

Occupational Health and Safety in Australia

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Abstract: The focus of OHS in Australia is on workplace-based prevention rather than individual health care. Over the past decade, workers' compensation data have shown continuous improvement in work-related deaths, serious injuries and diseases. Injuries from work-related vehicle incidents are the leading cause of fatalities. There is a high incidence of on-road incidents in light vehicles; this problem is under-recognised, and better incidence data are required to support more effective interventions. Rates of many long-latency diseases such as cancers are underestimated, and again more reliable information is needed, particularly on work-related exposures to carcinogens. Disease-related deaths are largely confined to older workers. Musculoskeletal injuries and disorders are the most frequent and costly OHS problem, constituting a large majority of non-fatal injuries and diseases. There is growing recognition that their risk management should be more evidence based, integrating assessment and control of psychosocial and 'manual handling' hazards. A high rate of population ageing is increasing risk of chronic diseases, including musculoskeletal disorders, which is helping to raise awareness of the importance of protecting and promoting workforce health. Strategies to achieve this have been developed but implementation is at an early stage.

Key words: Australia, Occupational injury, Chronic disease, Vehicles, Cancer, Ageing, Musculoskeletal

Background

With a land area of over 7.6 million square kilometres, Australia is the sixth largest country on earth; however, it is the driest inhabited continent and only around 6 percent of land is arable. Its population at the end of 2011 was estimated to be 22,696,800. According to the International Monetary Fund Australia's GDP (PPP) per capita^a in 2011 was \$40,234 (international dollars), which was ranked 14th highest at that time¹.

Australia has a system of parliamentary government at both federal and state levels. There are six states – Western Australia, Queensland, New South Wales, Victoria, Tasmania and South Australia, plus the Northern Territory, and the Australian Capital Territory (ACT) where the

federal capital, Canberra, is located. State governments have primary responsibility for occupational health and safety legislation, regulation, enforcement and more general guidance. Commonwealth (federal) legislation and instrumentalities cover only Commonwealth employees, plus employees of some specially licensed corporations and those in the maritime industry.

National Harmonisation of OHS Legislation

Commonwealth and State governments work cooperatively in many ways. In 2008, the Council of Australian Governments committed to "harmonisation of work health and safety laws"² across all Commonwealth, State and Territory jurisdictions. This initiative has resulted in a model Work Health and Safety (WHS) Act³, supported by model WHS Regulations, Codes of Practice^b, and a National Compliance and Enforcement Policy. New legislation based on these models was implemented in

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Commonwealth jurisdictions and in two States (New South Wales, Queensland) in January 2012, and will be implemented in a third State (Tasmania) in January 2013. At the time of writing the remaining three States are still working to resolve inconsistencies between the national model and existing State requirements and policies⁴⁾.

The new national Model WHS Act reflects the common content of earlier State and Territory OHS Acts, which were based on the UK Robens Report⁵⁾ and progressively developed from the 1970s onwards. One of the key themes of the new Act is the important role of ‘duty holders’⁶⁾. Duty holders include employers and self-employed persons; designers, manufacturers, suppliers, importers, installers and erectors of plant (i.e. equipment or machinery); manufacturers, suppliers and importers of substances; and employees (‘plant’ refers to equipment or machinery). The Act requires all duty holders to take positive, proactive and systematic steps to comply with their obligations. The principal duty holder is the Person who Conducts a Business or Undertaking (PCBU), whose duties relate to the work environment, plant and structures, systems of work, facilities for workers’ welfare, information, training, instruction and supervision, and monitoring of workers’ health and conditions at the workplace.

Another key theme is that of consultation. For example the model WHS Act specifies that the PCBU must, as far as is reasonably practicable, *consult with workers* who carry out work for the business or undertaking and are, or are likely to be, directly affected by an OHS matter³⁾. As defined here, consultation includes sharing relevant information, giving workers a reasonable opportunity to express their views, raise issues and contribute to decision making, as well as taking their views into account and advising them of outcomes. Importantly, consultation is required when identifying hazards, assessing risks and deciding how to eliminate or reduce such risks, and also in relation to any changes that may affect OHS. Where relevant, consultation must include workers’ health and safety representatives. Further information on the new WHS Act is available elsewhere^{3, 7)}.

Labour Market Conditions

In 2011, almost 11.4 million people in Australia were recorded as employed⁸⁾, and in early 2012 the unemployment rate was 5.2 percent, with an *underemployment* rate of 7.3 percent^c. Thirty percent of those categorised as employed were working part-time, of whom a much higher percentage were women than men.

Recent job growth has been mainly in ‘non-standard’ employment. In the period from 1992 to 2008, the number of full-time employees with leave entitlements (‘standard’ employment) increased by less than 10 percent, compared with around 100 percent increases in full-time casual workers (i.e. no leave entitlements) and in part-time work with leave entitlements⁹⁾. There was no corresponding decrease during this period in mean duration of employment in a particular job, and potential OHS implications of non-standard work are not clearcut⁹⁾. However, there have also been increases in various forms of outsourcing, franchising, complexity of supply chains, and home-based work, which may adversely affect OHS⁶⁾.

In November 2010 the largest industries in terms of numbers of jobs were as follows (percent of workforce in brackets): Health Care and Social Assistance (11%); Retail Trade (11%); Construction (9%); Manufacturing (9%); and Education and Training (8%). Taken together, services sector industries accounted for more than three-quarters of all jobs⁸⁾. For the period 2011 to 2016 it is predicted that all industries except Manufacturing will grow, with the largest numbers of new jobs being in: Health Care and Social Assistance (25% growth), Construction (19% growth) and Professional, Scientific and Technical Services (18% growth). Two decades ago Manufacturing had the greatest number of jobs, but this has declined to its current fourth position and is predicted to shrink by a further 3% by 2016; even then, however, it would have nearly five times more jobs than the Mining sector, despite the latter having the highest predicted growth rate (35%)⁸⁾.

Workforce Trends

The gender and age profile of Australia’s workforce is changing. Proportions of women are increasing, particularly in older age groups. During the period 2001–2002 to 2009–2010 the workforce participation rate for women rose from 60 percent to 65 percent, compared with an increase from 78 percent to 79 percent for men. Currently, 35 percent of full-time workers are women, and women constitute 70 percent of part-time workers¹⁰⁾.

Australia’s workforce is ageing rapidly. More than one third of workers are aged 45–69 and over the past decade the workforce participation rate for this age group has risen much more than the OECD average rise¹¹⁾. This creates many issues for OHS professionals since older workers are more prone to a range of chronic health conditions, and some of these (e.g. musculoskeletal disorders) are often work-related. The situation is exacerbated by increasing

levels of overweight and obesity. Australia is among the most overweight and obese of industrially developed nations, ranked fourth highest in a 2005 OECD report, and obesity increases with age up to around 65 yr¹²⁾.

Another OHS issue stemming from the greater numbers of overweight and obese workers is the need to modify standards relating to the design of various items of work equipment and the broader workplace environment. Also, effects on OHS of increased obesity within the *general population* can be seen in the healthcare system, where the growing proportion of bariatric patients is increasing risk of musculoskeletal injuries to healthcare (and funeral parlour) workers due to the potentially greater biomechanical loads when such patients need to be manually handled¹²⁾.

OHS Workforce Capacity

Primary health care is universally available and easily accessible in Australia through community-based clinics, so workplace-based care of individual workers is not the norm. Consistent with this, OHS in Australia focuses on prevention at workplace level, and the majority of OHS practitioners are not medically trained. They are a very diverse group whose expertise varies widely in both depth and breadth, as well as in areas of particular expertise. The main professional body for 'generalist' practitioners, who constitute the majority of OHS practitioners at both professional and sub-professional levels, is the Safety Institute of Australia. Other important professional associations are the Australian Institute of Occupational Hygienists, the Australasian Faculty of Occupational and Environmental Medicine, and the Human Factors and Ergonomics Society of Australia which has many members working within the OHS domain.

Currently the need to promote high standards of professional OHS practice is being promoted by the Health and Safety Professionals Alliance (HaSPA), established in 2007 at the instigation of WorkSafe Victoria. HaSPA comprises representatives of the above professional bodies and of universities teaching OHS courses, with employer and union representatives participating as observers. Many of HaSPA's activities have been at a national level and it may soon be superseded by a new national body. Under its auspices, an online document describing the 'core body of knowledge' that should be shared by all Australian generalist OHS professionals has been produced^{d)}, and an Australian OHS Education Accreditation Board has been established. One of the roles of the latter is to accredit university degree programs in OHS.

OHS Outcomes

Current information on work-related fatal and non-fatal injuries and diseases comes mainly from the compensation-based National Data Set (NDS). This is maintained by Safe Work Australia – a federally funded body whose role is to improve OHS outcomes and workers' compensation arrangements. The NDS provides information only on cases for which workers' compensation was paid; it excludes cases involving self-employed workers, and deaths where there was no dependent. The most recently reported NDS data showed that Transport and Storage, Manufacturing, Agriculture and Construction were the industries with the highest claim rates, while the two occupational categories with the highest rates were Labourers and related workers and Intermediate production and transport workers. Figure 1 shows that serious claim rates^{e)} have fallen over at least the last decade.

Injury-related deaths

Using the NDS supplemented by additional data sources for the period 2009–2010, it has been found that 337 people died as a result of work-related injuries, with 64 percent of deaths due to incidents while working^{f)}. The 64 percent who were fatally injured while working represents a *fatality rate per 100,000 workers* of 1.9¹⁴⁾. This rate is substantially lower than rates over the previous few years, but Safe Work Australia commented that "Unfortunately indications are that this lower rate will not continue, with the number of deaths ...in 2010–2011 showing a 7% increase on 2009–2010"¹⁴⁾, g.

International comparison. Differences in available data and related definitions inevitably limit the meaningfulness of international comparisons. Nevertheless, comparison of Australian data (converted to three-year moving averages, to reduce volatility) with fatality incidence rates from the International Labour Organisation suggests that Australia has remained in seventh place over recent years, although showing some relative improvement (see Fig. 2)¹⁵⁾.

Fatalities due to vehicle-related incidents. Of the 64 percent of Australia's work-related injury fatalities for 2009–2010 that were due to incidents *while working* (as reported above), 36 percent resulted from a traffic incident on a public road. Looking at all work-related fatalities due to traumatic injuries since 2003–2004, around one third resulted from such road traffic incidents and another third involved people killed in workplace vehicle incidents; only one third did not involve a vehicle; trucks were the most often recorded vehicle type¹⁴⁾. Clearly, injuries from

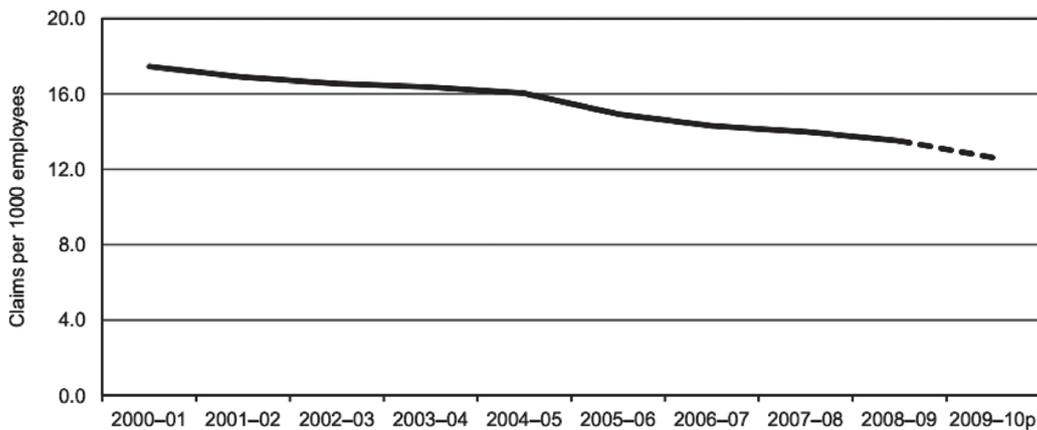


Fig. 1. NDS 'Serious claims': Incidence rate by year of lodgement, 2000–2001 to 2009–2010p. ^{13,p.15)}

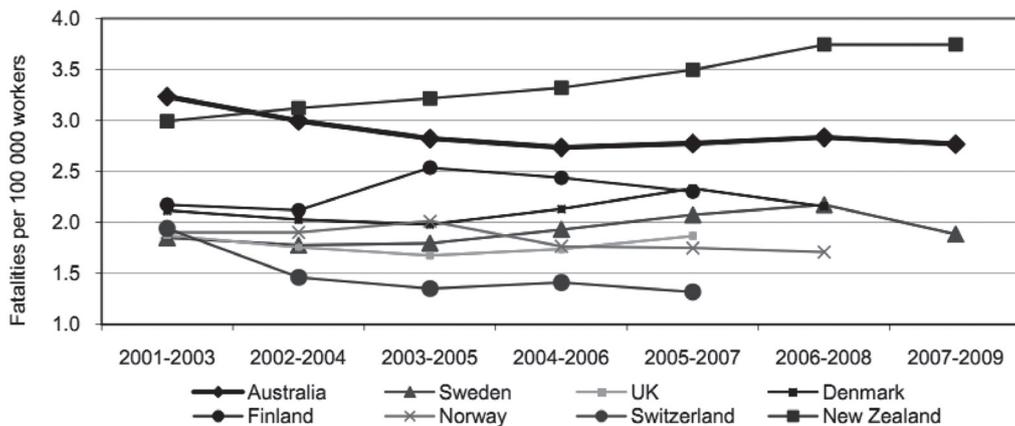


Fig. 2. Comparison of Australia's work-related injury fatality rate with the best performing countries. ^{15,p.5)}

all work-related vehicle incidents are the leading cause of traumatic, work-related fatalities in Australia, and a large number of these occur on public roads.

Further, there is strong evidence that fatalities (and injuries) suffered by people driving occupational light vehicles (OLVs)^g on public roads while working are substantially under-reported as occupational in nature, and Australian researchers have identified these as a leading cause of work-related injuries and associated fatalities^{16, 17)}. This issue is discussed in the final section below.

Disease-related deaths

Most work-related deaths due to disease occur in older workers because of the chronic nature of many of the diseases and the latency associated with work-related cancer. Recent NDS data show that 72 percent of disease-related deaths were for people aged 55 yr and over, and more than half of compensated disease-related deaths were due to mesothelioma or asbestosis (both resulting from past

exposure to asbestos fibres).

Work-related cancers are particularly prone to underestimation. It is impossible to determine exactly how many people are diagnosed with, or die from, work-related cancer. There are many reasons for this, including the absence of clinical or pathological features that unequivocally identify the work-related connection of any cancer. Further, the long latency (time lag between exposure and diagnosis), which typically is at least about ten to fifteen years and may be several decades, makes it difficult to clearly establish –or even to recognise– the connection between exposure and disease. The best estimate available for Australia is that there are approximately 5,000 invasive cancers and 34,000 non-melanoma skin cancers per year caused by occupational exposures¹⁸⁾. The vast majority of these cancers are due to exposures from several decades beforehand and so do not properly reflect risks arising from current exposures.

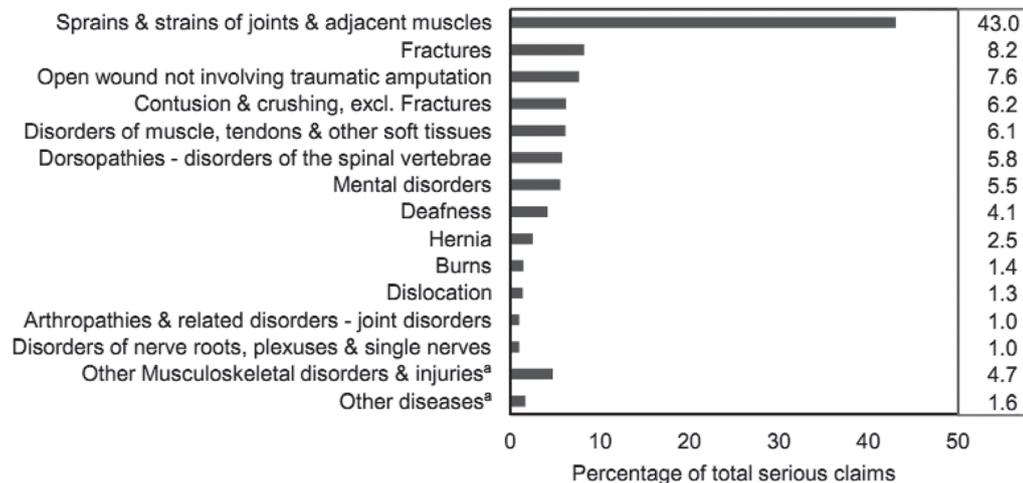


Fig. 3. Serious claims: percentage of claims by nature of injury or disease, 2009–2010p. ^{13,p.12)}

Non-fatal injuries and diseases

Figure 3 shows ‘serious claims’ stratified by injury and disease category¹³⁾. Claims for musculoskeletal injuries and disorders represented 87% of all serious claims over the period 2003–2004 to 2009–2010. Claims for mental disorders were the second most common type of claim (a very distant second). One probable reason for the predominance of claims for musculoskeletal injuries and disorders is that they are less affected than are cancers, for example, by the substantial under-estimation of disease-related occurrences provided by the compensation data. Unfortunately, there is no other routine source of data on these health conditions. Requirements to achieve more effective control of musculoskeletal injuries and disorders, which are the most costly OHS problem in Australia¹⁹⁾, are discussed in the final section below.

Work-related Hazard Levels

A hazard-focused approach to OHS risk management is long established and accepted. Extensive on-line information and guidance concerning appropriate management of work-related hazards is available from the Commonwealth and each of the State OHS jurisdictions. However, relatively little information is available on actual workplace hazard levels.

A self-report survey conducted in the mid-2000s provided some information on a range of exposures but was intended to identify areas of likely greatest future risk to assist in targeting preventative strategies, rather than to be nationally representative or to provide detailed information²⁰⁾. There is no direct information available on the

number of workers currently exposed to carcinogens, nor on the nature and intensity of those exposures. However, based on other data extrapolated to the Australia workforce there are probably about 1.5 million Australian workers exposed to known carcinogens¹⁸⁾.

Even when information on exposure to individual hazards is available, current evidence suggests that an approach that assesses risk separately for each type of hazard is unlikely to be the most effective means of managing risk for conditions affected by multiple and potentially interacting types of work-related hazards that vary in their relative importance, as is the case for musculoskeletal disorders, mental disorders and cardiovascular diseases²¹⁾.

Current Challenges and Future Directions

Various issues important to the future of OHS in Australia were identified in the sections above. Some of these are discussed below in relation to future OHS risk management requirements and strategies.

Vehicle-related injuries and fatalities. It is clear that a major focus of prevention activity should be on vehicle-related incidents, including those occurring on public roads as well as those in traditional workplaces. The importance of *workplace* vehicle (“mobile plant”) risk management is already well recognized, as is the importance of *heavy* vehicle use on *public roads*^{22, 23)}. However, the same is not true of OLV risk management. OLV use is not regulated by the kind of transport-specific legal framework that now applies to trucks²⁴⁾, despite OLVs accounting for 77 percent of work-related vehicle kilometres in 2009–2010²⁵⁾.

A major challenge is to improve the integration of

policies, regulatory and administrative systems across the OHS and road safety domains so that a clearer evidence base is available to support more effective targeting of OLV risk reduction strategies. At workplace level this risk needs to be addressed as part of routine OHS procedures, targeting all relevant work-related hazards¹⁷.

Occupational cancers. To reduce the largely hidden burden of work-related cancers in Australia, there is a need to develop and implement strategies for measuring current rates, as well as strategies for mitigating risk. This will require interventions to reduce work-related exposures to carcinogens, supported by legislative processes and more generally by actions to raise the profile of occupational cancer as a major OHS problem. An important aspect of this will be the measurement and monitoring of exposures, which is also relevant to many other work-related diseases^{26, 27}.

Musculoskeletal disorders (MSDs). As documented above, musculoskeletal injuries and disorders are Australia's most costly OHS problem. To date, workplace risk management strategies have typically focused on reducing biomechanical loads associated with 'manual handling'. However there is strong evidence that effective risk management requires a more holistic and participative approach that also takes account of the substantial effects of organisational and psychosocial hazards^{28–30}. On this basis, Australian researchers working in collaboration with the International Ergonomics Association and the World Health Organisation network of Collaborating Centres in Occupational Health have developed and are now evaluating the effectiveness of an MSDs risk management toolkit for routine workplace use by non-experts^{31, 32}.

Ageing workforce and chronic disease. As population ageing continues there is an increasing need to retain older workers in the workforce. Poor health and disability tend to increase with age and are major reasons for people leaving the workforce prematurely. It is therefore increasingly important to ensure that work remains suitable for the needs of older workers and that it neither causes nor exacerbates chronic health disorders. A wide range of workplace strategies to address this need at workplace level have been identified^{33–35}.

There is growing recognition that prevention of chronic health problems and disabilities among younger workers would decrease their incidence among future generations of older workers, as well as having more immediate benefits. To this end, a wide range of workplace health promotion and 'wellness' programs have been developed by both State and Commonwealth jurisdictions. Initially

these focused largely or entirely on changing behaviours of individual workers, particularly to reduce levels of obesity, but there is growing recognition of the need for 'whole system' strategies if they are to be effective, and for the need for program evaluation^{36–39}.

Health benefits of work. Recently there has been increasing recognition that lack of work can have important negative effects on health. The 2011 consensus statement of the Australasian Faculty of Occupational and Environmental Medicine of The Royal Australasian College of Physicians, entitled "*Realising the Health Benefits of Work*", is an important initiative in this area.

Australia's Work Health and Safety Strategy 2012–2022. The proposed national OHS strategy for the period 2012–2022 is based on extensive consultations throughout the country. At the time of writing a draft is available and open for public comment. The finally agreed strategy will be available later in 2012 from the Safe Work Australia website.

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Endnotes

- ^a GDP PPP per capita is calculated on a Purchasing Power Parity (PPP) basis, taking into account relative cost of living and inflation rates.
- ^b Codes of Practice are advisory but ‘evidentiary’, which means their content can be used as evidence in court prosecutions for alleged contravention of legislation or regulations.
- ^c *Underemployed* workers are defined as part-time workers who want and are available for more hours of work than they currently have, and full-time workers who worked part-time hours during the reference week for economic reasons such as being stood down or insufficient work being available.
- ^d www.ohsbok.org.au
- ^e Serious claims are for deaths, and injuries and diseases causing a temporary incapacity requiring absence of *at least* one working week. Claims in receipt of common law payments are also included.
- ^f The remainder were those commuting to/from work (23%) and bystanders 12 (%) – although these figures are undoubtedly underestimates.
- ^g An OLV has been defined in general terms as a light vehicle used by drivers and or passengers while working²³). More specifically, they are “motor vehicles of 4.5 tare weight or less, registered substantively for work use, used for any work purpose and including cars, station-wagons, utilities, vans and small buses”²⁴).