Accident Compensation Corporation New Zealand

Scheme review

March 2008

PricewaterhouseCoopers

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Mr Ross Wilson
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26 March 2008

Dear Mr Wilson

Research and evaluation into the future delivery of the Woodhouse Principles, incorporating assessment of the social and economic impacts of the New Zealand Accident Compensation scheme

Please find attached PwC Australia's report reviewing the ACC scheme.

Our terms of reference for this report are presented in the following pages, as is a list of those with whom we consulted for our review. We would like to thank those who participated in these consultations, all of whom did so with enthusiasm and candour.

We would also like to thank the ACC's independent peer reviewers, Alan Clayton and Cameron Mustard, for their significant and excellent feedback and assistance.

Yours faithfully

Daniel Tess
Partner
Sydney

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About this report and our research

This report represents our research and evaluation of possible future delivery options for the Woodhouse Principles in New Zealand, incorporating our assessment of the social and economic impacts of the New Zealand Accident Compensation Corporation scheme (the ACC scheme).

The scope of our research

In September 2007 the ACC Board of Members appointed PricewaterhouseCoopers Australia (PwC). The terms of reference were given by ACC as follows:

- The overall objective of the research is to evaluate the economic and social return on investment of the ACC scheme, and in particular to understand social, environmental and economic factors that will influence the sustainability of that return in the future.
- The scope of the project is targeted at a scheme level rather than an operational level. As such, the scope is designed to provide an evaluation of the scheme's value to New Zealand and allow decision makers to direct the future implementation of the scheme.

It is anticipated that the project will answer the following:

1. Using the Woodhouse principles as a framework for evaluation, what value has the scheme delivered to New Zealand in economic and social terms?
2. What are the key issues that, over the next five to ten years, will impact on the level of return?
3. How can the Woodhouse principles be best implemented in order to maximize this return in light of those issues?

In addition, ACC supplied PwC with 28 detailed research and evaluation questions, which are listed at the end of this section.

PwC consulted with and provided status updates to both the Board and management of ACC throughout this review.

Our research methodology

Our research consisted of the following:

- desktop review of international literature and other relevant documents
- review of documents supplied by ACC
- extensive meetings with both the Board and management of ACC
- formal consultations (via unstructured interviews) with approximately 30 different stakeholders in New Zealand, including expert individuals, other government departments, and representatives groups for employers, workers, providers, and other scheme participants, as well as a number of expert individuals abroad. A complete list of these consultations is shown below
- analysis of ACC scheme data provided to us by ACC.

A team of independent, external peer reviewers (Alan Clayton in Australia and Cameron Mustard in Canada), appointed by the ACC Board, reviewed our report.

Given the broad scope of our research and the limited time available to complete our review, we made judgements about how to focus our attention and allocate resources among a number of issues.

Many of the people we interviewed represented formal positions in their organisations and also gave their own opinions. We have not sought to separately verify their input, except on the basis of reasonable face value and consistency, and we have made judgements about their credibility and the weight which should be assigned to their views.

Stakeholder consultation list

Our review included formal consultations with the following stakeholders and experts on the ACC scheme. This list was suggested by the management and Board of Members of the ACC.

We also approached the Insurance Council of New Zealand for consultation, but they declined on the basis that their members did not share a common view of the issues for the industry to be represented as a whole.

Organisations
Association of Accredited Employers
Business New Zealand
District Health Boards New Zealand
Crown Law
The Consumers' Outlook Group
Ministry of Health
Ministry of Social Development
New Zealand Automobile Association
New Zealand Council of Trade Unions
New Zealand Institute of Chartered Accountants
New Zealand Law Society
New Zealand Medical Association
New Zealand Society of Physiotherapists
NZ Private Hospital Association
Small Business Advisory Group (Ministry of Economic Development)
Wellington Regional Chamber of Commerce

Individuals
David Caygill
Grant Duncan
John Langley
Katherine Lippel
Sir Geoffrey Palmer
Bob Stephens
Mr Leith Comer
Ms Sharon Clair
Professor Mason Durie
Mr James Johnston

Schemes
Victorian WorkCover Authority
WorkCover New South Wales

Detailed research and evaluation questions supplied by ACC

In addition to the broad scope presented above, ACC also provided the following list of evaluation questions, supported by more detailed secondary questions. This report presents and analyses the available evidence relating to each of these.

Evaluation Question
EVALUATION OF ACC AGAINST THE WOODHOUSE PRINCIPLES
How well does the scheme (and its seven component funds) perform in terms of implementing the five Woodhouse Principles in both a social and economic context at present?
• How successful has the ACC scheme been in achieving the comprehensive cover envisaged under the Woodhouse Principles?
The Woodhouse Principles have been interpreted and redefined in legislation over the past 30 years by successive governments. Mostly these changes have related to the detail of implementation of the scheme, but in some instances meanings of terms may have been redefined. Is it correct to state that the essential elements remain unchanged, in terms of current delivery of the Scheme?
VALUE OF THE ACC SCHEME
What value has the scheme delivered to New Zealand in both economic and social terms?
• What is being delivered in terms of social return?
• Are there any identified un-intended consequences of the implementation of the Woodhouse Principles?
• What are the overall economic returns?
• What are the advantages and disadvantages in terms of social and economic outcomes, which arise from having a single comprehensive scheme, as distinct from separate independently operated schemes?
• What is the current impact of the scheme as a whole, and each of the seven funds separately, on NZ society in social and economic terms?
EVALUATION OF ACC AGAINST OTHER SYSTEMS
In terms of the seven individual funds, are there alternative schemes in operation around the world that reflect society's management of similar types of accident and injury?
• Where other approaches exist, how well does the appropriate ACC scheme fund compare against other schemes in economic/financial and social terms?
• In each case, what are the positive and negative aspects of the NZ Scheme compared to other schemes overseas?
KEY TRENDS, RISKS AND ISSUES GOING FORWARD
What are the key issues that, over the next five to ten years, will impact on the level of return?

Evaluation Question
• What are the trends?
• What is the likely relative importance of these trends on the implementation of the Woodhouse Principles?
• What is the level of probability of each trend occurring to the extent that it will impact significantly on the implementation of the Woodhouse Principles? Are the trends likely to have a positive or negative impact?
• Given these trends, what elements of the ACC scheme are viable in an economic and social context over the long term and which are not?
• Can adaptations be made to those parts that are not viable? If so what are they and when would change be needed?
• Are there "macro-trends" (eg Bionics) which may affect ACC's business in the longer term (20 – 30 years)?
SCHEME IMPLEMENTATION AND DELIVERY
How could the Woodhouse principles be best implemented in the future in order to maximize this return in the light of these issues?
• If major changes were made to the way in which New Zealand implements the Woodhouse Principles (particularly opening parts of the compensation system to private providers) what could the possible social and economic outcomes be?
Taking into account the overall review, in the opinion of the consultants, what is the best mechanism for delivering the Woodhouse Principles in the New Zealand context over the next 10 years?
• What is the justification for this recommendation?
• Is the decision essentially evidence-based?
• How strong is this recommendation?
• If there is data to support the recommendation, how reliable is the available evidence on which this recommendation is based?
POTENTIAL IMPROVEMENTS TO THE ACC SCHEME
What other suggestions and recommendations do the consultants have on the operation and evaluation of the ACC scheme, and on the impact of the Woodhouse Principles?
• What improvements could be made to the overall scheme to improve its delivery, its social impact, its implementation of the Woodhouse Principles and its economic viability?
• Having identified trends, are there mitigating strategies or external events that could remove, reduce, or if appropriate, enhance these trends and their impact?
Is ACC collecting appropriate data that would allow ongoing understanding of the economic and social performance of the Scheme?
• How can ACC monitor and measure its performance against the Woodhouse principles better?
• What other data (if any) are needed to enable a more reliable assessment of the economic and social performance of the existing scheme or of new delivery mechanisms for implementing the Woodhouse principles?

In addition to addressing these questions in the relevant chapters, Appendix 1 provides a tabulated summary of our responses.

Disclosure statement

The ACC Board explicitly sourced this review from researchers outside New Zealand in order to reduce the potential for an affected party having reduced independence or objectivity.

In this context it is important to note that PricewaterhouseCoopers Actuarial (Australia) is the current principal actuarial advisor to ACC and provides advice on the insurance liabilities of ACC. PricewaterhouseCoopers New Zealand has also performed various internal audit engagements and other consulting assignments for ACC. Unless otherwise explicitly stated, references in this report to PricewaterhouseCoopers or PwC are to PricewaterhouseCoopers Australia.

As per the requirements of ACC we have performed this review independently of our New Zealand firm, our actuarial valuation team for ACC, and any partners and staff who have performed any recent engagements for ACC. In particular:

- members of the research team have not worked on any of the above engagements within the past 5 years;
- the research team has operated under separate work arrangements from ACC actuarial and internal audit teams, so that there was no information flow regarding ACC between the respective teams during the course of this research project; and
- a partner from the Australian Risk & Quality team was appointed, and had no connection to any ACC work. This partner reviewed our methodology and approach, and has provided an independent sign-off for the objective and independent nature of our review, independent of the team working on this engagement.

Our methodology has relied heavily on consultation with stakeholders in New Zealand, as well as the ACC Board and management, as this was essential in gathering meaningful and comprehensive evidence, and we have considered suggestions from all of these sources.

Authorship

This report was produced by a team of researchers in the Actuarial and Health Advisory practice of PricewaterhouseCoopers Australia. Daniel Tess was the Lead Partner for this review, and two other practice partners, John Walsh and Anne-Marie Feyer, had significant input and involvement across the whole report. John also served as the PwC Review Partner for the engagement.

The project was coordinated and led by a group of senior managers in our practice: Kirsten Armstrong, Caitlin Francis and Peter McCourt. Sylvia Wong also provided a great deal of assistance with managing logistics early in our work.

This report was also reviewed by Paul Carter, the Senior Risk & Quality Partner for our firm.

Two independent peer reviewers were separately contracted by the ACC, Alan Clayton of Bracton Consulting in Australia and Cameron Mustard of the University of Toronto Faculty of Medicine. Alan and Cam have reviewed numerous versions of this report and provided a great deal of feedback, guidance, helpful suggestions, and encouragement, and we are deeply grateful for their assistance.

Contents

Executive Summary		**i**
Part A	**Background and context**	
Chapter 1	ACC's place in the world	3
Part B	**ACC Performance: Evaluating the Evidence**	
Chapter 2	ACC performance against the Woodhouse Principles	31
Chapter 3	What value has ACC delivered to New Zealand?	47
Chapter 4	ACC: Performance against other benchmark systems	103
Chapter 5	Whole of scheme issues	171
Part C	**Going forward: how can ACC deliver the best value?**	
Chapter 6	Key trends, risks, and issues going forward	273
Chapter 7	Scheme implementation and delivery	345
Chapter 8	Recommendations	405
Appendix 1	Evaluation Questions and Answers	433
Appendix 2	Injury in New Zealand	447

Executive summary

Since 1974, New Zealand has had a unique approach to dealing with the consequences of injury. The ACC scheme is the only system in the world that provides universal, 24-hour coverage for all accidental physical injuries.* ACC was a groundbreaking world leader at its inception and remains today highly regarded by many experts in the field of accident compensation.

This report presents the results of our research addressing the following high level questions:

1 Using the Woodhouse Principles as a framework for evaluation, what value has the scheme delivered to New Zealand in both economic and social terms?

2 What are the key issues that, over the next five to ten years, will impact on the level of return?

3 How could the Woodhouse principles be best implemented in order to maximize this return in light of those issues?

A further 28 more detailed evaluation and secondary questions were put to us by the ACC Board (summarised in Appendix 1). We have aggregated all questions under six broad headings, as follows:

1. How well does the scheme perform in terms of implementing the Woodhouse Principles?

2. What value does ACC add to New Zealand?

3. How well does ACC compare against other schemes?

4. What are the key issues that, over the next five to ten years, will impact on the Scheme's level of economic and social returns?

5. How could the implementation and delivery of the scheme be improved?

6. What other recommendations would we make for the ACC scheme?

The following sections summarise our findings under each of these headings, preceded by a brief overview of the ACC scheme.

Note that our brief was not to recommend any particular policy position, but rather to present the available evidence as objectively as possible and draw conclusions from that evidence where appropriate.

* In addition, ACC also covers mental injury in certain limited circumstances, as well as occupational disease and gradual onset workplace injury.

This executive summary must be read in conjunction with our detailed analysis in the accompanying main report.

1 What is ACC?

ACC is the term commonly used to refer both to the overall system of coverage, benefits and services available for all injured people in New Zealand, as well as the government organisation (the Accident Compensation Corporation) which implements and delivers this scheme. In this report it generally refers to the scheme as a whole, since the scope of our review covers `ACC, the scheme', and is not an operational evaluation of the `ACC, the organisation'.

ACC can be characterised as a universal coverage no-fault scheme, paying periodic income benefits for earners[†], with comprehensive case management of a range of benefits and treatment and rehabilitation services, currently underwritten and managed by a government monopoly corporation[‡]. Throughout this report we compare a number of aspects of the ACC scheme to international schemes. We have found that, in a number of ways, ACC can be considered to be `best practice' when compared to international schemes.

ACC currently exists under provisions of the Injury Prevention, Rehabilitation, and Compensation Act 2001 (IPRC). The coverage provided by ACC is currently managed under the following six accounts:

- work (including both employers and self-employed)
- non-earners
- earners
- treatment injury
- motor vehicle
- residual (pre-1999) claims.

The vast majority of ACC claims are for treatment only, but approximately 150,000 New Zealanders receive additional benefits for their injuries, typically including some level of weekly income benefits and often including rehabilitation services.

Injuries in New Zealand

ACC's role in New Zealand society is important, because injury affects many New Zealanders. About 20% of New Zealanders currently suffer some level of disability[1], and approximately 20% of

[†] Lump sum income benefits are generally only available under the current scheme for survivors' benefits.

[‡] Note that, through the Accredited Employers programme, some employers may retain a portion of their underwriting risk and corresponding claims management and experience.

these are incapacitated due to injury. Injury represents somewhere between 5% and 10% of the total disease burden of New Zealand.[2] Injuries have a disproportionately large impact on Maori and Pacific people, as well as on the elderly.

Of a total population of 4.3 million:

- 1.6 million injury claims were filed with the ACC in 2006/07, mostly for reimbursement of treatment costs only
- about 150,000 claimants received additional benefits for their injuries, typically including some level of weekly income benefits and often including rehabilitation services (we refer to these elsewhere as “other benefit” claimants)
- there were 2,104,000 hospital admissions due to injury in a four year period from 2000-2004[3]
- around 180 New Zealanders each year suffer a serious injury, such as permanent brain or spinal injury, requiring long-term support
- 1,659 deaths were recorded as resulting from injury in 2002.[4]

The main causes of fatal injury in 2002 were transport related (32% of all deaths), intentional self harm (28%) and falls (18%).[4] The main cause of non-fatal injury resulting in hospitalisations over the four year period commencing 2000-2004[3] was falls, which were responsible for 40.5% of all hospitalisations.

Overall injury rates have been steadily declining in New Zealand as elsewhere in the OECD, although New Zealand reported injury levels remain comparatively high. Injuries are expensive to society, and it has been estimated that the social and economic cost of injuries in New Zealand is approximately $6 -$7 billion each year.[5] This cost underpins the need for an appropriate system to both prevent and meet the cost and consequences of injury.

2 The Woodhouse Principles

The ACC scheme was established following a 1967 Royal Commission into Workers’ Compensation in New Zealand. The Royal Commission was established to address the inadequacy of workers’ compensation benefits as well as other anomalies around coverage. Recognising the importance of injuries outside the workplace, the Royal Commission looked beyond workers’ compensation and into injuries occurring more broadly.

The report produced by the Commission, known as the Woodhouse Report after the Commission’s chairman Justice Owen Woodhouse (now the Rt Hon Sir Owen Woodhouse KBE, DSC), recommended replacing tort liability for personal injury with a new, universal, 24-hour, no-fault approach to compensation and services to the injured. The report put forward a general set of principles for accident compensation systems which have come to be known as the

"Woodhouse Principles"[6], which we include here in their original wording:

1 **Community responsibility** In the national interest, and as a matter of national obligation, the community must protect all citizens (including the self employed) and the housewives who sustain them from the burden of sudden individual losses when their ability to contribute to the general welfare by their work has been interrupted by physical incapacity.

2 **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.

3 **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.

4 **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.

5 **Administrative efficiency** The achievement of the system will be eroded to the extent that its benefits are delayed, or are inconsistently assessed, or the system itself is administered by methods that are economically wasteful.

Our terms of reference specifically ask us to evaluate the ACC scheme's implementation of the Woodhouse principles. We find that, in general, ACC implements the Woodhouse Principles well, when these principles are properly considered in the context of the broader Woodhouse Report. This observation is further reinforced when the ACC scheme's overall design is considered relative to other societies' management of similar types of accident and injury, which are generally more fragmented, complicated, and more narrowly focussed, and thus contain a wider range of boundary issues and pressures.

Our review notes three areas where the scheme does not fully align with the Woodhouse Principles:

- The Woodhouse Principles articulate a broad vision of Comprehensive Entitlement which is not realised in every instance. For example, scheme coverage of occupational disease and gradual process injury in the workplace was specifically recommended by the Woodhouse Report, is an extension of the previous New Zealand workers compensation scheme, and is aligned with international workers compensation systems and with the International Labour Organisation. However, the Woodhouse Report did not recommend extending this coverage to the rest of the scheme, due to uncertainty as to the costs of such extension. The currently proposed amendment bill, extending coverage to individuals who suffer psychological injury as a result of a

traumatic event in the workplace (but not elsewhere), would create a similar additional coverage boundary between the workplace and other injury environments.

- Some scheme stakeholders, including a number of claimants and the Council of Trade Unions (CTU), contend that claims management (including assessment) can sometimes be fundamentally different if handled by accredited employers or their appointed agents; if valid, this would be inconsistent with the "same uniform method of assessment" articulation of the Comprehensive Entitlement principle.
- The lack of any ongoing income benefits for claimants who suffer a permanent partial disability which leads to a significantly reduced capacity to earn, but are nevertheless able to work full time in some job, is seen by many to fail to fulfil the Woodhouse Report's articulation of the principle of Real Compensation ("for the whole period of incapacity").

Complex social systems generally require some degree of compromise for practical implementation, and in our view the issues around Comprehensive Entitlement arise from operational compromises which are no greater than many of the compromises found in the original Woodhouse proposals.

The issue of the scheme's treatment of those with permanent partial incapacity is more serious, and we consider this in detail in the report and make a number of recommendations. These include the possible introduction of a new programme of extended vocational development in appropriate cases, particularly for those claimants who stand to lose income benefits as a result of upcoming Vocational Independence assessment. It is not clear, however, that make-up pay benefits should be added to the scheme for permanent partial incapacity. We note that this issue applies to only a very small proportion (less than 0.5%) of "other benefit" claimants, and that any systematic vocational development programme such as we describe may require legislative authority or change.

We were further asked whether refinements to the original phrasing of the principles may be required to clarify the current state of legislative interpretation. Given the scheme's general alignment with the principles, such a re-statement does not seem necessary. Both the longevity of the Woodhouse Principles and the recognition that they have received within New Zealand and internationally would also argue against any short-term tinkering with their wording, especially without a clear imperative to do so.

3 What value does ACC add?

In our review we argue that New Zealand's implementation of the Woodhouse Principles via the ACC scheme has afforded New Zealand's society and economy four decades of added economic and social value. Measuring this value is difficult, and requires consideration of the systems which may have developed in New Zealand in the absence of ACC. For this "alternative scenario" model

we have applied the prevailing environment found in other industrialised nations, which features fault-based tort liability for most injuries currently covered by ACC.

Fault versus No Fault

Universal coverage on a no-fault basis is the most important feature of the ACC scheme which impacts its value on New Zealand, with the corresponding removal of tort law as a mechanism for compensating accidental injury. A scan of international literature shows that no-fault systems are associated with the following improved outcomes for injured people:

- More injured people (70-95%) receive compensation.[7]
- A higher portion of total costs (up to 90% in some schemes) goes directly to claimants' benefits compared to perhaps only 50% in liability systems.[7]
- Benefits commence payment more quickly than in tort systems. The average settlement completion in the US tort system is 15 to 20 months, whereas benefits flow in 3 weeks on average in an uncontested workers' compensation claim, and 4 months in contested claims.[7]
- Claimant outcomes appear better under periodic no-fault systems. A study by PwC for WorkCover NSW (a blended system) followed the outcomes for over 1,000 claimants receiving compensation under alternative compensation pathways. After standardisation for known variables, Common Law and Commutations claimants were found to have poorer health outcomes and worse return to work rates than those receiving no-fault weekly benefits.[8]

No-fault schemes can also impact system costs. In regards to treatment injury, no-fault systems tend to have lower levels of "defensive medicine", lowering system costs without any measurable impact on patient outcomes.[7] Furthermore, no-fault systems are widely believed to facilitate more open communication and disclosure of treatment incidents, which can improve patient safety in the long run.[9]

Blended systems allowing access to tort law, which are the norm in Australian workers compensation schemes, can be costly. Evidence indicates that access to common law benefits, even where significantly limited in nature, has been one of the primary drivers of cost blow-outs in workers compensation schemes in Australia.

No-fault schemes have in some research studies been linked to higher rates of motor vehicle injuries and fatalities[7]. However, in those jurisdictions examined the switch from fault to no-fault occurred at the same time as other scheme changes, including pricing changes, and is confounded by other system-wide impacts of road injury prevention efforts. There is no consistent systematic evidence of a liability-driven deterrence effect in other injury environments[10].

New Zealand without the ACC

It is impossible to say what New Zealand would look like for injured people without the ACC, but we have considered a scenario which looks rather like the typical situation in Canada, the US and Australia, featuring:

- a mandatory scheme for work injuries, roughly similar to the current ACC work account, which represents roughly 24% of the ACC claimants receiving benefits beyond treatment
- tort liability under common law available for all other injury victims
- a range of fault-based insurances, including a mandatory motor injuries scheme (likely including a low level of first-party no-fault benefits available for less serious injuries) as well as a mixture of mandatory and voluntary other private insurances, such as product liability, professional indemnity, medical malpractice, public liability, and personal accident and income protection

  We estimate that roughly 5% of current ACC claimants would be able to prove fault and claim in this category.

- a social security and public health system, similar to the present one, but with a likely higher level of private health insurance. Roughly 70% of current ACC claimants would receive benefits only from these systems.

The table below compares the ACC scheme with this alternative scenario:

Table 1 Summary of features of other systems compared to ACC

	ACC	Alternative No-ACC Scenario		
		Worker's comp	Fault-based comp & insurance	Social welfare + Health system
Coverage	No-fault	No-fault	Fault	No-fault, but rationed according to means
Income benefits	Periodic	Periodic	Lump sum	Periodic, means tested, lower level
Return-to-work	Good	Good	Poor	Medium
Workforce Participation	High	High	Low	Medium
Rehabilitation	Full	Full	Limited	Limited
Treatment	Scheme funded Public & Private	Scheme funded Public & Private	Award funded Public & Private	Public & individual funded Private
Admin & legal costs	Low	Low	High	Low

Compared with the current ACC scheme we would expect, based on the available evidence that the alternative scenario would:

- have poorer rehabilitation and financial outcomes for the bulk of injury victims whose access is limited to the social welfare and health systems
- have poorer return-to-work outcomes and more variable financial outcomes for the small proportion of people in the fault-based insurance system.

Further, the fault-based aspect of the scenario would distribute total resources to a much smaller proportion of injured people, with most people bearing their own financial losses from injury. In addition, we would expect much higher levels of overall administrative (non-claimant) costs in this area.

We would also expect the costs and outcomes for workers' compensation claimants to be slightly worse than the current ACC scheme, as additional pressure would be put onto this system due to the work/non-work coverage boundary.

The value added by the ACC scheme

Given the above comparison, we have imputed the following economic and social benefits of having the ACC scheme for New Zealand:

Economic values

- an increased pool of labour that is available and able to work, with the additional employment offering an additional boost to consumption spending as well as improved social outcomes discussed below. We estimate that total increased workforce participation from effective injury management under ACC may be worth approximately $315 million per annum to the New Zealand economy
- potentially higher – although unquantifiable – levels of labour productivity due to improvements in the ability of injured persons to work, and higher workforce morale associated with a reduction of fear, improved care and higher perceptions of fairness
- reduced long-term spending on health care and other government services due to improved injury management over and above any transfer of spending from health care to the ACC
- legal cost savings, resulting in increased consumption spending and the generation of higher levels of economic activity in consumption-based activities. The direct impact of legal cost savings have been incorporated into the comparisons of scheme costs below in order to avoid double-counting, however the total legal cost saving is likely to be greater due to the fact that savings in legal fees in respect of unsuccessful claims and other claimant outlays has not been measured
- increased participation in sport and other physical activities. Sport and Recreation New Zealand conservatively estimates the costs to society of physical inactivity to be $196 million per annum which could conceptually double if New Zealand's inactivity rate were, say, to increase to Canada's rate
- increased tourism activity, related to New Zealand's ability to provide activities such as adventure sports which are less developed elsewhere, due to the difficulties faced in other countries in obtaining liability insurance cover. At roughly 9% of total GDP, tourism accounts for $19 billion in direct value and around $6 billion in indirect value to the New Zealand economy.[11]

Social values

- improved equity in the distribution of resources
- improved social inclusion and cohesion
- lower rates of poverty, by overcoming a key source of marginalisation and enhancing the income earning potential of

lower socio-economic groups who are least able to afford private insurance coverage or litigation

- improved quality of life for injured persons and their carers, families, and friends, as a result of improved injury management
- increased participation in volunteer activities that promote community values and develop social networks, with volunteers achieving coverage when they otherwise would not.

However, achieving this extra 'value' must also be considered in the context of the cost of the ACC scheme compared to the cost of the alternative 'no-ACC' scenario. Total ACC contributions (excluding pre-1999 residual funding) for 2006/07 were $2,620 million. Over the same period we estimate the cost of the alternative scenario (including premiums workers' compensation premium costs, premiums for motor injury and other fault-based insurances, and additional health expenditure and increased social transfers) to be around $2,430 million. This gives an estimate of net additional ACC costs of $190 million. Importantly, this is less than our estimate of the value added by ACC, even if we consider only those values which are measurable.

Further, we note that far more people are covered under the ACC scheme compared to the 'no-ACC' scenario. in the 'no-ACC' scenario, over half (56%) of current 'other benefits' claimants in the ACC scheme would not receive any compensation or social security support except for medical treatment and would need to meet a significant portion of the cost of their injury through their own resources.

An additional indicator of the ACC scheme's fundamental value is the broad conceptual support which exists across New Zealand for the major proposition of the scheme: entitlement to 24-hour, comprehensive no-fault benefits in exchange for the loss of the right to sue for damages suffered from personal injury. Across more than 20 stakeholder consultations, which spanned the complete range of stakeholders in the scheme, all interviewees expressed strong support for this fundamental approach, and maintenance of this basic formula has been a consistent policy of both major political parties since the scheme's inception.

4 How well does ACC perform compared with other schemes?

Given the key identifying features of the ACC scheme - pure no-fault, universal 24-hour coverage of all accidental physical injuries, broad benefits, coordinated case management and a focus on claimant outcomes – there are only a limited number of similar schemes with which to compare. However, by any reasonable measure, ACC performs well when compared with these and other schemes, as considered below.

Broad coverage

Due to coverage of all injuries and ACC's no-fault nature, ACC offers broader coverage than every other scheme around the world. This is particularly so for injuries in public and home environments outside of work and motor vehicles. There are only a few countries in Scandinavia which provide no-fault coverage for treatment injury, a concept which was pioneered by Sweden. In relation to public and home environment injuries, no other comprehensive schemes exist, though a number of European countries provide stronger social welfare schemes to provide income and rehabilitation assistance. Perhaps the only system with conceptually wider coverage than ACC is the Netherlands workers compensation scheme, which provides to workers (only) coverage for all incapacity including illness and sickness.

A notable area where ACC's coverage definition is narrower than other comparable schemes is workplace stress, which is not covered as a primary condition by ACC[§] but is covered to some extent by most other workers' compensation schemes. In addition, the ACC does not provide for ongoing "top up" income benefits for claimants who are able to work full time but at a reduced earning capacity; such cover is common in other workers compensation systems. This is in noticeable contrast to the ACC scheme's relatively generous application of earnings abatement for those who cannot work full time.

Holistic case coordination

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 are typically more fragmented and often feature separate management and delivery of income benefits, treatment services, and vocational and social rehabilitation.

Periodic benefits

ACC income benefits are provided on a periodic basis, rather than as a single lump sum. In the US, UK 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. This evidence indicates that most lump sum recipients spend their award quickly (within 5 years), and a large majority of

[§] Workplace stress is covered by ACC if it arises from a primary physical workplace injury which itself is covered.

claimants become reliant on social security disability benefits as a source of income.[12] In addition, average recipient satisfaction levels reduce considerably over time after payment, due to claimants gradually becoming more aware of the reality of the long-term ill-effects of their injuries and their reduced capacity to work.[13],[14]

The existence of potential lump sum awards can also have significant secondary behavioural consequences, as claimants extend their time on periodic benefits during waiting periods or in anticipation of a settlement. A 1998 Coopers and Lybrand report[15] produced for the New Zealand Department of Labour concluded that "*access to lump sums has been the single most significant reason for past deterioration in claims costs in Australian schemes*".

High benefits

ACC offers income-replacement benefits of 80% of pre-injury earnings, which is in line with or above many other schemes. Some workers' compensation schemes provide benefits which are higher initially, but in many cases benefits are reduced over time by 'step downs' in these schemes. 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.[16]

In contrast to these generous income benefits, some ACC clients find that their providers sometimes charge more for treatment than the ACC will reimburse, leading to a co-payment requirement for treatment by their provider of choice. This is different to most workers compensation schemes elsewhere, and does not comply with International Labour Organisation (ILO) Convention 17. We note that the New Zealand Government has indicated its intention to move toward compliance with this convention over time.

Faster return-to-work

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% of claimants returned to work within six months) outperforms both the Australian average (85%) and all three comparable schemes (the state monopoly schemes of NSW 86%, Victoria 85% and South Australia 77%), with similar results for durable (longer-term) return to work.[17]

Low scheme costs

The ACC employer contribution rate as a proportion of wages is substantially lower (0.78% at June 2007) than in comparable Australian workers compensation schemes (NSW 1.86%, Victoria 1.38%, Australian average 2%). The overall cost of ACC is quite low even after adjustment for coverage (eg common law access) and other known differences, and is also low relative to other international systems (Canada average 2%).

ACC motor vehicle contribution levels are also significantly lower than all Australian states.

In making these scheme cost comparisons, we excluded the pre-1999 scheme funding levy, and only considered the go-forward risk coverage cost of the current scheme.

Low administration expenses

New Zealand has lower claims management expenses (8% of total expenditure) than all Australian schemes (9% to 32%), and lower total administration expenses (24% of total expenditure) than the schemes providing comparable benefits (NSW 28%, Victoria 31%).[16] When one considers that, in addition to these administrative expenses, most Australian schemes also pay significant legal costs for common law claims, it is clear that ACC is paying a relatively high portion of total premiums directly to claimant benefits.[17]

In addition to these more discrete scheme comparatives, we also identified a number of 'whole of scheme' issues which are of relevance to the ACC, both of in terms of its own performance but also in the context of possible lessons to be learned from international experience. These are considered below.

Prevention and safety strategy

New Zealand has comparatively high rates of injury fatality and hospitalisation.[18] However, ACC has a relatively small role in the area of prevention when compared with many other accident compensation schemes internationally, as other schemes often combine the management of prevention and compensation functions.

In 2003, New Zealand launched a new whole-of-government Injury Prevention Strategy (NZIPS)[5] out of recognition that there were still perceived gaps in injury prevention and that an overall strategic and coordinated approach was required. The NZIPS identified six priority areas, with separate sub-strategies to be implemented over the longer term. The ACC is the Secretariat for the NZIPS and also has the mandate to implement the sub-strategies 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. As yet the direction and benefits of this initiative are unclear.

Our consultations with stakeholders revealed positive sentiments towards this Strategy along with a number of shortcomings. One of the limitations noted was the perceived lack of overall coordination and leadership of the NZIPS and there was some support for the ACC to undertake such a role. However, the extent to which the ACC can take a leadership role in prevention is currently limited by:

- legislation[**], which mandates that the ACC 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 limited scope of the Secretariat function for the NZIPS ie while the Secretariat reports directly to the Minister for ACC, specific instructions have been given to ACC that it must not interfere in the responsibilities of the individual agencies; therefore, any ACC influence must be pursued via persuasion and cannot be mandated.

Despite these issues, the ACC needs to focus on prevention so as to contribute to improvement in the rates and incidence of injury in New Zealand. In particular, the ACC can capitalise on its unique position as the national injury insurer with access to timely data to monitor emerging areas of risk and trends in injury and coordinate relevant strategies to mitigate increases in injury to its advantage. The ACC should ensure a level of investment into prevention activities commensurate with the task and while there may be instances where it becomes increasingly difficult to balance the competing priorities of prevention, compensation and rehabilitation, a number of international jurisdictions have provided examples of demonstrable success in being able to so.

Rehabilitation and case management

The Woodhouse Report included ‘complete rehabilitation’ as one of its five guiding principles. Under the current 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 restores to the maximum practicable extent a claimant’s health, independence and participation.*

The ACC has designed a policy framework which sets a high standard for rehabilitation[19]; the challenge for ACC lies in translating these principles into practice.

ACC return to work outcomes compare favourably with Australian schemes[17]. However, recent reviews of vocational rehabilitation activities commissioned by ACC provides advice on opportunities for significant improvement, particularly in the area of robust rehabilitation and claimant outcome measurement.[20] This would allow the ACC to monitor and manage rehabilitation provider performance more effectively, identify gaps in service provision, and improve the quality of how individuals are matched to the most appropriate rehabilitation programmes.

[**] *Injury Prevention, Rehabilitation, Compensation Act 2001* (Sec 263)

In response, the ACC's current approach is evolving, as represented by the recently established Rehabilitation Framework[19] which lays out the organisation's plan for current and future rehabilitation improvements. The framework recognises the importance of several areas highlighted for improvement by the recent reviews. ACC has shown commitment to utilising current best practice principles in rehabilitation. ACC's current project to implement several International Disability Management Standards Council products recognised as being leading edge in workplace disability management is just one example of best practice approaches which target sustainable employment.[21]

When considering the ACC's rehabilitation approach in the context of international experience, several European schemes stand out. These schemes have taken a recent step forward by focusing their philosophy on an individual's ability and participation. Finland's "work ability" approach focuses on a worker's ability rather than their disability and recognises the interaction between a healthy work environment, a worker's well-being, injury prevention, the requirements of an ageing workforce and, importantly, a worker's own perceptions and assessment of their work ability.[22] Germany has also evolved their focus of disability management from that of welfare and passive care for people with a disability to one of participation and active self-determination.[23]

Rehabilitation success relies critically on case management which needs to be sophisticated enough to meet the complexity and variability of cases presented. Over the past decade ACC has demonstrated its commitment to the development of its case management approach and has undertaken various initiatives to increase the professionalism and competency of its case management staff. [24] Despite this, there remain reported issues with the effectiveness of translating these initiatives into case management practice[25], and these observations were supported during a number of the stakeholder interviews.

Although it appears that the ACC organisation may not be currently fulfilling its potential, the ACC's rehabilitation and case management strategies are based on sound principles. It appears that the main issues are to do with how these principles are translated into operational reality and managed, and how outcome performance of the scheme is measured. The ACC recognises these issues and has begun the process of addressing them and we encourage them to continue to do so with the utmost commitment.

Management of serious injury

Each year about 180 people in New Zealand are catastrophically injured and left with significant disabilities from which they will never recover that require life-time support. They will have significant daily needs for care, personal assistance, domestic support and ongoing equipment and medical needs. For those with the most profound injuries, these needs will extend to constant attendant care.

The term `serious injury' (SI) is used by ACC and adopted within this report to describe this cohort of claimants, which was estimated by

the ACC Serious Injury reserving model as at 30 September 2007 to consist of 3,269 claimants representing $4,173 million of scheme liabilities, or 30% of the total.[26] Over 70% of the SI cohort is male, and Maori are generally over-represented, accounting for 23% of the SI cohort (compared to 15% of the overall population).

Social welfare schemes, long-term care insurance and indemnity insurance have all been used internationally to meet the needs of the seriously injured. However, they have not been without their problems and, overall, each of these schemes would tend to fail one or more of the Woodhouse Principles.

- Social welfare systems, while demonstrating some real instances of best practice, have universally struggled against the dynamic of expanding demand and the need to finance the system. A degree of rationing is inevitable and there is often significant unmet need.
- Long-term care insurance schemes offered through private insurers have tended to be expensive and do not offer 'best practice' claims management. Mandatory long-term care insurances such as those in Germany,[27] Israel[28] and Singapore consider the components of best practice, but are focussed on the elderly, so the notions of rehabilitation and social participation are under-developed.
- Indemnity insurances tend to offer benefits in the form of lump sum benefits, which we have previously seen lead to poorer claimant outcomes than periodic benefits schemes.

Thus the current design of ACC best fits (in principle and in practice) the needs of people with serious injury, and the community around them. There are a number of other no-fault schemes which, like the ACC, address the needs of the catastrophically injured. Of particular interest are the Victorian Transport Accident Commission and Tasmanian Motor Accident Insurance Board in Australia, and Quebec's Société de l'assurance automobile. We note that ACC's full coverage of injury stands out in this type of analysis – other schemes cover only a subset of those seriously injured in any jurisdiction.

ACC still faces challenges in the management of serious injury. The SI cohort is steadily growing at a net rate of about 100 claims per annum, while expenditure on the SI cohort has been increasing at a rate of more than 10% per annum in recent years. Personal care is by far the largest cost item for serious injury. According to data from the comparable schemes of Quebec, Canada and Victoria, Australia, overall average payments per claimant across these schemes are broadly similar, although the hourly care rates paid by ACC are significantly lower than in the other schemes, implying that ACC provides considerably more hours of care per day for comparable claims than the other two. Reviews of claimant satisfaction indicate a very strong focus on services and service delivery rather than individual responsibility and expected participation.[29,30]

As a result, the ACC has recently restructured its operations to create a separate operational division focussed on the management

of serious injuries. Although not yet fully implemented, we believe this new strategic direction represents a conceptual “best practice” approach.

Interaction with broader social welfare

In practice, many people who suffer from an accident or illness shift between accident compensation schemes and social welfare systems. Thus the extent of co-ordination and the financial consequences of moving between the ACC and social welfare schemes is important.

Overall, there is less coordination between ACC and the broader social welfare system than is commonly found in European systems, but coordination is better than what is commonly found in the US and Australia. Although there is generally a significant monetary “step-down” for workers who go from ACC onto Ministry of Social Development (MSD) work and income benefits, the size of the step-down is comparable to other OECD systems.

MSD is taking steps to bring a greater focus on rehabilitation and return to work for its clients, and a number of steps are being taken to forge greater links between MSD and ACC, including co-located client service sites. Regional pilots are being established to help bridge the boundaries between ACC and MSD, for those claimants coming off ACC benefits.

Dispute resolution

Dispute resolution is a significant factor influencing outcomes for both injured claimants and the scheme as a whole. It is critical that disputes are minimised, and once they arise, are dealt with in a timely, objective and appropriate fashion. Around 6,000 disputes are lodged with ACC each year (4% of “other benefit” claims), and half of these are withdrawn or settled prior to a review decision being made. Disputes regarding cover, treatment and independence allowances (for injuries prior to 2002) make up over half of ACC’s reviews.

Comparison with other schemes indicates that the dispute rate in New Zealand is very low. In particular for workplace claims, ACC’s dispute rate of 0.2% (of “other benefit” claims) compares with an overall Australian average of around 9%, with Queensland at 4% having the lowest Australian rate.[16] ACC’s low rate of disputation is probably largely due to ACC’s universal coverage of injury, which removes most of the coverage boundaries leading to disputes in other schemes. ACC’s periodic benefits structure and the lack of employer experience rating of premiums may also contribute to the lower level of disputation.

Dispute resolution is handled by an agency which is wholly-owned by ACC but independently managed (Dispute Resolution Services Limited – DRSL). Consultations for this review reveal a number of concerns with the performance of DRSL, although a recent independent review of the performance of DRSL, commissioned by ACC, found that DRSL’s claim decision review process was

generally independent in substance, competent, and complied with the IPRC Act.[31]

A number of organisations we consulted believe that a scheme Ombudsman would be an appropriate addition to the dispute resolution process.

ACC performance overall

Overall, summarising our observations thus far, we conclude that the current ACC scheme is consistent with the Woodhouse Principles, adds considerable value to New Zealand society and economy and performs very well in comparison to alternative schemes in operation internationally.

Our review now looks forward to the future of ACC.

5 What are the key trends and risks for ACC?

Our review across the landscape of New Zealand demographics, environmental trends, medical and health system risks and population health has not uncovered any rapid forces which are expected to change the fundamental landscape for the ACC scheme over the 5 to 10 year timeframe as stipulated in our terms of reference.

Nevertheless, even in the short to medium term the following risks and trends will influence the ACC scheme either directly or indirectly:

- intensification of the workplace and associated psychosocial hazards, in particular workplace stress
- rising medical costs
- ACC's interaction with the wider public health system
- growth in chronic disease and its role in injury
- socio-economic disparities in health.

The major 'macro' challenge facing ACC over the next 40 years is the ageing of the New Zealand population, and in particular the ageing workforce, and the ramifications are wide. Not only is it likely that the frequency of injury will increase as a direct consequence of ageing, but it will be compounded by the increase in chronic disease.

Population demographics

New Zealand's population continues to grow larger and older. It is estimated that New Zealand's population will reach 5.05 million by 2051[32] and by the late 2040s the proportion of the population aged 65 years and over will have doubled to approximately 24%.

Long life is a sign of good health and so the ageing of New Zealand's population is partly an indicator of improving health. Nevertheless, along with this positive trend come some particular challenges. For the ACC, it is likely to see an increase in injuries to the elderly from falls and motor vehicle traffic accidents. The workforce is also ageing, which will put pressure on the incidence of work-related accidents. Ageing will also increase the length of time people live with disability and chronic disease, and contribute to an increase in overall healthcare expenditure.

The New Zealand population is also becoming more diverse with the non-European (Maori, Pacific Island and Asian) population projected to increase to around 40% of New Zealanders by 2020[33]. These groups tend to have a younger age structure and as such they will become increasingly important in the workforce.

The changing nature of work

Over the past two decades, the New Zealand economy has changed from being one of the most regulated in the OECD to one of the most deregulated. There has been a strong and consistent shift away from primary and secondary industries (eg fisheries, forestry and mining and manufacturing) towards service industries across the New Zealand economy, with corresponding impacts on the overall nature of work in the economy.

There is increasing workforce participation from women, and younger and older people, and there are ongoing changes in working methods and arrangements, partly as a consequence of globalisation and the increased use of information and communication technology (ICT) in the workplace. The changes in work environments can be described along five dimensions:

- **Employment relationships**: An increasing proportion of workers are employed in less secure forms of employment (eg contract work) which are associated with higher injury rates.[34,35]
- **Business structures and practices**: Increasing competition from global economies and the increased utilisation of ICT has resulted in the creation of new `lean', `flexible' or `high performance' systems and practices, which are associated with decreased job security.[36]
- **Work times and work arrangements**: Widespread expansion of business operating hours, an associated increased demand by employers to cover irregular work hours and the need to allow for increased staff flexibility has increased the prevalence of non-standard work arrangements.[37,38,39]
- **Working methods**: Technology is included in daily work practices and has become an everyday, essential working tool. Tele-working and telecommuting are increasing.[40,41,42,43]
- **Work demands**: Increasingly, work is being characterised by elevated psychosocial workloads, with many employees facing increased mental and emotional demands in the workplace even as physical demands decrease.[44]

The increasing intensification of the workplace has led to higher levels of workplace stress. Internationally this had led to increased claim rates and incapacity. Although stress is not directly covered by the ACC scheme, it is a strong risk factor for musculoskeletal injury and cardiovascular disease, both of which are covered in certain circumstances.

Whilst the specific impact of working conditions and occupational exposures on social disparities in health has yet to be comprehensively examined in New Zealand, there is a considerable body of research to suggest that work has a contributing role in reinforcing health inequalities.

Medical and health system trends

Public healthcare expenditure is growing faster than GDP and this trend is set to continue for the next 40 years. In New Zealand, per capita health expenditure in real terms is driven by the interaction of three factors: population ageing, health status, and coverage and prices. A recent Ministry of Health report[45] has estimated that:

- government health expenditure as a percentage of GDP will increase from 6.2% (in 2002) to 9.2% (in 2051), an increase of almost exactly 50%
- older people's share of health expenditure will increase from 40% to 63%, yet the ratio of spending on the average older versus younger person will decrease (by approximately 25%)
- growth in coverage and prices, not population ageing, will continue to be the key driver of health expenditure
- ageing will increase upward pressure on spending (especially from about 2026), making it more difficult to constrain spending growth.

In addition, the main effect of technological development has been to increase spending pressure, by expanding the possibilities for improving health. Therefore – in order to limit this inflationary effect *and* to achieve better health outcomes – it will be necessary for New Zealand to take a more strategic approach to technology adoption eg through 'horizon scanning', technology trialling (eg for bionics) and promoting evidence-based guidelines for clinical practice. It would then be possible to redirect investment towards more cost-effective interventions that would reduce the incidence and improve the management of chronic, disabling diseases and conditions. The ACC should consider how it is best able to influence such an approach in the wider New Zealand context, given that it has a clear interest in managing the costs of health care.

Interface between ACC and broader health care

In the period 1 July 2006 to 30 June 2007, ACC made payments totalling approximately $2.5 billion, of which about $889 million related to medical practitioner or hospital-related costs. This equates to 36% of ACC's total payments and approximately 11% of total

health care expenditure in New Zealand. Therefore, ACC has an influential role in certain areas of New Zealand's health system.

General Practitioners

Broad government GP funding has recently changed from a fee-for service model to a capitation (fee per person per year) basis, but the ACC scheme still pays on a fee-for-service basis. There is a risk to the ACC scheme if this funding disparity creates incentives for supplementing base provider income with ACC fees. In addition, a fee-for-service model does not give providers incentives or flexibility to innovate and specialise, nor consider the possibilities for prevention and rehabilitation beyond the treatment they are paid to provide care ie it is not outcome-based.

If ACC does revise the current funding mechanism for GPs, its successful implementation will depend upon effective clinician engagement and stakeholder management given the emotive subject matter and the highly polarised views which exist therein. It is likely that any change in funding mechanism to the GPs would be resisted by them.

Access and coverage to elective treatments

The ability of the ACC to purchase health and rehabilitation services directly from secondary and tertiary health is widely seen as a great benefit to scheme claimants in terms of:

- reduced waiting times and thus improving their chances of improved rehabilitation
- encouraging specialisation in rehabilitation both in terms of surgery and support services.

ACC's purchasing capability has also provided the opportunity to negotiate directly with providers and hence exert downward influence on costs, which at times has created tensions within the system. However, perceptions exist (based on the feedback received during the stakeholder consultations) that the ability to contract directly with health providers has not entirely removed the existence of delays for all ACC claimants because of (a) financial constraints and (b) the prioritisation of treatment of workers over those of non-workers.

This perceived lack of transparency appears to be at odds with the approach taken in the broader public health system, which is distinctive in its explicit acknowledgment that there is "a limit to the amount of elective treatment that taxpayer funding can support". The Ministry of Health's Clinical Priority Assessment Criteria seeks to ensure that the government gives priority to patients with the greatest need and therefore has equity – despite longer waiting lists – as a central tenet. Whilst not a hugely destabilising influence such differences in approach could adversely affect the public's opinion of the ACC.

Population health trends in New Zealand

Chronic disease, injury (discussed above) and disability are the key – and inter-connected – health trends which are affecting New Zealand now and will continue to do so for the next 40 years.

Chronic disease

Chronic conditions are diseases of long duration and slow progression[46] and (as elsewhere in the developed and developing world) they are the leading cause of illness in New Zealand, accounting for more than 80% of deaths.[47] They include diabetes, cardiovascular disease (CVD), cancer, respiratory conditions, mental health conditions, such as anxiety and depression, and arthritis. Rising obesity levels are also likely to increase the incidence of diabetes in the future, which currently affects approximately 5% (both diagnosed and undiagnosed) of the New Zealand population.

The current growth in the number of people living with chronic conditions is primarily affected by:

- lifestyle risk factors – in particular, lower levels of physical activity, poor nutrition, alcohol consumption and tobacco use – all of which have a striking association with lower socio-economic status[48]
- ageing of the general population
- improvements in the management of previously acute conditions.

The economic toll of chronic disease, in terms of direct (eg longer lengths of stay in hospital) and indirect costs eg lost productivity, absenteeism etc, is approximately 3% of gross domestic product, which would make the total cost to New Zealand in 2007 approximately $4 billion per annum.[49]

Chronic disease is also associated with higher injury frequency eg Motor Vehicle Traffic Crashes,[50] falls, and musculoskeletal conditions. The increasing prevalence of chronic mental health conditions adds another layer of complexity to these trends, since poor mental health is associated with both higher levels of other physical chronic disease and injury. In addition, chronic conditions can often complicate the injury management and rehabilitation process, particularly when mental illness (eg depression and anxiety) are present as a co-morbidity.

As a consequence, the profile of ACC's claimants is becoming more complex and therefore the ACC will need to employ more sophisticated methods in assessing the potential risk profile of new claimants and their rehabilitation needs.

Disability

The main source of data for disability trends in New Zealand is the self-assessed New Zealand Disability Survey and to date there have been three such surveys: 1996, 2001 and 2006. The Survey applies

a functional concept of disability in order to identify the limitation resulting from a disability rather than identifying the nature of the disorder or disabling condition itself.

The main findings from these data are:

- In 2006,[1] an estimated 660,300 New Zealanders reported a disability, representing 17% of the total population which is substantially lower than the rates reported in the two previous surveys (20%). The apparent decline was evident across all age groups but was more marked in the older age groups.
- The risk of disability substantially increases with age.
- Accidents or injuries are the most common cause of disability for those of working age.
- The proportion of disease-related disability has remained constant, suggesting that increases in chronic disease are not (yet) resulting in increasing levels of disability or that people's perception of disability as a consequence of illness is actually changing.
- Maori have a higher disability rate than other ethnic groups in every age group.[1]
- There has been little change in the proportion of the population with a disability requiring high support since 1996. In contrast there is a clear downward trend across the period for low support needs, and an upward trend in medium support needs.

While the trends in chronic disease and disability paint quite a complex and sometimes varying picture, it appears that some level of morbidity compression may be occurring in New Zealand. Morbidity compression implies that mortality reductions will be associated with a redistribution of disease and disability from more severe to less severe states. Under this situation, the proportion of the life span with serious illness or disability stabilises or decreases, whereas the proportion with moderate disability or less severe illness increases. As such, it is this scenario which appears to provide the best fit to the New Zealand evidence on changes in population health. This situation is also consistent with trends towards earlier detection of chronic conditions and better treatments to maintain health at some level. As a consequence, the demand for lower level disability support services over a longer period of time is likely to increase.

It is, however, unlikely that the Maori population will experience the same level of morbidity compression as European New Zealanders, as the proportion of the Maori population that experiences disability during prime working age is high and increases with age.

Sickness and invalid benefit trends

Although disability rates have been stable or declining, the number of people receiving sickness and invalid's benefit in New Zealand has grown considerably over the past three decades.

Over and above the impact of population growth, population ageing, and the rise in superannuation age from 60 to 65 years, the growth in the number of sickness and invalid's benefit recipients in New Zealand has been attributed to the growing prevalence of mental illness and musculoskeletal incapacities. The rate of growth was most rapid for Maori and Pacific people although they were more likely to have other chronic conditions (eg CVD, cancer, etc.) rather than mental health and musculoskeletal issues as their prime reason for sickness/incapacity.

Once on sickness or invalids benefits (as a proxy for disability) it is harder for people to gain employment. However, there is a growing focus internationally and in New Zealand on the systematic facilitation of greater workforce participation amongst people with a disability which should be encouraged, especially at an inter-agency level.

Social determinants of health

While medical care can prolong survival and improve prognosis after some serious diseases, more important for the health of the population as a whole are the social and economic conditions that make people ill and in need of medical care in the first place. Social gradient, stress (including from work), early life experience, unemployment, social support, addiction and access to cheap good food and transport are all key factors in determining a person's health.[51]

In this context, it is worth noting that the aims of the first four Woodhouse principles – Community Responsibility, Comprehensive Entitlements, Complete Rehabilitation and Real Compensation are all aimed at redressing/addressing the impact of these issues on people who are injured. Given the increasing complexity of the ACC's claimant base, it is likely that the ACC's ability to meet these principles is likely to become more challenging, particularly in relation to Complete Rehabilitation – both in terms of cost and completely rehabilitating those with chronic conditions.

With this more complex cohort in mind, it will be necessary for the ACC to continue to adapt and develop its rehabilitation approach to meet this ongoing challenge. In addition, a significant issue for ACC is the scale at which this overall approach needs to occur, ie it is not just scheme-wide. ACC needs to engage effectively with its wider stakeholders in prevention, case management and health care delivery activities to ensure its public good mandate is efficiently and effectively delivered.

6 What are the best mechanisms for implementing the ACC scheme and delivering ACC services?

Models considered

Around the world we can observe four main structural approaches for the implementation and delivery of accident compensation schemes:

- **Pure government monopoly**. This is the ACC model[††], and is used for the workers compensation schemes of Queensland and all the Canadian provinces, the world's three other no-fault motor injury schemes (Victorian Transport Accident Commission, Tasmanian Motor Accident Insurance Board in Australia, and Quebec's Société de l'assurance automobile), and the few treatment injury schemes which exist.
- **Closer integration with the broader social welfare system**, particularly for rehabilitation and return to work, in line with the broad approaches common in Northern Europe. European schemes also often feature a "carving out" of income benefits to the private sector.
- **Private competitive underwriting**, similar to most workers' compensation schemes in the United States and the smaller schemes in Australia.
- **Government underwriting with outsourced service delivery**, where the injury benefit system remains public but where these public services are delivered through managed competition arrangements with private outsourced providers, similar to the workers compensation schemes in the two largest Australian states, New South Wales and Victoria.

We evaluate each of these delivery mechanisms against the Woodhouse Principles, as well as the imperatives for safety and prevention and overall cost system cost affordability.

Clustering of international delivery models

When we examine the delivery systems which have been selected for implementing accident compensation schemes around the world, a clustering pattern emerges:

- Schemes delivered through pure private underwriting have relatively short financial "tails" due to the use of lump sum settlements, and do not feature vocational rehabilitation as a claimant entitlement (but rather a tool at the option of the employer and insurer). These financially focused systems lend themselves to insurance products which can often be

[††] Although, as noted previously, ACC and most other government monopoly workers compensation schemes allow for approved employers to self-insure a portion of their claims management and financial risk.

delivered efficiently by the financial sector through private insurance, with minimal regulatory oversight.[52]

- Schemes which feature high levels of periodic payments and provide a wide spectrum of defined vocational rehabilitation entitlements are all delivered through government monopolies.
- The two largest workers compensation monopolies in Australia have evolved systems for contracting out of their claims management to competitive private providers, with provider outcomes managed through comprehensive systems of performance-based remuneration.
- Many countries of northern Europe have a long history of significant social transfers and outcome-focused case management of incapacity and vocational development, and their case management of incapacity due to injury, particularly work injury, has evolved to be closely integrated with these broader social welfare systems.

Comparative performance of delivery models

The ACC under its current implementation structure performs as well or better than most other schemes we can observe around the world. Detailed comparative studies of schemes in North America and Australasia have failed to establish any evidence which would suggest specific changes to ACC's structural implementation.[52,53]

We believe that movement of the ACC scheme towards the more integrated social welfare approaches of northern Europe is unlikely due to the overall historical and societal differences which have driven the separate evolution of these schemes. We also believe that such movement might risk the loss of important control-cycle feedback mechanisms which exist in the scheme between claims incidence, cost and funding levels. However, there are a number of areas where closer functional relationships between MSD and ACC could potentially lead to improvements.

From experience in other schemes, we can project that transferring scheme coverage and underwriting to private insurers would require effective regulation of the delivery of the social objectives articulated by the Woodhouse Principles, because:

- Full coverage availability would need to be ensured, perhaps through some form of price regulation and/or residual market mechanism.
- Regulation would be required to ensure appropriate and sound decision making with respect to the assessment of ongoing claimant eligibility and ongoing entitlement.
- Regulation would be required to ensure the full and proper provision of vocational rehabilitation services.
- Appropriate arrangements would be required for the management of the long-term needs of serious injury claimants.

Despite competitive market pressures, comparative evidence from other jurisdictions suggest that administrative cost levels under private underwriting would be likely to rise to some extent.[52,54] It is unclear how the private insurance market would cope with coverage of other accounts beyond the work account, as there are no examples of private underwriting for closely comparable injury schemes.

A successful approach to contracting out of claims management has recently evolved in some Australian workers compensation schemes. However these schemes do have somewhat higher administrative cost levels than monopoly schemes (although lower than private underwriting), and as already presented, ACC performance across a range of high-level indicators is better than that of Australian schemes. Thus, although contracting out of claims management may potentially offer some conceptual advantages, there is no clear evidence that this approach would improve delivery of the ACC employers account.

The broad concept of contracting out of claims management is, at least in theory, applicable to other ACC accounts. However, unlike for workers compensation, there are no examples elsewhere of this approach being used for systems covering injury environments comparable to other ACC accounts. Due to this lack of any comparable experience, we cannot form a view as to the practical potential of this approach for any of the other ACC accounts.

We note that all comparative evidence we have relied on for this analysis is confounded by significant differences in scheme benefits and design, both between schemes and within schemes over time, and research sources we have relied on are consistently cautious about the reliability of their results. Thus, most specific comparative conclusions are relatively weak. However, the aggregated results are well-aligned, which strengthens the total evidence base somewhat.

Conclusions on implementation and delivery of ACC accounts

Employers

For the employers account, we can observe the following:

- ACC under its current structure performs comparatively well in terms of overall cost, administrative cost and return to work measures, with relatively high benefit levels.[54]
- Comparisons elsewhere indicate that privately underwritten workers compensation schemes as a group have higher levels of administrative cost on average than government monopoly schemes, likely driven the need to cover profit margins and marketing expenses.[54],[52] The especially long financial tail of the ACC would be expected to further increase any required level of private underwriting profit margins.[55]

- Comparisons elsewhere fail to establish any systematic difference in remaining overall scheme cost levels between government monopoly and private underwriting schemes.[54],[52]
- Workers compensation schemes which are closely comparable to ACC (periodic income benefits, comprehensive case management with coordination of a full range of benefits and services, and a focus on qualitative claimant outcomes of participation and independence) are all delivered through government monopolies, whereas privately underwritten schemes generally have a stronger focus on lump-sum financial settlements.
- A change to private competitive underwriting of the ACC employers account would require significant operational regulation in order to ensure delivery against the Woodhouse Principles.

These observations lead us to form a moderately strong view that a government monopoly is the best observable mechanism for implementing the ACC employers account. However, although government underwriting seems the best fit based on available information, the scheme's own privatisation experience in 1999 shows private underwriting to be at least mechanically viable, subject to sound regulation designed around the social objectives of the Woodhouse Principles.

Self-employed and earners

There are to our knowledge no other ACC-comparable schemes for the self-employed, which are generally excluded from workers compensation schemes, nor for coverage of workers outside work (although we note that such coverage is provided as an integrated part of the workers compensation systems in the Netherlands and Switzerland). Due to this lack of comparative evidence we are unable to make any evaluative conclusions regarding the best implementation approach for these accounts.

Motor vehicle

For the motor vehicle account we can make the following observations:

- There are few motor vehicle schemes in the world which share the key features of ACC (full or largely no-fault coverage; periodic benefits; comprehensive case management with coordination of a full range of benefits and services; and a focus on qualitative claimant outcomes of participation and independence). These schemes are presented in more detail in Chapter 4.
- The few schemes which are comparable to ACC are all delivered through government monopoly schemes.
- When compared with other no-fault motor vehicle injury schemes, ACC has relatively high benefit levels but very low levels of overall cost.

- The motor vehicle account is the largest contributor of serious injuries to the scheme accounting for 43% of total serious injury claims and costs.
- A change to private competitive underwriting of the ACC motor vehicle account would require significant operational regulation in order to ensure delivery against the Woodhouse Principles.

Relative to workers compensation, there is less direct comparable evidence regarding implementation structures and delivery mechanisms for motor vehicle schemes. However, we view the lack of privately underwritten ACC-comparable motor vehicle schemes as important evidence in itself, and we believe the importance of serious injuries within this account suggests that, taken as a whole, the motor vehicle account is best implemented under its current structure. This recommendation is stronger than that for the employers account, due to the greater importance of the serious injury cohort for this portfolio.

Treatment injury and non-earners

There are very few examples of no-fault treatment injury schemes elsewhere, and all are delivered through government monopolies.[‡‡] The ACC treatment injury account is currently broadly funded through the earners and non-earners accounts, the latter itself being funded via general revenue. Thus, the financial basis for private underwriting of this account is not immediately obvious, as there is no financial link to the risk environments of these accounts. These accounts contribute a significant portion of the serious injury client portfolio. Due to these observations it is difficult for us to envisage significant changes to the current implementation structure for the treatment injury and non-earners accounts under their current broad conceptualisation.

Serious injuries

There are few schemes in the world which provide ACC-comparable benefits and services to victims of serious injury. The few fully-funded accident compensation schemes which offer ACC-comparable benefits and services for significant client portfolios are either motor vehicle or treatment injury schemes and all these are implemented as government monopolies.[§§] Experience from these schemes and ACC has shown that good management of serious injury claims requires both specialist expertise and significant market presence, both of which generally come from specialist management of a focussed claim portfolio.

Long-term management of serious injury benefits and services typically lacks some of the potential financial incentives which can apply to other types of less serious claims. Investment in quality vocational rehabilitation can lead to a later payoff in increased

[‡‡] These schemes are detailed in Chapter 4.

[§§] These schemes are detailed in Chapters 4 and 5.

financial independence for moderate injuries. However, appropriate social rehabilitation may not offer any inherently offsetting financial benefits for the provider, even as it does generate significant social value through client independence and participation.

In addition, the very long financial tail of ACC social rehabilitation and income benefits for serious injury clients is a significant impediment to private underwriting, due to the very high levels of financial risk capital and subsequent supporting profit which would be required.

Due to all these factors, we strongly recommend that the implementation and delivery of benefits for serious injury clients remain a government service.

7 How could the ACC scheme be improved?

This section summarises the main recommendations for ACC arising out of our detailed analyses in our main report.

Prevention

Significant improvement in injury rates seems unlikely without a major structural change in the approach to safety and prevention.

Whilst the introduction of a high level injury prevention strategy (NZIPS) has been a positive step, further work is required to translate this strategy into operational reality. Some of the stakeholders consulted supported the ACC taking a greater leadership role. While it has been acknowledged that there are a number of limitations with respect to the ACC taking on this leadership role, nevertheless 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 (eg 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.

Rehabilitation strategy and Case management

Recent reviews of ACC's overall rehabilitation activities indicate a need for improvement.

Successful rehabilitation is central to scheme performance and case management is a critical component of that success. Previous reports and consultations conducted have indicated an ongoing need for improvement in the ACC's approach to rehabilitation and

case management. The ACC has demonstrated significant commitment in developing its approach to rehabilitation and as such undertaken various initiatives to increase the competency of its case management staff. However, there is an ongoing challenge to translate best practice principles into effective operations that lead to optimal claimant rehabilitation and return-to-work outcomes. We are aware that the ACC is currently targeting identified operational deficiencies and impediments to scheme performance with initiatives delivered under its Rehabilitation Framework.

We recommend the ACC continue to vigorously pursue rehabilitation improvements under this Framework. To this end, initiatives should continue to be based on best practice principles and continue to be focused on improving claimant outcomes. Case management strategies should continue to concentrate on strengthening the focus on individuals and individual involvement and promote cooperation and collaboration between all parties. This will set the foundations for the ACC to further develop a more comprehensive framework, which includes a holistic philosophy for the integration of rehabilitation into the continuum of social and occupational health maintenance: injury prevention; rehabilitation; and continued participation.

Development opportunities for claimants with permanent partial incapacity

The ACC should consider opportunities for expanded vocational development for claimants who are facing a loss of income benefits due to Vocational Independence assessment but who have significant earnings impairment.

The current proposed amendment bill would offer some improvement for these claimants in the requirement that pre-injury earning levels be considered in establishing rehabilitation plans and assessing Vocational Independence.

Recent reviews of rehabilitation services highlight the extra leverage on the quality of individual rehabilitation plans for these claimants, as they are used not only to guide the rehabilitation process but also as a trigger for Vocational Independence assessment.

We recommend that the scheme explore the establishment of a separate, non-entitlement programme for extended vocational development in appropriate cases as determined by ACC and agreed with interested claimants. This programme would offer vocational development services and training which extend beyond a claimant's pre-injury employment, experience, education, training and skills but which seek to restore and perhaps even extend past the claimant's pre-injury vocational situation in terms of participation, flexibility and opportunity. A first target claimant cohort for this programme should be those whose permanent partial incapacity causes a permanent and significant reduced capacity to earn, but who through the vocational independence test may stand to lose their entitlement to ongoing scheme income benefits. It is unclear whether such an approach to this client segment would require additional statutory authority or modification. We also note that this

client segment is quite small (less than 0.5% of “other benefit” claims).

Management of serious injury

ACC is seeking to achieve best practice in the management of serious injury.

Under the current ACC scheme, people who have sustained serious injuries have access to dignified support at a level that is not achieved in many comparable societies. There is, however, room for improvement for these claimants in the current scheme, in order to keep pace with international best practice.

ACC has commenced the National Serious Injury Service (NSIS) to concentrate on the management of these claims, and it is currently conducting a Capability and Performance Review. Whilst the NSIS has arisen out of a need to provide better independence and participation outcomes, it is also necessary to stabilise the rising cost of serious injury claims. The strategy and plan for the NSIS is sound, and represents international best practice.

We recommend that ACC continue to develop plans for self-purchasing arrangements for serious injury clients. We also recommend that ACC consider the development of long-term longitudinal monitoring and benchmarking of serious injury clients, in line with this type of research funded by the Transport Accident Commission in Victoria, Australia.

Financing of GP services

In the wake of recent changes to broad government funding of GPs ACC should reconsider its own funding approach.

ACC should consider changes to its funding model which would better align with the broader New Zealand Primary Care Strategy and would mitigate the obvious problematic incentives to augment base GP income through fee-for-service ACC treatment.

In light of the broader changes to the funding of GP services having provoked strong responses from certain stakeholders, ACC should take care to maintain constructive relationships, particularly with clinicians. Fundamental funding changes may also present important opportunities to improve ACC scheme experience through pay-for-performance elements, which could improve safety and prevention incentives as well as drive better management of chronic and mental health issues which are closely linked to rates of physical injury and recovery.

Experience rating

Experience rating for employers would be more fair and efficient, but would have risks.

Experience rating for the employers account has been debated since long before the ACC scheme’s inception. Throughout our

consultations, experience rating ranked as a top concern for individual employers, employer groups and associated stakeholders, all of whom strongly favoured experience rating on the basis that it is fairer and provides an incentive for safety. On the other hand, the CTU and most of the academic experts we interviewed had a strong aversion to experience rating on the basis that it provides incentives to suppress claims or potentially to encourage injured workers to return to work before they have recovered sufficiently.

We note that the effects of experience rating already largely apply to the employers account, since the majority of large employers are partially self-insured via the Partnership Programme. We also note that the weight of evidence suggests that any systematic safety incentives from experience-rating, if present, have small impacts. However, in our view, experience rating which makes appropriate use of statistical credibility offers substantial fairness and economic resource allocation efficiencies which, if properly regulated, could outweigh the residual adverse incentive risks which may remain even with appropriate regulation, and which could apply more broadly to medium-sized employers which cannot currently participate in the Partnership Programme.

Monitoring and evaluation

ACC monitoring and evaluation is good but could be further enhanced.

In general, the monitoring we observed in use by ACC management compares well with that we have seen in other comparable schemes. Suggestions for how data collection and reporting could be extended include:

- 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.

We have also presented a framework for reports to assist ACC management in assessing whether the information they receive could be improved.

8 References

1. Statistics New Zealand. 2006 Disability Survey. In: Statistics New Zealand, editor, 2007.

2. Tobias M. The Burden of Disease and Injury in New Zealand. *Public Health Intelligence Occasional Bulletin No 1*, 2001.

3. Injury Prevention and Research Unit. Causes of injury by age. *Factsheet 39*: University of Otago, 2007.

4. Statistics New Zealand. Fatal Injury Statistics: October 2005, 2005.

5. New Zealand Injury Prevention Strategy Secretariat/ ACC. New Zealand Injury Prevention Strategy, Why a Strategy?

6. New Zealand Royal Commission of Inquiry into Compensation for Personal Injury. Compensation for Personal Injury in New Zealand: Report of the Royal Commission of Inquiry, 1967.

7. DeWees D, Duff D, Trebilcock M. *Exploring the Domain of Accident Law: Taking the Facts Seriously*: Oxford University Press, 1996.

8. PricewaterhouseCoopers. WorkCover NSW - Health, Social and Economic outcomes associated with different compensation pathways.: PricewaterhouseCoopers, 2001.

9. Seubert DE, Cohen LT, LaFlam JM. Is "No-Fault" the Cure for the Medical Liability Crisis?, 2007.

10. Sloan FA, Chepke LM. *The Law and Economics of Public Health*: Now, 2007.

11. Statistics New Zealand. Tourism Satellite Account 2006.

12. Flahavan, Rea, Kelly, Tener. California Practice Guide: Personal Injury: TRG, 1992.

13. Bass C. Lump sum accident compensation, 1983.

14. Neave M, Howell. Adequacy of Common Law Damages. *Adelaide Law Review Research Paper No. 5*. The University of Adelaide: Adelaide Law Review Association, 1992:58.

15. Coopers & Lybrand Australia. Report to the New Zealand Department of Labour: Introduction of competition to the Provision of ACC Services., 1998.

16. Workplace Relations Ministers' Council. Comparative Performance Monitoring Report - Comparison of occupational health and safety and workers' compensation schemes in Australia and New Zealand. 8th ed, 2006.

17. Campbell Research and Consulting. Australia & New Zealand: The National Return-to-Work Monitor 2006/2007. North Fitzroy: Heads of Workers' Compensation Autorities, 2007.

18. Connor J, Langley J, Cryer C. International Comparisons of injury: A compilation of reports to the New Zealand Injury Prevention Strategy Secretariat, 2007.

19. ACC. The Rehabilitation Framework: Accident Compensation Corporation, 2007.

20. McPherson K, Diesfeld K, Schluter P, Travaglia S, Ryan B, DeSouza R, et al. Evaluation of Vocational Rehabilitation under the IPRC Act 2001. Auckland: Auckland University of Technology., 2007.

21. Osborne G. Managing disability in the NZ workplace – the NIDMAR approach (presentation to the ACC Consumer Outlook Group). www.acc.co.nz.: Accident Compensation Corporation, 2007.

22. Tuomi K, Ilmarinen J, Jahkola A, Katajarine l, Tulkki A. Work Ability Index. *Occupational Health Care 19, Respect for the Ageing Programme*. Helsinki Finland: Institute of Occupational Health, 1994.

23. Armstrong H, Laurs R. When the going gets tough: what happens to worn-out workers? Wellington: Hazel Armstrong Law, 2007.

24. Clayton A. Review of the Framework for Rehabilitation in the South Australian WorkCover Scheme. 2005:23-24.

25. Controller and Auditor-General. Accident Compensation Corporation: Case Management of Rehabilitation and Compensation. Wellington: Office of the Auditor-General, New Zealand, 2004.

26. ACC. Serious Injury Report, 2007.

27. Geraedts M, Heller GV, Harrington CA. Germany's Long-Term Care Insurance: Putting a Social Insurance Model into Practice. *The Milbank Quarterly* 2000;78(3).

28. Naon D. The impact of the community long-term care insurance law on services for the elderly in Israel. Jerusalem: Brookdale Institute of Gerontology and Adult Human Development in Israel, 1996.

29. UMR Research. Satisfaction with services provided by ACC: Serious Injury Community Claimant Report – a Quantitative and Qualitative Study, 2007.

30. UMR Research. Satisfaction with services provided by ACC. Serious Injury Main Support Person Report – a Quantitative Study, 2007.

31. VINSTAR. Feasibility Study: The Future of Dispute Resolution Services Limited and its services, 2006.

32. Statistics New Zealand. National Population Projections, 2007.

33. Statistics New Zealand. Demographic Trends 2006: National Ethnic Projections based on 2001 Ethnic Affairs, Ethnic Perspectives in Policy. 2006.

34. Allan C, Brosnan P, Horwitz F, Walsh P. From standard to non-standard employment: Labour force change in Australia, New Zealand and South Africa. *International Journal of Manpower* 2001;22(8):748-763.

35. Tucker D. "Precarious" non-standard employment - a review of the literature. *Report of the Labour Market Policy Group*. Wellington: Labour Market Policy group, Department of Labour, 2002.

36. OECD. New enterprise work practices and their labour market implications. In: OECD, editor. *Employment outlook* Geneva: Organisation for Economic Co-operation and Development, 1999:179-221.

37. Gospel H. Quality of working life: A review on changes in work organisation, conditions of employment and work-life arrangements. *Report to the ILO, Geneva*: International Labour Office, 2003.

38. Houseman S, Osawa M. *Non-standard work in developed economies: Causes and consequences*: W.E. Upjohn Institute, 2003.

39. Evans JM, Lippoldt DC, Marianna P. Trends in working hours in OECD countries. Geneva: OECD, 2001.

40. Lehto A-M, Sutela H. Efficient, more efficient, exhausted: Findings of Finnish quality of work life surveys 1977-1997. Helsinki: Statistics Finland, 1999.

41. Hector C. Information technology use and employment change in New Zealand industries. *New Zealand Journal of Industrial Relations* 2003;28(3):212-228.

42. Hughes K, Lowe GS, Schellenberg G. Men's and women's quality of work in the new Canadian economy: Canadian Policy Research Networks, 2003.

43. James L. Redefining work as a result of globalisation and the use of new information technologies. *Magazine of the European Agency for Health and Safety at Work* 2000;2:1-4.

44. Kompier M. The psychosocial work environment and health - what do we know and where should we go? *Scandinavian Journal of Work, Environment and Health* 2002;28(1):1-4.

45. Ministry of Health New Zealand. Population Ageing and Health Expenditure: New Zealand 2002–2051. In: Ministry of Health, editor. Wellington, 2004.

46. World Health Organisation. Chronic Diseases http://www.who.int/topics/chronic_diseases/en/.

47. National Advisory Committee on Health and Disability. Meeting the needs of people with chronic conditions. In: Health Mo, editor, 2007.

48. Glover JD, Hetzel DM, Tennant SK. The socioeconomic gradient and chronic illness and associated risk factors in Australia. *Australia and New Zealand Health Policy* 2004;1(8):1-8.

49. Suhrcke M, Nugent R, Stuckler D, Rocco L. Chronic Disease: An Economic Perspective. London, 2006.

50. Whitlock G, Norton R, Clark T, Jackson R, MacMahon S. Is body mass index a risk factor for motor vehicle driver injury? A cohort study with prospective and retrospective outcomes. *International Journal of Epidemiology* 2003;32:147-149.

51. Wilkinson RG, Marmot M. *Social determinants of health: The solid facts*. 2nd ed. Copenhagen: WHO, 2003.

52. Thomason T, Schmidle T.P., Burton JF. *Workers Compensation Benefits, Costs, and Safety under Alternative Insurance Arrangements*. Michigan, USA: WE Upjohn Institute for Institute for Employment Research, 2001.

53. Burton F, J., Thomason T. The Employers' Costs of Workers' Compensation Insurance in Ontario and Selected Other Canadian and U.S. Jurisdictions: Workers' Disability Income Systems, Inc., 2001.

54. Workplace Relations Ministers Council. Comparative Performance Monitoring Report: Comparison of occupational health and safety and workers' compensation schemes in Australia and New Zealand. 9th Edition ed, 2007.

55. Munich Re Group. Workers Compensation: Analysis of Private and Public Systems. Germany Münchener Rückversicherungs-Gesellschaft, 2000.