

## Apples, Oranges and Bananas: Comparative Studies in Australian Workers' Compensation Systems

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Nearly one quarter of a million Australian workers experience a new episode of work disability annually and make claims for compensation through one of the nation's workers' compensation systems. A substantial evidence base demonstrates the scope to reduce the burden of work disability through more effective practices and policy settings. This chapter describes findings from a recent, four-year comparative study of Australian workers' compensation systems that sought to identify and characterise policy impact on work and health relevant outcomes in Australians with work disability. The Compensation Policy And Return to Work Effectiveness (COMPARE) project includes before-and-after comparisons of the impact of major policy changes such as legislative reform in the states of Tasmania, South Australia and New South Wales. The project also compares work and health and claim outcomes between jurisdictions, for example examining the rate of return to work planning amongst the state and territory compensation systems. The research summarised in this chapter demonstrates that legislative settings of Australian workers' compensation systems have a significant impact on work disability, and on processes and practices that are intended to support recovery and return to work following work-related injury and disease. The studies presented use epidemiological and quasi-experimental methods to address questions of policy and legislative impact on health-related outcomes. The COMPARE study has begun to develop an evidence base to support

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future policy development in the field, and has demonstrated the need for long-term follow-up and evaluation of changes in law.

## I Work Disability in Australia

Work disability occurs when a worker is unable to stay at work or return to work (RTW) following injury or illness due to social, administrative, physical, psychological, or cultural reasons. Nearly one quarter of a million Australian workers experience a new episode of work disability annually and make claims for compensation through one of the nation's workers' compensation systems<sup>1</sup>. The total cost to society has most recently been estimated at \$61.8 billion or 4.1 per cent of GDP,<sup>2</sup> and Australia's workers' compensation systems bear direct costs of \$9 billion per annum in income support, treatment and rehabilitation and lump sum payments.<sup>3</sup>

Conditions that commonly cause work disability, such as back pain, depression and anxiety, represent three of the five leading causes of disability in working age Australians. One study by the author reported a loss of 189,000 productive working years in the state of Victoria alone between the financial years 1995 and 2008 in workers with accepted workers' compensation claims.<sup>4</sup> Return to work can support recovery from illness and injury, and reduce ongoing disability.<sup>5</sup> Work disability may have knock on social and economic consequences, such as increasing the risk of marital separation<sup>6</sup> and negatively impacting the health of family members.<sup>7</sup>

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<sup>1</sup> TJ Lane et al, *Work-related Injury and Illness in Australia, 2004 to 2014. What is the Incidence of Work-related Conditions and their Impact on Time Lost from Work by State and Territory, Age, Gender and Injury type?* (Melbourne, Institute for Safety Compensation and Recovery Research, 2016) 54.

<sup>2</sup> SafeWork Australia, *The Cost of Work-related Injury and Illness for Australian Employers, Workers and the Community: 2012–13* (Canberra, SafeWork Australia, 2016).

<sup>3</sup> Above, n 1.

<sup>4</sup> R Ruseckaite and A Collie, 'The Incidence and Impact of Recurrent Workplace Injury and Disease: A Cohort Study of WorkSafe Victoria, Australia Compensation Claims' (2013) 3(3) *BMJ Open*.

<sup>5</sup> S Rueda et al, 'Association of Returning to Work with Better Health in Working-aged Adults: A Systematic Review' (2012) 102(3) *American Journal of Public Health* 541.

<sup>6</sup> A Dembe, 'Social Inequalities in Occupational Health and Health Care for Work-related Injuries and Illnesses' (1999) 22(5–6) *International Journal of Law and Psychiatry* 567.

<sup>7</sup> A Asfaw et al, 'Incidence and Costs of Family Member Hospitalization Following Injuries of Workers' Compensation Claimants' (2012) 55(11) *American Journal of Industrial Medicine* 1028.

Prevention of work disability and promotion of return to work are central mandates of workers' compensation agencies worldwide. While the incidence of work-related injury and illness resulting in working time loss has decreased by up to 30 per cent over the last decade, the duration of disability of those injured has increased.<sup>8</sup> Several social factors have hindered efforts to reduce work disability. For example, the ageing of the workforce poses particular challenges given our findings that older workers have longer durations of disability than younger workers, and are more likely to 'relapse' into a period away from work following an initial return to the workforce.<sup>9</sup> Similarly, there is a growing trend towards so-called precarious employment relationships (eg workers on short-term contracts). Workers with precarious job arrangements also take longer to RTW than those with secure employment relationships.

The presence and resolution of work disability occurs within a complex social system that involves people and organisations (actors) within, at a minimum, the person's immediate social/family environment, their workplace, the healthcare, and workers' compensation systems. The investigator team have examined interactions between these system actors.<sup>10</sup> These studies make it clear that work disability is influenced by the interactions between actors, and that these actors relate to each other in dynamic and non-linear ways. The features of interaction, non-linearity and dynamism are hallmarks of complex adaptive systems. In the past two decades complex systems approaches have been applied to several social policy areas including healthcare, education, economics, environmental science and, more recently, work disability prevention.<sup>11</sup>

Complex systems theory holds that the performance of workers' compensation systems (say, in their ability to return injured workers to work) is an emergent property of the numerous interconnected interactions between actors within the system. Efforts to reduce work disability will succeed or fail based on the non-linear inter-dependencies of system actors, rather than on pressure for improved performance applied by an external party or by a single actor. The 'control' of complex systems tends to be highly dispersed and decentralised. The model of

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<sup>8</sup> Above, n 1.

<sup>9</sup> J Berecki-Gisolf et al, 'The Impact of Aging on Work Disability and Return to Work: Insights from Workers' Compensation Claim Records' (2012) 54(3) *Journal of Occupational and Environmental Medicine* 318.

<sup>10</sup> E Kilgour et al, 'Interactions between Injured Workers and Insurers in Workers' Compensation Systems: A Systematic Review of Qualitative Research Literature' (2015) 25(1) *Journal of Occupational Rehabilitation* 160.

<sup>11</sup> A Jetha et al, 'Return-to-Work within a Complex and Dynamic Organizational Work Disability System' (2016) 26(3) *Journal of Occupational Rehabilitation* 276.

workers' compensation in many developed nations invests the 'regulation' of the system in a government authority. In reality there are many other actors with influential roles in return to work and disability reduction. Policy and practice interventions informed by this understanding will be more likely to succeed than otherwise.

One implication of system complexity is that identification of effective policy and practice requires real-world evaluation and policy experimentation. Isolating policy or practice effects via controlled trials may provide a misleading indication of effectiveness. Instead, quasi-experimental methods, testing the impact of 'natural' policy and practice experiments on system relevant outcomes, are likely to provide a more meaningful evidence base.

## II Policy, Health and Disability

Current models of function, disability and health with respect to work disability recognise the important contribution of social and environmental factors to work-related injury and ability to function in employment. These models include, for example, the biopsychosocial model of disability and the International Classification of Functioning, Disability and Health.<sup>12</sup> These models present an alternative to the biomedical model that views recovery from injury and illness as primarily the product of treatment modalities. They explain the divergent outcomes that are commonly observed in people with similar conditions and receiving similar treatment, but in whom social circumstances and psychological processes may differ.

Within this broader context, there is also clear evidence that policy is a critical social determinant which exerts a powerful influence on the health of individuals and communities. The World Health Organization (WHO) sponsored Helsinki Statement on Health in All Policies recognised the importance of governments considering health as an outcome across all areas of policy making, and states that 'Health in All Policies is an approach to public policies across sectors that systematically takes into account the health implications of decisions, seeks synergies, and avoids harmful health impacts in order to improve population health and health equity'. One rather dramatic example of a policy impact on health is the effect of 2005 changes to the state of Florida's criminal laws to provide legal immunity to individuals using lethal

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<sup>12</sup> World Health Organisation, *How to Use the ICF: A Practical Manual for Using the International Classification of Functioning, Disability and Health (ICF). Exposure Draft for Comment* (Geneva, World Health Organisation, 2013).

force in self-defence. Evaluation of the impact of the so-called ‘stand your ground’ law on homicides reported that following introduction of the law the monthly homicide rate increased by 24.4 per cent and the rate of homicide by firearm by 31.6 per cent. These effects were sustained for more than a decade post-implementation of the law.<sup>13</sup>

While perhaps with less dramatic impacts, there is also evidence of policy effects in the field of work disability and workers’ compensation. For example, one study across 49 states of the USA identified that waiting periods for wage replacement and policies on access to medical treatment were independently associated with duration of disability in workers with low back pain.<sup>14</sup> Comparative studies such as these provide powerful evidence of policy and practice effects, but remain rare in the work disability literature.

The current evidence suggests there is substantial scope to reduce the burden of work disability through more effective practices and policy settings, leading to significant economic and productivity gains. This chapter describes findings from a recent, four-year comparative study of Australian workers’ compensation systems that sought to identify and characterise policy impact on work and health relevant outcomes.

### III Australian Workers’ Compensation Systems

In Australia, compensation and rehabilitation for people with work disability is organised through workers’ compensation systems established in state, territory and Commonwealth law. In total there are 11 main workers’ compensation systems in operation across the nation. Each of the eight states and territories has developed its own workers’ compensation system, and there are also three Commonwealth systems. All operate under an ‘insurance model’, with premiums collected from employers based on the risk of work injury. The benefits and services provided are, at a high level, similar between schemes and focus on medical treatment/healthcare, income support and long-term care for people with severe injury or complex health needs. The schemes also share common objectives, which include an emphasis

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<sup>13</sup> DK Humphreys et al, ‘Evaluating the Impact of Florida’s “Stand Your Ground” Self-defense Law on Homicide and Suicide by Firearm: An Interrupted Time Series Study’ (2017) 177(1) *JAMA Internal Medicine* 44.

<sup>14</sup> M Shraim et al, ‘Length of Disability and Medical Costs in Low Back Pain: Do State Workers’ Compensation Policies Make a Difference?’ (2014) 57(12) *Journal of Occupational and Environmental Medicine* 1275.

on returning injured workers to work and maintaining the financial sustainability of the compensation schemes.

Despite these high level similarities, there is substantial variability in policy and practice between the Australian workers' compensation schemes. They vary with respect to their structure and administration (eg source of funding); the coverage and eligibility of workers (eg workforce coverage, waiting periods); the types of benefits and entitlements provided (eg level and duration of wage-replacement benefits) and the approach to case management (eg provided in-house by regulator or by private provider). The Australian approach to workers' compensation, including an overview of these similarities and differences between schemes, has been described previously.<sup>15</sup>

These systems are also dynamic, with policy and practice changes very common. For example, a recent study identified 60 instances of legislative amendment between 2004 and 2015, where the primary purpose was to amend or introduce schemes for compensation and/or rehabilitation of workers for work-related injury or illness.<sup>16</sup> These ranged from very large 'scheme transformations' following major reviews to very minor changes. Of these 20 per cent (12 in total) were characterised as major changes, in which there was a clear policy intent to modify worker outcomes, including return to work. These findings make clear that legislation is an instrument that is regularly used by governments across Australia to modify workers' compensation scheme performance.

In summary, Australia has a complex and fragmented approach to workers' compensation. The compensation schemes have common objectives but they vary with respect to how these objectives are achieved. Or, referring to the title of this chapter, they are all fruit, but some are apples, some oranges and others bananas. The policy frameworks of individual systems also change regularly, and at the same time, there have been substantial efforts to collect longitudinal data across most of the Australian schemes (see section IV). This landscape provides a strong foundation for the program of comparative research that will be described in following sections.

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<sup>15</sup> A Collie, 'Australian Workers' Compensation Systems' in E Willis et al (eds), *Understanding the Australian Healthcare System*, 3rd edn (Melbourne, Elsevier Health, 2016).

<sup>16</sup> A Collie et al, *The Impact of Legislative Change on Workers' Compensation Processes and Outcomes: Findings from the COMPARE Project* (Melbourne, Monash University, 2017).

## IV The Compensation Policy and Return to Work Effectiveness (COMPARE) Project

### A Background

The COMPARE project was established at Monash University in 2014, following engagement and discussion with workers' compensation regulators across multiple states and territories regarding the lack of evidence around the impact of policy and practice. The overarching purpose of the project was to develop an evidence-base around the impact of policy and practice on return to work in Australian workers' compensation jurisdictions, and in doing so to support development of policy and practice in future. The specific research aims related to this were:

- 1 to determine the impact of workers' compensation scheme policy on return to work and duration of time loss;
- 2 to identify policies that have positive and negative impact on return to work and duration of time loss.

The study had a number of other important objectives that supported achieving these research aims. These included developing a national workers' compensation research data platform, extracting insights from two existing national datasets of relevance to the sector, developing and testing methods for assessing the impact of policy and policy change in Australian workers' compensation system, and developing an academic/government collaboration that enables two-way knowledge exchange and transfer of evidence into policy and practice.

The study was established in mid-2014 and the first phase was completed over a four-year timeframe. Funding was provided by the state of Victoria and the Commonwealth, with data provision by the eight state and territory workers' compensation regulators. A further three years of funding (for 2019 to 2021) has subsequently been secured through an Australian Research Council Discovery Grant.

### B Methods

The COMPARE project adopted a comparative research paradigm, utilising the unique features of the Australian workers' compensation system to conduct a series of 'natural experiments' to test the effect of policy and practice. Two sorts of comparison were made. First, through a series of sub-studies we compared worker and scheme relevant outcomes between groups. This

could include, for example, comparing the duration of time off work between different states and territories. Second, in a second series of sub-studies comparisons were made before and after a policy event, for example examining duration of time off work before and after a change in legislation that was intended to have an impact on return to work. In both approaches attempts are made to isolate policy effects by accounting for the effects of other factors. This occurs in two ways: first, by selecting cohorts that are matched on certain features (eg age, occupation, injury type); and second, by including a range of co-variables related to the person, their workplace, their injury and their compensation claim in statistical analyses.

Using these high level principles, specific analytical approaches were developed for each individual sub-study. Details of these methods are contained in the articles and reports referenced and will not be repeated here. They broadly included descriptive methods, different forms of regression analysis and time series analysis. For each study our analytical objective was to move beyond description and wherever possible to conduct inferential analysis, examining relationships between measures, while taking into account the influence of other factors. We also applied analytical techniques that test causal inferences, such as Interrupted Time Series (ITS).

Throughout the study two main data sources were used. These were the National Dataset of Compensation Based Statistics (NDS) and the National Return to Work Survey (NRTWS). Each of these has been described in detail elsewhere.<sup>17</sup>

The NDS is case level claims administrative data that includes information on the claim, the worker, employer, and claim outcomes such as compensated time lost. For the COMPARE study data was available from the 2003/04 financial year to 2015/16 and was updated annually. At June 2018 the database included 4,363,267 cases with data from the New South Wales, Victoria, Queensland, Western Australia, Tasmania, South Australia, Australian Capital Territory, Northern Territory and Commonwealth (Comcare) workers' compensation schemes.

The NRTWS captures self-reported RTW outcomes plus a range of self-reported health, employer and claim indicators. The data accessed for the COMPARE study included the 2013, 2014 and 2016 waves of the survey. This included 14,501 cases of self-reported data from injured workers approximately 4 to 24 months post claim, from the New South Wales, Victoria,

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<sup>17</sup> Safe Work Australia, *National Dataset of Compensation Based Statistics*, 3rd edn (Canberra, Safe Work Australia, 2004); Social Research Centre, *Return to Work Survey: 2016 Summary Research Report (Australia and New Zealand)* (Melbourne, Safe Work Australia, 2017) 59.



Queensland, Western Australia, Tasmania, South Australia, Australian Capital Territory, Northern Territory and Commonwealth (Comcare & Seacare) workers' compensation schemes.

The research team also accessed a range of other data sources to support specific analysis, including labour force data from the Australian Bureau of Statistics (ABS), estimates of workers' compensation coverage data provided by Safe Work Australia, and summary data from the National Work Injury Survey conducted by the ABS.

## C Study 1 – Setting the Scene

The first study from COMPARE sought to examine differences in disability duration (time off work) between the major Australian workers' compensation jurisdictions. The objective of the analysis was to determine whether the jurisdiction in which a work-related injury compensation claim is made is an independent predictor of duration of work disability following injury, and if so, the magnitude of the effect.

Using the National Dataset of Compensation Based Statistics, the authors first selected a standardised cohort of compensation claims lodged during the 2010 year across eight different jurisdictions. Differences in disability duration were compared between these jurisdictions using a Cox regression model, with statistical adjustment for other factors that have been shown to impact on duration, such as age, gender, injury type, and occupation. Large and significant differences between the jurisdictions were observed. Compared with New South Wales, workers in Victoria, South Australia and Comcare had significantly longer durations of time off work and were more likely to be receiving income benefits at 104 weeks post injury, while workers in Tasmania and Queensland had significantly shorter durations of time off work. Western Australia was not significantly different from New South Wales. The differences between jurisdictions were substantial. The cumulative probability of still being off work at 20 weeks post injury was ~0.5 in the state of Victoria, whereas in Tasmania and Queensland the probability at this time point was approximately half that, at 0.2. These differences persisted throughout the 104-week follow-up period. The magnitude of these effects were as substantial as effects observed for injury type and larger than the effects observed for age, which is commonly accepted as one of the strongest predictors of disability duration.

The findings suggest that the design and management (ie policy and practice) of workers' compensation have a substantial effect on duration of work disability for injured

workers. However, this says little about which policies are responsible for the differences. The authors argued that this justified future research that isolates specific policies to determine their effects. The report also demonstrates that it is feasible to conduct comparative studies in Australian workers' compensation systems using existing administrative data sets. This finding established the evidence to support the future studies in the COMPARE project.

## D Study 2 – Before-and-After Comparisons

In a series of studies using ITS designs, the COMPARE project team sought to determine the impact of legislative changes on worker and employer outcomes. ITS is considered one of the most powerful quasi-experimental designs for evaluating natural experiments like policy change or community interventions where data have been collected at regular intervals before and after a time-bounded event. ITS can be applied where randomised controlled trials are cost-prohibitive, impractical, or unethical, and is particularly suited to the evaluation of population-level impacts in real-world settings.<sup>18</sup> Unlike other before-and-after analytical techniques such as difference-in-differences, ITS accounts for secular trends, minimising the likelihood that observed differences due to pre-existing trends are misattributed to the event. Using the ITS approach it is possible to estimate causal effects using observational data such as that used in the COMPARE study.

### i Introduction of Employer Incentives in South Australia and Tasmania

This study investigated the impact of incentives for employers to report work injuries more quickly.<sup>19</sup> The incentives were implemented across two workers' compensation jurisdictions as part of larger legislative amendments. In July 2008 South Australia began offering employers a rebate on their two-week employer excess if they reported an injury within two working days of notification. Eighteen months later, Tasmania began penalising employers who reported work injuries more than three days after notification, requiring them to pay compensation for each day they were late. Both were designed to improve access to workers'

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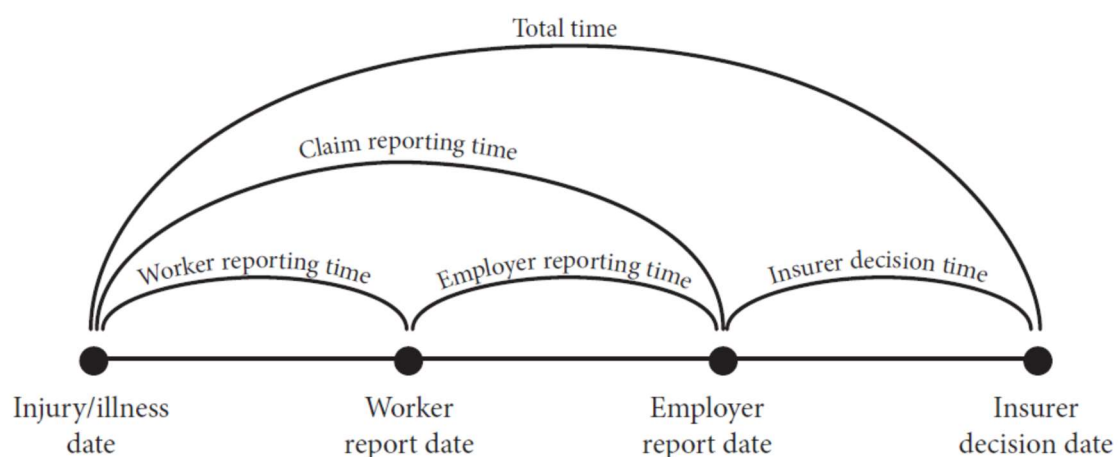
<sup>18</sup> J Lopez Bernal et al, 'Interrupted Time Series Regression for the Evaluation of Public Health Interventions: A Tutorial' (2016) 46(1) *International Journal of Epidemiology* 348.

<sup>19</sup> TJ Lane et al, 'Effectiveness of Employer Financial Incentives in Reducing Time to Report Worker Injury: An Interrupted Time Series Study of Two Australian Workers' Compensation Jurisdictions' (2018) 18(1) *BMC Public Health* 100.

compensation benefits and services to improve recovery, reduce costs, and shorten time off work.

Using claim-level workers' compensation data in the NDS, aggregate datasets of the amount of time between several stages in the claim lodgement process were created. The key time periods were claim lodgement time, insurer decision time, and total time (see Figure 1). The dataset described the median number of days between each date within South Australia, Tasmania and a comparator that consisted of other Australian workers' compensation jurisdictions. An ITS analytic approach was used to examine level and trend disruptions in time series following the policy changes.

**Figure 1: Key events and time periods in the claim lodgement process**



This study identified that the introduction of incentives was followed by reductions in claim reporting time in both states. However, in South Australia there was only a change in worker reporting time and not employer reporting time, which undermined the proposed causal mechanism (it was not possible to analyse these times in Tasmania due to a lack of worker report date data). There was also an increase in insurer decision time in Tasmania, and similar increases in South Australia following implementation of the different waves of the workers' compensation amendments, which suggested an effect due to administrative burden. Overall, total time did not immediately change, though there was a marginal but significant trend decrease in both states

The reduction in worker reporting time in South Australia was attributed to the introduction of provisional liability, which coincided with the reporting incentives. Provisional liability grants workers' compensation applicants' access to benefits and services before their

claim is accepted. It was not possible to compare this effect in Tasmania, which had introduced provisional liability two decades earlier. Provisional liability also limited the potential negative effect of increased insurer decision times, since delays in insurer decision are less of an obstacle to treatment and related services where provisional liability exists. As claim reporting time decreased in both jurisdictions, this would suggest that injured workers were receiving services more quickly and the legislative amendments achieved their aim. However, there remain questions about the generalisability of findings, particularly for jurisdictions without provisional liability.

## ii Tasmanian Workers' Compensation Scheme Reform

On 1 July 2010, Australia's smallest state, Tasmania, introduced an amendment to its Workers Rehabilitation and Compensation Act 1988 in response to a major review in 2007.<sup>20</sup> Along with aiming to make the system fairer, the amendment's objective was to provide 'prompt and effective management of workplace injuries in a manner that promotes and assists the return to work of injured workers as soon as possible'.<sup>21</sup> The amendments sought to increase benefit generosity and introduce a new Return to Work and Injury Management Model (IMM). The IMM established a framework for improving and streamlining the injury management processes in order to encourage and promote return to work, including the creation of an 'injury management coordinator' role to oversee the injury management process and introduction of a new claims form and medical certificate.<sup>22</sup> ITS analysis was used to determine the impact of this major scheme reform on the duration of disability.

No changes in claim volumes were observed. Following the legislative amendment, there was a decrease in the median duration of disability, however this was non-significant. Relative to the rest of Australia, which was used as a comparator condition, there was a statistically significant increase in the trend of time loss in Tasmania of 0.11 weeks per quarter following the legislative amendment. However, there were no statistically significant changes to the mean number of weeks lost. Assuming that duration of time on compensation income

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<sup>20</sup> A Clayton, *Review of the Tasmanian Workers Compensation System* (2007).

<sup>21</sup> WorkCover Tasmania and Workplace Standards Tasmania, *A Guide to Workers Rehabilitation and Compensation in Tasmania – For Injuries Occurring on or after 1 July 2010* (2010), cited 22 September 2016, available at [worksafe.tas.gov.au/\\_\\_data/assets/pdf\\_file/0005/541157/GB260-Guide-to-W-Rehaband-Comp.pdf](http://worksafe.tas.gov.au/__data/assets/pdf_file/0005/541157/GB260-Guide-to-W-Rehaband-Comp.pdf).

<sup>22</sup> S Gray et al, *Evaluating the Success of Legislative Amendments Designed to Reduce Work Disability, Policy Design and Practice* (2019) 2(3) *Policy Design and Practice* 291.

benefits is a reasonable proxy for RTW,<sup>23</sup> this finding indicates that the Tasmanian legislative amendments did not achieve their objective of returning injured workers to work faster.

One possible explanation for this null finding is that the two major components of the Tasmanian legislative package were acting in opposition. There is evidence that increased benefit generosity is associated with increases in disability duration.<sup>24</sup> As the Tasmanian amendments included more generous benefits, these effects may have ‘cancelled out’ any reductions in disability duration arising from the new injury management model.

### iii New South Wales Workers’ Compensation Scheme Reform

In June 2012, the Workers’ Compensation Legislation Amendment Act (2012) came into effect in New South Wales. The Act made multiple changes to the structure and operation of the state workers’ compensation scheme. The primary objective of the reform was to improve the long-term financial sustainability of the workers’ compensation scheme. This was intended to be achieved by reducing expenditure on benefits and services and restricting access to the scheme for certain groups of workers. A second objective was to improve return to work rates of injured and ill workers whose workers’ compensation claims were accepted. The proposed mechanism to achieve this objective was to introduce financial disincentives for not returning to work where the worker has some work capacity. The reforms also provided the regulator and insurers with additional powers to make claims decisions that affect treatment and income benefits. Emergency service personnel and coal miners were exempted from the reforms to eligibility, income benefits and medical treatment.

The reforms had a significant impact on the finances of the scheme. A subsequent statutory review demonstrating a \$5 billion improvement in the scheme’s financial position, moving from a \$4 billion unfunded liability that prompted the reforms, to a \$1 billion surplus within two years of the reforms taking effect.<sup>25</sup> The COMPARE study team examined the

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<sup>23</sup> N Krause et al, ‘Alternative Approaches for Measuring Duration of Work Disability after Low Back Injury Based on Administrative Workers’ Compensation Data’ (1999) 35(6) *American Journal of Industrial Medicine* 604.

<sup>24</sup> BD Meyer et al, ‘Workers’ Compensation and Injury Duration: Evidence from a Natural Experiment’ (1995) 85(3) *American Economic Review* 322.

<sup>25</sup> Centre for International Economics, *Statutory Review of the Workers Compensation Legislation Amendment Act 2012: Final Report* (Canberra, Centre for International Economics, 2014).

impact of these reforms on access to benefits (number of compensation claims accepted) and on duration of disability (time off work) using an ITS analytical approach.

Results indicated a 15.3 per cent reduction in monthly claims volume immediately following the legislative amendments, with a greater impact for workers making claims that involve income replacement (17.3 per cent). These effects were not uniform across the scheme, as there was a more substantial reduction in accepted claims for occupational disease (36.5 per cent) and for mental health conditions (25.9 per cent) than for workers with other conditions (13.1 per cent). Concurrent with these decreases in claim volume, there were increases in disability duration following the reforms. Median duration of disability across all accepted claims increased by 0.5 weeks (statistically significant at  $p < 0.01$ ), while the median duration of claims for mental health conditions increased by 4.0 weeks (20 days).

These findings demonstrate that the New South Wales reforms achieved their intended objective of improving the long-term financial sustainability of the scheme by restricting access to benefits. However these effects were not uniform and there appears to be a negative impact on disability duration, indicating slower returns to work in those workers accessing the New South Wales scheme post the reforms.

## E Study 3 – Between Jurisdiction Comparisons

In a further set of studies using epidemiological analysis methods, the COMPARE project conducted a set of analyses that focused on the relationships between modifiable employer and insurer practices and work disability. These studies focused on aspects of the workers' compensation claim management practices where there are clear expectations set in legislation. Analyses sought to characterise between-jurisdiction differences in these practices and relate these to disability duration.

### i Return to Work Planning

A RTW plan is a mandatory requirement for employers of injured workers in all Australian workers' compensation jurisdictions, although the specific requirements vary between jurisdictions (see Table 1). Having a RTW plan has been associated with improved RTW outcomes in previous studies, however these studies have been from single jurisdictions or have not focused on the RTW plan as a primary outcome. The NRTWS provides an opportunity to assess both: (a) how frequently a RTW plan was developed in multiple Australian workers'

compensation jurisdictions; and (b) the association between having a RTW Plan and duration of disability.

**Table 1: Overview of RTW plan policy in Australian workers' compensation legislation**

<b>Jurisdiction</b>	<b>Who is responsible for RTW plan?</b>	<b>Is plan compulsory?</b>	<b>Minimum expected injury time before a RTW plan becomes compulsory.</b>
Comcare	Employer	If required following a rehabilitation assessment	Rehabilitation assessment after 3 days
New South Wales	Employer	Yes	7 days
Northern Territory	Employer	Yes	28 days
Queensland	Insurer	Yes	Not specified
South Australia	Insurer	Yes	28 days
Seacare	Employer	Yes	28 days
Tasmania	Injury management co-ordinator	Yes	5 days
Victoria	Employer	Yes	Not specified
Western Australia	Employer	When required by treating doctor	Not applicable

Analysis of the 2013 and 2014 iterations of the National RTW Survey (N=5651 completed surveys) revealed that 47 per cent of injured workers with accepted workers'

compensation claims reported having a written RTW plan, 9 per cent reported having an unwritten RTW plan, while 44 per cent of surveyed workers did not recall having a RTW plan. Multivariate regression models identified that female workers, those with musculoskeletal and neurological conditions and workers employed by self-insurers were all significantly more likely to have a RTW plan.

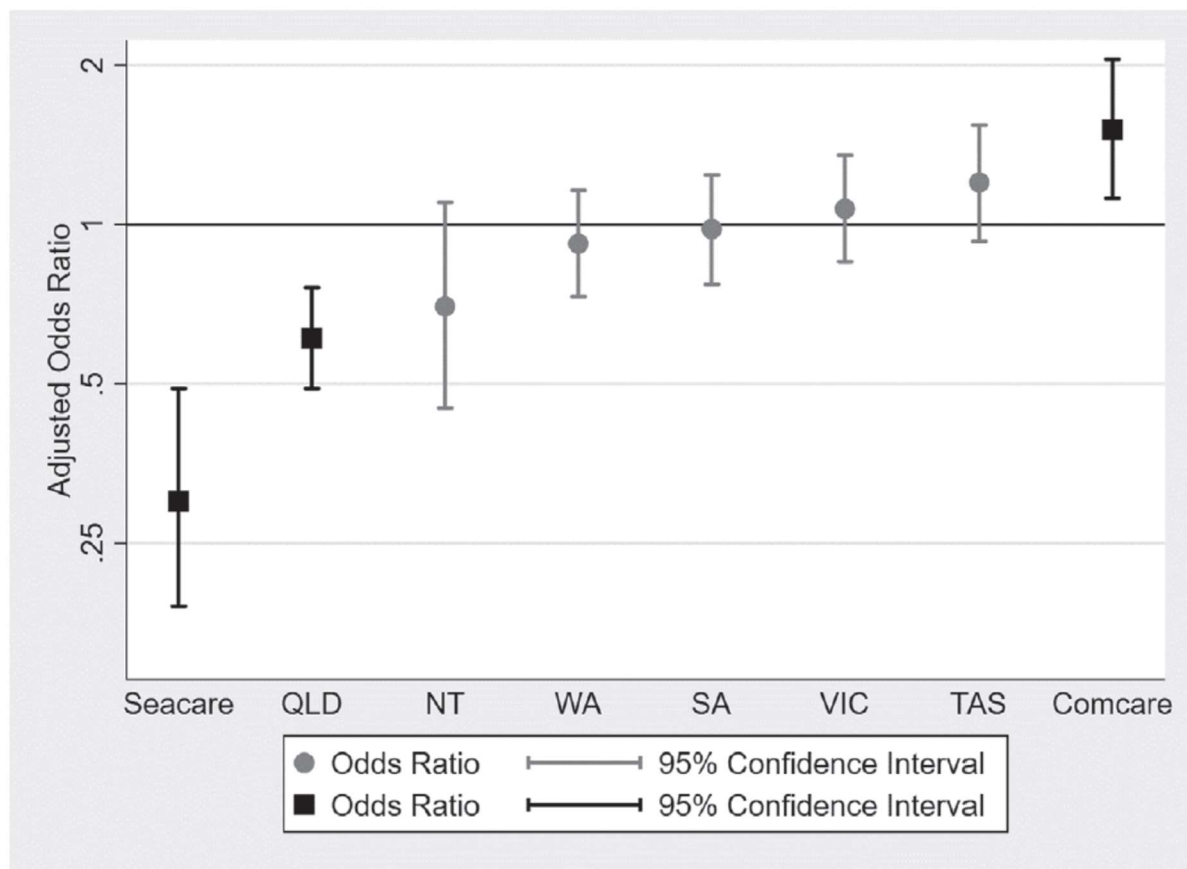
Using a binary logistic regression model, the odds of having any RTW plan was determined in each jurisdiction, using New South Wales as the comparator (see Figure 2). Workers with accepted workers' compensation claims under the Comcare scheme were 1.5 times more likely to report having had a RTW plan than those in New South Wales. In contrast, workers in Queensland and Seacare were significantly less likely to report having a RTW plan.

A further analysis testing the association between self-reported presence of a RTW plan and time taken to return to work identified that workers who reported having a RTW plan had increased odds of RTW. In the first 30 days after the claim, whether the plan was written or unwritten did not affect RTW, however it was significantly better than having no RTW plan. However, after 30 days, having a written plan was most effective, increasing the odds of RTW 3.4 times, while an unwritten plan increased the odds of RTW 2.2 times.

This study suggests both that legislative requirements to prepare RTW plans vary substantially between jurisdictions, and that rates of RTW planning varies. Further, having a RTW plan is significantly associated with increased odds of RTW. Nationally, 43 per cent of workers surveyed reported not having a RTW plan prepared during their workers' compensation claim. Provision of RTW plans is highly amenable to modification and thus represents an opportunity for intervention that may improve RTW outcomes.



**Figure 2: Adjusted odds of reporting a RTW plan by jurisdiction (relative to NSW)**



## ii Benefit Duration and Commutation

As with RTW plans, workers' compensation legislation in Australia commonly sets time limits with respect to the duration for which income benefits can be provided, and the circumstances under which a claim can be commuted. A commutation commonly involves paying a lump sum to the worker to close the claim. There are multiple 'long-tail' schemes in which income benefits may be provided from date of claim acceptance until retirement age, and in which commutations or redemptions are only provided under limited circumstances. There are also 'short-tail' schemes that provide income benefits for defined periods of time (eg two years, 130 weeks), and some schemes in which claims can be commuted based on their duration or following negotiation with the worker and/or their employer. These policy settings are variously intended to encourage return to work and as a means of controlling the costs of providing workers' compensation. A summary of some relevant legislative settings is provided in Table 2.

**Table 2: Overview of income duration and commutation policy in Australian workers' compensation legislation**

<b>Jurisdiction</b>	<b>Maximum Duration of Income Support</b>	<b>Commutation / Redemption</b>
Comcare	Retirement age	In limited circumstances
New South Wales	130 weeks (work capacity); 260 weeks (no work capacity)	In limited circumstances
Northern Territory	104 weeks (work capacity + suitable employment) 260 weeks (work capacity + no suitable employment) Until retirement age (>15 per cent WPI)	No time limit. Negotiated between worker and insurer/employer.
Queensland	104 weeks; 104–260 weeks (>15 per cent permanent impairment)	After 2 years.
South Australia	104 weeks (most workers); retirement age (>30 per cent WPI)	No time limit. By agreement with worker.
Seacare	Retirement Age	In limited circumstances
Tasmania	9 years (<15 per cent WPI); 12 years (15–20 per cent WPI); 15 years (20–30 per cent WPI)	Within two years of date of claim (conditions have been met)
Victoria	130 weeks (most workers); retirement age (no work capacity)	In limited circumstances
Western Australia	Retirement age	After six months

Long periods of involvement in workers' compensation systems have been associated with, and may contribute to, poor health and quality of life outcomes for workers.<sup>26</sup> (Comparing jurisdictional patterns of long-term claims may provide some insight into the effect of these legislative settings on duration.)

This study used the NDS to examine jurisdictional differences in the frequency of long duration claims and the amount of working time lost to long duration claims, and changes in long duration claims over time. Each claim was categorised into one of four groups based on duration of paid income benefits (1) Group 1 = less than 6 months; (2) Group 2 = 6–12 months; (3) Group 3 = 13–24 months; (4) Group 4 = greater than 24 months. Claim duration was capped at a maximum of 260 weeks (five years) to ensure estimates were conservative and did not over-inflate the impact of very long duration claims. Pearson's Chi squared test was used to test for statistical differences in the proportion of claims and weeks compensated between each group. Statistical differences in the rate of long-term claims, weeks compensated and in the change in the rate of long-term claims and weeks compensated from 2004–2013 between groups were tested by modelling the incidence rate ratio with a Poisson distribution.

Analyses identified that 12 per cent of all included time-loss claims were of at least six months' duration, but that these accounted for 76 per cent of the total burden of disability as measured in weeks of compensated time loss. Almost half of all time compensated (47 per cent) was in those 3.9 per cent of workers whose claims lasted over 24 months. For every 1,000 workers who have workers' compensation insurance coverage in Australia, 2.5 per annum have a long-tail workers' compensation claim with income benefits provided beyond six months.

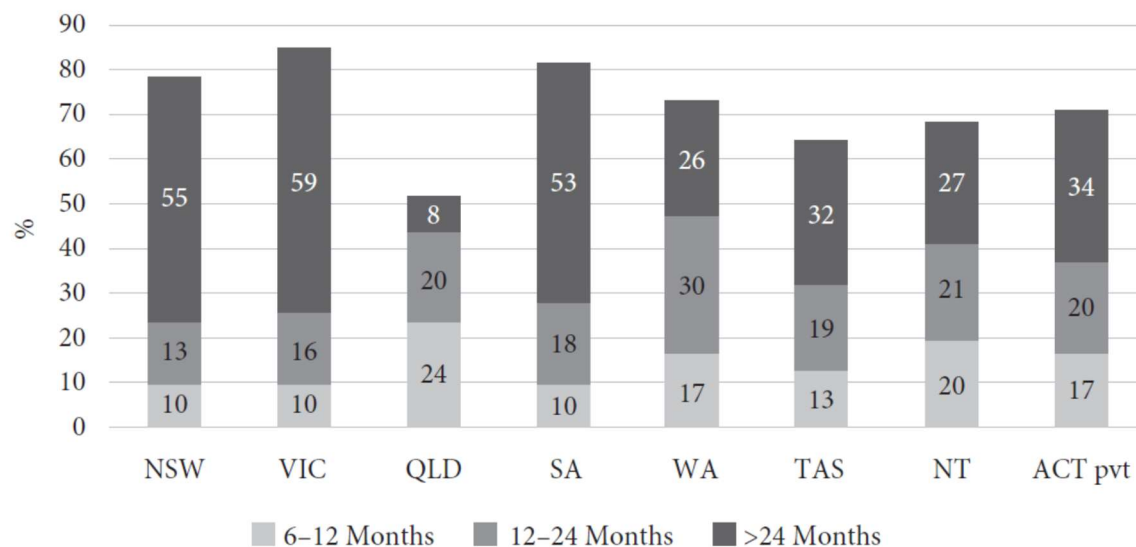
There were large differences between jurisdictions in the percentage who were long-term and in the rate and change over time of long-term claims. The number of claims and weeks compensated were similar between jurisdictions up to 24 months. After 24 months there was great variation between jurisdictions, as indicated in Figure 3. These differences are probably explained by different policies regarding the maximum duration of income support and access to commutations and redemptions, rather than reflecting different RTW outcomes. For example, short-tail jurisdictions in which commutations are common (such as Queensland) have a relatively small proportion of all income benefit compensation paid to workers with

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<sup>26</sup> Kilgour et al, above, n 10.

claims greater than two years' duration. Those in which the use of commutations is restricted have a much greater percentage (eg Victoria, South Australia and New South Wales).

**Figure 3: Percentage of total weeks compensated in each jurisdiction**



## F Strengths, Limitations and Data Gaps

The overarching strengths of the COMPARE study include the use of very large datasets, with population coverage in the case of the NDS. With the exception of the Defence and Veterans Affairs (DVA) compensation scheme, all of the major Australian workers' compensation schemes are represented in these databases. Both databases record multiple worker, injury, demographic, claim and employer characteristics which enable inclusion of multiple co-variables in statistical analysis, producing greater certainty in estimates. Standard injury and occupation coding schema are used in both datasets and these are consistent between datasets. In addition the national standard industry coding schema is included in the NDS. Combined, the datasets have enabled examination of multiple RTW relevant outcomes including duration of time loss (disability duration) and self-reported RTW. Both datasets include a time series. This was critical for evaluation of policy change using ITS and has enabled the development of causal inferences related to time-bound changes in policy (legislative amendments) using ITS analysis. Finally it was possible to source denominator data for most analyses, in the form of ABS labour force data or covered worker estimates at occupation and industry level. This has enabled calculation of rates of claims (per 1,000 working population or covered population, for example) in addition to raw counts.

The datasets also have some limitations. The NDS is administrative data collected primarily for the purposes of managing workers' compensation claims. The estimate of time loss derived from the NDS appears robust. However, prior research has shown that time loss data is not equivalent to RTW, particularly for longer duration claims where other factors can result in benefit cessation other than RTW. The NDS also has multiple gaps in data. These relate mainly to gaps in the claims process (for example very little information on dispute resolution or legal system involvement during the course of a claim), lack of information on healthcare provision which is a major feature of workers' compensation schemes in Australia and an important return to work tool, and relatively limited information on the psychosocial predictors of return to work. Through the course of the COMPARE project the research team identified multiple instances of differences in data entry between jurisdictions. For the most part analytic strategies were able to account for these, however in some cases we needed to develop modified coding approaches to account for these differences. For the NRTWS, the cross-sectional nature of the data limits our ability to make causal inferences.

## G Summary

The COMPARE study sought to establish a research evidence-base around the impact of policy and practice on return to work in Australian workers' compensation systems. The study has demonstrated that jurisdictional policy and practice has a major impact on duration of disability in workers with accepted workers' compensation claims, and has isolated the effects of some specific employer and insurer practices and processes such as RTW planning. The study has provided evidence that changes to scheme design through legislative amendment can have significant impacts on access to workers' compensation systems, claims processing times and duration of disability, but can also produce unanticipated effects in some groups of workers or where competing RTW incentives are introduced via legislation.

In summary the COMPARE study has provided a foundation of evidence which can support current and future workers' compensation policy and practice, and there is substantial potential to extend this knowledge base through future studies.

## V Other Comparative Studies in Injury Compensation

There are multiple other comparative studies conducted in injury compensations schemes within Australia and internationally. These include studies in motor vehicle accident compensation schemes, USA workers' compensation and even cross-national comparisons.

For example, one study across 49 states of the USA identified that waiting periods for wage replacement and policies on access to medical treatment were independently associated with duration of disability in workers with low back pain.<sup>27</sup> In another example, in 1999 the tort-based transport injury scheme in the Australian state of New South Wales introduced four key legislative changes: removing non-economic loss from common law (eg 'pain and suffering'); introducing clinical guidelines for whiplash treatment; ensuring earlier acceptance of compensation claims through regulation; and earlier access to treatment.<sup>28</sup> Cameron et al followed insured whiplash-afflicted individuals in NSW two years after their injury and found that those whose accident occurred after the legislative change had better health outcomes.<sup>29</sup>

Another study in Australian motor vehicle crash compensation schemes demonstrated that the Victorian no-fault scheme was considered fairer and was associated with superior health outcomes at 12 and 24 months post-injury than the NSW common law scheme.<sup>30</sup> This study surveyed 182 CTP claimants (N=98 in NSW; N=84 in VIC) at 12–24 months post injury regarding their self-rated health status and their perception of the fairness of the claims management process. Regression modelling showed a significant positive interaction between overall fairness perception of the compensation process and health post-injury (odds ratio = 2.78,  $p = 0.002$ ). Adjusting the model for demographic and injury characteristics showed that the association between fairness and health was of the same magnitude after adjustment (adjusted odds ratio = 2.83,  $p = 0.004$ ). Similarly, in a natural experiment conducted of the motor vehicle injury compensation scheme in Saskatchewan, Canada, it was found that whiplash-affected individuals had improved prognoses following a major policy change.<sup>31</sup> Here the scheme changed from a tort-based to a no-fault system, which meant that an individual could no longer access payments for 'pain and suffering', and income replacement and medical

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<sup>27</sup> Above, n 14.

<sup>28</sup> ID Cameron et al, 'Legislative Change is Associated with Improved Health Status in People with Whiplash' (2008) 33(3) *Spine* 250.

<sup>29</sup> *ibid.*

<sup>30</sup> NA Elbers et al, 'Differences in Perceived Fairness and Health Outcomes in Two Injury Compensation Systems: A Comparative Study' (2016) 16 *BMC Public Health* 658.

<sup>31</sup> JD Cassidy et al, 'Effect of Eliminating Compensation for Pain and Suffering on the Outcome of Insurance Claims for Whiplash Injury' (2000) 342(16) *New England Journal of Medicine* 1179-1.

benefits were increased. It has subsequently been shown that these two sorts of systems are associated with differences in health outcomes,<sup>32</sup> and therefore improvements in health outcomes following this change were unsurprising. These studies further demonstrate the value of the comparative research paradigm in teasing apart policy impacts.

## VI Conclusions

The research summarised in this chapter demonstrates both that work disability is a significant public health and social policy issue, and that the legislative settings within the Australian workers' compensation systems have a significant impact on the duration of disability, and on processes and practices that are intended to support recovery and return to work following work-related injury and disease. The studies presented use epidemiological and quasi-experimental methods to address questions of policy and legislative impact on health related outcomes. The COMPARE study has begun to develop an evidence base to support future policy development in the field, and has at least demonstrated the need for long-term follow-up and evaluation of changes in law. There remain substantial gaps in knowledge that future similar studies will seek to address. There also remain significant variations in policy and legislative design between Australian systems and as yet no consensus regarding the optimal scheme design for supporting recovery and return to work, and reducing the burden of disability following injury and illness in the workplace.

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<sup>32</sup> NA Elbers et al, 'Differences in Perceived Fairness and Health Outcomes in Two Injury Compensation Systems: A Comparative Study' (2016) 16 *BMC Public Health* 658.