rewarded for work to be performed as a volunteer and receives no reward for work performed as a volunteer.

3.4.2 Coverage of work-related harm

The Employment Relations Act 2000 gives all employees the right to pursue a personal grievance if they have a complaint of:

- unjustifiable dismissal
- unjustifiable action that disadvantages the employee
- discrimination
- sexual harassment
- racial harassment
- duress over membership of a union or other employee organisation.

The test for justification of a personal grievance (section 103A) is as follows:

The question of whether a dismissal or an action was justifiable must be determined, on an objective basis, by considering whether the employer’s actions, and how the employer acted, were what a fair and reasonable employer would have done in all the circumstances at the time the dismissal or action occurred.

An employee with a grievance claim may ask the employer for any remedy the employee thinks appropriate. If the grievance goes to the Employment Relations Authority, the employee can ask for:

- reinstatement
- interim reinstatement while the personal grievance is heard
- reimbursement of lost wages or other money as a result of the grievance
- compensation for effects on the employee personally, such as humiliation, loss of dignity or injury to his or her feelings or the loss of any benefit that the employee might reasonably have expected if the grievance had not arisen.

In cases of sexual or racial harassment, the Authority can recommend the employer transfer, take disciplinary action against or help change the behaviour of the harasser, or adopt a formal harassment policy. The Authority must reduce
the remedies if the employee is found to be partly at fault in a grievance case. Anyone who is unhappy with the Authority’s determination can take the problem to the Employment Court for a full judicial hearing. This is not in the form of an appeal but is a full judicial hearing of the original problem.

The Employment Relations Act introduces concepts of work-related psychological harm. Case law shows that work-related stress is recognised where it is clear that the job is causing the employee’s stress. Factors taken into consideration include the nature of the work, the workload and the adequacy of resources and staffing. The court also looks at whether the employer knew about the stress, or whether it was reasonably foreseeable, and whether the employer took reasonable or practicable steps to deal with the risk of stress. In the New Zealand precedent decision regarding stress in the Employment Court, Mr Gilbert was successful in the Employment Court on claims of breach of contract and constructive unjustifiable dismissal. The court found that “[t]he law now implies a contractual term that an employer shall take all reasonable care not to cause employees physical or psychological injury or further injury by reason of the volume, character, nature or circumstances of the work required to be performed”. The duty to take reasonable steps to maintain a safe workplace extends to mental harm as well as physical injuries.

3.5 The Sentencing Act 2002

The Sentencing Act 2002 provides for the courts to order reparations or payments to be made for causing emotional harm, and loss or damage consequential on any emotional or physical harm. While this provision is not limited to work-related harm, it is often used in this context and thereby forms a part of how New Zealand recognises work-related harm.

A court may also order a payment for emotional harm, and loss or damage consequential on any emotional or physical harm, when discharging a person without conviction (section 106), instead of imposing a sentence when a person has been convicted (section 108) or when ordering a person to come up for sentence when called on (section 110).

The Sentencing Act 2002 also provides for offenders serving community-based sentences or home detention sentences to be covered by the IPRC Act for work-related personal injuries.

3.5.1 Who is included

The Sentencing Act may be applied in a broad range of sentencing scenarios. For the purposes of work-related harm, the provisions for the courts to order

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reparations or payments to be made for causing emotional harm, and loss or damage consequential on any emotional or physical harm, are most likely to arise in the context of a prosecution under the HSE Act.

### 3.5.2 Coverage of work-related harm

The Sentencing Act does not explicitly define emotional or physical harm. Section 51A of the HSE Act also sets out a framework for sentencing, which largely repeats the relevant provisions of the Sentencing Act. Table 3.4 sets out the most relevant provisions of the Sentencing Act that provide for the recognition of work-related harm.

#### Table 3.4: How the Sentencing Act recognises work-related harm

<table>
<thead>
<tr>
<th><strong>Sentencing Act 1992</strong></th>
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<tbody>
<tr>
<td>32 Sentence of reparation</td>
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<tr>
<td>(1) A court may impose a sentence of reparation if an offender has, through or by means of an offence of which the offender is convicted, caused a person to suffer:</td>
</tr>
<tr>
<td>(a) loss of or damage to property; or</td>
</tr>
<tr>
<td>(b) emotional harm; or</td>
</tr>
<tr>
<td>(c) loss or damage consequential on any emotional or physical harm or loss of, or damage to, property.</td>
</tr>
<tr>
<td>(5) Despite subsections (1) and (3), the court must not order the making of reparation in respect of any consequential loss or damage described in subsection (1)(c) for which the court believes that a person has entitlements under the Injury Prevention, Rehabilitation, and Compensation Act 2001.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Determining amount of fine (section 40)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) In determining the amount of a fine, the court must take into account, in addition to the provisions of sections 7 to 10, the financial capacity of the offender.</td>
</tr>
<tr>
<td>(2) Subsection (1) applies whether taking into account the financial capacity of the offender has the effect of increasing or reducing the amount of the fine.</td>
</tr>
<tr>
<td>(4) If a court imposes a fine in addition to a sentence of reparation, it must, in fixing the amount of the fine, take into account the amount payable under the sentence of reparation.</td>
</tr>
</tbody>
</table>

The provisions to order reparations or payments expressly prohibit the ordering of reparations in respect of any consequential loss or damage for which the court believes that a person has entitlements under the IPRC Act. The courts have consistently interpreted this provision to allow reparations to include 20 percent of a person’s earnings, where ACC has compensated 80 percent of their earnings,
as well as other losses not covered by ACC.\textsuperscript{14} As discussed in Chapter 5, many key informants consider that this creates inequalities between compensation for those where the perpetrator of the harm is prosecuted and those who only receive ACC compensation. Others disagreed on the basis of the importance of strong enforcement for prevention purposes.

Both the Sentencing Act and the HSE Act require reparations to be taken into account when setting a fine. \textit{Department of Labour v. Ferrier Woolscours (Canterbury) Ltd} [2005] DCR 356 set out a two-step approach whereby reparations are determined first and any fine is determined in light of the reparations order, which has largely been followed since.\textsuperscript{50} As discussed in Chapter 5, this has resulted in reparations making up the greater proportion of the penalty, with smaller fines as a result. Because employers can insure against reparations, but not fines, this means that the deterrent effect of the penalty is reduced.

\subsection*{3.6 Common law}

The common law provides a series of principles and duties that may provide a legal remedy for work-related harm where it is not expressly covered or excluded by statute. In New Zealand, this is limited by the ACC scheme, which, in return for no-fault cover, removes the right to sue for personal injury, other than for exemplary damages. Remedies for work-related harm that is not covered by the IPRC Act may potentially be sought through common law processes.

As discussed above, the IPRC Act gives a restricted meaning to personal injury and accident and excludes a number of injuries, conditions or circumstances from cover under the Act. Where these exclusions apply, there is no cover, and if negligence or another cause of action can be proved, the injured person will be entitled to bring a claim for common law damages in a New Zealand court.\textsuperscript{51}

For example, mental injury and heart attacks and strokes are only covered in limited circumstances. If it is arguable that a plaintiff’s injuries are not covered under the Act but are the result of another person’s negligence, common law proceedings may be issued in a New Zealand court.\textsuperscript{51}

An award of common law damages may include such items as pain and suffering, loss of enjoyment of life, disfigurement, permanent loss or impairment of bodily function, loss of future prospects of employment, loss of future earning capacity, loss of expectation of life, and pecuniary losses not related to earnings, none of which is covered under the IPRC Act.\textsuperscript{51}

An example of the kind of case for which common law damages have been sought is where an onlooker witnesses the death or injury of another.\textsuperscript{15} Mental harm due

\textsuperscript{14} \textit{P M Davies v. NZ Police} HC CHCH CRI-2006-409-000203 19 December 2006; \textit{Peter Miles Davies v. New Zealand Police} CA101/07 [2007] NZCA 484.

to a single traumatic event is now explicitly covered under the IPRC Amendment Act 2008, and there will be no further need for common law claims in this area.

In *Brickell v. A-G* [2000], the applicant succeeded in a claim for emotional harm, brought in the High Court for breach of duty in tort and breach of statutory duty. That case was based on accumulated post-traumatic stress disorder, following 16 years’ service with a police video unit, filming crime and accident scenes and victims of serious crimes.\(^\text{16}\)

In New Zealand, the recognition of work-related harm is dominated by the HSE Act, and the ACC scheme under the IPRC Act, which removes the right to sue where ACC cover is provided. While common law principles are still relevant where cover is not provided under the ACC, as can be seen in employment law cases of work-related stress, the recognition of work-related harm in New Zealand is highly dependent on legislated definitions.

### 3.7 Chapter conclusion

There are no overarching definitions of work-related harm, or work-related injury or disease, in New Zealand. There are a variety of mechanisms that provide for the recognition of work-related harm, which can lead to confusion, particularly for employers. Assessed against the principles set out in Chapter 2, the key findings regarding New Zealand’s definitions of work-related harm are as follows:

**Purpose**

- There is no clear comprehensive framework for identifying work-related harm for the purpose of surveillance, and there is a lack of clarity regarding the purposes of the varying definitions of work-related harm in New Zealand generally.

**Who is covered**

- The HSE and IPRC Acts have comparatively broad coverage of traditional workers, the self-employed, contractors, bystanders, commuters, volunteers and students, with a high degree of conformity between HSE Act and IPRC Act coverage.
- New Zealand’s broad coverage is, in part, due to ACC’s universal coverage for acute injury, which means that, while these groups may be covered for rehabilitation and compensation purposes, the harm may not be identified or recorded as work-related.
- Gaps in coverage for compensation purposes for work-related gradual process, disease or infection include bystanders, third parties, volunteers and students. Commuting accidents are recognised as work-related in very limited situations only (for example, when the employer is driving the vehicle).

**Coverage of acute injury**

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• The HSE Act’s reporting requirements for acute injury were unclear and confusing for employers at the time this report was developed. This may be addressed by the agreed new definition of serious harm.

• Acute work-related injury is covered very well for compensation purposes, and there is a high level of awareness and uptake.

• The ease of obtaining cover for acute injury may mean, however, that underlying chronic conditions are not addressed.

Coverage of chronic injury

• There is under-reporting of chronic harm to the Department of Labour generally, which may be addressed in part by the agreed new definition of serious harm.

• The work-relatedness of chronic injuries, particularly musculoskeletal injuries, is often difficult to determine due to the variability of diagnosis by medical practitioners and the need for standard diagnostic terminology for chronic musculoskeletal injuries.

• Work-related pain conditions that are not considered to stem from an injury are not covered by ACC.

Coverage of acute disease/illness

• Work-related acute diseases are generally well recognised and covered, although there can be difficulties attributing common illness to work.

Coverage of chronic disease/illness

• There is little notification of work-related chronic disease to the Department of Labour and very low numbers of claims to ACC, resulting in poor surveillance.

• While there is the potential under the HSE Act, to date in New Zealand, no prosecutions have been taken in regard to work-related chronic disease or illness, with the exception of stress.

• There is poor coverage of occupational disease for ACC purposes. Schedule 2 of the IPCR Act does not cover many diseases that have a clear link to work due to the presumptive nature of the schedule, and the IPCR Act definitions of work-related chronic conditions that may be covered where Schedule 2 does not apply are not considered easily understood.

• The work-relatedness of chronic disease, particularly common diseases, is often difficult to determine due to poor understanding of occupational causes by medical practitioners, a lack of scientific evidence in some emerging areas, a lack of New Zealand-specific scientific evidence and poor memory where exposures happened years before.

• There may be a possible bias towards diagnosing acute conditions for the ease of obtaining ACC cover, which masks the true nature of the problem and may prevent accurate treatment and compensation.

Coverage of mental harm
• Mental harm can be an injury that is acute, in the case of a single traumatic event, or chronic, in the case of the impact of a series of traumatic events over time. It can also be an illness that develops in response to acute or chronic exposures.

• Mental injury is only covered under the ACC scheme where it is the result of a physical injury or a single traumatic event.

• There is confusion amongst employers and a need for greater clarity because stress, which generally manifests as a chronic illness, is covered under the HSE Act but not by ACC. Many employers do not realise that they have civil liability in this area, particularly in the context of employment law.

• The lack of coverage of work-related mental harm by ACC may be supplemented to an unknown degree by employment, sentencing and common law. Anecdotal comment from key informants is that the use of these avenues is increasing.

Burdens of proof

• Most key informants considered that ACC’s burden of proof for work-relatedness should be simplified to “on the balance of probabilities” with other tests – such as the ability for ACC to decline the claim if it finds that the risk of suffering the personal injury is not significantly greater for persons who perform the employment task than it is for persons who do not perform it – removed.

Classification of work-related harm

• New Zealand does not have an integrated system for recording and classifying work-related harm.

• For notification purposes, the HSE Act defines work-related harm in a much more limited fashion than for its general duties. Even in light of the recently revised definitions for reporting purposes, given the fear of enforcement action, this is not seen as a useful mechanism for surveillance purposes.

• While ACC has the most robust system for recording work-related harm in theory, in practice, there are a number of limitations including its definitions and inaccurate coding.
CHAPTER 4: INTERNATIONAL DEFINITIONS OF WORK-RELATED HARM

4.1 Chapter overview

None of the countries examined in this review has an overarching definition of work-related harm or a comprehensive method for collecting work-related harm data. The body of literature focused on identifying work-related harm, both injury and disease, has clearly identified that there is little consistency internationally on definitions of work-related harm.24

Chapter 4 describes how work-related harm is defined in five other countries:

- Australia
- the United Kingdom
- the Netherlands
- Finland
- the United States of America.

For clarity, the definitions of work-related harm are discussed within the context of each jurisdiction’s relevant structures and systems. For each country, Chapter 4 discusses the following:

- A brief overview of the scope of work-related harm covered by occupational safety and health regulation: As in New Zealand, each of the countries examined has occupational health and safety legislation that sets out the general duties of employers to provide for the health and safety of employees and others, such as bystanders. While these frameworks do not define work-related harm as such (because they are focused on preventative measures), they do set up a legal framework that means employers can be brought to account when work-related harm occurs. In this regard, they help recognise, and thereby define, work-related harm.

- The definitions of work-related harm used for occupational safety and health reporting purposes: In most cases, the occupational safety and health legislation sets up a reporting regime for occupational injuries and illnesses. The level of specificity varies, from general requirements such as hospitalisations and deaths, to very specific lists of occupational diseases.

- The definitions of work-related harm used for workers’ compensation purposes: With the exception of the Netherlands, each of the countries examined has workers’ compensation schemes based on compulsory employer insurance. Each of these systems requires detailed definitions of work-related harm. The Netherlands is unique in its approach of not distinguishing between work and non-work-related harm with a broad insurance-based social security system paid for by both employers and individuals.

- The classification systems used to record work-related harm: All of the countries examined have a variety of methods for reporting, recording and
classifying work-related harm, all of which present difficulties in establishing an accurate record of work-related harm.
4.2 Australia

4.2.1 Summary

Australia’s health and safety regulation is broadly similar to New Zealand’s. In some states, such as New South Wales, reporting requirements are more explicit and comprehensive than New Zealand’s HSE Act reporting requirements. For example, New South Wales requires major accidents and near-misses that do not result in harm to be reported. However, like New Zealand, all of Australia’s OSH notification schemes suffer from under-reporting and, alone, are not an effective mechanism for recording the size and nature of work-related harm.

Eligibility for workers’ compensation in Australia generally hinges upon three core criteria. First, a claimant must fall within one of the categories of “worker” to whom the relevant scheme applies. Second, the claimant must have suffered a type of injury or disease for which compensation is payable. Third, the requisite connection between the claimant’s employment and the injury or disease must be proved.52

Based on the historic development of the Australian schemes, the definition of “worker” for the purposes of workers’ compensation is generally limited to those in a traditional employment contract and excludes the self-employed. There are a host of deemed inclusions and exclusions, which vary from state to state, creating inconsistency.52

As in New Zealand, there are differing standards for the inclusion of acute and chronic conditions, which vary between states. In Victoria, acute injuries and illnesses, and gradual process (chronic) injuries must simply arise out of or in the course of employment. In contrast, employment must be a significant contributing factor in the case of chronic illness and disease.53 In New South Wales, employment must generally be a “substantial contributing factor” for both acute and chronic injuries and illnesses.

Australia now has a range of systems in place for collecting work-related harm data, each of which has limitations as a single source of information on work-related harm. While OSH and workers’ compensation schemes in Australia are governed by separate legislation and definitions of work-related harm, they are usually administered by the same organisation in each state (such as WorkCover in Victoria). Federally, the Australian Safety and Compensation Council (ASCC) co-ordinates national data collection. These systems allow for greater co-ordination of different data sources than seen in New Zealand and, as data collection methods continue to improve, potentially allow for more robust identification of work-related harm.

4.2.2 Overview of occupational safety and health regulation

Currently, each of Australia’s six states and two territories has its own OSH legislation. There are also Commonwealth Acts and a plethora of other specialist
statutes. Given the number of different schemes, this review has focused on the two largest states only, Victoria and New South Wales.17

Like New Zealand’s HSE Act, both the Victoria and New South Wales Occupational Safety and Health Acts place on employers a set of duties that include ensuring the safety of bystanders and do not require a definition of work-related harm. There is a significantly larger body of occupational health and safety case law in Australia than New Zealand, considered by key informants to be based on more resourcing to take prosecutions.

4.2.3 Definitions of work-related harm used for occupational safety and health reporting purposes

Both Victoria and New South Wales have more explicit, prescriptive requirements for reporting work-related harm than New Zealand has, including the reporting of near-misses. As in New Zealand, the OSH reporting requirements differ from the definitions of work-related harm covered by workers’ compensation, which may contribute to confusion for employers. For example, journey to work accidents are covered by workers’ compensation in New South Wales, but are not reportable under the OSH legislation.

In Victoria, under the Occupational Health and Safety Act 2004, which regulates health and safety in the workplace, employers must notify WorkSafe immediately after becoming aware of an incident at their workplace that results in:

- a death
- a person requiring medical treatment within 48 hours of exposure to a substance
- a person requiring immediate medical treatment in a hospital
- a person requiring medical treatment for certain serious injuries including, for example, amputation, a serious head injury, or the loss of a bodily function.

Employers must also immediately notify WorkSafe of some incidents in which people are exposed to immediate health and safety risks (near-misses).55

In New South Wales, under the Occupational Health and Safety Act 2000 (section 86), the occupier of any place of work must give WorkCover notice of:

- any serious incident at the place of work, which includes a person being killed
- any incident or serious incident prescribed by regulations. (These are set out in Appendix 5, and include specified serious injuries, illness and near-misses.)

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17 In April 2008, the Australian government announced a review into model OSH legislation, which was underway at the time of publication of this report. All state and territorial governments have agreed to work co-operatively to harmonise OHS legislation by 2011 – see www.nationalohsreview.gov.au.
4.2.4 Definitions of work-related harm used for workers’ compensation purposes

4.2.4.1 Definition of worker, injury and disease

**Victoria**

An “injury” is defined as any physical or mental injury specifically including industrial deafness; a disease contracted by a worker in the course of the worker’s employment (whether at, or away from, the place of employment); and a recurrence, aggravation, acceleration, exacerbation or deterioration of any pre-existing injury or disease.

“Disease” is defined as any physical or mental ailment, disorder, defect or morbid condition, whether of sudden or gradual development; and the aggravation, acceleration, exacerbation or recurrence of any pre-existing disease.\(^18\)

**New South Wales**

“Injury” is defined as a personal injury arising out of or in the course of employment, and includes a “disease” that is contracted by a worker in the course of employment and to which the employment was a contributing factor, and the aggravation, acceleration, exacerbation or deterioration of any disease, where the employment was a contributing factor to the aggravation, acceleration, exacerbation or deterioration.\(^19\)

Dust diseases are covered by the Workers’ Compensation (Dust Diseases) Act 1942.

In both Victoria and New South Wales, the person must be a worker to be entitled to workers’ compensation. A “worker” is defined as a person who works under a contract with an employer, express or implied. In practice, this excludes most self-employed persons. Victoria expressly includes students employed as part of their studies. In New South Wales, police, casual workers, religious officers in certain circumstances and sports persons in specified circumstances are excluded from cover.

In both jurisdictions, the definition of injury includes disease that arises in the course of employment and, in New South Wales, to which the employment was a significant contributing factor. Both jurisdictions cover injuries occurring while the worker is on a break and travelling for work purposes.

In Victoria, gradual process injuries due to the nature of employment in which the worker was employed at any time before notice of the injury was given are to be treated as injuries arising out of or in the course of employment. Similarly, in New South Wales, gradual process injuries are deemed to have happened at the time of the incapacity or claim. This effectively allows gradual process injuries to

\(^{18}\) The Accident Compensation Act 1985.

\(^{19}\) The Workers’ Compensation Act 1987.
be treated as acute injuries, in contrast to New Zealand, which requires the
higher threshold set out in section 30 of the IPRC Act to be met (see Chapter 3).
Both jurisdictions provide for regulations to specify diseases that are deemed to
be work-related, unless established to the contrary, similar to Schedule 2 of New
Zealand’s IPRC Act.

New South Wales covers the daily or other periodic journeys between the
worker’s place of abode and place of employment (commuting), and Victoria does
not. However, all traffic accidents in Victoria are covered by the Transport
Accident Commission (TAC), a no-fault scheme funded through motor vehicle
registration.56 While the TAC works closely with WorkSafe Victoria in a number of
areas, it does not define or report on work-related or journey to work accidents.57

4.2.4.2 Limitations on entitlement

In New South Wales, employment must generally be a “substantial contributing
factor” to the injury. Exceptions to this general rule include travelling for work
purposes, which explicitly include the daily or other periodic journeys between the
worker’s place of abode and place of employment (commuting), recess claims
and undertaking duties as a trade union representative.

In contrast in Victoria, the worker’s employment must be a “significant
contributing factor” in limited cases including heart attack injury or stroke injury,
a disease contracted by a worker in the course of the worker’s employment
(whether at, or away from, the place of employment) and a recurrence,
aggravation, acceleration, exacerbation or deterioration of any pre-existing injury
or disease.

In both jurisdictions, compensation is not payable where:

• the injury is an illness or disorder of the mind caused by stress where the
  stress arose from certain specified reasonable actions taken by an employer

• it is proved that the injury was deliberately self-inflicted or attributable to the
  worker’s serious and wilful misconduct.

New South Wales requires deductions for previous injuries or pre-existing
conditions from an assessment of impairment for compensation purposes. Victoria
removes entitlement to compensation if it is proved that, before commencing
employment with the employer, a worker had a pre-existing injury or disease of
which the worker was aware and did not disclose to the employer and the
employer had requested disclosure.

4.2.4.3 Common law

Work-related harm may also be recognised through common law processes in
both jurisdictions, but compensation for an injury may only be paid through one
mechanism. In Victoria, to be entitled to sue for damages through the common
law, the injury or injuries must be serious, as defined in the Accident
Compensation Act 1985. Serious injury includes permanent serious impairment or
loss of a body function, permanent serious disfigurement and permanent severe
mental or permanent severe behavioural disturbance or disorder.
4.2.5 Classification systems used to record work-related harm

As in most other countries, Australia relies on OSH and workers’ compensation data for its main source of statistics on work-related harm. A number of studies, some discussed in Chapter 2, based on the examination of coronial files and hospitalisation data have begun to supplement this information and highlight the inadequacies of the standard collection methods. They note that workers’ compensation data do not include minor injuries that do not result in lost work time or the self-employed, who make up 15–20 percent of the workforce, and not all workers eligible to do so will make a compensation claim. In a 2005 study, only one-quarter of respondents to the 2002 New South Wales Adult Health Survey, conducted by the New South Wales Department of Health, who reported a work-related injury or illness reported receiving workers’ compensation for that injury or illness, mostly on the basis that the injury or illness was minor.

As noted in Chapter 2, a comparison of the results of Driscoll et al.’s study of all work-related fatalities in Australia based on coronial files with work-related fatalities recorded by OSH and workers’ compensation agencies highlighted the inadequacy of both OSH and workers’ compensation agencies’ records of fatalities. The percentage of deaths not covered by any agency was 34 percent. Only 35 percent were covered by an OSH agency, and only 57 percent were covered by a compensation agency. The OSH agencies had minimal coverage of work-related deaths that occurred on the road – workers 8 percent and commuters 3 percent, compared with workers’ compensation agencies 65 percent and 53 percent. There was less than 8 percent coverage of bystanders by either agency.

4.2.5.1 The National Data Set for Compensation-based Statistics

Australia’s regular monitoring of work-related harm is based on the analysis of workers’ compensation claims. The National Data Set for Compensation-based Statistics (NDS) recommends a standard set of data items, concepts and definitions for inclusion in workers’ compensation systems operating in Australia. The primary purpose of the NDS is to enable the production of national and nationally comparable workers’ compensation-based data.

The NDS is supported by several classification systems including the Australian and New Zealand Standard Industrial Classification (ANZSIC), the Australian Standard Classification of Occupations (ASCO) and the Type of Occurrence Classification System (TOOCS). TOOCS is central to the NDS. It consists of hierarchical classifications for the nature, bodily location, mechanism, breakdown agency and agency of injury or disease.

Through the current version of the NDS, the Australia’s workers’ compensation database covers the more serious compensated work-related injury and disease cases. With some exceptions, data have been coded to agreed standard classifications with respect to industry of employer, occupation of employee and the type and circumstance of the injury or disease. Information is also available on the age and gender of the injured worker and costs and working days lost in respect of new cases reported each year.
NDS-based data are used to produce a number of regular and ad hoc statistical reports, including the annual Compendium of Workers’ Compensation Statistics, which forms the basis of the Workplace Relations Ministers Council’s Comparative Performance Monitoring (CPM) reports.

Current NDS-based statistics do not cover all occurrences of occupational injury and disease for the following reasons:

- Temporary disability occupational injuries and diseases that result in absences from work of less than one working week are not always claimed as workers’ compensation.
- Occupational injuries and diseases occurring on a journey to or from work (commuting claims) are not covered by all state and territory workers’ compensation schemes.
- While the majority of employees are covered for workers’ compensation under general commonwealth, state and territory workers’ compensation legislation, some specific groups of workers are covered under separate legislation. For example, claims lodged by police in Western Australia and military personnel within the Defence Forces are excluded.
- Most occupational injuries to the self-employed are excluded because they generally are not covered for workers’ compensation.
- Not all cases of occupational disease are reported in workers’ compensation statistics. This is because many diseases result from long-term exposure to agents or have a long latency period, making the link between the occupational disease and work more difficult to identify.
- Other cases not claimed as workers’ compensation or not acknowledged as being work-related are excluded.62

In addition to those exclusions listed above, bystanders are not included. Because the NDS does not capture information on injury or disease among self-employed workers, NDS data for industries in which a high proportion of workers are self-employed are likely to understate the actual number of work-related fatalities.32

The strengths of the NDS are that it:

- is Australia’s most comprehensive source of compensation-based OHS data
- is supported by several classification systems (outlined above)
- has an independent assessment of work-relatedness
- has a validation system in place
- has a system to review and update the data on a regular basis.63

4.2.5.2  ICD-10-AM

ICD-10-AM is the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification. ICD-10-AM has been developed by the National Centre for Classification in Health (NCCH) with assistance from clinicians and clinical coders to ensure that the classification is current and appropriate for Australian clinical practice.
The introduction of ICD-10-AM, in particular, the activity code “while working for income”, has allowed the examination of hospital records for work-related injury for the first time and has stimulated a number of studies as a result.64

A comprehensive analysis of hospitalised cases of work-related injury was published in 2007 based largely on the classification of all hospitalisations according to work-related ICD-10-AM codes. While most cases of work-related injury do not result in admission to a hospital, those that are admitted include the most severe cases. The study was useful in highlighting that all cases of hospitalised injury are not covered by workers’ compensation, which can be explained by the limitations of workers’ compensation discussed above, such as not covering self-employed persons.65

ICD-10-AM is updated every two years and is currently in its sixth edition, implemented in July 2008.66 New Zealand hospitals also use ICD-10-AM and, from 2008, will update the version in co-ordination with Australia’s update, but every four years, rather than every two.67

4.2.5.3 National Coroners Information System (NCIS)

The NCIS is a national internet-based data storage and retrieval system of coronial cases in Australia. The NCIS holds information on all fatalities referred to a coroner in Australia. The NCIS contains a work-relatedness data item, with fatalities being identified as work-related or not work-related according to detailed coding instructions. The definition of work-relatedness is broad: “A person who was fatally injured as a result of, or who died of a fatal condition caused by exposure to their own or another’s work activity or work factors”. The guidelines that accompany this definition note that it is intentionally broad and may include cases that would not be eligible for workers’ compensation. For example, work-related homicide, suicide and natural cause deaths, as well as bystander and commuting deaths, are included.68

The strengths of the NCIS are that:

• the scope of the collection includes all deaths reported to an Australian coroner regardless of compensation status or work arrangements
• text details about the causes and circumstances surrounding a fatal incident are generally provided, including details such as police narratives
• there is a work-relatedness assessment against standard criteria
• relevant data items are coded to ICD-10-AM.63

The weaknesses of the NCIS include:

• difficulties with the identification of bystander deaths, due to lack of information in the accompanying text documents, especially for road-related fatalities
• under-identification of work-related fatalities in Western Australia due to a lack of access to cases where the coroner’s findings are pending and limitations in the coding of work-relatedness stemming from lack of information available to coroners
• the current coding of iatrogenic cases as being work-related.63

4.2.5.4 Notified Fatalities (NF)

In an attempt to capture information from some of the groups not captured in workers’ compensation data, such as the self-employed, the ASCC has also undertaken a collection of all fatalities notified to OSH authorities since 2003. These data are collected from OHS authorities throughout Australia and cover employees, self-employed workers and bystanders who suffered a fatal injury at work or as a result of a work activity.63

The information requested includes gender, age, industry of workplace, industry of employer, occupation, narrative, whether commuting and type of work activity. Where multiple fatalities occurred as a result of the same incident, a separate notification is required for each fatality.

The strengths of the NF are that:

• it captures fatalities not covered by NDS, such as the self-employed and bystanders
• it includes information about where the fatality occurred – for example, at the workplace, at a private residence or at a hospital (excluding, however, fatalities resulting from medical treatment or medical malpractice)
• data are coded to maximise comparability with the NDS.63

The weaknesses of the NF are that:

• it has only been collected nationally since 2003
• it has limited coverage of transport-related deaths due to the difficulty in identifying work-related road fatalities and the lack of established protocols in most jurisdictions for notifying work-related road crashes to the OHS authority
• it tends to only capture deaths that occur shortly after the injury
• many data items – for example, mechanism of injury – are missing for transport and farming-related deaths.69

4.2.6 Conclusion: Australia

As in New Zealand, Australia’s reporting and workers’ compensation schemes suffer from gaps and inconsistencies. Australia’s OSH notification schemes suffer from under-reporting and alone are not an effective mechanism for recording the size and nature of work-related harm. Australia’s workers’ compensations schemes exclude a number of types of workers, including the self-employed and a host of different groups that differ between states. This has implications for rehabilitation and compensation and also reduces the coverage of workers’ compensation statistics.

These limitations highlight the potential difficulty of establishing a common framework for defining work-related harm. There are, however, potentially a number of lessons that could be learned from Australia:
• The reporting requirements in Victoria and New South Wales are similar to New Zealand’s, but are more explicit, which reduces confusion for employers, and broader in some aspects, such as requiring near-misses, which is more likely to focus investigations on preventative action.

• In both Victoria and New South Wales, gradual process injuries are treated in the same way as other injuries for the purpose of determining cover.

• Commuting accidents are covered by workers’ compensation schemes in most states.

• Both Victoria and New South Wales broadly cover mental harm, except in the case of stress that arises from certain specified reasonable actions taken by an employer.

• While OSH and workers’ compensation schemes in Australia are governed by separate legislation, legal frameworks and definitions of work-related harm, they are usually administered by the same organisation in each state (such as WorkCover in Victoria). This allows for better information sharing and co-ordinated prevention activity.

• Federally, the Australian Safety and Compensation Council co-ordinates national data collection from a range of systems that collect work-related harm data, each of which has limitations as a single source of information on work-related harm. This allows for greater co-ordination of different data sources than seen in New Zealand and, as data collection methods continue to improve, potentially allows for more robust identification of work-related harm.
4.3 The United Kingdom

4.3.1 Summary

The UK’s health and safety regulation is broadly similar to New Zealand’s and Australia’s. The OSH reporting regime faces similar challenges to New Zealand’s, particularly under-reporting. The UK has, however, developed a number of supplementary survey methods that have the potential for development in New Zealand and may help overcome the universal difficulties of gathering accurate information on work-related harm.

The UK’s system does not create distinctions between acute and chronic injuries and illness for the purposes of income support or compensation. The Industrial Injuries Disablement Benefit (IIDB) is for people who have suffered an accident at work or contracted a disease because of their job: “The Industrial Injuries Disablement Benefit is a payment for people who are ill or disabled as a result of an accident, disease or event that happened at work – or in connection with work. We use accident to mean any incident or series of incidents at work which were not deliberate and which resulted in personal injury.”

In practice, however, the process of getting cover through employers’ liability insurance for chronic injuries and illnesses, and acute illness, is much harder than for acute injuries. Major problems are acknowledged to exist with the compensation systems of tort-based actions and state welfare benefits for work-related harm. Walters and James argue that only a minority of those harmed as a result of work receive any compensation, the high costs of pursuing actions for damages being beyond individual workers: “Provisions for treatment and rehabilitation are insufficient and inadequately funded… Those who are injured or made ill by their work often do not receive the support that would enable them to return to work and are likely to suffer financial hardship.”

4.3.2 Overview of occupational safety and health regulation

Occupational health and safety legislation in Australia and New Zealand has traditionally had its origins in the UK’s health and safety law. All three systems are currently based on the recommendations of the 1972 Robens report into health safety and welfare at work. In each case, the legislation sets up general duties on employers and others, without the need to define work-related harm. This framework provides the basis for prosecutions, which, in effect, define the parameters of what is recognised as work-related harm. Work-related harm is also defined in detail by way of regulation for notification purposes.

The Health and Safety at Work Act 1974 (HSW Act) sets out the general duties that employers have to:

- ensure, so far as is reasonably practical, the health, safety and welfare at work of all their employees (section 2)
- conduct their undertaking in such a way as to ensure, so far as is reasonably practical, that persons not in their employment who may be affected thereby are not thereby exposed to risks to their health or safety (section 3).
4.3.3 Definitions of work-related harm used for occupational safety and health reporting purposes

The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR) place a legal duty on employers, self-employed people and people in control of premises to report work-related deaths, major injuries or over-three-day injuries, work-related diseases and dangerous occurrences (near-miss accidents). The information enables the Health and Safety Executive (HSE) and local authorities to identify where and how risks arise and to investigate serious accidents. Appendix 6 sets out RIDDOR’s reporting requirements.

Employers have a mandatory requirement to make reports of injuries to RIDDOR. If a doctor notifies an employer that one of their workers suffers from a reportable work-related disease, the employer must report it to RIDDOR. Quite a large amount of data is collected. For example, responses to the questions in the Report of an Injury populate 50 fields in the database including eight identifying questions on the employee and the workplace and four questions about the incident.

RIDDOR has been criticised for under-reporting workplace deaths, particularly those collected by other agencies such as maritime and civil aircraft accidents and road traffic accidents, and internal anomalies such as when a traffic accident is counted as work-related. Comparison of the occupational disease estimates obtained by HSE with those for disablement benefits under the Industrial Injuries Scheme suggests that there is still substantial under-reporting under RIDDOR, particularly for diseases with long induction periods (for example, the pneumoconioses and occupational cancers).

The HSE admit that RIDDOR currently functions moderately well for occupational injuries and much less well for occupational diseases. The HSE has evidence from a study conducted in the 1990s that, then, only about 33 percent of cases were reported. They have reason to believe that this has increased to approximately 40 percent (as at 2005). However, for the self-employed, they believe that only about 5 percent of cases are reported.

There appear to be two main reasons for this situation. The first is a lack of any incentive. Reporting exists primarily for the collection of statistical information and does not occur within any other context such as insurance or actuarial needs. Prosecution for failing to do so is apparently a very rare event. The second reason is that it is widely perceived by those who report to RIDDOR that their action may trigger an investigation or, at the least, an inspection by HSE or local authority inspectors.

4.3.4 Definitions of work-related harm used for workers’ compensation purposes

The UK differs from Australia and New Zealand in that it does not have a workers’ compensation scheme, relying on social security, employers’ liability insurance and litigation to cover income loss and medical costs caused by work-related harm. There is, however, a large body of case law that effectively defines work-related harm. All of these systems together provide for the recognition of work-related harm and are described below.
4.3.4.1 State benefits

Any employee who is injured or made ill at work is entitled to claim benefits under the social security system as well as receive treatment from the National Health Service (NHS). The Social Security Act 1975 provides entitlement “in respect of any day during the injury benefit period on which... he is incapable of work”. The following benefits, paid irrespective of fault, are relevant to work-related harm:

- People who become sick while they are working for an employer and are earning at a certain threshold are entitled to statutory sick pay paid out via the employer.
- People who are not working when they become sick, or are self-employed, or who have been sick for more than 28 weeks may be entitled to the Incapacity Benefit.
- People who are ill or disabled as a result of an accident, disease or event that happened at work or in connection with work may be entitled to the Industrial Injuries Disablement Benefit. Related benefits include the Constant Attendance Allowance, Exceptionally Severe Disablement Allowance, Reduced Earnings Allowance and Retirement Allowance.

People who lodge an injury claim through litigation may have to claim social security benefits while it is going through the process towards settlement. Should the claim be successful, the claimant will be obliged to repay benefits and possibly some other costs out of the settlement.

4.3.4.2 Employers’ liability insurance

Employers’ liability insurance enables an employer to meet the cost of compensation for employees’ and former employees’ injuries or illnesses whether they are caused on or off site. It includes “bodily injury and disease” (not defined) and, in practice, can cover diseases that may manifest many years after the employment ceased. Any injuries or illnesses relating to motor accidents that occur while employees are working are usually covered separately by motor insurance. Employers’ liability insurance requires the courts to establish the negligence of an employer. This is often done through actual or threatened litigation.

Public liability insurance covers employers for claims made against them by members of the public or other businesses, but not for claims by employees. Public liability insurance is generally voluntary, but employers’ liability insurance is compulsory.

Most employers are required by law (Employers’ Liability (Compulsory Insurance) Act 1969) to insure against liability for injury or disease to their employees arising out of their employment. Some are exempt, for example:

- most public organisations including government departments and agencies, local authorities, police authorities and nationalised industries
- health service bodies including NHS trusts, health authorities, primary care trusts and Scottish health boards
• family businesses.75

Those who work for a public sector organisation can still claim compensation if injured at work or made ill as a result of work and the employer is to blame. Any compensation will be paid directly from public funds.74

Employers are legally obliged to conduct risk assessments, to take practical measures to protect employees and to report incidents. If an insurer believes that an employer has failed to meet their legal responsibilities for the health and safety of employees and that this has led to a claim, the policy may enable the insurer to sue the employer to reclaim the cost of the compensation.75

4.3.4.3 Litigation

Employees in the UK who are injured or made ill at work are entitled to sue their employers for compensation in the civil courts. The UK is acknowledged to be a highly litigious society.54 New Zealand’s courts frequently look to jurisprudence in the UK on occupational safety and health and compensation issues.

It is not possible to set out in this report all of the key decisions that help define work-related harm. An example is in Sutherland v. Hatton [2002] EWCA Civ 76, where the Supreme Court set out a number of general principles that have been influential in the area of identifying work-related stress. A selection of these is summarised here:

• The harm to the particular employee must have been reasonably foreseeable.
• Foreseeability depends on what the employer knows (or ought reasonably to know) about the employee. Because of the nature of a mental disorder, it is harder to foresee than physical injury, but may be easier to foresee in a known individual than the population at large.
• The test is the same whatever the employment: there are no occupations that should be regarded as intrinsically dangerous to health.
• The employer is generally entitled to take what they are told by the employee at face value unless they have good reason to think to the contrary.
• To trigger a duty to take steps, the indications of impending harm to health arising from stress at work must be plain enough for any reasonable employer to realise that they should do something about it.
• The employer is only in breach of duty if they have failed to take the steps that are reasonable in the circumstances, bearing in mind the magnitude of the risk of harm occurring, the gravity of the harm that may occur, the costs and practicability of preventing it and the justifications for running the risk.
• The claimant must show that breach of duty has caused or materially contributed to the harm suffered. It is not enough to show that occupational stress has caused the harm.

In general terms, industrial disease claims for compensation must usually have been settled or legal proceedings must have been issued in a court of law within three years of knowledge of a significant injury. In most cases, the time will start running on the day the injury occurs, as in a road traffic accident; however, in
occupational illness cases, the three-year period starts to run from the time when
the potential claimant knew or ought to have known of the existence of a
problem.54

4.3.5 Classification systems used to record work-related harm

As the UK does not have a workers’ compensation scheme through which to
collect data as in many other countries, it is reliant on RIDDOR (described above)
and other surveillance tools. Two methodological strategies have been used to try
to overcome the weaknesses of the RIDDOR system due to low reporting. One of
these addresses injuries and the other diseases. Both approaches supplement the
information available from the RIDDOR database with survey data.73

For occupational injuries, the Labour Force Survey (LFS) is used. The LFS gives
estimates on the levels of workplace injury, which, together with the rates of
reported injury, give estimates of the levels of reporting of injuries in industries.73

For occupational diseases, the surveys of Self-reported Work-related Illness
(SWI) are conducted in conjunction with the Labour Force Surveys. The SWI
attempts to measure work-related illness based on individual perceptions. These
surveys provide an indication of the overall prevalence of work-related illness and
its distribution by major disease groups and a range of demographic and
employment-related variables.73

Other sources of information about occupational diseases in the UK are available
from voluntary reporting by specialist doctors. The national voluntary
occupational health surveillance schemes in the UK are run by the University of
Manchester and, collectively since 2002, use the acronym THOR (The Health and
Occupation Reporting network). The THOR schemes rely on the willing
participation of about 2,000 specialist doctors including occupational physicians,
psychiatrists, rheumatologists, respiratory physicians and dermatologists as well
as specially trained general practitioners who report cases of work-related ill
health anonymously. They are targeted to return more than 6,000 reports
annually between them. These generate an annual estimate of about 25,000
cases of occupational disease and work-related ill health.76 The schemes are as
follows:

• **SWORD** (Surveillance of Work-related and Occupational Respiratory Disease,) which aims to determine the scale and patterns of work-related respiratory
disease in the UK and to identify the agents thought to be responsible along
with information on industry and occupation. Nine respiratory disease
categories, plus “other” are provided, including occupational asthma, benign
and malignant pleural disease, mesothelioma, lung cancer and
pneumoconiosis.77

• **EPI-DERM** (occupational skin surveillance), a scheme for surveillance of
occupational skin disease by dermatologists.78

• **SIDAW** (Surveillance of Infectious Disease At Work), which commonly reports
outbreaks of diarrhoeal disease and scabies. Other diseases are also reported,
such as legionellosis and tuberculosis.79
• **OSSA** (Occupational Surveillance Scheme for Audiologists), which records work-related hearing disorders.\(^{80}\)

• **MOSS** (Musculoskeletal Occupational Surveillance Scheme), which collects information on cases of musculoskeletal disorders thought to result from work, reported by consultant rheumatologists. Information included in a reported case gives details of the job, industry and the event that was believed to have precipitated the diagnosed illness. Other personal details such as age, sex and region are reported to help identify the groups of people that suffer more frequently with occupational musculoskeletal disorders.\(^{81}\)

• **SOSMI** (Surveillance of Occupational Stress and Mental Illness), which collects information on occupational stress and mental illness, reported by consultant psychiatrists. Information included in a reported case gives details of the job, industry and the event that was believed to have precipitated the diagnosed illness. Other personal details such as age, sex and region are reported to help identify the groups of people that suffer more frequently with occupational mental ill health. There are six main categories of disease that are reported to SOSMI: anxiety/depression, post-traumatic stress disorder, other work-related stress, alcohol and drug abuse, psychotic episode, and other (for example, chronic fatigue syndrome, obsessive compulsive disorder, agoraphobia).\(^{82}\)

• **OPRA** (Occupational Physicians Reporting Activity), which was established as a separate scheme for all types of work-related disease. Information reported to OPRA gives a very broad picture of occupational disease and work-related conditions in the UK, since OPRA incorporates all of the categories covered by the other THOR component schemes, as well as any conditions not included elsewhere. The most common diseases reported are musculoskeletal, for example, back pain and upper limb disorders, and mental ill-health, for example, anxiety, depression and stress. A significant number of cases of contact dermatitis are also reported.\(^{83}\)

In all the schemes, participating physicians are asked to report all new cases that they believe to have been caused by occupational or work-related factors, seen for the first time by themselves or by physicians working under them during the month. In MOSS and SOSMI, unlike the other specialist schemes, the physicians are advised to report cases “either caused or made worse by work”. MOSS and SOSMI also specify that the decision on work-relatedness should be based essentially on whether the disease would have occurred in the absence of occupational factors. Diagnosis is coded using ICD-10. Occupation and industry are also coded, using standard occupational coding and standard industrial coding.\(^{84}\)

Despite the limited precision and accuracy of a reporting system based on subjective judgements, these schemes are generally considered to be reasonably valid. One study has suggested that these types of schemes may be more useful in terms of collecting data on certain types of diseases than providing analysis of causation.\(^{85}\) Discussion with rheumatologists on the MOSS advisory group suggests that they determine attribution very cautiously, leading, perhaps, to
lower estimates of work-related disease than would be obtained by asking the workers themselves.\textsuperscript{86}

Many cases of work-related disease fall outside the catchment of the THOR schemes, since many workers will not have access to an occupational physician at their place of work, and other specialists such as chest physicians, dermatologists and psychiatrists will largely see only the more serious or difficult-to-resolve cases that are referred to them by other doctors. Therefore, figures from the THOR schemes should be regarded very much as minimal estimates of the true incidence of work-related disease.\textsuperscript{73}

4.3.6 Conclusion: United Kingdom

The challenges faced by the RIDDOR scheme highlight the universal problem with using reporting mechanisms run by a regulatory agency for surveillance purposes. Reporting serves a vital function in regard to investigations, and the UK provides another example of a reporting regime that requires the reporting of near-misses, which may stimulate preventative actions. However, the system is hampered by fears of enforcement action and a lack of incentive to report.

There are, however, potentially a number of lessons that could be learned from the United Kingdom:

- OSH reporting regimes are unlikely to be a useful tool for surveillance, although they have other useful purposes, particularly for investigations and prevention activities.
- The UK’s supplementary survey methods based on voluntary reports by occupational medical specialists may have the potential for application in New Zealand.
- As in New Zealand, one of the key barriers to identifying work-related harm recently highlighted in the UK is the lack of appropriate training for general practitioners, the lack of referral options and insufficient access to support for patients in the early stages of sickness, including those with mental health conditions. To address these concerns (and others), Dame Carol Black has recommended a new integrated approach to working-age health, underpinned by the inclusion of occupational health and vocational rehabilitation within mainstream health care, clear professional leadership, clear standards of practice and formal accreditation for all providers, a revitalised workforce, a sound academic base. systematic gathering and analysis of data and a universal awareness and understanding of the latest evidence and most effective interventions.\textsuperscript{87}
4.4 The Netherlands

4.4.1 Summary
As with the other countries examined in this review, the Netherlands’ mandatory notification requirements are narrower than that their OSH framework generally, and the system suffers from under-reporting. Occupational disease notification is run under a separate system, with notification from occupational physicians. There are a number of limitations on the reporting systems, with no reporting requirements for journey to work accidents or accidents that do not require hospitalisation, and there is significant under-reporting of occupational disease.

Employers may be held accountable in the courts for their health and safety responsibilities, including preventing or limiting employment-related psychosocial pressure including sexual intimidation, aggression and violence, and aggravation and pressure of work that causes stress (a condition that has physical, mental or social consequences that are perceived as negative).

The Netherlands’ system of recognising work-related harm for rehabilitation and compensation purposes has a number of unique features in comparison to the other countries examined in this review. In particular, the Netherlands does not define work-related harm or separate the provision of health care or income support from general health care or income support. It does, however, create incentives for employers to ensure the general health of their employees. For example, the sickness benefit must be paid by the employer at 70 percent of the employee’s salary for the first two years of sickness or disability, and compulsory health insurance must be paid by both the individual and the employer.

4.4.2 Overview of occupational safety and health regulation
Like the other countries examined in this review, health and safety regulation in the Netherlands places general duties on employers to maintain the health and safety of employees, to conduct a policy aimed at achieving the best possible working conditions and to take appropriate measures to prevent hazards to third parties. It also creates reporting requirements for serious accidents and occupational diseases.88

4.4.3 The definitions of work-related harm used for occupational safety and health reporting purposes
Under the Working Conditions Act 1999, employers are obliged to report serious accidents (death, hospital admission or permanent injury) only if suffered by their employees during the course of their work.

Employers must also register all accidents resulting in more than three days’ absence from work; however, these accidents are not reported and are therefore not accessible for research or surveillance purposes.88

An accident at work is defined as an unintentional, sudden event affecting an employee in connection with the performance of work that had the virtually immediate consequence of damaging their health and led to them taking time off sick, or that had the virtually immediate consequence of causing their death.
(Article 9). Traffic accidents that occur on the way to or from work are not regarded as industrial accidents and do not carry a reporting obligation.\textsuperscript{89}

The employer must operate a policy aimed at preventing employment-related psychosocial pressure, or limiting it if prevention is not possible, as part of the general working conditions policy. Employment-related psychosocial pressure is defined as sexual intimidation, aggression and violence, and aggravation and pressure of work that causes stress. Stress is defined as a condition that has physical, mental or social consequences that are perceived as negative.

In addition to standard work, the Act applies to activities carried out by apprentices and students in training establishments that are comparable to work.

4.4.4 Definitions of work-related harm used for workers’ compensation purposes

As the Netherlands does not define work-related harm for compensation purposes, this section outlines the aspects of the Dutch social security system that cover the medical costs and loss of income associated with work-related harm.

The Dutch social security system provides income support for occupational disability, a sickness benefit and a surviving relative's benefit. In addition, the Netherlands has a new compulsory health insurance system that came into force on 1 January 2006. Individuals, employers and the government contribute to the cost of the scheme, which covers work and non-work-related harm.

The Dutch social security system is based on social insurances and supplementary income support provisions. The two categories of social insurance – employee and national insurances – are paid for jointly by employees and employers.

4.4.4.1 Employee insurances\textsuperscript{90}

Employees in the Netherlands are automatically insured under several Acts of Parliament. In this context, an employee is defined as someone who works for an employer and has an employment contract. There are other types of employment relationships that are equated with paid employment, including home-workers, musicians and artists. The employee insurances that are likely to cover cases of work-related harm in the Netherlands are as follows:

- **The Extension of Obligation to Pay Salary (Sickness) Act (WULBZ):** Dutch employers are obliged to pay 70 percent of the employee's salary for the first two years of sickness or disability, designed to encourage employers to become actively involved in prevention and rehabilitation.\textsuperscript{91} The requirement does not distinguish cause of illness. The sickness benefit described below is paid where there is no employer.

- **Sickness Benefits Act (ZW):** This Act entitles the insuree to a sickness benefit if their employer is not obliged to continue paying their salary under the WULBZ. The Dutch system does not distinguish between causes of illness. The scheme covers contractors not working in their own company, trainees and persons working from home. Those who are not automatically covered, such as the self-employed, are generally required to voluntarily insure.\textsuperscript{92}
• **Invalidity Insurance Act (WAO):** This Act provides benefit entitlements for employees who became partially or fully unfit for work before 1 January 2004 and have had that status for more than two years. Claimants can collect the WAO benefit until they turn 65, subject to regular reassessments.

• **Work and Income (Capacity for Work) Act (WIA):** This Act was introduced in 2005 and replaces the WAO. The WIA provides benefit entitlements for employees who became unfit for work and still have a minimum incapacity of 35 percent after the 104-week waiting period. The WIA comprises two schemes:
  - The income support scheme for persons incapable of work (IVA) – Under this scheme, employees who become fully and permanently incapable of work are entitled to a wage-replacing incapacity benefit, equal to 70 percent of their monthly salary. Claimants can receive this benefit until they turn 65.
  - The work resumption benefit for persons partially capable of work (WGA) – Under this scheme, employees who are partially incapable of work (at least 35 percent) are entitled to an income supplement benefit.93

4.4.4.2 National insurances

Everyone who lives in or is in paid employment in the Netherlands falls under these schemes. The schemes that are likely to cover aspects of work-related harm are as follows:

• **The Health Care Insurance Act (ZVW):** All residents of the Netherlands are obliged to take out health insurance. The Act establishes a private health insurance system with social conditions – the insurers are obliged to accept every resident in their area of activity regardless of age or health and may not charge higher premiums for people who are sick or old. The government finances the premium for those who cannot afford to pay and children up to the age of 18 years. In addition to the fixed premium, the Act obliges citizens to also pay a contribution of 6.5 percent of their income, which must be reimbursed by the employer. Self-employed persons and pensioners pay 4.4 percent.94

• **Surviving Dependents Act (ANW):** This Act provides a benefit for people whose spouse or partner has died. Generally, every resident of the Netherlands is automatically insured for the ANW. Besides the surviving relatives allowance, there are supplementary pension schemes that allow for a supplementary surviving relative’s pension from the employer. This comes on top of any surviving relative’s allowance.95

• **Exceptional Medical Expenses Act (AWBZ):** This Act provides insurance cover for major medical expenses that are not covered by health care insurance, such as care in a nursing home, care in a home or institution for disabled persons, and home care.
Supplementary income support is also available for people who are not eligible for a benefit or receive too little to live on. This is intended exclusively as a supplement to raise the family income to the guaranteed minimum income.

4.4.4.3 Common law

In addition to the social security system, all beneficiaries, whether their injury or disease is work-related or not, can recover additional monies through the common law if they can show that their illness was caused by a negligent employer or any other person. Under the Dutch Civil Code, an employee has only to contend that the employer was negligent and the employer must prove that they were not. Both special and general damages may be awarded from which the social insurance payments are deducted. While this is a possible route, anecdotaly, few people actually do sue, as their needs are generally met.

4.4.5 Classification systems used to record work-related harm

Due to the Working Conditions Act’s requirement for employers to report serious accidents only, the OSH Inspectorate holds a database on fatal and severe injuries only. Reporting of fatal accidents is almost complete, but non-fatal accidents are seriously under-reported. The database includes students and volunteers but excludes self-employed persons and traffic accidents during work.

There are a number of other national databases of relevance, set out below.

4.4.5.1 External cause of injury and poisoning statistics

Statistics Netherlands holds statistics of external cause of injury and poisoning in the Netherlands based on coroners’ reports. Deaths as a result of occupational accidents can be selected from this database. The statistics on external cause of injury and poisoning provide the most reliable data on fatal occupational accidents. Traffic accidents during work are excluded.

4.4.5.2 Dutch Injury Surveillance System (LIS)

The Consumer Safety Institute runs the Dutch Injury Surveillance System (LIS) at the emergency departments of a subset of Dutch hospitals. This system collects data on occupational accidents with less severe outcomes that required hospital admission and is considered reliable.

4.4.5.3 Labour Force Survey

Statistics Netherlands includes an occupational accidents questionnaire in their Labour Force Survey.

4.4.5.4 The Netherlands Workers Survey

The Netherlands Workers Survey collects data on psychosocial and physical work load, work-related health complaints and medical consumption, chemical/biological exposure and accidents during work. Data are collected through the Dutch Health Interview Survey and Dutch Labour Force Survey. Both surveys are executed continuously based on nationally representative samples.
Data on working conditions are collected by face-to-face interviews with the help of portable computers. As the data on working conditions are collected continuously, these surveys monitor trends in working conditions.

Data are collected on:

- psychosocial work load (for example, time pressure, job control)
- physical work load (for example, noise, vibrations, use of power, unfavourable work postures)
- work-related health complaints and medical consumption (for example, absence through illness, visits to general practitioner/specialist/hospital)
- chemical/biological exposure (included in the survey since 2000)
- accidents during work (included in the survey since 2000).

4.4.5.5 National Registry of Occupational Diseases

The National Registry of Occupational Diseases collects reports of occupational and work-related diseases based on a mandatory notification system from occupational physicians. Information is collected about the diagnosis, sex and age, type and degree of exposure at work, profession at the moment of exposure and economic activity of the employer. Numbers of reports per occupation, per industry and per diagnosis group are reported. The system does not include those who are self-employed. The aims are to:

- obtain information about the prevalence of occupational diseases in sectors and professions, as well as changes and trends in this information
- stimulate the notification of occupational diseases by occupational physicians
- report shortcomings in the care system for occupational diseases and also in the availability of knowledge in the field.

It is estimated that this system notifies only about 30 percent of all diseases. Currently, the system is being evaluated, and methods are being developed to improve notification.

4.4.6 Conclusion: The Netherlands

The Netherlands experiences the same difficulties with reporting work-related harm as the other countries examined in this review. There are a number of definitional limitations on the reporting systems, with no reporting requirements for journey to work accidents or accidents that do not require hospitalisation and significant under-reporting of occupational disease.

The Netherlands’ system is unique in its approach to providing equal treatment for work-related and non-work-related harm, while still placing the responsibility firmly on employers to actively maintain healthy, safe working environments. While this system is very different from New Zealand’s, lessons could be learned from the Netherlands regarding improving co-operation between occupational health and safety and medical professionals, which may improve the diagnosis of work-related harm.
According to the Ministry of Social Affairs and Employment:

The government encourages employers and employees to take adequate action in the early stages of a period of absence. Curbing unnecessary medicalisation is an important objective of this effort. The government makes investments to improve cooperation between occupational safety and health care providers and medical care providers... Effective cooperation between (medical) professionals is of importance not only for the prevention of work-related health conditions, but also for timely and permanent reintegration. When company doctors, general practitioners, medical specialists and other medical and paramedical care professionals work together better, they will be able to offer fast and effective care. This helps prevent sickness from leading to invalidity, and limits long-term absenteeism and occupational disability. That is why the government is committed to accelerating the decompartmentalisation of occupational safety and health care and curative care in order to arrive at a comprehensive approach to working conditions, absenteeism and reintegration. The government provides practical support for the social partners in the effort to strengthen prevention policy and invest in the necessary improvements in safety and health and absenteeism policy.¹⁰⁰

Over the past few years, a range of initiatives have been launched in order to improve co-operation between industrial health care providers and curative care providers. Examples include:

- the Health and Labour Knowledge Network, which is aimed at optimising diagnoses, treatment and referrals
- co-operation projects between general practitioners and company doctors
- the Transmural Safety and Health-Curative Care Project, which provides joint refresher courses and additional training in order to more effectively align practices of company doctors, insurance doctors and medical specialists.¹⁰⁰

As of January 2004, company doctors have the authority to refer employees to medical specialists for treatment of work-related conditions, paid for by public health care funds. The aim is to boost the harmonisation and co-operation among the experts involved in sickness absenteeism. Evaluations of several initiatives show that co-operation between occupational safety and health care providers and curative care providers is slowly improving.¹⁰⁰
4.5 Finland

4.5.1 Summary

Finland’s health and safety regulation and occupational accident insurance schemes are widely considered to be broad, with wide coverage of different groups affected by work-related harm, providing for high levels of compensation. The scheme can cover all costs caused by the accident or occupational disease and the loss of earnings and, if needed, also the loss of the worker’s working capacity. Diagnosis and treatment, as well as the rehabilitation of accidental injuries and occupational diseases, are compensated. Wage-replacement benefits for loss of ability to work are paid to employees or, in the case of fatal diseases and injuries, are paid to survivors. The accident insurers also provide advisory services for accident prevention and safety improvement.54

The Finnish compensation scheme is more comparable with New Zealand’s than the UK’s or the Netherlands’. Its definitions of work-related harm for compensation purposes are broader than New Zealand’s, however. For example, it comprehensively covers mental harm and work-related commuting accidents.

In Finland, a physical, chemical or biological factor must have been present to such an extent that it is sufficient to cause the disease, unless the disease clearly has been caused by exposure outside work. This establishes a low burden for establishing work-relatedness and a high burden for proving otherwise. The list of physical, chemical or biological factors deemed occupational is extensive.

4.5.2 Overview of occupational safety and health regulation

In Finland, the Ministry of Social Affairs and Health (MSAH) is responsible for most OSH matters. In addition, the Federation of Accident Insurance Institutions (FAII) is the co-ordinating body for all organisations engaged in statutory accident insurance. Every insurance company handling statutory accident insurance in Finland has to be a member of the FAII.

According to MSAH, “In Finland, occupational safety and health is based on the concept of a good working environment, which besides occupational safety and health, covers terms of employment and the psychic [sic] well-being of the employees. The main objective of occupational safety and health is to maintain and develop health, safety and work ability of the employee, as well as to prevent occupational accidents and illnesses.”54

The Occupational Health Care Act 2001 requires the employer to arrange occupational health care at their own expense in order to prevent and control health risks and problems related to work and working conditions and to protect and promote the safety, working capacity and health of their employees (section 4). The main aim of this Act appears to be to direct employee health care measures towards ensuring that employees can sustain longer working lives. It also contains a significant shift of focus towards promoting health and the ability to work, and it established a new basis for addressing issues concerned with working conditions.
Under the Occupational Health Care Act, both the employer and employee are obliged to pass relevant information about work and the workplace to the responsible health care service. This is designed to facilitate workplace evaluation and potential prevention strategies. The health care service provider also has a duty of care to inform both the employer and the employee about potential workplace hazards. These explicitly include “the functioning of the workplace community”, which has generally been interpreted to acknowledge the role of workplace stress.54

The objectives of the Occupational Safety and Health Act 2002 are to improve the working environment and working conditions in order to ensure and maintain the working capacity of employees as well as to prevent occupational accidents and diseases and eliminate other hazards from work and the working environment to the physical and mental health of employees.54 The Act creates detailed obligations for employers in regard to occupational safety and health. It covers work undertaken by leased labour, apprentices and students, rehabilitation and rehabilitative work experience, persons serving a court sentence, certain types of military service and certain types of work in the home (sections 3, 4 and 5).

The Act sets out a general duty that requires employers to take care of the safety and health of their employees while at work by taking necessary measures. For this purpose, employers must consider the circumstances related to the work, working conditions and other aspects of the working environment as well as the employees’ personal capacities. Unusual and unforeseeable circumstances that are beyond the employer’s control, and exceptional events, the consequences of which could not have been avoided despite the exercise of all due care, are taken into consideration as factors restricting the scope of the duty to exercise care.

The employer is required to have an occupational safety and health policy and “systematically and adequately analyse and identify the hazards and risk factors caused by the work”. Provisions on specific risks include requiring appropriate ergonomic workstations, avoiding and reducing workloads, preventing the threat of violence, taking measures against harassment, minimising risks of lone working and night working and allowing for work pauses.

As a European Union (EU) member state, Finland is also bound by European legislation. In the EU, the legislative framework is established by the European Commission through a series of European directives based in Article 137 of the EU Treaty, giving the EU authority to legislate in this field. Directive 89/391/EEC, or the Framework Directive, sets the general principles for effective safety and health at work, with other EU laws addressing specific issues such as chemical agents, noise and pregnant workers. The EU has established legislation in the form of directives and standards designed to protect the health and safety of Europe’s workers.54

4.5.3 Definitions of work-related harm used for occupational safety and health reporting purposes

Unlike the other countries examined in this review, Finland’s occupational injury and illness reporting requirements are not established under the occupational safety and health legislation. Keeping track of occupational injuries has largely
been devolved to the insurers providing compulsory cover for workers and is discussed below in regard to classification systems used for reporting work-related harm.

4.5.4 Definitions of work-related harm used for workers’ compensation purposes

In Finland, work accidents and occupational diseases are compensated through the statutory accident insurance system. The present occupational accident insurance legislation is based on the Labour Accident Insurance Act 1948 and the Act on Accident Insurance for Public Sector Employees 1935. These Acts have been amended several times, most recently in 2004 and 2005. According to the current legislation, every employer who employs a person for more than 12 days a year must provide occupational accident insurance for their worker. The accident insurance system is financed on the basis of premiums paid by employers, in line with EU directives.54

Finland has a complex structure of social insurance incorporating a comprehensive range of social security and insurance institutions. However, compensation for work-related diseases and injuries takes priority over other forms of statutory compensation and pensions. This means that the injured worker is first paid the compensation to which they are entitled on the basis of statutory accident insurance in full, and the benefits of other social insurance are only paid if there is additional entitlement to them.54

4.5.4.1 Accident insurance

Finnish statutory accident insurance provides cover for both occupational disease and occupational injury and incidents both at work and on the journey to work. An employee is entitled to compensation even when the employer fails to take out the mandatory accident insurance. The current occupational accident insurance system covers employees in the public and private sectors, including the self-employed.54

An employment accident is defined as any accident causing injury or illness sustained by the employee:

- in the course of his/her employment
- in circumstances arising from employment at the workplace or in an area pertaining to it, while commuting from his/her residence to the workplace or vice versa or while attending to business for the employer elsewhere
- while attempting to save the employer’s property or, in connection with his/her employment, human life (section 4).

Injuries arising within 24 hours of one of the above incidents, as well as war injuries, the significant aggravation of injury or illness and assault are also covered for compensation purposes.

Compensation is paid for occupational disease as defined in the Occupational Diseases Act. The Occupational Diseases Act (1343/88) defines disease entitled to statutory compensation as “a disease caused by any physical factor, chemical substance or biological agent encountered in the course of work done under
contract of employment, in the public service or in public office or as an agricultural entrepreneur”. A “notable worsening” of another disease or injury is also explicitly covered.

A disease is deemed as occupational when the physical, chemical or biological factor is present in a person’s work to such an extent that its exposure effect is sufficient to cause the disease in question, unless it is stated that the disease has been clearly caused by exposure outside work. The physical, chemical and biological factors deemed occupational are set out in Appendix 7.

4.5.4.2 Social insurance

Sickness insurance provides a daily sickness benefit and rehabilitation allowance and reimburses private medical and dental fees, laboratory and treatment costs, pharmaceutical expenses and travel expenses related to treatment. It also covers maternal, paternal and parental allowances, the special maternity allowance and special care allowance. According to MSAH, all residents in Finland are entitled to sickness insurance compensation (if their home is Finland and they live mainly in that country). Employees of Finnish firms who work abroad remain, together with their families, within the Finland sickness insurance system. The amount of sickness insurance varies, depending on what it is being claimed for. Sickness benefit; rehabilitation allowance; maternal, paternal and parental allowances; the special maternity allowance and special care allowance are assessed according to income.54

4.5.5 Classification systems used to record work-related harm

Information on occupational diseases is held in a number of databases. The principal one is the Finnish Register of Occupational Diseases (FROD), and this is supplemented by other important registers such as the Finnish Cancer Registry. All occupational diseases are supposed to be reported to FROD.73

Keeping track of occupational injuries has largely been devolved to the insurers providing compulsory cover for workers. The principal database is the Database of Occupational Injuries. All accidents that result in three or more days off work are supposed to be included. The insurer is obliged to provide the register with data on every case reported to them, regardless of compensation decisions. A supplementary source of information is the Database of Descriptions of Severe Occupational Injuries. This is designed to capture information on all severe accidents that are examined by statutory inspectors.73

There is a combined register that is supposed to capture data on all accidents at work or occupational disease in Finland – the Register of Occupational Injuries and Diseases in Finland. This system is run by the Federation of Accident Insurance Institutions and should contain information on all injuries and diseases that have been compensated on the basis of statutory workers’ compensation. This means that, in theory, the system contains data of all accidents at work or occupational diseases in Finland that have been compensated. All insurance companies practising statutory accident insurance in Finland are under an obligation by law to deliver this data.73
The general aim of the combined register is to provide statistics of accidents at work and occupational diseases over a long period of time. Statistics can then be provided on the basis of numerous variables. These include the injured body part, means of transport (if the accident happened while commuting), primary cause of the disease and its medical diagnosis, as well as the amount of compensation paid. These can be cross-referenced freely. The system does not contain text fields, so its main use is in the creation of numeric statistical information on the basis of which conclusions can be made and appropriate actions taken. The information is considered reliable, as the database has a long continuous history and a relatively high capture rate. The main limitation occurs where coding has changed at various points in time.73

4.5.5.1 Finnish Register of Occupational Diseases (FROD)

The FROD system contains records of occupational diseases reported by physicians and/or insurance companies. Insurance companies send reports of cases where compensation is claimed for occupational disease. The Ministry of Labour sends reports of cases received from medical practitioners on the basis of the Act on the Supervision of Labour Protection. The database system helps ensure that each new case is recorded only once. The detailed classification of information makes FROD potentially useful for the prevention of occupational diseases. Links to other information systems are possible using the Finnish Social Security Number.73

A reasonably large amount of data is collected. A recorded case of an occupational disease contains identification data on the person (personal ID number, name, sex, age, occupational title), information on the employer (name, industry, location), description of the disease (diagnosis, date of diagnosis), information on causes (exposures and exposure times) and information on compensation and severity. Data on costs of claims and cases are not held in the register.73

Diseases are identified with codes from the Finnish edition of International Classification of Diseases. Causes of diseases are represented using the Exposure Classification of The Institute of Occupational Health. Occupational diseases are classified by “diagnosis” and “cause” into the following disease groups:

- Hearing loss.
- Repetitive strain (musculoskeletal disease, caused by injury and non-physiological stress in work).
- Allergic respiratory diseases.
- Skin diseases.
- Asbestos-induced.
- Others – this group includes infectious diseases, conjunctivitis, vibration syndrome, and various types of poisoning.73
4.5.5.2 Finnish Register of Occupational Injuries

This register contains records of occupational injuries. Employers are obliged to notify those occupational accidents causing more than three days’ absence from work to their insurance company. The Federation of Accident Insurance Institutions is obliged to provide the register with data on every case reported to them, regardless of compensation decisions. Each year, there are approximately 120,000 occupational injuries recorded. The number of fatalities is in the range of about 50 cases.73

A reasonably large amount of data is collected. A recorded case of an occupational injury contains identification data on the person (personal ID number, name, sex, age, occupational title), information on the employer (name, industry, location), description of the accident, type of accident, injured part of the body, type of injury, severity of the accident and the NACE (General Name for Economic Activities in the European Union) code. Data on costs of claims and cases are not held in the register.73

The quality of data is not measured, and the codes that are used to categorise accidents are not considered good. However, when compared with neighbouring Nordic countries, they believe that the coverage of accidents is good. Nearly all accidents that result in three or more days off work are likely to be included in the system. The system can be used to measure how many accidents occur in different industries and occupations. However, it provides scant information about how the accidents happened and the probable causes. The exceptions to this are the serious injuries that are attended by labour inspectors, but the quality of this data is dependent on the ability of the inspectors to make useful analyses of the accidents. This is believed to be variable.73

4.5.5.3 Other mechanisms for studying disease

A 2001 Finnish study estimating the proportions (attributable fractions) of fatalities related to occupational factors in Finland has been influential internationally in the development of methods to identify work-related disease.35

The researchers used existing epidemiological literature to estimate the population attributable fraction and disease burden for causes of death from work-related diseases.

For this study, occupational accidents were compiled by the Federation of Finnish Insurance Companies and the Farmers’ Social Insurance Institution. The researchers did not rely on the Register of Occupational Diseases because they considered that the reporting activity is influenced by the national practice of compensating occupational diseases and is considered to underestimate the number of cases of occupational disease, especially for ischemic (or coronary) heart disease and chronic obstructive respiratory disease and doesn’t provide data on deaths.35

The approach has not been without its critics,101 but has, nonetheless, provided useful indications in the absence of other mechanisms for identifying the nature and size of work-related disease. The study assisted NOHSAC’s research into the burden of occupational injury and disease in New Zealand.
4.5.6 Conclusion: Finland

Finland’s health and safety regulation and occupational accident insurance schemes are widely considered to be broad and to provide for high levels of compensation.

The Finnish compensation scheme is more comparable with New Zealand’s than the UK’s or the Netherlands’, and its system of surveillance has been used in NOHSAC’s recommendations for the surveillance of work-related harm in New Zealand.\textsuperscript{1} The value in the Finnish system is its broad coverage and attempts to draw together data from both accident insurance and Department of Labour sources. The recommendations in this report regarding surveillance build on NOHSAC’s previous recommendations.

In addition, potential lessons that could be learned from Finland include:

- its broad definitions of work-related harm for compensation purposes, which include, for example, comprehensive cover for mental harm and identification of commuting accidents as work-related
- the requirement for a physical, chemical or biological factor to have been present to such an extent that it is sufficient to cause the disease, unless the disease has been clearly caused by exposure outside work – this establishes a low burden for establishing work-relatedness and a high burden for proving otherwise.

The broader approach is highlighted in Finland’s statistics. According to the FAII, from the current population of about five million, there are approximately 2.6 million in the workforce. The number of employers is about 200,000. Each year, up to 120,000 work accidents occur that are covered by insurance. Approximately 14,000 of these occur while commuting to and from work. About 5,500 occupational diseases are registered each year. The most common of these are upper limb musculoskeletal pain problems, hearing diseases or injuries due to stress and strain.\textsuperscript{34}

The benefit of more broadly capturing actual work-related harm is that the problem is identified and not buried. Greater incentives are created for taking preventative action, and there is a greater degree of fairness for individuals who would not otherwise be assisted. Clearly, there are practical obstacles in identifying the work-relatedness of chronic conditions beyond the definition, which are experienced internationally and impact on the recognition of work-related disease in particular.
4.6 The United States of America

4.6.1 Summary

The United States has a national framework for occupational safety and health regulation (in addition to state-based initiatives) and state-based workers’ compensation legislation. While each state’s legislation differs, there are some broad similarities.

Generally, for a worker to quality for workers’ compensation benefits three conditions must be met:

1. There must be an injury or illness.
2. It must “arise out of and in the course of employment”.
3. There must be medical costs, rehabilitation costs, lost wages or disfigurement.

Generally, injuries and illnesses are considered eligible for compensation if occupational exposure is the sole cause of the disease, is one of several causes of the disease, was aggravated by or aggravates a non-occupational exposure or hastens the onset of disability.\textsuperscript{102} This principle works in favour of recognising the work-relatedness of chronic conditions where work may not be the sole cause.

This principle has changed in some states where the legislation has been amended to:

- require that work be a major or predominant cause of the disability, or
- eliminate compensation for the aggravation of a pre-existing condition or for a condition related to the ageing process.

Some states have additional requirements such as the disease may not be “an ordinary disease of life” (such as emphysema and hearing loss) or characteristic of or peculiar to a worker’s occupation.\textsuperscript{102}

Generally, the legal standard for determining the work-relatedness of occupational diseases such as occupational lung cancer that do not have distinctive clinical features is that there was a preponderance of evidence (probability greater than 50 percent) that the illness in question was caused by, aggravated by or hastened by workplace exposure.\textsuperscript{102}

While workers’ compensation legislation may provide for equal treatment for acute and chronic conditions (although not always), the much higher number of chronic claims contested by insurance companies has a negative effect on compensation in practice. More than 80 percent of all compensation claims for chronic occupational diseases and almost 50 percent of all injury claims for permanent total disability or death are contested. Even if there is a low chance of winning, the delay allows insurance companies to invest the money, creating a huge incentive to contest the claim.\textsuperscript{102}

4.6.2 Overview of occupational safety and health regulation

The national regulation of health and safety in the United States is the responsibility of the Occupational Safety and Health Administration (OSHA) under
the Occupational Safety and Health Act 1970. The OSH Act does not define work-related harm, but OSHA is responsible for developing mandatory job safety and health standards, and establishing reporting and record-keeping procedures to monitor job-related injuries and illnesses, among other things.\textsuperscript{103}

Where OSHA has not set a standard addressing a specific hazard, employers must comply with the OSH Act’s general duty clause, which requires employers to maintain “... a place of employment which is free from recognized hazards that are causing or are likely to cause death or serious physical harm to his employees”.\textsuperscript{54} The burden of proving that a particular substance is a recognised hazard and that industrial exposure to it results in a significant degree of exposure is placed on OSHA, as is the requirement that the proposed controls are technologically feasible.\textsuperscript{103}

Standard setting is a very slow process, and protection of workers through the employer’s general duty obligation is therefore especially important. Its use is hampered, however, by the availability of reliable health effects data, as well as by the willingness of a particular OSHA administration to use this as a vehicle for protection. Because of the difficulties with standard setting, OSHA’s current focus has shifted towards more voluntary initiatives, providing expert advice and working with industry, trade unions and workers.\textsuperscript{103}

\subsection{4.6.3 Definitions of work-related harm used for occupational safety and health reporting purposes}

OSHA requires employers of more than 10 employees (except for employers in certain low-hazard industries in the retail, finance, insurance, real estate and service sectors) to maintain records of occupational injuries and illnesses as they occur. All occupational injuries and diseases must be recorded if they result in death, one or more lost workdays, restriction of work or motion, loss of consciousness, transfer to another job, or medical treatment (other than first aid).\textsuperscript{103}

All employers must advise the nearest OSHA office of any accident that results in one or more fatalities or the hospitalisation of three or more employees. OSHA often investigates such accidents to determine whether violations of standards contributed to the event.\textsuperscript{54} Because this self-reported information relies on the employer determining that injuries and illness arose out of their “work-relatedness” at his or her facility, injuries, and especially illnesses, are acknowledged to be under-reported.\textsuperscript{103}

The OSH Act defines an employer as any “person engaged in a business affecting commerce who has employees”. Federal government employees are covered through a separate scheme. The Act does not cover:

- self-employed persons
- farms that employ only immediate members of the farmer’s family
- working conditions for which other federal agencies, operating under the authority of other federal laws, regulate worker safety. This category includes most working conditions in mining, nuclear energy and nuclear weapons manufacture, and many aspects of the transportation industries
• employees of state and local governments, unless they are in one of the states operating an OSHA-approved state plan.\textsuperscript{54}

4.6.4 Definitions of work-related harm used for workers’ compensation purposes

There are three methods for a worker to obtain compensation in the United States. One is accessing a social security benefit, the second is through a workers’ compensation system and the third is through litigation.

4.6.4.1 Social security

The social security programmes most likely to be used in cases of work-related harm are the disability insurance, the survivor’s benefit and Medicaid:

• **Disability insurance:** Disability insurance pays benefits to a worker, and certain members of their family, if the worker is “insured” by virtue of having worked long enough and having paid social security taxes. To be eligible, the worker must be unable to continue in their previous job and unable to adjust to other work, with age, education and work experience taken into account. Furthermore, the disability must be long term, lasting 12 months, expected to last 12 months, resulting in death or expected to result in death. Disability determination has created the largest system of administrative courts in the US.

• **Survivor’s benefit:** If a worker who is covered by social security dies, a surviving spouse or dependent children can receive a survivor’s benefit. The earliest age for a benefit to be paid to a widow or a widower is 60.

• **Medicaid** is the US health insurance programme for individuals and families with low incomes and resources, including low-income parents, children, seniors and people with disabilities. Medicaid is the largest source of funding for medical and health-related services for people with limited income.\textsuperscript{54}

4.6.4.2 Statutory (workers’) compensation

In most states, most employees who are injured on the job, or made sick by their work, have an absolute right to medical care for that injury and, in many cases, monetary payments to compensate for resulting temporary or permanent disabilities. To facilitate this, employers are generally required to carry workers’ compensation insurance, which protect employers from damage suits filed by injured workers. In most states, there are substantial financial penalties that can be imposed on employers that fail to do so.\textsuperscript{54}

While each state has its own workers’ compensation law, there are some similarities. The US workers’ compensation schemes are no-fault systems. For a worker to qualify for workers’ compensation benefits, generally three conditions must be met:

1) There must be an injury or illness.

2) It must “arise out of and in the course of employment”.

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3) There must be medical costs, rehabilitation costs, lost wages or disfigurement.

Workers’ compensation schemes generally require employers or their insurance companies to reimburse part of injured workers’ lost wages and all of their medical and rehabilitation expenses, as well as benefits to survivors of fatally injured workers.\textsuperscript{102}

Generally, injuries and illnesses are considered eligible for compensation if occupational exposure is the sole cause of the disease, is one of several causes of the disease, was aggravated by or aggravates a non-occupational exposure or hastens the onset of disability. For example, a worker with pre-existing chronic low back pain may become permanently disabled as a result of lifting a heavy object at work. The worker’s pre-existing condition might just have easily been aggravated at home, but the fact that the disabling event occurred at work is generally sufficient for compensation to be awarded. The principle is generally the same where a non-disabling work-related condition is aggravated by a non-work exposure.\textsuperscript{102}

During the 1990s, nine states passed laws that changed the long-standing principle that workers are eligible for benefits even if their disabilities are, in part, caused by non-work factors. These laws:

\begin{itemize}
  \item require that work be a major or predominant cause of the disability, or
  \item eliminate compensation for the aggravation of a pre-existing condition or for a condition related to the ageing process.\textsuperscript{102}
\end{itemize}

Several states, including California and Florida, allow disability to be apportioned between occupational and non-occupational causes. Although this may seem like a sensible approach, apportionment is often difficult or impossible and creates difficult decisions for workers’ compensation administrators.\textsuperscript{102}

The workers’ compensation system relies on a physician to say whether or not a worker’s illness was caused by or aggravated by work. Boden et al. contend that many physicians are unaware of the occupational histories of their patients or do not have the medical training to identify the occupational causative factors. Alternatively, the illness may be equally likely to have been caused by work or non-work exposures, or may have had multiple causes. The added complicating factor is where an exposure happened many years before, and the person’s memory may be unclear. A study in California and Washington revealed that, of 51 probable cases of occupational respiratory conditions, only one was reported as a workers’ compensation claim.\textsuperscript{102}

The legal burden of proof for determining the work-relatedness of occupational diseases such as occupational lung cancer that do not have distinctive clinical features is generally “a preponderance of evidence that the disease is occupational in origin”. This means it must be more likely than not (a probability greater than 50 percent) that the illness in question was caused by, aggravated by or hastened by workplace exposure. Some states have additional requirements, such as the disease may not be “an ordinary disease of life” (such as emphysema and hearing loss) or characteristic of or peculiar to a worker’s occupation.\textsuperscript{102}
Insurance carriers have the right to contest a claim, which is more common in expensive cases. More than 80 percent of all compensation claims for chronic occupational diseases and almost 50 percent of all injury claims for permanent total disability or death are contested by insurance carriers. Even if there is a low chance of winning, the delay allows insurance companies to invest the money, creating a huge incentive to contest the claim. This creates a significant practical difference in the outcomes for acute and chronic conditions.

Disability due to job stress alone, without evidence of any physical injury or illness, is now a compensable condition in about one-half of US states. Although there are many definitions of job stress, Hurrell et al. define it as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources or needs of the worker.

4.6.4.3 Common law

There is a large personal injury litigation sector in the US. However, under ordinary circumstances, an employee who qualifies for workers’ compensation benefits cannot file a personal injury suit against the employer. This has meant lower awards, as workers’ compensation does not provide payment for “pain and suffering” as common law settlements may, and social security disability payments may be lower than lost income.

In most states, injured workers can sue their employer if:

- an employer is required to carry workers’ compensation insurance but fails to do so
- the particular injury or illness (for example, stress-related mental illness) is not compensable under the state’s workers’ compensation law – to be successful, the worker must prove that the employer was negligent; the no-fault principle of workers’ compensation does not apply
- the employer has paid workers’ compensation but has violated a specific employment law such as discrimination
- an employer intentionally (rather than negligently) causes injury to an employee – this possibility varies between states, and the standard of proof is often very high.

A person who is injured at work may also have a claim against a third party. For example, they might claim against the manufacturer of unsafe machinery, the owner of the premises where the injury occurs (if different from the employer), or against another company whose employee is alleged to have caused the injury. These lawsuits always require that the worker show that the third party was negligent. Levy et al. note that the fear of these types of liability suits has driven some employers to focus on preventive activities. They consider that such lawsuits play an important role in directing attention to prevention of some diseases, even though the approach can be cumbersome and inequitable.
4.6.5 Classification systems used to record work-related harm

There is a wide array of federal and state surveillance and classification systems in the United States. It is not possible to summarise them all here. Kendall provides an extensive list of various surveillance programmes in the US.\textsuperscript{73}

4.6.5.1 OSH Act requirements

As noted above, the OSH Act requires employers to maintain records on workplace injuries and illnesses. The OSH Act also requires the Secretary of Labor to compile accurate statistics on occupational injuries and illnesses, including all disabling, serious or significant injuries and illnesses, whether or not involving loss of time from work, other than minor injuries requiring only first aid treatment, and to make periodic reports on such occurrences.\textsuperscript{105}

An injury or illness is considered by the Occupational Safety and Health Administration to be work-related for recording purposes if an event or exposure in the work environment either caused or contributed to the resulting condition or significantly aggravated a pre-existing condition. Recordable cases include both injury and illness. Appendix 8 sets out OSHA’s requirements for recordable cases.

Statistics are collected for these purposes through an annual survey of data from OSHA logs of workplace injuries and illnesses maintained by employers. The survey measures non-fatal injuries and illnesses. It excludes the self-employed, farms with fewer than 11 employees, private households, federal government agencies and, for national estimates, employees in state and local government agencies.\textsuperscript{106}

4.6.5.2 NIOSH surveillance systems

Kendall describes three of the surveillance systems currently conducted by NIOSH to track occupational injuries and diseases as “flagships”. They are federal in design and operation, but they are necessarily state-based for implementation.\textsuperscript{73}

The first is the Sentinel Event Notification System for Occupational Risks. This is a collaborative effort with state health departments aimed at improving the recognition and prevention of occupational sentinel health events, such as asthma, silicosis, amputations, burns, dermatitis and noise-induced hearing loss.

The second is the Adult Blood Lead Epidemiology and Surveillance (ABLES) programme in over two-thirds of the states. ABLES is designed to enable states to track and respond to cases of excessive lead exposure and to develop broader intervention activities.

The third is the NIOSH National Traumatic Occupational Fatalities Surveillance System (NTOF), which identifies occupational injury fatalities based on death certificates and allows description of causes of death and comparison of rates among industries and occupations as well as trends over time. NTOF uses external cause of death codes E800–E999 (ICD). The NIOSH Fatality Assessment and Control Evaluation programme is designed to provide in-depth field investigations of individual occupational fatalities and is effective in identifying and disseminating prevention information.\textsuperscript{73}
4.6.5.3 Census of Fatal Occupational Injuries (CFOI)

Another US surveillance system for occupational injury fatalities is the Bureau of Labor Statistics Census of Fatal Occupational Injuries (CFOI). While the NTOF uses only death certificates, CFOI uses multiple sources for case ascertainment. For a fatality to be included in the census, the deceased must have been employed (that is, working for pay, compensation or profit) at the time of the event, engaged in a legal work activity or present at the site of the incident as a requirement of his or her job. These criteria are generally broader than those used by federal and state agencies administering specific laws and regulations. Fatalities that occur during a person’s commute to or from work are excluded from the census counts. The definitions used for CFOI are as follows:

**Definition of Traumatic Injury**

A *traumatic injury* is defined as any wound or damage to the body resulting from acute exposure to energy, such as heat, electricity, or impact from a crash or fall, or from the absence of such essentials as heat or oxygen, caused by a specific event or incident within a single workday or shift. Included are open wounds, intracranial and internal injuries, heatstroke, hypothermia, asphyxiation, acute poisonings resulting from short-term exposures limited to the worker’s shift, suicides and homicides, and work injuries listed as underlying or contributory causes of death. Heart attacks and strokes are considered illnesses and therefore excluded from CFOI unless a traumatic injury contributed to the death.

**Work Relationship Criteria**

A *work relationship* exists if an event or exposure results in the fatal injury or illness of a person:

1. ON the employer’s premises and the person was there to work; or
2. OFF the employer’s premises and the person was there to work, or the event or exposure was related to the person’s work or status as an employee.

The employer’s premises include buildings, grounds, parking lots, and other facilities and property used in the conduct of business. Work is defined as duties, activities, or tasks that produce a product or result; that are done in exchange for money, goods, services, profit, or benefit; and, that are legal activities in the United States.

The following are clarifications of the CFOI work relationship criteria.

**Volunteer workers**: Fatalities to volunteer workers who are exposed to the same work hazards and perform the same duties or functions as paid employees and that meet the CFOI work relationship criteria are IN scope.

**Institutionalized persons**: Fatalities to institutionalized persons, including inmates of penal and mental institutions, sanatoriums, and homes for the aged, infirm and needy, are OUT of scope unless they are employed off the premises of their institutions.

**Suicides** and **homicides** that meet the CFOI work relationship criteria are IN scope.

**Recreational activities**: Fatal events or exposures that occurred during a person’s recreational activities, that were not required by the person’s employer, are OUT of scope.

**Travel status**: Fatal events or exposures that occurred when a person was in travel status.
are IN scope if the travel was for work purposes or was a condition of employment. The exclusion pertaining to recreational activities also applies to a person in travel status.

**Commuting:** Fatal events or exposures that occurred during a person's commute to or from work are OUT of scope, unless the incident occurred on the employer's premises.

**Off-duty police:** Homicides occurring to off-duty police officers are generally IN scope. Other fatalities to off-duty police are in scope if they are performing a police-related function, such as directing traffic at the scene of an accident or rescuing someone from a fire.

**Undocumented workers:** Fatalities to undocumented workers are IN scope provided they meet the other work-relationship criteria.107

Data for the CFOI are compiled from various federal, state and local administrative sources including death certificates, workers’ compensation reports and claims, reports to various regulatory agencies, medical examiner reports and police reports, as well as news and other non-governmental reports.

A direct case-by-case comparison between the NTOF and CFOI databases for the period 1992 through 1994 found that there was only an 88 percent agreement and that the NTOF reported an average of only 84 percent of the number of traumatic occupational fatalities reported in CFOI. Similar results were obtained in a more recent comparison of the two systems over a six-year time period, with NTOF reporting about 85 percent of the fatalities reported by CFOI.73 Other studies highlighting that only a minority of workers with work-related illness, including repetitive trauma, file for workers’ compensation (as low as 25 percent) show the importance of relying on multiple data sources.108

The Occupational Injury and Illness Classification System Manual provides the classification system used to code the case characteristics of injuries, illnesses and fatalities in the Survey of Occupational Injuries and Illnesses and the CFOI programmes. This manual contains the rules of selection, code descriptions, code titles and indices for the following code structures: nature of injury or illness, part of body affected, source of injury or illness, event or exposure, and secondary source of injury or illness.109

### 4.6.6 Conclusion: The United States of America

A 2001 study comparing fatal occupational injury in New Zealand, Australia and the United States harmonised the case definitions used in each of the three countries in order to make robust comparisons. The study highlighted a high level of agreement between the coding of working status, reasonable agreement on students, volunteers or suicides, but only moderate agreement for classifying bystanders and commuters. The authors attributed the disparities largely to different interpretations of the responsibilities of the employer: “...in the United States’ definition, bystanders, commuters, and farm no-work are all considered ‘not work-related’ and are not separately distinguished.”27 The study highlighted that, while there are some conceptual differences, there were enough core similarities for harmonisation to be possible.26
In spite of the clear differences between New Zealand and the United States in terms of population and governance, there are a number of similarities in the challenges both countries face. The review of the United States has highlighted:

- the current difficulties of identifying work-related chronic conditions experienced around the world
- the importance of developing systems that do not exacerbate the difficulty of obtaining cover for chronic conditions
- the difficulties experienced by doctors expected to be able to attribute chronic conditions to work or non-work causes and the need for additional and ongoing training in this area
- the usefulness of surveillance systems that draw on different sources for data, using the same classification systems.
4.7 International comparison and analysis

As apparent from this review, none of the countries examined has an overarching definition of work-related harm or a comprehensive method for collecting work-related harm data. The review shows that definitions of work-related harm around the world are generally developed for specific purposes, which may not be complementary. The systems most likely to provide broad coverage for rehabilitation and compensation purposes by not requiring work-relatedness to be established, such as the Netherlands, do not have compensation schemes that provide an excellent source of data on work-relatedness (as defined by the scheme). Finland and Australia, both dependent on establishing work-relatedness for rehabilitation and compensation purposes, generally have broader definitions of work-related harm than New Zealand in this regard.

This section compares and contrasts the countries examined in this chapter with the concepts of work-related harm discussed in Chapter 2 and New Zealand’s definitions, discussed in Chapter 3.

4.7.1 Purpose

It is clear from the international review that having multiple definitions and mechanisms for recognising work-related harm is common, and the difficulties experienced as a result are widely acknowledged internationally. None of the countries examined has an overarching framework with the sole purpose of identifying all types of work-related harm.

The legal frameworks for recognising work-related harm in New Zealand and the five other countries examined generally fall into three categories:

1. OSH notification systems that define work-related harm for regulation and prevention purposes.
2. Workers’ compensation systems that define work-related harm for rehabilitation and compensation purposes.
3. Operational classification systems that may or may not use their own definitions of work-related harm or may draw those from categories 1 or 2.

The best reporting mechanisms can be seen where there is a workers’ compensation scheme with broad coverage and high uptake, as in Finland. Where there is a high incentive to claim compensation and broad coverage that recognises a broad spectrum of work-related illness and injury, there will be a clearer picture of size and nature of work-related harm. Generally, all workers’ compensation schemes based on an insurance model have limitations, however, and surveys and other supplementary tools are increasingly used to improve information on work-related harm.

4.7.2 Who is included

Chapter 2 highlighted the importance of definitions of work-related harm clearly identifying the specific groups of people who are included or excluded. The international research discussed in Chapter 2 has given particular attention to
clearly identifying work-related harm among the following groups: workers, including the self-employed and contractors, bystanders, commuters, and volunteers and students in work-like situations. There is also increasing discussion of how older workers are covered, given the ageing workforce.

Internationally, there is considerable variation in how these groups of people are recognised for occupational safety and health regulation purposes, for compensation purposes and in reporting and classification systems for work-related harm. Compared with the other countries examined in this review, New Zealand’s coverage of particular groups of people other than those in a traditional work environment is broad. In this regard, New Zealand’s current definitions appear well placed to face the changing nature of work in terms of providing cover and enforcement for people in non-traditional work situations. As identified in Chapter 3, however, there are still gaps that could be improved.

Table 4.1 summarises the general coverage of OSH regulation, Table 4.2 summarises the coverage of OSH reporting requirements and Table 4.3 summarises the coverage of workers’ compensation schemes in the jurisdictions examined in this review. The tables highlight the difficulties of making international comparisons without specifying definitional differences and the importance of transparency when discussing what is meant by “work-related harm”.

**Table 4.1: OSH coverage of particular groups for general regulation purposes**

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<th>Self-employed</th>
<th>Bystanders</th>
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**Table 4.2: OSH coverage of particular groups for reporting purposes**
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<td></td>
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<td></td>
<td>Notification required by employers at their workplace only.</td>
<td>Notification required by employers at their workplace only.</td>
<td>Notification required by employers at their workplace only.</td>
<td></td>
<td>Notification required by employers at their workplace only.</td>
<td></td>
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<tr>
<td>NSW,</td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Australia</td>
<td>√</td>
<td></td>
<td>√</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Notification required by occupier of place of work only.</td>
<td>Notification required by occupier of place of work only.</td>
<td>X</td>
<td>Notification required by occupier of place of work only.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The UK</td>
<td>√</td>
<td></td>
<td>√</td>
<td>X</td>
<td>√ Members of the public.</td>
<td>√ Members of the public.</td>
</tr>
<tr>
<td>The</td>
<td>√</td>
<td></td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Netherlands</td>
<td>Notification required by employers at their workplace only.</td>
<td>Notification required by employers at their workplace only.</td>
<td>Notification required by employers at their workplace only.</td>
<td>Notification required by employers at their workplace only.</td>
<td>Notification required by employers at their workplace only.</td>
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</tr>
<tr>
<td>Finland</td>
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<td>√</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>The</td>
<td>X</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
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<td>US</td>
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<tr>
<td>OSH Act only</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4.3: Workers’ compensation coverage of particular groups
<table>
<thead>
<tr>
<th>Country</th>
<th>NZ</th>
<th>Victoria, Australia</th>
<th>NSW, Australia</th>
<th>The Netherlands</th>
<th>Finland</th>
<th>The US</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X X X</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>X X X</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>X</td>
<td>X X X</td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td>Coverage does not distinguish between work and non-work-related harm.</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>X X X</td>
<td></td>
</tr>
<tr>
<td></td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td>✓</td>
<td>X X X</td>
<td></td>
</tr>
</tbody>
</table>

Partial and not usually identified as work-related.

But covered by the TAC.
4.7.3 Identifying work-related acute and chronic injury and disease

The different approaches to identifying or distinguishing acute and chronic conditions are summarised in Tables 4.4 and 4.5 below.

**Table 4.4: OSH reporting coverage of acute and chronic injury and disease/illness**

<table>
<thead>
<tr>
<th></th>
<th>Acute injury</th>
<th>Chronic injury</th>
<th>Acute disease/illness</th>
<th>Chronic disease/illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Victoria, Australia</td>
<td>✓</td>
<td>X</td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>NSW, Australia</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>The UK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>✓</td>
<td>X</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Finland</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>The US</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

**Table 4.5: Workers’ compensation coverage of acute and chronic injury and disease/illness**

<table>
<thead>
<tr>
<th></th>
<th>Acute injury</th>
<th>Chronic injury</th>
<th>Acute disease/illness</th>
<th>Chronic disease/illness</th>
</tr>
</thead>
<tbody>
<tr>
<td>NZ</td>
<td>✓</td>
<td>✓ Limited by gradual process definition.</td>
<td>✓ Limited by disease, infection definition.</td>
<td>✓ Limited by disease, infection definition.</td>
</tr>
<tr>
<td>Victoria, Australia</td>
<td>✓</td>
<td>Out of or in the course of employment.</td>
<td>✓ Out of or in the course of employment.</td>
<td>✓ Significant contributing factor.</td>
</tr>
<tr>
<td>NSW, Australia</td>
<td>✓ Significant contributing factor.</td>
<td>✓ Significant contributing factor.</td>
<td>✓ Significant contributing factor.</td>
<td>✓ Significant contributing factor.</td>
</tr>
<tr>
<td>The UK</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>Finland</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
<tr>
<td>The US</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
<td>✓</td>
</tr>
</tbody>
</table>

In summary:

- In Victoria, under workers’ compensation law, acute injuries and illnesses, and gradual process (chronic) injuries must simply arise out of or in the course of employment. In contrast, employment must be a significant contributing factor in the case of chronic illness and disease. Under OSH law, Victoria requires the notification of acute injuries only.

- In New South Wales, under workers’ compensation law, employment must generally be a “substantial contributing factor” for both acute and chronic injuries and illnesses. Exceptions to this general rule include travelling for work purposes, which explicitly includes commuting and recess claims. Under OSH law, New South Wales requires the notification of acute and chronic injuries and illness.

- While the UK’s system does not create distinctions between acute and chronic injuries and illness for the purposes of income support or compensation, in practice, the process of getting cover through employers’ liability insurance for chronic injuries and illnesses, and acute illness, is much harder than for acute injuries. Under OSH law, the UK requires notification of acute and chronic injuries and illness.

- In the Netherlands, there appear to be no definitional distinctions between acute and chronic injuries and illnesses for health care and income support purposes. Generally, everyone has a right to health care, covered by compulsory health insurance, and everyone has a right to 70 percent of their income to be paid for the first two years by their employer. The eligibility criteria for benefits depend on the extent of the illness or disability rather than its origins. Under OSH law, the Netherlands requires notification of acute injuries and occupational diseases.

- Finland has broad coverage of acute and chronic conditions. It covers chronic injury and illness within a list of occupational diseases. Finland requires notification of acute and chronic injuries and illness.

- Coverage in the United States differs between states. Some states require that work be a major or predominant cause of the disability or eliminate compensation for the aggravation of a pre-existing condition or for a condition related to the ageing process. Some states have additional requirements such as the disease may not be “an ordinary disease of life” or even characteristic of or peculiar to a worker’s occupation. Under federal OSH law, there are requirements to record and gather statistics on both acute and chronic injuries.
and illness. While the definitions are broad, the methods of collecting the data are often inadequate.

4.7.4 Classification and surveillance

There are a vast array of methods and systems for collecting and/or classifying information on work-related harm used internationally. The NOHSAC reports *Methods and systems used to measure and monitor occupational disease and injury in New Zealand*\(^\text{10}\) and *International review of methods and systems used to measure and monitor occupational disease and injury*\(^\text{73}\) have set out in detail methods and systems used to measure and monitor occupational disease and injury in New Zealand and internationally.

The international review of systems for classifying work-related harm above focused on the two major methods for collecting work-related harm data: compulsory notification requirements and workers’ compensation data. Neither of the two major methods of collecting work-related harm data are adequate for compiling an accurate picture of the size and nature of work-related harm. The review also highlighted a number of other research approaches that are being used to supplement the traditional methods, such as the voluntary reporting schemes for occupational physicians in the UK, analyses of hospitalisation data and attributable fraction analyses for occupational disease.

Classification systems need to be developed and utilised in such a way that robust surveillance of work-related harm is possible. Ideally, systems recording work-related harm would use identical or compatible classification systems internationally. The ICD has the greatest potential in this regard as it is broadly used and continues to be developed with greater improvements in the ability to identify work-related harm.

The European Agency for Safety and Health at Work reports on OSH monitoring systems. It notes that no single data source can provide a complete and adequate description of occupational safety and health. There are a wide variety of approaches towards monitoring occupational safety and health in the European Union aiming to describe the situation at different levels, from the company level to a national overview. It has become a very dynamic area with a number of new models and strategies.\(^\text{111}\)

The different approaches chosen for monitoring OSH at a national level include monitoring health outcomes, describing the workplace environment and describing the infrastructure and the level of prevention at national and at enterprise level. The traditional data collection approaches, based on outcome factors such as accident and diseases data, have been complemented by some new initiatives that combine data sources and monitor the infrastructure and resources at different levels. All these initiatives strive to reach the goal of having as complete a picture as possible of occupational safety and health at the level chosen.\(^\text{111}\)

The Australian studies led by Driscoll have highlighted the usefulness of coronial records for identifying work-related fatalities.\(^\text{14}\) New Zealand’s changes to the coronial system hold promise for an improved source of information on work-related fatalities if the system is able to determine work-relatedness for all deaths.
investigated. Fatalities investigated by the coroner are, however, only the tip of the iceberg, and information on non-fatal injury as well as disease are vital to understanding the nature of work-related harm. As discussed earlier, a number of studies have stressed the importance of using multiple sources of data and types of studies to obtain a better understanding of work-related harm. These studies have predominantly used ICD-10-AM to identify injuries as well as work-relatedness. In the absence of a clear international model for identifying work-related harm from a single source, this approach holds weight, but demands a clear framework of definitions for work-related harm.

4.8 Chapter conclusion

The international review highlights that the kinds of problems identified in New Zealand are experienced internationally and emphasises the potential difficulty of establishing a common framework for defining work-related harm. In particular:

- none of the countries examined in this review has an overarching definition of work-related harm
- with the exception of Finland, none of the countries examined in this review has a comprehensive method for collecting work-related harm data
- all of the occupational health and safety systems examined suffer from under-reporting of work-related harm, particularly work-related disease/illness, which indicates that they are unlikely to be a useful tool for surveillance, although they have other useful purposes, particularly for investigations and other prevention activities such as education
- all of the countries examined face challenges in the attribution of chronic conditions to work due to the difficulties of identifying causation where there has been long latency, the often poor knowledge of general practitioners and/or the lack of relevant research.

In comparison to the countries examined in this review, New Zealand:

- is similar in its division of occupational safety and health regulation and compensation functions
- generally has broader coverage of particular groups of people other than those in a traditional work environment for compensation and regulation purposes, notably the self-employed and those in non-traditional employment relationships. However, reporting requirements are generally not as broad.

There are, however, a number of areas where, in light of the principles for defining work-related harm set out above, New Zealand could learn lessons from the countries examined. In particular:

- all of the countries examined, with the exception of the United States, provide for more straightforward criteria for rehabilitation and compensation cover of work-related chronic injury and work-related chronic disease and illness
- several jurisdictions provide for clearer, more explicit reporting requirements, with broader coverage including for example, near-misses – this may reduce confusion for employers, which would increase notification and may help focus investigations on preventative action
• each of the countries examined provides compensation for work-related mental harm, albeit with some limitations
• the Netherlands, Finland and several states in Australia recognise commuter accidents as work-related
• Australia, the UK, Finland and the United States all provide examples of data collection methods that draw on multiple sources to provide more accurate data on work-related harm than single sources alone.
CHAPTER 5: IMPLICATIONS FOR DIAGNOSIS, REHABILITATION, COMPENSATION AND PREVENTION

5.1 Chapter overview

The limitations of New Zealand’s definitions of work-related harm identified in Chapter 3 and highlighted in comparison to other countries in Chapter 4, as well as poor medical attribution of harm to work, have implications for the rehabilitation, compensation and prevention of work-related harm.

As set out in Chapter 3, the current definitions of work-related harm mean that some types of harm are better recognised than others. Acute injuries are well covered in terms of rehabilitation and compensation but, other than traditional work injuries, may not be identified as work-related. Acute illness is less likely to be linked to work unless it is an illness commonly recognised as occupational, such as leptospirosis in meat workers. Chronic conditions are generally under-attributed to work on the basis of a lack of information regarding causation, poor understanding of occupational medicine by medical practitioners and a more difficult threshold for ACC purposes. Mental harm is broadly covered by the HSE Act, but there is only limited coverage by ACC.

In light of the findings of this report, Chapter 5 discusses the implications of New Zealand’s current definitions of work-related harm for diagnosis, rehabilitation, compensation and prevention. It also examines the impacts of how harm is defined in relation to policy development and the relationship with public health.
5.2 Diagnosis

The accurate medical diagnosis of a condition and the accurate attribution to work-related exposures are fundamental for appropriate rehabilitation, compensation and prevention activities. Accurate diagnosis and attribution to work is the basis for ACC cover, is essential for the earliest possible interventions and is the key to prevention and rehabilitation. Most key informants commented on the importance of getting the diagnosis right. Most considered that accurate diagnosis determines how well all other aspects of the ACC system work. For example, the clarity of the diagnosis impacts on the length of time or delay it may take to get cover, as well as whether the person actually gets cover.

Both the actual diagnosis and the terminology or classification used to record the diagnosis help determine the action that ACC takes and the record that remains of the injury or illness. These records form the basis for ACC’s prevention activities and statistical analyses of the size and nature of work-related harm in New Zealand.

Medical diagnosis is, however, completely independent of New Zealand’s legislative definitions of work-related harm. The legislation and definitions do not address the pathway to diagnosis, but assume that there is already a diagnosis. The primary issue is how diagnosis impacts on delivery of intent of the legislation, rather than the impact of the legislation on the diagnosis.

However, medical practitioners are generally aware of what medical treatment is covered by ACC and what is not. The widespread concern that work-related disease is grossly under-identified is offset to some unknown degree by medical practitioners making a link between an illness and work that is tenuous or not present for the purpose of ACC cover. In this respect, how work-related harm is defined in New Zealand impacts on how work-related harm is diagnosed and recorded. In turn, this has a significant impact on rehabilitation, compensation and prevention.

General practitioners and other medical practitioners who lodge ACC claims are most commonly responsible for making an assessment of whether the injury or illness is work-related. Often, this assessment is based solely on what their client has told them (as opposed, for example, to a workplace assessment that may provide more useful information about the work-relatedness of the harm).

Occupational medical specialists are only funded through ACC once an ACC claim has been accepted and, therefore, are usually not making the first assessment of work-relatedness. However, ACC investigates most work-related gradual process, disease and infection claims and, in this context, usually draws on the expertise of occupational medical specialists to determine the work-relatedness of a claim. Occupational medical specialists also play an important role when ACC claims are contested.

There are a number of concerns regarding the accuracy of the diagnosis of work-related harm, most of which are a combination of definitional and other factors. They include:

• the under-recognition of work-related chronic illness and chronic injury
• the need for improved medical training in occupational medicine
• the importance of using commonly agreed diagnostic terminology
• the influence of public health messages on diagnosis
• implications for employment.

5.2.1 Under-recognition of work-related chronic illness and injury

As discussed in NOHSAC’s *The burden of occupational disease and injury in New Zealand*, the actual numbers of occupational disease, including deaths, are likely to be significantly undercounted by ACC claims. This is based not only on the limitations of ACC’s definitional criteria, but also on the under-attribution of disease to work-related causes by medical professionals.

Most key informants expressed concern that work-related illness was under-recognised, particularly those illnesses caused by environmental factors. Some noted that doctors are more likely to simply treat the symptoms of the illness without thinking about the person’s occupation and possible causation (for example, in the case of asthma).

Key informants noted the following:

• There is not enough routine inquiry around occupation for people diagnosed with cancer. Doctors often stop a work-related inquiry if the person is a smoker, even though ACC provides cover for asbestos exposure, for example, when a person is smoker.
• Delay in confirming a diagnosis is standard for gradual process injury claims under ACC. There is unnecessary expense obtaining a specialist definition of the mechanism of the injury, when the work-relatedness is relatively clear. There can also be confusion between medical practitioners using different standards of proof.
• Occupational physicians are required for accurate diagnosis: “They have good access to information from general practitioners and the ability to investigate workplaces. If it wasn’t for specialist services, there would be huge under-diagnosis. For example, asthma triggered by animals in laboratories – people simply aren’t aware that there is a causal link. There are not enough occupational physicians. Multidisciplinary teams work well.”

Key informants noted that work-related mental injury and stress are not well diagnosed and that, in common conditions like asthma, work-related causes are not routinely investigated.

Some key informants, however, considered that doctors had too great a tendency to attribute some conditions to work without thorough investigation.

5.2.2 Medical training in occupational medicine

The problem most commonly identified regarding under- or inaccurate attribution to work was the lack of training and investigations undertaken by medical practitioners and the poor accessibility to occupational medicine specialists.
Many key informants stressed the need for a national approach to the training of doctors in medical schools, doctors in training schemes and doctors in continuing education about occupational health. Key informants noted the following:

• There needs to be better occupational medicine training for general practitioners, nurses, laboratories and paramedics so they are more aware of the types of injuries and illness that can be work-related, know to ask the right questions and know what to do with the information. Most considered that the real solution was with improving the training for general practitioners on the basis that specialists are not involved in primary care.

• The training of medical students and ongoing training of doctors is poor on an international basis. The majority of general practitioners in New Zealand would have had no occupational health training, a subgroup have a diploma and some would have advice directly from ACC where there is a provider relationship. For example, Auckland Medical School only has one lecture a year in toxicology.

• How general practitioners attribute a condition to work or not is dependent on their experience with other patients and their knowledge of occupational epidemiology and can be very anecdotal.

One reason put forward for the paucity of training of medical students and ongoing training of doctors was the dislocation of occupational medicine from the Ministry of Health in 1992. There is, for example, no Vote Health funding for occupational medicine training and no obligation on medical schools to teach occupational medicine. This issue is discussed further in Section 5.5.

One key informant considered that the changes to the work-related gradual process component in the Injury Prevention, Rehabilitation, and Compensation Amendment Act 2008 (section 30, discussed in Chapter 3) will require ACC to be much more knowledgeable about the epidemiology of occupational illnesses and apply that in a more systematic way.

In addition to improved training of general practitioners, many considered that there need to be more referrals to occupational physicians, but that there are too few occupational physicians in New Zealand: “We’re a really small country. We’ve got a diverse sector with lots of different exposures. We’re spread thin geographically. In some centres, you will have very little access to occupational physicians, and we need more people with that kind of knowledge on causation and exposures than we currently possess. It’s a challenge for us.”

As noted above, consultations with occupational physicians are only funded through ACC. Several key informants recommended that there should be publicly funded specialist occupational medicine clinics in public hospitals that general practitioners can refer to. The clinics would not be available to a person who already has an ACC claim. The clinic would make an independent judgement about whether or not the person has a work-related problem and then refer them back to their general practitioner.

Many key informants recommended that ACC should have an independent panel to assess the work-relatedness of claims, comprised of people with appropriate
expertise, including physicians, therapists, hygienists or engineers. Others focused on the importance of funding ongoing research in this area.

5.2.3 Importance of using commonly agreed diagnostic terms

The lack of agreement regarding diagnostic terminology, particularly relating to musculoskeletal disorders, has been widely discussed. Diagnostic terminology must be acceptable to ACC in order for ACC to be clear on the problem and the treatment, rehabilitation and compensation required.

Many key informants considered that there is often a lack of clarity over a diagnosis, particularly where there is a lack of commonly agreed diagnostic terminology, as with musculoskeletal disorders and pain conditions. They stressed the importance of commonly agreed diagnostic terms, such as agreeing not to use the term "occupational overuse syndrome".

Agreed terminology is also important for accurate classification. As discussed in Chapter 3, many key informants considered that the ACC's recording of Read Codes is inaccurate, meaning that ACC's record of work-related injury and illness is inaccurate.

5.2.4 Influence of public health messages on diagnosis

A small number of key informants expressed concern that public health messages, while completely justifiable in themselves, can influence the investigation and diagnosis of work-related harm in a negative way.

They noted that public health messages around the risks of smoking, although completely justifiable, may prevent investigation of work-related causes for a disease, such as lung cancer. For example, where a smoker presents with lung cancer, there may be an automatic assumption that smoking was the cause, which prevents investigation into the work history. This may prevent possibilities for prevention for other workers. It also may prevent appropriate compensation due to that person, if work was a causative factor.

In another example given, one key informant noted that a company may, for example, spend their health and safety budget on testing everyone for diabetes, which means they do not do appropriate screening according to their obligations under the HSE Act. This may also stop a person going to their general practitioner, which prevents diagnosis: "Employers have an obligation to follow the HSE, identify hazards and make sure they are screening for any effects of those hazards. It is very important that they do that. Testing for other things is avoidance behaviour and is not really doing anything useful."

5.2.5 Implications for employment

Some key informants considered that a person may discourage a doctor from diagnosing work-related harm if the person is concerned it is going to have a negative effect on their employment status.

Some key informants considered that employers are increasingly confused by the complexities of the diagnosis of work-related harm and the growing awareness of the potential harm of many common situations. There is an increasingly broad
range of issues where the body of knowledge around causation is unclear, for example, the use of mobile phones, occupational road risk or the ageing workforce.

Several key informants noted particular confusion regarding people who may have a predisposition to a particular illness, such as asthma or dermatitis. “Is illness in such cases a failure of pre-employment health screening to identify that there was a lack of fit between the worker and workplace or is there an expectation that a workplace should be safe for anybody regardless of the medical conditions they bring? There will be situations where, however well you protect the worker, their inherent vulnerability may mean that it is inappropriate for them to work there, because the nature of the consequences could be very severe.”

5.2.6 Department of Labour investigations

The Department of Labour’s Notification of Occupational Diseases Scheme (NODS), as described in Chapter 3, is a voluntary reporting scheme for occupational diseases that provides for a more thorough investigation of work-relatedness. Cases can be reported at the level of suspicion, and, with a consent form, the NODS panels can investigate the case. The panels are headed by doctors and include other individuals with appropriate expertise. The investigations include a confirmation of the diagnosis and a commentary on the work-relatedness of that.

The purpose of the NODS is to look for patterns to enable the Department of Labour to intervene. The Department also feeds back the conclusions of the panels to individuals, and they may wish to use that to support an ACC claim. Serious harm reports may also be investigated by the NODS panels to determine work-relatedness and assess workplace failures.

While this is a useful mechanism for those who access it, limited numbers of reports are made to the NODS. It can also create confusion if a panel makes a finding of work-relatedness but the definitional threshold is not met for ACC cover.

5.2.7 Summary of implications for diagnosis

The accurate medical diagnosis of a condition and the accurate attribution to work-related exposures are fundamental to appropriate rehabilitation, compensation and prevention activities.

Work-related chronic illness and work-related chronic injury are currently considered to be under-identified for a number of reasons, primarily, limitations with the IPRC Act’s section 30, inadequate medical diagnosis based on inadequate medical training and the lack of commonly agreed diagnostic terminology.

Concerns were also expressed about the unintended consequences of valid public health messages, for example, around diabetes and smoking, which may discourage proper occupational investigations and the fear of negative employment consequences, which may influence what a person tells their doctor.
Key informants considered that the most important interventions to improve diagnosis were establishing systems to ensure that ACC claims are investigated by people with the appropriate expertise, improving the occupational medicine training of general practitioners and improving access to occupational medical specialists in the public health system.

The lack of recognition of the possibility of chronic conditions being work-related can be seen throughout the health system. For example, a major recent review of how New Zealand meets the needs of those with chronic conditions did not discuss the role of ACC in regard to work-related chronic conditions. This may, in part, explain the low numbers of claims for work-related disease if doctors are not making the connection between work and chronic conditions, and people are not aware that ACC cover may be available.
5.3 Rehabilitation and compensation

Three of the original five Woodhouse principles underpinning the ACC scheme were as follows:

- **Complete rehabilitation:** The scheme must be deliberately organised to urge forward the physical and vocational recovery of these citizens, while at the same time providing a real measure of money compensation for their losses.

- **Comprehensive entitlement:** All injured persons should receive compensation from any community financed scheme on the same uniform method of assessment, regardless of the causes which gave rise to their injuries.

- **Real compensation:** Real compensation demands for the whole period of incapacity the provision of income-related benefits for lost income and recognition of the plain fact that any permanent bodily impairment is a loss in itself regardless of its effect on earning capacity.114

Because ACC is based on an insurance model, its definitions of work-related harm are fundamental to how the system functions. It can only cover what falls within the scope of its definitions. ACC is unique internationally in its full coverage of acute injury regardless of fault or work-relatedness. There is no other scheme in the world with such broad coverage for non-work-related harm, although some social security schemes have a similar effect.

What falls within the scope of ACC’s cover for work-related harm is not always clear, however. In many areas within ACC’s scope, and those areas currently outside its scope, assessments of scope are dependent on research and scientific links, which are constantly developing. One key informant noted that, for a long time, the view was that nothing was wrong with asbestos.

The intention of the ACC scheme is to identify those injuries and illnesses that employers should bear responsibility for covering the cost of. In turn, the intention is to encourage employers to take better preventative action to reduce the cost of their levies.

Some key informants considered that the effect of the ACC scheme, however, has been to focus decision making on the definitions themselves, particularly the meaning of “personal injury”, and away from the bigger picture of whether the employer should be bearing the cost of the treatment and rehabilitative care needed. Some key informants were of the view that, even if the harm was not caused in part or fully by work, it is in the employer’s best interests and those of the country generally to get the person back to work as soon as possible. This is similar to the approach taken in the Netherlands, where the employer bears responsibility for 70 percent of the person’s salary for up to two years following an injury or illness, regardless of its work-relatedness. Treatment is covered by insurance paid by both the individual and the employer.

New Zealand’s approaches to rehabilitation and compensation are summarised below, followed by a discussion of the implications of New Zealand’s definitions of work-related harm on rehabilitation and compensation:
5.3.1 New Zealand’s approach to rehabilitation

Under the IPCRC Act, rehabilitation is described as a primary focus of the ACC and one that should consist of both social and vocational rehabilitation with the goal of achieving the appropriate quality of life through the provision of entitlements that restore, to the maximum practicable extent, a claimant’s health, independence and participation.

ACC offers a range of benefits covering income replacement, impairment benefits, treatment costs, rehabilitation costs and death benefits. This enables ACC to take a holistic co-ordinating case management role across all claimant benefits and services in pursuit of the best overall outcome for claimants in terms of participation and independence. Other systems internationally are typically more fragmented and often feature separate management and delivery of income benefits, treatment services and vocational and social rehabilitation.  

Compared with other workers’ compensation systems, ACC performs well in terms of return to work. The clearest comparative evidence is for workers’ compensation schemes across Australia, where the ACC (88 percent of claimants returned to work within six months) outperforms both the Australian average (85 percent) and all three comparable schemes (the state monopoly schemes of New South Wales 86 percent, Victoria 85 percent and South Australia 77 percent), with similar results for durable (longer-term) return to work.  

Several key informants expressed concern that ACC’s vocational independence assessment, which determines whether a person should be able to return to work or not, results in negative outcomes particularly for those who formerly ran their own businesses. The 2008 IPCRC Amendment Act made changes that provide ACC with discretion to extend the three-year limit on vocational rehabilitation, where appropriate, so that claimants who require ongoing assistance can return to or stay in the workforce with more vocational rehabilitation. The Amendment Act removed the upper age limit so that claimants who wish to continue working after reaching retirement age are still eligible to receive vocational rehabilitation. The Amendment Act also requires occupational assessors to take into account the pre-injury earnings of the claimant, both when undertaking the initial occupational assessment and when conducting the vocational independence assessment. It is too early to assess the impact of these changes, which may go some way to addressing concerns in this area.

5.3.2 New Zealand’s approach to compensation

ACC income benefits are provided on a periodic basis, rather than as a single lump sum. In the United States, the United Kingdom and several Australian schemes, most workers’ compensation benefits are provided in lump sum form, either as a result of a settlement with an insurer or commutation with a state fund. In addition, most Australian schemes feature some level of access to lump
sum common law awards for the more seriously injured. A significant research base indicates that claimant outcomes are demonstrably better under periodic payments than in a lump sum environment. 47

ACC offers incomereplacement benefits of 80 percent of preinjury earnings, which is in line with or above many other schemes. Some workers’ compensation schemes provide benefits that are higher initially but, in many cases, benefits are reduced over time. Impairment benefits provided by ACC are lower than Australian schemes but, when considered in conjunction with income and other benefits, total ACC financial benefits are broadly in line with other workers’ compensation schemes. In addition, ACC covers treatment costs, although not always in full. 47

A number of key informants considered that ACC works generally well in this area, with ACC levies being less than in other countries and return to work rates better. One noted that international comparisons show torts systems delay treatment and lump sum compensation discourages a person from getting better whereas ACC’s weekly payments and a focus on full rehabilitation encourage a person to get better.

The PricewaterhouseCoopers 2008 scheme review found that the current design of ACC best fits (in principle and in practice) the needs of people with serious injury and the community around them. The review noted that the current ACC scheme provides people who have sustained serious injuries with access to dignified support at a level that is not achieved in many comparable societies. The review also noted that there is room for improvement in order to keep pace with international best practice. 47

In addition to ACC, there are other mechanisms for compensation as discussed in Chapter 3. In particular, where there is a prosecution under the HSE Act, a person may be entitled to receive reparations or payments for emotional harm under the Sentencing Act 2002. The provisions to order reparations or payments expressly prohibit the ordering of reparations in respect of any consequential loss or damage for which the court believes that a person has entitlements under the IPRC Act. The courts have consistently interpreted this provision to allow reparations to include 20 percent of a person’s earnings, where ACC has compensated 80 percent of their earnings, as well as other losses not covered by ACC.

This interpretation has been upheld in the High Court and Court of Appeal and is currently before the Supreme Court. 20 This question does not only arise in regard to work-related harm; it includes any harm that is subject to ACC compensation. In Davies, the Court of Appeal noted [at 23]: “On the one hand, there is to be no ‘doubling up’ of recovery under the Compensation Act and the Sentencing Act. On the other hand, the consequences of physical harm are not to fall outside both Acts.”

5.3.3 Limitations on cover

The way work-related harm is defined in the IPRC Act is clearly the gate-keeper for access to rehabilitation and compensation through ACC. Due to coverage of all injuries and ACC’s no-fault nature, ACC is generally considered to offer broader coverage than schemes internationally, which are most commonly restricted to workers’ compensation.\textsuperscript{47} However, when examining only the workers’ compensation aspects of the schemes, this comparison is less easy to make.

As discussed in Chapter 3, the notable gaps in ACC cover include work-related chronic mental harm and musculoskeletal disorders where there is no personal injury. Work-related disease continues to be under-recognised. Most of the countries examined in this review have broader coverage than New Zealand in these areas. Each of these areas is characterised by the difficulty of attributing causation, and they are also difficult conditions to treat. Without access to rehabilitation assistance, the outcomes for returning to work and good health are likely to be compromised. As summarised by one key informant: “If you don’t have cover, you’re very unlikely to get funded rehabilitation, and that’s got an impact on productivity for the whole of New Zealand.”

The limited coverage in these areas may also impact negatively on other rehabilitation outcomes where there is more than one condition present. For example, while work-related stress may continue to be excluded from ACC cover, it is recognised as being a risk factor in musculoskeletal disorders. It may also be a key factor to address in successful rehabilitation.\textsuperscript{47}

As expressed by one key informant: “ACC has the incentives and ability to rehabilitate people and return them back to work. When people get excluded from cover, they’re essentially left to their own resources, and from a productivity point of view, that’s not the best use of people. A more comprehensive scheme, with more comprehensive definitions, would mean that more diseases that, epidemiologically, we know are caused by work would be addressed in the context of those greater incentives to rehabilitate and prevent.”

Particular concern was expressed regarding the difficulty of obtaining both rehabilitation and compensation for occupational disease and gradual process, including chronic pain syndromes. Several key informants noted that many people with these conditions lose their jobs or their condition may make them unsuitable for most of the tasks they used to do. One key informant noted that the current definitions “have the effect of denying employees compensation when they suffer loss of earnings as a direct consequence of a harmful activity or environment at work.”

Particular concern was also raised regarding the lack of ACC cover for those over the age of 65. At that point, ACC recipients are transferred to superannuation benefits. One key informant commented that there are powerful incentives for people to get back to work if they are only paid 80 percent of their wages and powerful incentives for ACC to get the person back to work (for example, ACC contracts private health providers to get people back to work sooner), but this doesn’t happen for those over 65. As noted above, the 2008 Amendment Act may address this concern, in part through extending the availability of vocational rehabilitation beyond age 65.
Where someone is not eligible for cover under ACC, they are reliant on public health services or private health insurance and may not receive income support. Key informants working in rehabilitation services such as occupational therapy noted the lack of consistency between the rehabilitative approaches of ACC and public health. Generally, key informants considered the treatment and assistance provided through ACC to be superior to public health, in part because ACC uses private health care to speed up the process.

5.3.4 Inappropriate and delayed interventions

Accurate diagnosis is not just important to ensure cover; accurate diagnosis is important to ensure appropriate and effective interventions. While not always compatible with accurate diagnosis, key informants stressed the importance of early intervention for the best rehabilitation outcomes and the least cost. Optimising both accurate diagnosis and early intervention is clearly desirable for the best possible rehabilitation and appropriate compensation.

Some noted that many employers are doing more rehabilitation, but the diagnosis leading to rehabilitation could be improved by ACC accepting high risk claims earlier. There was a strong recommendation for greater collaboration with provider networks to develop better rehabilitation interventions.

One key informant noted that, if someone has a gradual process injury claim, they may wait four or more months before there is a decision made on cover under the IPRC Act: “We repeatedly hear about workers who have had to return to work, in pain, without treatment, because they cannot afford to be off work for so long with no income. Employers may invoke ‘frustration of contract’ by passage of time. In cases where cover is disputed – i.e. the application of the definitions is not clear – the person may lose their job. Earning ability is not a recognised factor in our view of ‘harm’ but it is a major consequence of workplace harm for many workers.”

The importance of accurate diagnosis is best illustrated by its impact on decisions around return to work. Many key informants stressed the importance of work in the rehabilitation process. While rehabilitation involves the workplace, it requires the person to not be re-exposed to the hazard. For this, it is important to know the hazard that has plausibly caused the condition.

Clearly understanding work environments and exposures is a significant challenge and highlights the need for ongoing research and improved knowledge of the occupational causes of illnesses, particularly common ones, among medical professionals. Some key informants linked better interventions to better developing and utilising the classification and surveillance of exposures.

Some key informants expressed concern that, without the knowledge of causation, ACC continues to treat the injury and not the cause of the injury. This is likely to happen when, for example, a condition is misdiagnosed as acute when there is an underlying chronic condition – a problem highlighted in Chapter 3.
5.3.5 Perceptions of inequalities

While ACC does not cover generally mental harm, there are other avenues that do. As discussed in Chapter 3, where an employer is prosecuted under the HSE Act, they may be ordered to pay reparations to a person who was harmed, according to the Sentencing Act. Remedies may also be paid through employment law and common law processes. While payments made through these avenues may not double-up on anything paid through ACC, key informants were concerned that reparations paid following a prosecution under the HSE Act were unfair because they are only ever available to a small proportion of those eligible for ACC.

Key informants noted that the ACC scheme was supposed to be no-fault, no liability, but that changes in the Sentencing Act since 2002 meant that a select few received additional compensation on the basis of employer liability. The Sentencing Act is seen to undermine the no-fault intent of ACC and encourage litigation.

Some noted that this situation is exacerbated because the Department of Labour is only resourced to take sample cases, meaning many of those potentially eligible for reparations do not get the chance. While this concern was partly addressed by the 2002 amendment to allow for private prosecutions, none has been taken.

This issue highlights the implications of various systems that recognise work-related harm without common definitions. The major distorting factor is the different approaches to mental and emotional harm.

One lawyer commented that it is very common to see reparations awarded for emotional harm, with judges frequently commenting that it is impossible to properly quantify or justify and simply choosing a number. Reparations awarded for emotional harm vary significantly, often between $50,000 and $80,000, but as high as $180,000 and as low as $30,000. The key informant considered that there is no significant difference in the emotional harm suffered in those cases. He noted that sometimes the ability of offender to pay is considered and sometimes it is not.

A number of key informants commented from the perspective of the victim when discussing this issue. For example: “For the victim, the impact is the same, the interface with their life is the same. If they aren’t at work and the person they have the accident with is at work and that makes it a workplace accident, then the outcome is different than for the same person if they have an accident with someone who is not at work... If you are the innocent party either way, why should you get a different outcome? Either ACC is all enveloping, in which case you get ACC cover and nothing else, or we abandon it altogether and say we take the chances on the market, and I would have thought ACC’s proved to be the better system for New Zealand.”

While these concerns are compelling, penalties for an offence under the HSE Act are an important tool for prevention, as discussed later in this chapter. One key informant noted that the current law provides accountability for a criminal breach, tested to the highest standard of proof, beyond all reasonable doubt, and is
entirely appropriate. Consideration of the appropriate split between reparations and fines is discussed in regard to prevention below.

5.3.6 Summary of implications for rehabilitation and compensation

How work-related harm is defined determines who has access to rehabilitation assistance and compensation. The accurate medical diagnosis of a condition and the accurate attribution to work-related exposures are fundamental to an appropriate rehabilitation programme and appropriate compensation.

Clearly recognising the cause of harm is an important part of appropriate rehabilitation, particularly in relation to the workplace. It is, for example, detrimental for a person to return to the same work practices or environment that has caused their condition. On the other hand, work is clearly a vital part of the rehabilitative process, and early return to work, even at a reduced level, is an indicator of better rehabilitation outcomes in the long term.

Current definitions exclude those suffering from chronic work-related mental harm, work-related pain conditions, work-related third party diseases (such as those contracted by dust brought home in clothes) and work-related gradual process, disease or infection suffered by volunteers or students in work-like situations. These limitations impact on the ability of those affected to recover and return to work.

Delays in assessing gradual process, disease and infection claims can impede early interventions that improve the chances of complete rehabilitation. This calls for a straightforward definition and improved medical training in occupational illness and injury, to stimulate earlier rehabilitation interventions.

The additional sources of compensation accessible through employment law and the courts in the case of an HSE Act prosecution are clearly seen as inequitable by many. However, HSE Act prosecutions, and associated orders of payments and fines, play a vital role in the prevention framework as discussed below. This may also be seen as a distorting effect of the limitations placed on ACC regarding mental harm.

Importantly, where particular groups of people are not eligible for rehabilitation or compensation, there is no incentive for prevention activities in that area, either for ACC and to a lesser degree by employers (who have broader obligations under the HSE Act). There are also limitations for prevention activity where certain harm may be covered because of the broad coverage of ACC for personal injury but not recognised as work-related, such as bystander traffic accident fatalities.

The benefits of more comprehensive rehabilitation of work-related harm are likely to be quicker return to work, reduced compensation costs, greater productivity and all the benefits of improved health outcomes generally. There are, of course, costs, particularly to employers, in running the scheme.

Full coverage of work-related harm has been dismissed on the basis of the cost that would fall to employers through increased levies. This assumption needs to be evaluated in light of the broader costs to employers, the economy and society of reduced productivity and the burden on public health and other social services,
and the gains to be made from increased awareness of the problems and increased prevention activities.
5.4 Prevention

As with rehabilitation and compensation, how work-related harm is defined and identified provides the foundation for directing prevention activities. The prevention of work-related harm can take many different forms, from the improvement of machinery design and protective equipment, to education, warning notices, prosecution and penalties for employers.

Several key informants considered that the current legislative framework has led to a lack of co-ordination between the Department of Labour and ACC and that the prevention arms of the two organisations should merge, as in several states in Australia.

ACC’s and the Department of Labour’s approaches to prevention are summarised below, followed by a discussion of the implications of definitions of work-related harm on prevention:

- Lack of a surveillance system
- Lack of reporting.

5.4.1 ACC’s approach to prevention

In 2003, New Zealand launched a new whole-of-government Injury Prevention Strategy (NZIPS) out of recognition that there were perceived gaps in injury prevention and that an overall strategic and co-ordinated approach was required. The NZIPS identified six priority areas, with separate substrategies to be implemented over the longer term. The ACC is the Secretariat for the NZIPS and also has the mandate to implement the substrategies for drowning and falls, while the Land Transport Authority and Department of Labour have responsibilities for road safety and occupational health and safety prevention respectively. The Department of Labour has developed the Workplace Health and Safety Strategy in this context. The PricewaterhouseCoopers scheme review noted that, as yet, the direction and benefits of the NZIPS are unclear.47

ACC is the lead agency for injury prevention in New Zealand. Outside the NZIPS, ACC must justify its expenditure on any safety and prevention measures it undertakes by assuring itself that the measure will eventually result in a cost effective reduction in actual or projected levy rates. The focus of ACC’s injury prevention activities is directly tied to its mandate for providing cover. This means that all of the exclusions from the IPC Act’s definitions of work-related harm identified in this report are excluded from ACC’s mandate for prevention. Some key informants expressed concern, for example, that this means older workers will fall outside the scope of ACC prevention activities. One noted that ACC’s prevention projects in the area of pain and stress are undermined because there is no incentive, or requirement, for them to cover them.

Moreover, ACC’s injury prevention focus is on those claims that cost the most, such as spinal cord injuries, because its mandate is to reduce levies through prevention activity. Terminal work-related illness is less likely to be a focus because it forms a very small proportion of cover provided by ACC.
Key informants considered that prevention initiatives need to be longer-term, with a greater range of interventions, and need to utilise and collaborate with the provider network. They considered that there is a tendency to focus on rehabilitation because it is visible, whereas the effects of prevention activities are not immediate.

The PricewaterhouseCoopers 2008 scheme review noted that ACC has a relatively small role in the area of prevention when compared with many other accident compensation schemes internationally and recommended a major structural change in the approach to safety and prevention: “...the ACC needs to maintain and prioritise its focus on prevention to capitalise on its unique position to contribute to any improvement in the rate and incidence of injury in New Zealand. A number of examples in Europe (for example, Germany, Finland and Sweden) demonstrate that systematic societal approaches to safety and prevention can have dramatic positive impacts. The ACC needs to determine the priority of its prevention function as compared to its compensation and rehabilitation functions and as such ensure the level of investment in prevention is commensurate with the task.”

5.4.2 The Department of Labour’s approach to prevention

The Department of Labour also has prevention functions. It provides information to businesses, works with industry to find solutions, inspects workplaces, investigates accidents, takes enforcement action under the HSE Act and is the lead agency responsible for the Workplace Health and Safety Strategy.

The HSE Act is designed for prevention. As discussed in Chapter 3, it requires the employer to take all practicable steps to ensure safety and allows for prosecution where there is the potential for harm, if all practicable steps have not been taken. However, one key informant considered that it is more common for the harm itself to be assessed in court rather than the potential for harm. The potential of the HSE Act in this regard has not been fulfilled: “Prosecuting cases with victims is the ambulance at the bottom of the cliff, and that becomes the driver. The point of the legislation is to be a barrier at the top of the cliff. We should be assessing culpability in terms of knowledge around hazards and preventing the potential for harm.” Some key informants noted that there is always an element of luck if someone dies or lives, and it is better to target at the level of identifying and managing hazards than actual harm.

The maximum penalties under the HSE Act were increased substantially in 2002 to increase the preventative effect of occupational health and safety legislation. Australia has also taken this approach, and there have been substantial increases in the total amount of fines awarded by the courts on offenders in most Australian jurisdictions over the past five years. Two key informants argued, however, that the level of fines in New Zealand remains too low for real prevention incentives due to the Sentencing Act’s requirement that reparations be taken into account and employers’ ability to insure against reparations.

Both the Sentencing Act and the HSE Act require reparations to be taken into account when setting a fine. Department of Labour v. Ferrier Woolscours
(Canterbury) Ltd [2005]21 set out a two-step approach whereby reparations are determined first, and any fine is determined in light of the reparations order, which has largely been followed since.50 In practice, the courts look at how serious the offending is and the total that should be paid, they then assess how much should go to reparations, and what is left is the fine.

Two key informants noted that this practice undermines the deterrent effect of the HSE Act because it generally results in lower fines than reparations. The problem is that businesses may and often do insure against reparations as well as taking life insurance policies against the lives of employees, but they may not insure against fines. In effect, this means that the insured employer pays very little penalty, undermining the effect of the prosecution.

The small number of recent studies identified that strong enforcement of occupational health and safety regulation has an impact on reducing injury incidence and severity.115 One study specifically noted the effectiveness of specific deterrence, requiring field investigations and prosecutions.115 Gordon and Woodfield, in a number of articles based on a law and economics analysis, argue that prosecutions for the potential for harm, as provided for by the HSE Act, combined with much stronger penalties is the most effective mechanism for engaging employers to prevent workplace harm.116,117,118

A number of key informants talked about the important role of enforcement in the prevention of work-related harm and the need for more prosecutions and higher fines. One noted that, in Australia, they prosecute more people: “That helps to build a culture of recognition that health and safety is important and needs to be taken more seriously... There needs to be the kind of cultural shift that you see in a business where someone has had a really nasty accident.”

5.4.3 Lack of a surveillance system

As discussed in Chapter 3, New Zealand does not have an integrated system for recording and classifying work-related harm. The fundamental implication of the lack of a surveillance system is that we do not know how well we are doing in terms of diagnosis, rehabilitation, compensation or prevention.

The ILO insists that an important component of a national programme on occupational safety and health in any country should be building up a reliable evidence base on the real number of work-related accidents and diseases. This information can then be the baseline for prevention programmes, standard setting, advocacy and promotion.119

In practice, the recording and classification systems used by the ACC and the Department of Labour, discussed in Chapter 3, are the primary mechanism for gathering information on work-related harm on a routine basis. However, the Department of Labour’s notification systems are too limited in scope to be useful for surveillance. The IPRC Act creates a high incentive for claims and, on this basis, provides an excellent record of the work-related acute injuries that are easily covered, provided they are correctly coded. Its data regarding chronic

injury and illness, particularly work-related chronic musculoskeletal harm, pain, disease and mental harm, remain limited, at least in part due to its limited definitions of work-related harm in these areas. It also only captures work-related fatalities where there is a claim for funeral expenses or support for a partner or dependents. Key informants generally expressed concern that the IPRC Act definitions provide the framework for collecting data on injury causation and targeting prevention programmes.

Key informants expressed strong support for improved information sharing between ACC and the Department of Labour, both at the surveillance level. One noted that departments need to share classification systems, thresholds and definitions. One key informant noted that there is some limited information sharing, which allows the Department of Labour to cross-check serious harm reports and ACC data to see the level of reporting.

A number of key informants noted the success of public health surveillance and considered that it would be beneficial if occupational health and injury surveillance could be interfaced with public health surveillance.

NOHSAC has previously reviewed, in detail, the systems potentially of use in New Zealand for the surveillance of occupational disease and injury. In addition to the Department of Labour and ACC systems discussed in Chapter 3, they discussed a number of other potential systems including:

• medical certificates of death, reported to the Births, Deaths and Marriages electronic database, which do not record work-relatedness

• the Ministry of Health Morality Collection, which has the potential for analysis using ICD-10

• the New Zealand Cancer Registry, which does not indicate work-relatedness

• the National Minimum Data Set, which is the collection of public and private hospital discharge information coded according to ICD-10

• Episerv, which records all notifiable diseases reported to Medical Officers of Health and includes a free-text field for occupation, which is fairly well completed for work-related cases

• the Injury Information Manager, which was established within Statistics New Zealand to produce coherent injury statistics by collecting and aggregating injury-related information from existing data sources

• coroners’ reports which, under a new electronic database system effective from 1 July 2007, can potentially record work-relatedness. Coroners’ reports investigate sudden or unexplained deaths, and deaths in special circumstances are more likely to cover deaths as a result of occupational injury than occupational disease.¹

NOHSAC’s research highlighted inadequacies with all of the databases examined and recommended:

• establishing an expert group to advise on the development of an effective system of occupational disease and injury surveillance, including the establishment of an independent unit or agency
• establishing an independent unit for the surveillance of occupational disease and injury in the short term
• establishing an independent agency for the surveillance of occupational disease and injury in the long term
• establishing an integrated concept-driven occupational disease and injury surveillance system within the independent agency that is concept rather than data driven and utilises data from multiple sources.

This report reiterates these recommendations and recommends that roles of the expert group should be to:
• develop a broad definition of work-related harm for surveillance purposes based on the principles recommended in this report
• develop an ongoing surveillance method based on the recommendations in the NOHSAC report *Surveillance of occupational disease and injury in New Zealand*¹
• make recommendations for adjustments to existing definitions of work-related harm to improve the data collection for surveillance purposes
• make recommendations to improve the use of operational classification systems for work-related harm in New Zealand, including the development of ICD-11, which is currently underway.²

The previous NOHSAC report also recommended numerous steps to be taken to improve the quality of the classifications within existing systems. These recommendations included:
• improving coding of occupation and industry using the standard classification systems used by Statistics New Zealand
• improving accuracy by improving hospitals’ use of work-related E codes, and ACC’s use of Read Codes
• taking steps to improve reporting to NODS by general practitioners
• developing the coronial system to enable the surveillance of deaths from occupational disease and injury
• developing a common definition of work-relatedness to apply in the recording of occupational disease by the Ministry of Health, Department of Labour and ACC.¹

Most of these recommendations have not been implemented and are still valid. Key informants noted cost and a lack of willingness for ownership were the major barriers to establishing a unit to undertake surveillance. Without an agency responsible for co-ordinating surveillance of work-related harm, there is no value in developing a definition of work-related harm for surveillance purposes. Establishing responsibility for surveillance of work-related harm is vital.

### 5.4.4 Lack of reporting

While the notification of work-related harm to the Department of Labour is unlikely to be a useful tool for surveillance purposes, it has an important role in
triggering investigations. Investigations are important in terms of identifying underlying causes, initiating education with employers and initiating enforcement action.

The definition of serious harm has implications for what is reported to the Department of Labour on the basis of its content and also on the basis of how well it is understood by employers. As discussed in Chapter 3, the HSE Act’s definition of serious harm has been recently reviewed. The extent to which the new definition addressed key informants’ concerns regarding the need for simplicity is yet to be assessed.

When an incident is not reported, the opportunity for an investigation is missed. Investigations are an important tool for identifying causation and, subsequently, for prevention. One key informant gave the example of a man who reported a mishap in a small aircraft, which he needn’t have done. This report was investigated, and a problem with the model was discovered, which potentially saved many lives.

Key informants were divided over whether the “near-misses” should be reported and for what purposes. Some thought they should be reported for investigation purposes only, others thought enforcement action should be able to be taken. One noted: “There is an element of luck when it comes to the seriousness of harm. I’ve seen falls from four metres where the person died and falls from six metres where the person sprained their ankle. In both cases, the problem was the same – the company needed proper railing – yet one didn’t even need to be reported. The emphasis on the outcome of harm is not necessarily the appropriate place for it to be. Identifying and reporting near-misses can be difficult, however.”

Several key informants noted that only a very small proportion of notifications are actually investigated and that this discourages employers from reporting because they think nothing happens.

A number of key informants noted that it was not clear whether the purpose of reporting was surveillance or enforcement. Several suggested that the Department of Labour have separate reporting requirements for these purposes, with a lower threshold for surveillance and a higher threshold for enforcement.

In light of the international comparison in this review, it is considered unlikely that reporting to the Department of Labour will ever be an effective mechanism for surveillance. As discussed above, surveillance is considered most likely to be effective through collecting a range of data from different sources and a broad compensation scheme for work-related harm. In light of this report, however, it would be desirable for the reporting requirements to be evaluated against the recommended principles for defining work-related harm.

5.4.5 Summary of implications for prevention

The fundamental impact of the lack of an overarching definition of work-related harm and a co-ordinated system for gathering work-related harm data is the inability to know the true nature of the problems and where to target prevention activities.
Good prevention initiatives are based on good information. Establishing a reliable surveillance mechanism with a comprehensive definition of work-related harm is the first step in establishing an effective prevention system.

In spite of the Workplace Health and Safety Strategy and the New Zealand Injury Prevention Strategy, there is a general concern that prevention activities are not co-ordinated, particularly between ACC and the Department of Labour. There appear to be continuing concerns that there is no agency taking full responsibility for the prevention of work-related harm.

ACC’s prevention function in regard to work-related harm is seen to be limited by its requirement to reduce levies and, therefore, by the scope of its cover. It, therefore, has a limited role in prevention regarding most stress and mental harm issues, and pain conditions where there is no injury as currently defined. It also means that low cost areas are not a focus. These are likely to include work-related terminal illnesses and older people who are shifted from ACC to superannuation at 65 years – areas in which prevention activity is important.

There is also a perceived lack of clarity around the purpose of the Department of Labour’s reporting requirement. To improve notification, the definition of serious harm needs, above all, to be very clear and objectively easy to understand.

The current nature of the serious harm definition means that it is narrower than the HSE Act’s framework generally, and doesn’t include significant near-misses, as required in other jurisdictions reviewed, such as Victoria. There is also ongoing concern that the Department of Labour is grossly under-resourced in its investigation and education capacities.

There is also concern that the preventative intention of the HSE Act is undermined by a continued focus on prosecuting cases where harm has occurred (rather than potential harm) and by the Sentencing Act’s focus on reparations, which employers can insure against, meaning fines are low and meaningless. Many key informants stressed the importance of education generally for prevention purposes, and in particular, several noted the important role of the case law in education and the need for more prosecutions on this basis, including cases that will be lost.
5.5 Policy development and the relationship with public health

A number of implications for policy development and the relationship with public health have been identified as stemming not from the definitions of work–related harm specifically, but from the general frameworks in which they sit. They include:

- a lack of public health involvement in occupational disease policy
- public health taking the burden of occupational illness
- lack of resources for occupational health.

5.5.1 A lack of public health involvement in occupational disease policy

In 1992, with the introduction of the HSE Act, responsibility for occupational health policy moved from the Ministry of Health to the Department of Labour. In addition, the IPRC Act (and its predecessors) have placed responsibility for the treatment and rehabilitation of occupational injury and illness with ACC. These divisions have meant that the Ministry of Health has no mandate (or method) to identify occupational disease or address its treatment or prevention.

One key informant expressed frustration that public health has no mandate to address occupational disease and that the interface between public health and occupational health in the field is not strong.

Nevertheless, there are important ongoing relationships between the Ministry of Health, ACC and the Department of Labour. As noted in the PricewaterhouseCoopers scheme review in early 2008, ACC made almost $900 million in payments to medical practitioners and hospitals, representing around 11 percent of health care expenditure in New Zealand. Therefore, ACC has an influential role in certain areas of New Zealand’s health system.  ACC has strong links with occupational medical and occupational health services because of their Workwise clinics, but links with public health are rare. There are some areas where the interface is becoming stronger between the Department of Labour and the Ministry of Health, for example, around the Hazardous Substances and New Organisms Act.

Some key informants commented that the current framework has meant departments have restricted functions that are not always complementary. A number of key informants highlighted the perception that the Australian model of regulator and compensator working together would help address these issues.

5.5.2 Public health takes burden of occupational illness

The effect of certain work–related conditions being excluded from ACC cover is that responsibility for their care falls to public health. One key informant considered that: “We have a body of worn out workers not eligible for ACC cover and unable to work or to earn at their previous rate because of degenerative harm that has been caused, contributed to or escalated by work. This shifts the
cost of those workplace injuries onto the individual employee and to the public health system.”

Another key informant noted that, while the fear of floodgates opening and unmanageable cost to employers has barred recognition of mental harm and gradual process harm in many cases, it has not prevented the harm from occurring, but rather leaves the individual and the public health system to deal with it.

There can be difficult cases that sit on the boundaries of occupational and public health. For three years, the case of the Environmental Science and Research scientist who contracted meningococcal disease and suffered a triple amputation was considered not to be work-related until this finding was overturned in mid 2008.46

Many key informants questioned whether it should be necessary to distinguish borderline cases and simply ensure that the person received the appropriate treatment and compensation. Others considered that employers should not pick up the costs of poor health generally and possible failures in public health.

5.5.3 Lack of resources for occupational health

There is widespread perception that the Department of Labour is under-funded to deal with occupational disease. Several key informants talked about the lack of proper funding for the Department of Labour to develop policy around occupational disease or undertake its responsibilities in this area. Comparisons were made with the UK where occupational health is within the public health system, and every National Health Service trust (equivalent to a District Health Board) has a requirement to set up an occupational health unit.

The result in New Zealand is seen to have been a neglect of occupational disease, a focus on inspections and prosecutions for injuries and accidents rather than the big picture of occupational health and a lack of a co-ordinated approach to data, training, information or education.

5.5.4 Summary of implications for relationship with public health

The Ministry of Health has no responsibility for occupational disease although, in reality, it largely bears the cost due to under-identification of work-related harm, disease and illness. This situation appears to be exacerbated by a very clear perception that the Department of Labour is under-resourced to tackle the problems of occupational disease.

There is also a perceived disconnection between ACC and the Department of Labour, particularly in regard to sharing information and prevention activities. This contrasts with Australian states examined where the same agency is both the occupational health and safety regulator and responsible for workers’ compensation.

These concerns can be seen to contribute to the greatest concerns regarding the implications of the current definitions of work-related harm, namely the lack of
identification and treatment/rehabilitation/compensation of chronic conditions and the lack of data to inform appropriate prevention activities.

5.6 Chapter conclusion

The way work-related harm is defined in New Zealand, through the IPRC and HSE Acts and through employment and sentencing law, has shaped the recognition of work-related harm and its rehabilitation, compensation and consequential prevention activities. Accurate medical diagnosis of a condition and accurate attribution to work-related exposures are also fundamental to appropriate rehabilitation, compensation, and prevention activities.

The key findings in this chapter are as follows:

Diagnosis

• Work-related chronic illness and work-related chronic injury are currently considered to be under-identified for a number of reasons, primarily, limitations with the IPRC Act’s section 30, inadequate medical diagnosis based on inadequate medical training and the lack of commonly agreed diagnostic terminology.

• Key informants considered that the most important interventions to improve diagnosis were establishing systems to ensure that ACC claims are investigated by people with the appropriate expertise, improving the occupational medicine training of general practitioners and improving access to occupational medical specialists in the public health system.

Rehabilitation and compensation

• Current definitions exclude those suffering from chronic work-related mental harm, work-related pain conditions, work-related third party diseases (such as that contracted by dust brought home in clothes) and work-related gradual process, disease or infection suffered by volunteers or students in work-like situations. The limitations of the current definitions impact on the ability of those affected to recover and return to work and to receive appropriate compensation.

• The current definitions are also considered to lead to inappropriate or delayed interventions, in some cases, and perceptions of inequalities between those who may access ACC only and those who may access others avenues of compensation through the courts.

• The benefits of more comprehensive rehabilitation of work-related harm are likely to be quicker return to work, reduced compensation costs, greater productivity and all the benefits of improved health outcomes generally. There would be costs, particularly to employers, in running the scheme.

• Full coverage of work-related harm has been dismissed on the basis of the cost that would fall to employers through increased levies. This assumption needs to be evaluated in light of the broader costs to employers, the economy and society of reduced productivity and the burden on public health and other social services, and the gains to be made from increased awareness of the problems and increased prevention activities.
Prevention

- The fundamental impact of the lack of an overarching definition of work-related harm and a co-ordinated system for gathering work-related harm data is the inability to know the true nature of the problems and where to target prevention activities.

- Establishing a reliable surveillance mechanism with a comprehensive definition of work-related harm is the first step in establishing an effective prevention system.

- ACC’s prevention function in regard to work-related harm is seen to be limited by its requirement to reduce levies and its predominant focus on injury, regardless of work-relatedness. There is also a perceived lack of clarity around the purpose of the Department of Labour’s reporting requirement.

- In spite of the Workplace Health and Safety Strategy and the New Zealand Injury Prevention Strategy, there is a general concern that prevention activities are not co-ordinated, particularly between ACC and the Department of Labour. There appear to be continuing concerns that there is no agency taking full responsibility for the prevention of work-related harm.
CHAPTER 6: CONCLUSIONS AND RECOMMENDATIONS

6.1 Chapter overview

The object of this project was to review concepts of work-related harm and actual definitions used internationally in order to develop recommendations for harmonising New Zealand’s definitions, with a view to providing more effective and efficient diagnosis, rehabilitation, compensation and prevention for work-related harm.

This review has highlighted numerous problems that arise from inconsistencies and the lack of coverage of definitions and the subsequent implications for good surveillance, rehabilitation and compensation in particular. This calls for greater consistency and robust consideration of the rationale for limited definitions. That said, it is clear from the international review that the aim of having a single definition of work-related harm is likely to be unrealistic and possibly undesirable, given the different systems and purposes for defining work-related harm.

On this basis, the report recommends a set of principles for defining work-related harm that could be used as the basis of a definition for surveillance purposes, as well as a tool for evaluating existing definitions, with a view to developing a common approach to recognising work-related harm.

Firstly, given the absence of a system of surveillance in New Zealand and the importance of understanding the nature of the problem of work-related harm in order to truly evaluate the impacts on rehabilitation and compensation, the report reiterates NOHSAC’s previous recommendations to establish a system for surveillance.

Secondly, the report recommends a broad set of principles on which to base a definition of work-related harm for surveillance purposes.

Thirdly, the report recommends further work to help evaluate the possibility of moving ACC’s definitions of work-related harm towards the principles outlined for surveillance purposes, and simplifying the Department of Labour’s definition of work-related harm for reporting purposes with a focus on prevention. The report also recommends initiatives to improve occupational medicine training among general practitioners and to improve the education of employers in occupational disease as practical steps needed to support good definitions.

6.2 Conclusions

None of the countries examined has a single definition of work-related harm for all purposes or a single framework for surveillance, rehabilitation, compensation and prevention purposes. From this perspective, there is no evidence to suggest that a single definition of work-related harm is plausible or likely to improve the outcomes of rehabilitation or compensation.
It is possible, however, to identify a broad conceptual framework for defining work-related harm that could be a standard reference for surveillance purposes based on the principles discussed in Chapter 2.

It would also be possible to assess New Zealand definitions of work-related harm against this broad conceptual framework and identify gaps and inconsistencies that could then be evaluated according to the purpose of the definition. For example, in some cases, it may be appropriate to focus on serious harm only, and in others, it may be appropriate to focus on a broad spectrum of harm, including near-misses. There was strong support from key informants for a broad conceptual definition, with agencies responsible for separate but complementary definitions of work-related harm for rehabilitation, compensation and prevention purposes.

Under New Zealand’s current framework, the implications of how work-related harm is defined are significant. The definitions of work-related harm in the IPRC Act determine who is eligible for treatment, rehabilitation assistance and compensation. While there is broad coverage of acute injury, current definitions exclude those suffering from chronic work-related mental harm, work-related pain conditions, work-related third party disease (such as that contracted by dust brought home in clothes) and work-related gradual process, disease or infection suffered by volunteers or students in work-like situations. The limitations of the current definitions have implications for the ability of those affected to recover and return to work.

Importantly, where particular groups of people are not eligible for rehabilitation or compensation, there is less incentive for prevention activities in that area. There are also limitations for prevention activity where certain harm may be covered because of the broad coverage of ACC for acute injury (i.e. anyone is covered regardless of whether they were working or not) but not recognised as work-related. This is likely to happen in the case of bystander and commuter traffic accident fatalities.

Defining work-related harm on the basis of the principles set out in the recommendations section of this chapter would provide for more comprehensive cover of work-related conditions by ACC. Full coverage of work-related harm has been dismissed on the basis of the cost that would fall to employers through increased levies. This assumption needs to be evaluated in light of the broader costs to employers, the economy and society of reduced productivity and the burden on public health and other social services, and the gains to be made from increased awareness of the problems and increased prevention activities.

Key informants considered that harmonising definitions of work-related harm and addressing the gaps and inconsistencies identified throughout this report could dramatically improve prevention and rehabilitation outcomes and, in particular, could:

• improve the information collected by each agency and allow for a comprehensive picture of injury and illness and disease in New Zealand, whether occupational or environmental
• allow for better recognition of the connection between events and injuries, and better targeted interventions, which should decrease the numbers of illnesses and injuries
• better share the costs of harm between employers, the public health system and individuals
• help bring consistency between the treatment of acute and chronic conditions – speeding up treatment, reducing the risk of job loss, improving rehabilitation outcomes and recognising harm that is presently denied.

Improved attribution to work will only partly be addressed by more comprehensive definitions. Clearly, there is a need for broader recognition of the work-related causes of many common chronic and acute conditions by the medical profession and greater understanding by employers.

6.3 Recommendations

A system for surveillance

Recommendation 1

1.1 NOHSAC’s recommendations in Surveillance of occupational disease and injury in New Zealand\(^4\) should be implemented, in particular, establishing an expert group to advise on the development of an effective system of occupational disease and injury surveillance.

1.2 The roles of the expert group should be to:

a) develop a broad definition of work-related harm for surveillance purposes based on the principles outlined below

b) develop an ongoing surveillance method based on the recommendations in the NOHSAC report Surveillance of Occupational Disease and Injury in New Zealand\(^4\)

c) make recommendations for adjustments to existing definitions of work-related harm to improve the data collection for surveillance purposes

d) make recommendations to improve the use of operational classification systems for work-related harm in New Zealand, including the development of ICD-11 which is currently underway.

Principles for defining work-related harm for surveillance purposes

Recommendation 2

2. The definition of work-related harm must identify its purpose(s).

Recommendation 3

3.1 The definition of work-related harm should specifically identify:

• workers
• bystanders and third parties
• students in work-like situations
• volunteers in work-like situations.

3.2 The definition of work-related harm should specifically identify:
• harm in the workplace
• motor vehicle harm
• commuting harm.

3.3 Fatal and non-fatal harm should be separately identified.

Recommendation 4

4.3 The definition of work-related injury should include both acute and chronic injury.

4.4 The definition of work-related disease/illness should include both acute and chronic disease/illness.

Recommendation 5

5.3 Harm should be identified as work-related when “on the balance of probabilities” it is considered work-related, other than in the case of a criminal prosecution.

5.4 Certain specified conditions that have a strong correlation with work exposures should be considered work-related unless proven otherwise, as with the current Schedule 2 of the IPRC Act.

Further work towards a common approach

Recommendation 6

6 NOHSAC should commission a major cost/benefit analysis of the implications of a more comprehensive ACC scheme covering all work-related harm as set out in the principles for defining work-related harm recommended in this report, factoring in the broader costs to employers, the economy and society of reduced productivity; the burden on public health and other social services; and the gains to be made from increased awareness of the problems, increased rehabilitation and increased prevention activities.

Recommendation 7

7 The definitions of work-related harm in the IPRC Act should be reviewed in light of the multiple purposes of the IPRC Act; the broader definitions of work-related harm employed in Finland, Victoria and New South Wales; the principles for defining work-related harm outlined above; and the recommended cost/benefit analysis.

Recommendation 8

8 The definition of work-related harm for reporting purposes should be reviewed in light of the purpose of the notification requirement under the
HSE Act and the principles outlined above. Particular consideration should be given to requiring near-misses with the potential for serious harm to be notified.

**Recommendation 9**

9.1 The Department of Labour should establish a working group with the Ministry of Health and representatives from each of New Zealand’s medical schools and the Medical Council to look at ways to improve medical training in the recognition and identification of work-related harm, particularly work-related chronic harm.

9.2 The Department of Labour and ACC should continue their efforts to educate employers about work-related harm, particularly work-related disease and the recent additions to Schedule 2 of the IPRC Act.
REFERENCES


44. Department of Labour (2008) *The Injury Prevention, Rehabilitation, and Compensation Bill (No 2) Department of Labour report to the Transport and Industrial Relations Select Committee*, Department of Labour, Wellington.


80. The University of Manchester, The Health and Occupation Reporting Network,


nk_id=95128&rubriek_id=13013&lijstm=0,310_6058,603_12086, accessed 5 September 2008.


## APPENDICES

### Appendix 1: Glossary of abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ABLES</td>
<td>Adult Blood Lead Epidemiology and Surveillance (United States)</td>
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<tr>
<td>ACC</td>
<td>Accident Compensation Corporation (New Zealand)</td>
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<tr>
<td>ANW</td>
<td>Surviving Dependents Act (the Netherlands)</td>
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<tr>
<td>ANZSIC</td>
<td>Australian and New Zealand Standard Industrial Classification</td>
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<tr>
<td>ASCC</td>
<td>Australian Safety and Compensation Council</td>
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<td>ASCO</td>
<td>Australian Standard Classification of Occupations</td>
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<tr>
<td>AWBZ</td>
<td>Exceptional Medical Expenses Act (the Netherlands)</td>
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<tr>
<td>CFOI</td>
<td>Census of Fatal Occupational Injuries (United States)</td>
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<tr>
<td>CPM</td>
<td>Workplace Relations Ministers Council’s Comparative Performance Monitoring (Australia)</td>
</tr>
<tr>
<td>EPI-DERM</td>
<td>Occupational Skin Surveillance (United Kingdom)</td>
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<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FAII</td>
<td>Federation of Accident Insurance Institutions (Finland)</td>
</tr>
<tr>
<td>FROD</td>
<td>Finnish Register of Occupational Diseases (Finland)</td>
</tr>
<tr>
<td>HSE</td>
<td>Health and Safety Executive (United Kingdom)</td>
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<tr>
<td>HSE Act</td>
<td>Health and Safety in Employment Act 1992 (New Zealand)</td>
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<tr>
<td>HSNO Act</td>
<td>Hazardous Substances and New Organisms Act 1996 (New Zealand)</td>
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<tr>
<td>HSW Act</td>
<td>Health and Safety at Work Act 1974 (United Kingdom)</td>
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<tr>
<td>ICD</td>
<td>International Statistical Classification of Diseases and Related Health Problems</td>
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<tr>
<td>ICD-10</td>
<td>International Statistical Classification of Diseases and Related Health Problems, Tenth Revision</td>
</tr>
<tr>
<td>ICD-10-AM</td>
<td>International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian</td>
</tr>
<tr>
<td>Abbreviation</td>
<td>Description</td>
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<tr>
<td>ICECI</td>
<td>International Classification of External Causes of Injuries</td>
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<td>ILO</td>
<td>International Labour Organisation</td>
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<tr>
<td>IPRC Act</td>
<td>Injury Prevention, Rehabilitation, and Compensation Act 2001 (New Zealand)</td>
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<tr>
<td>IVA</td>
<td>Income support scheme for persons incapable of work (the Netherlands)</td>
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<tr>
<td>LFS</td>
<td>Labour Force Survey (United Kingdom)</td>
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<tr>
<td>LIS</td>
<td>Dutch Injury Surveillance System (the Netherlands)</td>
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<tr>
<td>MOSS</td>
<td>Musculoskeletal Occupational Surveillance Scheme (United Kingdom)</td>
</tr>
<tr>
<td>MSAH</td>
<td>Ministry of Social Affairs and Health (Finland)</td>
</tr>
<tr>
<td>NCCH</td>
<td>National Centre for Classification in Health (Australia)</td>
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<tr>
<td>NCIS</td>
<td>National Coroners Information System (Australia)</td>
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<tr>
<td>NDS</td>
<td>National Data Set for Compensation-based Statistics (Australia)</td>
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<tr>
<td>NF</td>
<td>Notified Fatalities data set (Australia)</td>
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<tr>
<td>NHI</td>
<td>National Health Index (New Zealand)</td>
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<tr>
<td>NHS</td>
<td>National Health Service (United Kingdom)</td>
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<tr>
<td>NIOSH</td>
<td>National Institute of Occupational Safety and Health (United States)</td>
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<tr>
<td>NODS</td>
<td>Notifiable Occupational Disease System (New Zealand)</td>
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<tr>
<td>NOHSAC</td>
<td>National Occupational Health and Safety Advisory Committee (New Zealand)</td>
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<tr>
<td>NTOF</td>
<td>National Traumatic Occupational Fatalities Surveillance System (United States)</td>
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<tr>
<td>NZIPS</td>
<td>New Zealand Injury Prevention Strategy</td>
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<td>OOS</td>
<td>Occupational overuse syndrome</td>
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<td>OPRA</td>
<td>Occupational Physicians Reporting Activity (United States)</td>
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<tr>
<td>Acronym</td>
<td>Description</td>
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<tr>
<td>OSH</td>
<td>Occupational safety and health</td>
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<tr>
<td>OSHA</td>
<td>Occupational Safety and Health Administration (United States)</td>
</tr>
<tr>
<td>OSSA</td>
<td>Occupational Surveillance Scheme for Audiologists (United Kingdom)</td>
</tr>
<tr>
<td>RIDDOR</td>
<td>Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (United Kingdom)</td>
</tr>
<tr>
<td>SIDAW</td>
<td>Surveillance of Infectious Disease At Work (United Kingdom)</td>
</tr>
<tr>
<td>SOSMI</td>
<td>Surveillance of Occupational Stress and Mental Illness (United Kingdom)</td>
</tr>
<tr>
<td>SWI</td>
<td>Self-reported Work-related Illness (United Kingdom)</td>
</tr>
<tr>
<td>SWORD</td>
<td>Surveillance of Work-Related and Occupational Respiratory Disease (United Kingdom)</td>
</tr>
<tr>
<td>TAC</td>
<td>Transport Accident Commission (Victoria, Australia)</td>
</tr>
<tr>
<td>THOR</td>
<td>The Health and Occupation Reporting network (United Kingdom)</td>
</tr>
<tr>
<td>TOOCS</td>
<td>Type of Occurrence Classification System (Australia)</td>
</tr>
<tr>
<td>WAO</td>
<td>Invalidity Insurance Act (the Netherlands)</td>
</tr>
<tr>
<td>WGA</td>
<td>Work resumption benefit for persons partially capable of work (the Netherlands)</td>
</tr>
<tr>
<td>WIA</td>
<td>Work and Income (Capacity for Work) Act (the Netherlands)</td>
</tr>
<tr>
<td>WR MVTC</td>
<td>Work-related motor vehicle traffic crash</td>
</tr>
<tr>
<td>WULBZ</td>
<td>Extension of Obligation to Pay Salary (Sickness) Act (the Netherlands)</td>
</tr>
<tr>
<td>ZVW</td>
<td>Health Care Insurance Act (the Netherlands)</td>
</tr>
<tr>
<td>ZW</td>
<td>Sickness Benefits Act (the Netherlands)</td>
</tr>
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</table>
Appendix 2: Key informants

Appendix 2 lists the organisations with whom the project team conducted interviews as part of the information collection phase of this review. In some cases, the project team interviewed more than one person from the organisation listed. The views of the key informants were not endorsed as officially representative of their organisation.

In total, the project team conducted 43 interviews. The majority of the interviews were conducted face to face, with some conducted by telephone. The project team acknowledges the contribution made by these stakeholders and thanks them for their participation.

Government agencies
Accident Compensation Corporation
Civil Aviation Authority of New Zealand
Department of Building and Housing
Department of Labour
Department of Statistics
Environmental Risk Management Authority
Maritime New Zealand
Ministry of Health
Ministry of Social Development
Ministry of Transport
New Zealand Police

Employer organisations
Business New Zealand
Employers and Manufacturers Association (Northern)

Employee representatives
New Zealand Council of Trade Unions
Public Service Association

Research institutions
Centre for Public Health Research
Dunedin School of Medicine
Injury Prevention Research Unit

Occupational health practitioners
New Zealand Occupational Health Nurses Association
New Zealand Society of Physiotherapists
New Zealand Society of Occupational Therapists

Individuals:
• Dr David Black
• Dr Chris Walls
• Dr Mark Floyd

ACC and occupational health and safety litigation specialists
Hazel Armstrong Law
John Miller Law
Keegan Alexander (Auckland)
Kensington Swan (Auckland)
Simpson Grierson (Wellington)

Safety organisations and services
Impac: Risk and safety management solutions
New Zealand Ergonomics Society
New Zealand Occupational Hygiene Society
New Zealand Safety Council
Appendix 3: Legislation by country

Appendix 3 lists the legislation reviewed in this report by country.

**New Zealand**
The Health and Safety in Employment Act 1992
The Injury Prevention, Rehabilitation, and Compensation Act 2001
The Employment Relations Act 2000
The Sentencing Act 2002

**Australia**
Victoria
The Occupational Health and Safety Act 2004
The Accident Compensation Act 1985

New South Wales
The Occupational Health and Safety Act 2000
The Workers Compensation Act 1987
The Workplace Injury Management and Workers Compensation Act 1998

**The United Kingdom**
The Health and Safety at Work Act 1974
The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995
The Social Security Act 1975
The Employers’ Liability (Compulsory Insurance) Act 1969

**The Netherlands**
The Working Conditions Act 1999
The Working Conditions Decree 1997
The Act on Occupational Safety and Health
The Extension of Obligation to Pay Salary (Sickness) Act (WULBZ)
The Sickness Benefits Act (ZW)
The Invalidity Insurance Act (WAO)
The Work and Income (Capacity for Work) Act (WIA)
The Health Care Insurance Act (ZVW)
The Surviving Dependents Act (ANW)
The Exceptional Medical Expenses Act (AWBZ)
Finland
The Occupational Health Care Act 2001
The Occupational Safety and Health Act 2002
The Labour Accident Insurance Act 1948
The Act on Accident Insurance for Public Sector Employees 1935
The Occupational Diseases Act

The United States of America
The Occupational Safety and Health Act 1970
Appendix 4: Coverage of work-related chronic injury and disease under the IPRC Act

**Accident** (section 25) means any of the following kinds of occurrences:

(a) a specific event or a series of events, other than a gradual process, that—

(i) involves the application of a force (including gravity), or resistance, external to the human body; or

(ii) involves the sudden movement of the body to avoid a force (including gravity), or resistance, external to the body; or

(iii) involves a twisting movement of the body:

(b) the inhalation of any solid, liquid, gas, or foreign object on a specific occasion, which kind of occurrence does not include the inhalation of a virus, bacterium, protozoan, or fungus, unless that inhalation is the result of the criminal act of a person other than the injured person:

(ba) the oral ingestion of any solid, liquid, gas, fungus, or foreign object on a specific occasion, which kind of occurrence does not include the ingestion of a virus, bacterium, or protozoan, unless that ingestion is the result of the criminal act of a person other than the injured person:

(c) a burn, or exposure to radiation or rays of any kind, on a specific occasion, which kind of occurrence does not include a burn or exposure caused by exposure to the elements:

(d) the absorption of any chemical through the skin within a defined period of time not exceeding 1 month:

(e) any exposure to the elements, or to extremes of temperature or environment, within a defined period of time not exceeding 1 month, that,—

(i) for a continuous period exceeding 1 month, results in any restriction or lack of ability that prevents the person from performing an activity in the manner or within the range considered normal for the person; or

(ii) causes death.

**Personal injury** (section 26) is defined as:

(1) Personal injury means—

(a) the death of a person; or

(b) physical injuries suffered by a person, including, for example, a strain or a sprain; or

(c) mental injury suffered by a person because of physical injuries suffered by the person; or

(d) mental injury suffered by a person in the circumstances described in section 21 (certain criminal acts); or
(da) work-related mental injury that is suffered by a person in the circumstances described in section 21B; or.

(e) damage (other than wear and tear) to dentures or prostheses that replace a part of the human body.

(2) Personal injury does not include personal injury caused wholly or substantially by a gradual process, disease, or infection unless it is personal injury of a kind described in section 20(2)(e) to (h).

(3) Personal injury does not include a cardiovascular or cerebrovascular episode unless it is personal injury of a kind described in section 20(2)(i) or (j).

(4) Personal injury does not include—
(a) personal injury caused wholly or substantially by the ageing process; or
(b) personal injury to teeth or dentures caused by the natural use of those teeth or dentures.

**Work-related personal injury** (section 28)

(1) A work-related personal injury is a personal injury that a person suffers—

(a) while he or she is at any place for the purposes of his or her employment, including, for example, a place that itself moves or a place to or through which the claimant moves; or

(b) while he or she is having a break from work for a meal or rest or refreshment at his or her place of employment; or

(c) while he or she is travelling to or from his or her place of employment at the start or finish of his or her day’s work, if he or she is an employee and if the transport—

(i) is provided by the employer; and

(ii) is provided for the purpose of transporting employees; and

(iii) is driven by the employer or, at the direction of the employer, by another employee of the employer or of a related or associated employer; or

(d) while he or she is travelling, by the most direct practicable route, between his or her place of employment and another place for the purposes of getting treatment for a work-related personal injury, if the treatment—

(i) is necessary for the injury; and

(ii) is treatment of a type that the claimant is entitled to under Part 1 of Schedule 1.

(2) In subsection (1)(d), most direct practicable route does not include those parts of a route that deviate unreasonably from, or interrupt, a journey for purposes unrelated to the employment or the treatment.

(3) Work-related personal injury includes a cardiovascular or cerebrovascular episode suffered by a person, if the episode is caused by physical effort or
physical strain, in performing his or her employment, that is abnormal in application or excessive in intensity for the person.

(4) Work-related personal injury includes personal injury caused by a work-related gradual process, disease, or infection.

(4A) Work-related personal injury includes work-related mental injury that is suffered in the circumstances described in section 21B.

(7) It is irrelevant to the decision whether the person suffered a work-related personal injury that, when the event causing the injury occurred, he or she—

(a) may have been acting in contravention of any Act or regulations applicable to the employment, or in contravention of any instructions, or in the absence of instructions; or

(b) may have been working under an illegal contract; or

(c) may have been indulging in, or may have been the victim of, misconduct, skylarking, or negligence; or

(d) may have been the victim of a force of nature.

**Personal injury caused by work-related gradual process, disease, or infection** (section 30)

(1) Personal injury caused by a work-related gradual process, disease, or infection means personal injury—

(a) suffered by a person; and

(b) caused by a gradual process, disease, or infection; and

(c) caused in the circumstances described in subsection (2).

(1A) Subsection (1)(c) is subject to subsection (2A)

(2) The circumstances are—

(a) the person—

(i) performs an employment task that has a particular property or characteristic; or

(ii) is employed in an environment that has a particular property or characteristic; and

(b) the particular property or characteristic—

(i) causes, or contributes to the cause of, the personal injury; and

(ii) [repealed]

(iii) may or may not be present throughout the whole of the person’s employment; and

(c) that, if the particular property or characteristic is present in both the person’s employment tasks and non-employment activities or environment, it is more likely that the person’s personal injury was caused as a result of the employment tasks or environment rather than the non-employment
activities or environment.

(2A) However, even if it is established that a claimant’s personal injury was caused in the circumstances described in subsection (2), the Corporation may decline the claim if the Corporation establishes that the risk of suffering the personal injury is not significantly greater for persons who—

(a) perform the employment task than it is for persons who do not perform it; or
(b) are employed in that type of environment than it is for persons who are not.”

(3) Personal injury caused by a work-related gradual process, disease, or infection includes personal injury that is—

(a) of a type described in Schedule 2; and
(b) suffered by a person who is or has been in employment—

(i) that involves exposure, or the prescribed level or extent of exposure, to agents, dusts, compounds, substances, radiation, or things (as the case may be) described in that schedule in relation to that type of personal injury; or
(ii) in an occupation, industry, or process described in that schedule in relation to that type of personal injury.

(5) Personal injury caused by a work-related gradual process, disease, or infection does not include—

(a) personal injury related to non-physical stress; or
(b) any degree of deafness for which compensation has been paid under the Workers’ Compensation Act 1956.

**Mental injury** (section 27) is defined as a clinically significant behavioural, cognitive or psychological dysfunction.

**Work-related mental injury** (section 21B)

(1) A person has cover for a personal injury that is a work-related mental injury if—

(a) he or she suffers the mental injury inside or outside New Zealand on or after 1 October 2008; and

(b) the mental injury is caused by a single event of a kind described in subsection (2).

(2) Subsection (1)(b) applies to an event that—

(a) the person experiences, sees, or hears directly in the circumstances described in section 28(1); and

(b) is an event that could reasonably be expected to cause mental injury to people generally; and

(c) occurs—

(i) in New Zealand; or

(ii) outside New Zealand to a person who is ordinarily resident in New Zealand.
when the event occurs.

(5) In subsection (2)(a), a person experiences, sees, or hears an event directly if that person—

(a) is involved in or witnesses the event himself or herself; and

(b) is in close physical proximity to the event at the time it occurs.

(6) To avoid doubt, a person does not experience, see, or hear an event directly if that person experiences, sees, or hears it through a secondary source, for example, by—

(a) seeing it on television (including closed circuit television):

(b) seeing pictures of, or reading about, it in news media:

(c) hearing it on radio or by telephone:

(d) hearing about it from radio, telephone, or another person.

(7) In this section, event—

(a) means—

(i) an event that is sudden; or

(ii) a direct outcome of a sudden event; and

(b) includes a series of events that—

(i) arise from the same cause or circumstance; and

(ii) together comprise a single incident or occasion; but

(c) does not include a gradual process.
Appendix 5: New South Wales’ notification requirements prescribed in regulations

For the purposes of the definition of "serious incident" the following incidents at or in relation to a place of work are prescribed at regulation 344 of the Occupational Health and Safety Regulations 2001:

(a) an injury to a person that results in the amputation of a limb
(b) the placing of a person on a life support system
(c) any incident listed below that presents an immediate threat to life:
   (i) the loss of consciousness of a person caused by impact of physical force, exposure to hazardous substances, electric shock or lack of oxygen
   (ii) major damage to any plant, equipment, building or structure
   (iii) an uncontrolled explosion or fire
   (iv) an uncontrolled escape of gas, dangerous goods or steam
   (v) imminent risk of explosion or fire
   (vi) imminent risk of an escape of gas, dangerous goods or steam
   (vii) a spill or incident resulting in exposure or potential exposure of a person to a notifiable or prohibited carcinogenic substance (as defined in Part 6.3)
   (viii) entrapment of a person in a confined space
   (ix) collapse of an excavation
   (x) entrapment of a person in machinery
   (xi) serious burns to a person

d) in relation to a major hazard facility (as defined in Chapter 6B)-if not already covered by another paragraph of this clause, a major accident (as defined in that Chapter).

The Occupational Health and Safety Regulations 2001 also require notification of an incident listed below occurring at or in relation to a place of work is, if it is an incident that presents a risk to health or safety and is not immediately threatening to life:

(a) an injury to a person (supported by a medical certificate) that results in the person being unfit, for a continuous period of at least 7 days, to attend the person’s usual place of work, to perform his or her usual duties at his or her place of work or, in the case of a non-employee, to carry out his or her usual activities,

(b) an illness of a person (supported by a medical certificate) that is related to work processes and results in the person being unfit, for a continuous period of at least 7 days, to attend the person’s usual place of work or to perform his or her usual duties at that place of work,

(c) damage to any plant, equipment, building or structure or other thing that impedes safe operation,

(d) an uncontrolled explosion or fire,
(e) an uncontrolled escape of gas, dangerous goods (within the meaning of the ADG Code) or steam,
(f) a spill or incident resulting in exposure or potential exposure of a person to a notifiable or prohibited carcinogenic substance,
(g) removal of workers from lead risk work due to excessive blood lead levels,
(h) exposure to bodily fluids that presents a risk of transmission of blood-borne diseases,
(i) the use or threatened use of a weapon that involves a risk of serious injury to, or illness of, a person,
(i1) a robbery that involves a risk of serious injury to, or illness of, a person,
(i2) electric shock that involves a risk of serious injury to a person,
(j) any other incident that involves a risk of:
   (i) explosion or fire, or
   (ii) escape of gas, dangerous goods (within the meaning of the ADG Code) or steam, or
   (iii) serious injury to, or illness of, a person, or
   (iv) substantial property damage,
(k) in relation to a major hazard facility -if not already covered by another paragraph of this clause, a major accident or near miss.
Appendix 6: The United Kingdom’s Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 1995 (RIDDOR)\textsuperscript{22}

The following incidents must be reported:

- deaths;
- major injuries;
- over-3-day injuries – where an employee or self-employed person is away from work or unable to perform their normal work duties for more than 3 consecutive days, but has not suffered a “major injury”;
- injuries to members of the public or people not at work where they are taken from the scene of an accident to hospital;
- some work-related diseases;
- dangerous occurrences – where something happens that does not result in an injury, but could have done;
- CORGI registered gas fitters must also report dangerous gas fittings they find, and gas conveyors/suppliers must report some flammable gas incidents.

Reportable major injuries are:

- Fracture, other than to fingers, thumbs and toes;
- Amputation;
- Dislocation of the shoulder, hip, knee or spine;
- Loss of sight (temporary or permanent);
- Chemical or hot metal burn to the eye or any penetrating injury to the eye;
- Injury resulting from an electric shock or electrical burn leading to unconsciousness, or requiring resuscitation or admittance to hospital for more than 24 hours;
- Any other injury: leading to hypothermia, heat-induced illness or unconsciousness; or requiring resuscitation; or requiring admittance to hospital for more than 24 hours;
- Unconsciousness caused by asphyxia or exposure to harmful substance or biological agent;
- Acute illness requiring medical treatment, or loss of consciousness arising from absorption of any substance by inhalation, ingestion or through the skin;
- Acute illness requiring medical treatment where there is reason to believe that this resulted from exposure to a biological agent or its toxins or infected material.

\textsuperscript{22} Health and Safety Executive, RIDDOR in detail, \url{http://www.hse.gov.uk/riddor/guidance.htm}, updated 12/5/08, accessed 10 September 2008.
Reportable diseases include:

- Certain poisonings;
- Some skin diseases such as occupational dermatitis, skin cancer, chrome ulcer, oil folliculitis/acne;
- Lung diseases including: occupational asthma, farmer’s lung, pneumoconiosis, asbestosis, mesothelioma;
- Infections such as: leptospirosis; hepatitis; tuberculosis; anthrax; legionellosis and tetanus;
- Other conditions such as: occupational cancer; certain musculoskeletal disorders; decompression illness and hand-arm vibration syndrome.

Reportable dangerous occurrences are:

- Collapse, overturning or failure of load-bearing parts of lifts and lifting equipment;
- Explosion, collapse or bursting of any closed vessel or associated pipework;
- Failure of any freight container in any of its load-bearing parts;
- Plant or equipment coming into contact with overhead power lines;
- Electrical short circuit or overload causing fire or explosion;
- Any unintentional explosion, misfire, failure of demolition to cause the intended collapse, projection of material beyond a site boundary, injury caused by an explosion;
- Accidental release of a biological agent likely to cause severe human illness;
- Failure of industrial radiography or irradiation equipment to de-energise or return to its safe position after the intended exposure period;
- Malfunction of breathing apparatus while in use or during testing immediately before use;
- Failure or endangering of diving equipment, the trapping of a diver, an explosion near a diver, or an uncontrolled ascent;
- Collapse or partial collapse of a scaffold over five metres high, or erected near water where there could be a risk of drowning after a fall;
- Unintended collision of a train with any vehicle;
- Dangerous occurrence at a well (other than a water well);
- Dangerous occurrence at a pipeline;
- Failure of any load-bearing fairground equipment, or derailment or unintended collision of cars or trains;
- A road tanker carrying a dangerous substance overturns, suffers serious damage, catches fire or the substance is released;
- A dangerous substance being conveyed by road is involved in a fire or released;
• The following dangerous occurrences are reportable except in relation to offshore workplaces: unintended collapse of: any building or structure under construction, alteration or demolition where over five tonnes of material falls; a wall or floor in a place of work; any false-work;

• Explosion or fire causing suspension of normal work for over 24 hours;

• Sudden, uncontrolled release in a building of: 100 kg or more of flammable liquid; 10 kg of flammable liquid above its boiling point; 10 kg or more of flammable gas; or of 500 kg of these substances if the release is in the open air;

• Accidental release of any substance which may damage health.
Appendix 7: Physical, chemical and biological factors deemed occupational in Finland

Physical factors

• Vibration – Typical forms of disease: White finger syndrome; polyneuropathy of the upper limb.
• Noise – Typical forms of disease: Cochlear type of deterioration of hearing.
• Overpressure – Typical forms of disease: Direct effects of changes of pressure, such as maxillary haemorrhages and tympanic ruptures; indirect effects of pressure such as nitrous inebriation and diver’s disease; as a long-term effect an aseptic bone necrosis of big joints.
• Ionising radiation – Typical forms of disease: Bone marrow injuries, lens opacities, skin changes (eczemas, wounds, scars, skin cancer).
• Infrared radiation – Typical forms of disease: Lens opacities, e.g. glassblower’s cataract; skin changes (connective tissue changes, telangiectasies).
• Ultraviolet radiation – Typical forms of disease: Conjunctivitis and keratitis of the eye; skin changes (light eczema, light contact eczema).

Chemical factors

• Arsenic and its compounds – Typical forms of disease: Acute arsenic intoxication (gastro-intestinal, respiratory, and nervous symptoms); long-term respiratory, mucous membrane symptoms; conjunctival irritation of the eye; skin changes like chronic eczema, skin pigmentation, hyperkeratosis, skin cancer; pulmonary cancer; peripheral neuropathies.
• Beryllium and its compounds – Typical forms of disease: Irritation of mucous membranes; chemical pneumonitis in high exposure; chronic berylliosis; skin changes (contact eczema, foreign body reaction e.g. granuloma); pulmonary cancer.
• Mercury and its compounds – Typical forms of disease: Irritation of mucous membranes and gastro-intestinal tract in acute intoxication, sometimes chemical pneumonitis. In sub-chronic or chronic intoxication, the symptoms vary according to individual factors and form of exposure: symptoms of the mouth (gingivitis), peripheral and central nervous injuries (e.g. shake, psychic changes, renal injuries (albuminuria) and in connection with the injuries, elevated mercury levels in urine and blood; skin changes (contact eczema, eczema or other wide-spread rash).
• Phosphorus and its compounds – Typical forms of disease: Injuries of bone and liver; respiratory irritation; central nervous symptoms; caustic injuries of the skin; depression of cholinesterase activity of the tissues in organic phosphorous compound intoxications
• Cadmium and its compounds – Typical forms of disease: Acute intoxication with strong respiratory symptoms (chemical pneumonitis); chronic intoxication (renal injuries, emphysema); skin changes (contact eczema);
pulmonary cancer.

- Cobalt and its compounds – Typical forms of disease: Skin changes (contact eczema); rhinitis and asthma due to cobalt allergy; hard metal lung.

- Chromium and its compounds – Typical forms of disease: Local dermatic or mucosal irritation or corrosion caused by chromium (chrome wounds); skin changes (contact eczema); rhinitis and asthma due to chromium compound allergy; pulmonary cancer; sinusal cancer.

- Lead and its compounds – Typical forms of disease: The first sign of subchronic or chronic inorganic lead intoxication is disturbed haemoglobin synthesis, later anaemia, reticulocytosis, peripheral nerve injuries, gastrointestinal symptoms, liver and kidney injuries, and central nervous symptoms. Organic lead intoxication is characterised by central nervous symptoms. In inorganic lead intoxication, symptoms are associated with elevated blood lead level and elevated erythrocyte protoporphyrin values, and in organic lead intoxication, elevated lead levels in blood and urine.

- Manganese and its compounds – Typical forms of disease: Acute chemical pneumonitis; chronic manganese intoxication (manganism), dominated by nervous symptoms.

- Nickel and its compounds – Typical forms of disease: Skin changes (contact eczema); rhinitis and asthma due to nickel allergy; chemical pneumonitis caused by nickel carbonyl; sinusal and pulmonary cancer.

- Zinc and its compounds – Typical forms of disease: Zinc fever; skin changes caused by zinc chloride (contact eczema, corrosion).

- Vanadium and its compounds – Typical forms of disease: Irritation of respiratory tract (chemical pneumonitis, bronchial constriction).

- Halogens and their inorganic compounds (chlorine, bromine, fluorine) – Typical forms of disease: Irritation and corrosion of mucous membranes and conjunctiva; chemical pneumonitis; bone changes caused by fluorine compounds (fluorosis); fever caused by fluorine polymer dispersion products (polymer fever); skin changes (contact eczema, corrosion caused by fluorides).

- Cyanide compounds – Typical forms of disease: Acute cyanide intoxication, chronic intoxication (respiratory symptoms, nervous symptoms); respiratory diseases caused by isocyanates (asthma).

- Carbon disulfide – Typical forms of disease: Acute intoxication with mainly central nervous symptoms; chronic intoxication by carbon disulfide with central and peripheral nervous symptoms, possibly associated with coronary heart disease.

- Hydrogen sulfide – Typical forms of disease: Acute intoxications with mainly respiratory and central nervous symptoms, and pulmonary oedema.

- Sulfur dioxide and sulfuric acid – Typical forms of disease: Irritative and inflammatory symptoms of mucous membranes and respiratory organs; corrosion of teeth and eyes; skin changes (contact eczema, corrosion).
• Nitrogen oxides, nitric acid and ammonia – Typical forms of disease: Acute respiratory irritation symptoms; pulmonary oedema; local irritation or corrosion of mucous membranes; skin changes (contact eczema, corrosion).

• Carbon monoxide – Typical forms of disease: Acute intoxication caused by carbon monoxide with mainly central nervous symptoms. The clinical picture is associated with elevation of carbon monoxide haemoglobinemia.

• Phosgene – Typical forms of disease: Acute irritative symptoms of respiratory tract and conjunctival tissues; pulmonary oedema.

• Inorganic bases and their anhydrides – Typical forms of disease: Skin changes (contact eczema, corrosion); acute irritation or corrosion symptoms of conjunctiva, mucous membranes, respiratory or gastro-intestinal tract.

• Aliphatic, aromatic and alicyclic hydrocarbons – Typical forms of disease: Acute and chronic mainly central and peripheral nervous intoxications; skin changes (contact eczema); leukaemias caused by benzene; hemangiosarcoma of the liver caused by vinyl chloride.

• Halogene derivates of hydrocarbons – Typical forms of disease: Acute and chronic mainly nervous system intoxications; skin changes (contact eczema); cardiac arrhythmias and irritative respiratory symptoms caused by freons.

• Nitrous and amino derivates of hydrocarbons – Typical forms of disease: Acute intoxications associated with methemoglobinemia; haemolytic anaemia, liver and eye changes caused by trinitrotoluene; skin changes (contact eczema); asthma caused by amines; cancer of urinary bladder caused by aromatic amines.

• Nitroglycerine and nitroglucol – Typical forms of disease: Central nervous and circulatory symptoms (i.e. hypotension, vasodilatation) caused either by acute or by chronic intoxication; skin changes (contact eczema).

• Aldehydes, ketons, alcohols ethers and esters – Typical forms of disease: Skin changes (contact eczema); asthma and rhinitis caused by formaldehyde; acute mainly central nervous intoxications caused by alcohols, ketons, ethers and esters; leukaemias caused by ethyleneoxyde.

• Organic acids and acid anhydrides – Typical forms of disease: Irritation and corrosion of skin and mucous membranes; asthma and rhinitis caused by acid anhydrides (i.e. phtalic acid, maleinic acid and trimellitic acid anhydrides).

• Phenol and its homologues and their halogen and nitro derivates – Typical forms of disease: Acute intoxications with respiratory, hepatic, renal and central nervous symptoms; chronic intoxication with central nervous and gastrointestinal symptoms; skin changes (contact eczema, changes in pigmentation); haemolytic anaemia; methemoglobinemia; hepatic cancer caused by polychlorinated biphenyls.

• Antibiotics – Typical forms of disease: Skin changes (contact eczema); respiratory allergies.

• Cancer drugs: Alkylating substances (cyclophosphamide, chlorambusil, semustil, kermustine, lomustine) and antimetabolitis (atsathioprine) – Typical
forms of disease: Leukaemias, lymphohaematopoietic cancers and bladder cancer.

- Plastics and synthetic resins and the substances and intermediates involved in their production – Typical forms of disease: Respiratory diseases (asthma, rhinitis); skin changes (contact eczema).

- Organic dusts and exposures i.e. flours, corn, wood dusts and materials, animal epithelia, excretions and other exposures of animal origin, dusts of natural fibres and enzymes, natural resins, india rubber – Typical forms of disease: Skin changes (contact eczema, contact urticaria, protein contact eczema); allergic rhinitis, conjunctivitis or pulmonary asthma caused by organic dust, Monday fever (byssinosis) caused by raw cotton.

- Mineral dusts – Typical forms of disease: Pulmonary diseases caused by quartz and asbestos dust (pneumoconioses); pulmonary cancer and mesothelioma caused by asbestos; consequences of pneumoconioses in respiratory and circulatory organs.

- Tiuramines, carbamates, derivates of paraphenylenediamines – Typical forms of disease: Skin changes (contact eczema).

- Reactive and dispersion dyes – Typical forms of disease: Skin changes (contact eczema); asthma and rhinitis caused by reactive dyes.

- Aflatosins – Typical forms of disease: Cancer of liver.

**Biological factors**

- Spores released by bacteria and molds and other biologically active substances – Typical forms of disease: Allergic alveolitis; asthma and rhinitis caused by molds; humidifier fever.

- Tuberculosis bacilli – Typical forms of disease: Different forms of tuberculosis.

- Viruses, bacteria, fungi, protozoa and schistosomes Typical forms of disease: Hepatitis B, anthrax, erysipelas, ringworm, brucellosis, listeriosis, dermatic mycosis, toxoplasmosis, malaria, bilharziosis.

**Other**

Tenovaginitis and humeral epicondylitis are compensated as occupational diseases caused by a physical factor when caused by performing repetitive, monotonous or strained movements as designated in subsection one of section 1 of the Act on Occupational Diseases.

According to the Statute on Certain Injuries Compensable as Occupational Accidents (852/48), passed in 1948, the following conditions are to be compensated in the same manner as occupational diseases or accidents, i.e. if they are caused by work factors:

- sores and galls
- lesion caused by a corrosive substance
- lesion due to inhalation of a dangerous gas
- inflammation of the patella or elbow due to repeated or unusual pressure
• tendinitis crepitans due to repeated or monotonous work movements if it is not a complication of some defect, injury or illness that is not compensable under the Occupational Accident Insurance Act
• lesion attributable to extreme temperatures, for example, frostbite or sunstroke
• lesion due to considerable fluctuation in air pressure.
Appendix 8: Occupational Safety and Health Administration (United States of America) requirements for recordable work-related cases

Recordable cases include work-related injuries and illnesses that result in:

- Death
- Loss of consciousness
- Days away from work
- Restricted work activity or job transfer
- Medical treatment (beyond first aid)
- Significant work related injuries or illnesses that are diagnosed by a physician or other licensed health care professional. These include any work related case involving cancer, chronic irreversible disease, a fractured or cracked bone, or a punctured eardrum.

Additional criteria that can result in a recordable case include:

- Any needlestick injury or cut from a sharp object that is contaminated with another person's blood or other potentially infectious material.
- Any case requiring an employee to be medically removed under the requirements of an OSHA health standard.
- Tuberculosis infection as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional after exposure to a known case of active tuberculosis.
- An employee's hearing test (audiogram) reveals 1) that the employee has experienced a Standard Threshold Shift (STS) in hearing in one or both ears (averaged at 2000, 3000, and 4000 Hz) and 2) the employee's total hearing level is 25 decibels (dB) or more above the audiometric zero (also averaged at 2000, 3000, and 4000 Hz) in the same ear(s) as the STS.

Days away from work, days of restricted work activity or job transfer (DART) are cases that involve days away from work, or days of restricted work activity or job transfer, or both:

- **Cases involving days away from work** are cases requiring at least one day away from work with or without days of job transfer or restriction.

- **Job transfer or restriction cases** occur when, as a result of a work-related injury or illness, an employer or health care professional keeps, or recommends keeping an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been scheduled to work before the injury or illness occurred.

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Other recordable cases are recordable cases that do not involve death, days away from work or days of restricted work activity or job transfer.

Incidence rate is the number of injuries and/or illnesses per 100 full-time workers and were calculated as: (N/EH) X 200,000 where:

- N = number of injuries and/or illnesses
- EH = total hours worked by all employees during the calendar year
- 200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

Occupational injury is any wound or damage to the body resulting from an event in the work environment.

Occupational illnesses:

Skin diseases or disorders are illnesses involving the worker’s skin that are caused by work exposure to chemicals, plants or other substances. Examples: Contact dermatitis, eczema, or rash caused by primary irritants and sensitizers or poisonous plants; oil acne; friction blisters, chrome ulcers; inflammation of the skin.

Respiratory conditions are illnesses associated with breathing hazardous biological agents, chemicals, dust, gases, vapors, or fumes at work. Examples: Silicosis, asbestosis, pneumonitis, pharyngitis, rhinitis or acute congestion; farmer's lung, beryllium disease, tuberculosis, occupational asthma, reactive airways dysfunction syndrome (RADS), chronic obstructive pulmonary disease (COPD), hypersensitivity pneumonitis, toxic inhalation injury, such as metal fume fever, chronic obstructive bronchitis and other pneumoconioses.

Poisoning includes disorders evidenced by abnormal concentrations of toxic substances in blood, other tissues, other bodily fluids, or the breath that are caused by the ingestion or absorption of toxic substances into the body. Examples: Poisoning by lead, mercury, cadmium, arsenic, or other metals; poisoning by carbon monoxide, hydrogen sulfide, or other gases; poisoning by benzene, benzol, carbon tetrachloride, or other organic solvents; poisoning by insecticide sprays such as parathion or lead arsenate; poisoning by other chemicals such as formaldehyde.

Hearing loss Noise-induced hearing loss for recordkeeping purposes is a change in hearing threshold relative to the baseline audiogram of an average of 10 dB or more in either ear at 2000, 3000, and 4000 hertz and the employee’s total hearing level is 25 decibels (dB) or more above the audiometric zero (also averaged at 2000, 3000, and 4000 hertz) in the same ear(s).

All other occupational illnesses Examples: Heatstroke, sunstroke, heat exhaustion, heat stress and other effects of environmental heat; freezing, frostbite, and other effects of exposure to low temperatures; decompression sickness; effects of ionizing radiation (isotopes, x-rays, radium); effects of nonionizing radiation (welding flash, ultra-violet rays, lasers); anthrax; bloodborne pathogenic diseases such as AIDS, HIV, hepatitis B or hepatitis C; brucellosis; malignant or benign tumors; histoplasmosis; coccidioidomycosis.
Case Characteristics:

**Nature of injury** or illness names the principal physical characteristic of a disabling condition, such as sprain/strain, cut/laceration, or carpal tunnel syndrome.

**Part of body** affected is directly linked to the nature of injury or illness cited, for example, back sprain, finger cut, or wrist and carpal tunnel syndrome.

**Source** of injury or illness is the object, substance, exposure, or bodily motion that directly produced or inflicted the disabling condition cited. Examples are a heavy box, a toxic substance, fire/flame, and bodily motion of injured/ill worker.

**Event or exposure** signifies the manner in which the injury or illness was produced or inflicted, for example, overexertion while lifting or fall from ladder.

**Median days away from work** is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. Half the cases involved more days and half involved less days than a specified median.