
Exploring the Impact of an Ageing Workforce on the South Australian Workers' Compensation Scheme

presented to

WorkCover SA

by

The Australian Institute for Social Research



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CONTENTS

1	KEY FINDINGS	1
1.1	LESSONS LEARNED FROM CASE STUDIES OF BEST PRACTICE	7
2	INTRODUCTION	10
2.1	PROJECT PURPOSE AND METHODOLOGY	10
2.2	THE CHANGING AGE PROFILE OF THE SOUTH AUSTRALIAN POPULATION	12
2.3	OTHER FACTORS SHAPING SOUTH AUSTRALIA'S POPULATION	14
2.4	POLICY, SOCIAL AND ECONOMIC CHANGE AFFECTING OLDER WORKERS	16
3	AGEING AND THE SOUTH AUSTRALIAN WORKFORCE	19
3.1	PROFILE OF THE SOUTH AUSTRALIAN WORKFORCE	20
3.1.1	<i>Gender profile of the South Australian workforce</i>	22
3.1.2	<i>English language proficiency of the South Australian workforce</i>	24
3.1.3	<i>Disability and the South Australian workforce</i>	26
3.1.4	<i>Occupation-based ageing in the South Australian workforce</i>	28
3.1.5	<i>Industry-based ageing in the South Australian workforce</i>	30
3.2	INJURY, ILLNESS AND RECOVERY RATES OF OLDER SOUTH AUSTRALIAN WORKERS	32
3.2.1	<i>Age-based distribution of claims</i>	33
3.2.2	<i>Duration of claims by age</i>	35
3.2.3	<i>Incidence of claims by age</i>	36
3.2.4	<i>Frequency of claims by age</i>	37
3.2.5	<i>Industry sector and age-based risk of claim</i>	38
3.2.6	<i>Occupation and age-based risk of claim</i>	39
3.3	CONCLUSIONS	40
4	AGEING AND CAPACITY TO WORK: RESEARCH EVIDENCE	43
4.1	AGEING-RELATED HEALTH, FUNCTIONAL STATUS AND ABILITY TO WORK	43
4.1.1	<i>Separating age-related ability to work from age-related working conditions</i>	46
4.2	CHANGES IN FUNCTIONAL CAPACITY	48
4.2.1	<i>Respiratory and cardiovascular function</i>	48
4.2.2	<i>Sensory function</i>	49
4.2.3	<i>Musculoskeletal function</i>	51
4.2.4	<i>Psychological function</i>	52

4.2.5	<i>Cognitive function</i>	54
4.3	AGEING AND THE CAPACITY FOR LEARNING AND TRAINING	57
4.4	WORKPLACE ASSESSMENT OF AGEING-RELATED HEALTH AND SAFETY RISKS, AND PRODUCTIVITY	59
4.4.1	<i>Workplace assessment of ageing-related health and safety risks</i>	59
4.4.2	<i>Productivity and older workers</i>	59
4.5	SUMMARISING THE CONTRIBUTIONS AND CHALLENGES OF AN AGEING WORKFORCE	61
5	GOOD PRACTICE IN WORKPLACE AGE MANAGEMENT	66
5.1	THE GROWTH OF ‘AGE MANAGEMENT’	68
5.1.1	<i>Defining ‘age management’</i>	68
5.1.2	<i>The business case for ‘age management’</i>	69
5.2	EUROPEAN UNION CASE STUDIES OF GOOD PRACTICE IN AGE MANAGEMENT	77
5.3	CASE STUDIES ILLUSTRATING AN EMPHASIS ON PREVENTION	77
5.4	CASE STUDIES ILLUSTRATING A FOCUS ON THE WHOLE LIFE COURSE.....	79
5.4.1	<i>The importance of managing transitions</i>	80
5.5	CASE STUDIES ILLUSTRATING A HOLISTIC, COMPREHENSIVE APPROACH TO AGE MANAGEMENT	81
5.6	CASE STUDIES ILLUSTRATING COMPENSATORY PROVISION FOR OLDER WORKERS	82
5.6.1	<i>Age management and shift work</i>	85
5.7	CASE STUDY CONCLUSIONS	85
5.7.1	<i>Key success factors</i>	85
5.7.2	<i>Summarising the critical success factors and strategies for their achievement</i>	88
5.8	LESSONS LEARNED	89
6	CONCLUSION: ASSESSING THE IMPACT OF AN AGEING SOUTH AUSTRALIAN WORKFORCE	91
6.1	THE IMPACT OF AGEING ON WORKCOVER LIABILITIES	91
6.2	MODELLING THE TRADE-OFF BETWEEN AGE-RELATED ILLNESS AND THE POSITIVE IMPACT OF OLDER WORKERS.....	93
7	REFERENCES	94
APPENDIX 1: NUMBER OF PEOPLE EMPLOYED AGED 55 AND OVER, 2006 CENSUS, SOUTH AUSTRALIA AND AUSTRALIA, 2 DIGIT OCCUPATION		102

LIST OF FIGURES

Figure 1: South Australia: Population by 5-Year Age Cohort, 1971, 2001 and 2031	13
Figure 2: South Australia: Age and Sex Structure of the Population, 1961-2011	14
Figure 3: Potential labour demand compared with current trends in labour supply, South Australia	20
Figure 4: Percentage of workforce aged 55 and over, 2006.....	21
Figure 5: Age profile of workforce – South Australia 2001 and 2006.....	22

Figure 6: South Australia: Age and Sex Distribution of the Population, 2001 and 2006	23
Figure 7: Age and Sex Structure of the Australia-Born and Overseas-Born Population, 2006	26
Figure 8: Top oldest occupations by number, South Australia 2006	29
Figure 9: Top 10 South Australian occupations with highest % of workers aged 55 and over, compared with other States, 2006	30
Figure 10: Top 20 'oldest' industries, South Australia, by number, 2006.....	31
Figure 11: Employed persons aged 55 and older – 'oldest' industries, SA and Australia, 2006	31
Figure 12: Age distribution of WorkCover claimants 2006 and 2007	34
Figure 13: Share of full-time employment to total employment, by age group, South Australia, 2006	35
Figure 14: Claims involving time lost from work, by age group.....	36

LIST OF TABLES

Table 1: Changes in workforce participation by age and gender, South Australia, 1986-2006	23
Table 2: Proficiency in Spoken English/Language by Age Group - 2006 Census.....	25
Table 3: Australia – Proportion of Population with Disabilities/Handicaps, 1981 to 2003	28
Table 4: Age-based Distribution of Claims, 2006-2007.....	34
Table 5: Incidence rate (claims per 1,000 employees), 1996-97 and 2003-04	37
Table 6: Frequency rate (claims per million hours worked), 1996-97 and 2003-04.....	38
Table 7: Employment share by industry and industry share of WorkCover SA Claims, 2005-06	39
Table 8: Total Claims (percentage of total) by Occupational Group 2006-07 and Share of Total Employment 2006, South Australia.....	40

LIST OF CHARTS

CHART 1: Workforce Ageing: Myths and Evidence.....	3
CHART 2: Benefits for older workers	9
CHART 3: Benefits for employers.....	9
CHART 4: Key literature findings by analytical theme	47
CHART 5: Workforce Ageing: Myths and Evidence.....	62
CHART 6: Drivers of Age Management policy.....	75
CHART 7: Benefits of Age Management for employees	75
CHART 8: Benefits of Age Management for employers.....	76

1 KEY FINDINGS

- o Older people comprise an increasing share of the employed workforce and this trend can be expected to continue for some time as the Baby Boomer cohort reaches retirement age, and a range of economic, social and policy changes encourage them to delay their retirement.
- o The proportion of the workforce with a disability (whether acquired from the workplace or not) will **increase** over the next decade due to population ageing, the prolonged lifespan of people born with a disability, and the increasing availability of employment for under-employed people with a disability in response to significant skills shortages. **Acquired** disability becomes progressively more concentrated in **older age** groups and therefore the percentage of the workforce with a disability is likely to continue to increase over coming years.
- o Ageing is not uniform across industry sectors and occupational groups, with concentrations varying significantly.
 - ⇒ The industries with the highest proportion of workers aged 55 and over in South Australia are **agriculture, health care, education, public administration** and parts of retailing, construction and manufacturing.
 - ⇒ The occupations with the oldest profile are **farmers and farm managers, managers and administrators and generalist managers**.
- o *WorkCover SA* claims do not necessarily correspond with the age profiles of industries and occupations.
 - ⇒ Claims are overwhelmingly concentrated in the **community services** and **manufacturing** sectors, in both cases, well above their workforce representation, followed by the wholesale and retail trade sector.
 - ⇒ Occupations with the highest share of claims were **labourers and related workers, tradespersons and intermediate production, and transport workers** - all of whom have a share of total claims which far exceeds their share of total employment. Claims are highest in **manual** occupations and it is likely that older workers in these occupations have left the labour force or moved to less physically demanding work roles.
- o In common with national trends, there has been a **decline in the number of *WorkCover SA* claims**, and in the incidence rate **across all age groups**, with the **largest rate of decline** in incidence rates involving workers aged **60 to 64**.
- o While the total number of claims is falling, the **distribution of claims has shifted towards older age groups**. This is consistent with the observed ageing of the workforce. With the ageing of the workforce expected to accelerate over the coming decade, the share of claims among older workers is likely to increase.
 - ⇒ The **highest proportion of claims**, on an age basis, involves the **40 to 49 year** age groups, followed by 35 to 39 year olds, and then by those aged 50 to 54.
 - ⇒ For all age groups between **20 and 54**, the share of *WorkCover SA* claims is **greater** than their workforce representation.

- ⇒ Those aged **55 and over** have a **lower** proportion of claims relative to their share of employment, and this is likely to reflect that they have the greatest share of part-time employment compared with all groups aged from 24 and over.
- o In order to better understand the implications of workforce ageing on *WorkCover SA* liabilities it is important to analyse claims on the basis of their *duration*, *incidence* (that is, number of compensated claims per 1,000 employees) and *frequency* (that is, the number of claims per million hours worked by age group).
 - ⇒ A within-occupation analysis of claim rates involving the loss of ten days or more indicates that the likelihood of a time-lost claim increases significantly with age, peaking at the **50 to 54 year** age group.
 - ⇒ The incidence rate of claims has declined over time, across age groups, with the largest rate of decline involving 60-64 year olds. However, the incidence rate increases significantly with age and those with the highest incidence are aged between 50 and 65 years, particularly those aged **55-64 years**.
 - ⇒ Frequency rates have also declined for each age group over the past decade. Frequency rates also increase with age, but not to the extent of incidence rates. As with incidence rates, the age group with the highest frequency rates are those between **55 and 64 years**.
- o The likelihood of liability arising from workplace illness or injury cannot easily be determined on the basis of chronological age. Age is one variable that is mediated by a range of workplace factors, by the individual health and fitness of workers, and the interactive effect between individual worker and their work environment.
- o Ageism generates a number of myths and stereotypes about older people and the ageing process, and these are particularly evident in relation to the perceived capacity for workforce participation. Myths and stereotypes leave no room for individuality – they assume a homogeneity that is not possible when such large numbers of very different people are involved, and are evident in widely used terms like ‘the aged’ or ‘the youth of Australia’. Myths and stereotypes are based on perceptions, rather than reality, and underpinned by prejudice. In the face of a larger cohort of older people (the Baby Boomer generation) proportionate to the population as a whole, coupled with the need to retain mature workforce members, ageism is under siege. In drawing our conclusions from the available research, we present key myths and assess them against research findings. The Chart below summarises all of this information.

CHART 1: Workforce Ageing: Myths and Evidence

MYTH	RESEARCH EVIDENCE
<p>Ageing brings ill health and disease</p>	<ul style="list-style-type: none"> ⇒ Age alone is not the key determinant of health. Other factors include education, lifestyle, fitness, nutrition, socio-economic status, and environment. ⇒ These factors are more reliable predictors of health in old age than chronological age. Much depends on the individual. <hr/> <ul style="list-style-type: none"> ⇒ Rates of chronic diseases and acquired disability increase with age. ⇒ However, most chronic illnesses linked with older age can be minimised or prevented.
<p>Older workers have more sickness based absence</p>	<ul style="list-style-type: none"> ⇒ Factors other than age affect sickness (eg individual health and fitness, lifestyle). ⇒ Older workers take less non-certified sickness but more certified sickness absence. Non-certified absence can be of greater concern to employers. ⇒ Ergonomic and workplace design addresses the most usual cause of absence in older workers – musculoskeletal issues. Workplace environment, including degree of control/autonomy, plays a key role in worker illness and injury, and absence.
<p>Increasing numbers of older people are responsible for rising health costs</p>	<ul style="list-style-type: none"> ⇒ Expenditure on people aged 65 and over is higher than for younger age groups. ⇒ However, the costs associated with advances in medical technology have a greater impact on the health budget.
<p>Older workers have more injuries</p>	<ul style="list-style-type: none"> ⇒ There is little conclusive evidence to suggest older workers are a greater accident or injury risk in the workplace. ⇒ Older workers have fewer accidents, but when they are injured, their injuries are usually more severe. ⇒ However, older workers have a greater risk of fatal injury. ⇒ International research findings show that the incidence of injury decreases with age, but much depends on the definition of the term ‘incidence’. If defined as ‘injuries per thousand employed in that age group’, the incidence of injury increases with age (based on <i>WorkCover SA</i> claims data). However, if the meaning of incidence is simply the <i>number</i> of people injured in that age group, then it does decrease with age. ⇒ International research findings indicate that older workers may take longer to recover from their injuries but <i>WorkCover SA</i> claims data do not show any increased duration times for older injured workers. ⇒ Different types of injury are associated with different age groups (eg sprains, falls are more likely for older workers). ⇒ These can be prevented or minimised through training and workplace design. ⇒ It is not necessarily the person’s chronological age that predisposes them to injury at work but their prolonged exposure to health and safety risk factors over time. ⇒ Older workers usually are more responsible regarding health and safety issues.
<p>Older workers are less able to adapt to change</p>	<ul style="list-style-type: none"> ⇒ Older workers can adapt to change, including in the workplace. ⇒ Adaptation is influenced by a range of factors, rather than by age. ⇒ Resistance to change can be reduced through appropriate consultation, training, support and flexible adjustment to individual need.

MYTH	RESEARCH EVIDENCE
Older people have reduced functional capacity and therefore are less able to work	<ul style="list-style-type: none"> ⇒ Cardiovascular and respiratory capacity declines with age, and this is exacerbated if people are unfit. ⇒ However, workplaces can be modified to address this.
	<ul style="list-style-type: none"> ⇒ Sensory and sensorimotor ability declines with age, but varies with the amount of previous exposure to certain environmental factors eg loud noise. These changes can begin in the mid-forty years. ⇒ However, accommodation can be made through aids (eg spectacles) and workplace design (eg effective lighting). ⇒ Changes in balancing ability increase susceptibility to falls and changes in thermoregulatory functions make it more difficult to manage extremes of temperature. ⇒ Workplaces can be designed to address these issues.
	<ul style="list-style-type: none"> ⇒ Ageing brings declines in musculoskeletal functioning, increasing the risk of injury and reducing physical strength and endurance. ⇒ However, appropriate training can reduce the risk of injury as can workplace design. Individual physical strength and endurance can be improved upon or compensate, and overall decline in this area can be minimised through preventive measures (eg maintaining fitness). ⇒
	<ul style="list-style-type: none"> ⇒ Ageing can bring greater susceptibility to a range of psychological issues including stress, but much depends on individual circumstances and on workplace factors.
	<ul style="list-style-type: none"> ⇒ Cognitive functioning shows a gradual deterioration with age (eg in relation memory, learning, thinking, concentration and attention) but with considerable variation from one individual to another. ⇒ Decline in most abilities does not occur before 60 years, and is usually evident around 74 years of age, and there has been a slowing in the rate of average decline over successive generations. ⇒ Decline is reversible and usually due to lack of use of cognitive abilities. It can also be prevented through active usage and practice.
	<ul style="list-style-type: none"> ⇒ Although speed of learning declines with age, this can be compensated for by strong motivation to learn, and actual learning is not dependent on a person's age. ⇒ Some cognitive functions eg problem solving, complex reasoning, use of language, improve with age
	<ul style="list-style-type: none"> ⇒ Individual health and education critically affects age-related functional change.
	Older workers represent a lower return on the training investment

MYTH	RESEARCH EVIDENCE
Older workers lack the capacity for training and re-training, including in the use of new technologies	⇒ Learning is not dependent on age, but people learn in different ways at different ages.
	⇒ Learning is facilitated by educational level and older generations are now more highly educated than their predecessors.
	⇒ The way in which training is delivered is critical. Older workers usually need training to be applied to the workplace, and respond well to self-paced learning and collaborative (eg with peers) learning. They usually require more time to learn and to practise new learning.
	⇒ Cognitive changes do not mean that older workers are unable to learn new information but the way in which they learn is likely to be different.
	⇒ Therefore, training should be tailored to individual need – which represents good practice in training for all age groups.
	⇒ Mature workers require confidence to benefit from training and may need encouragement and support to participate in formal training, especially if they have low levels of literacy and numeracy and little ongoing learning experience.
Older workers are less productive	⇒ Older workers tend to receive less formal training, reducing their confidence to participate and increasing the perception that they are less trainable.
	⇒ Productivity does not simply decline with age.
	⇒ Much depends on individual health, cognitive functioning, ability to adapt to change and learn new information.
	⇒ Older workers are more likely to have a slower speed of working but this is offset by a higher quality of output.
	⇒ Reducing time pressures and giving preference to quality rather than quantity of output enhances the productivity of older workers.
	⇒ Three factors have been found to affect decline in ability to work –
	⇒ Excessive physical demand, including repetitive movement
⇒ Stressful and dangerous work environments	
⇒ Poorly organised work.	
⇒ These are all preventable through workplace design.	

As CHART 1 shows, there are some forms of decline associated with the ageing process, but most of these can be prevented, minimised, reversed or accommodated. In addition, older workers bring a range of positive attributes that have been identified by researchers, and which more than offset any deterioration. Those benefits include the following –

- o Broader experience from having worked in a variety of jobs, industries and organisations
- o Wisdom acquired from having lived longer and having made mistakes over time from which they have learned
- o Higher rates of retention;
- o Greater reliability;
- o Reduced ‘unsubstantiated absenteeism’;
- o Lower rates of absenteeism;
- o More responsible attitude to workplace safety (Benjamin & Wilson: 2005; Berger: 2005; Brooke: 2003; Critchley: 2006; Ilmarinen: 2001; Selby Smith *et al*: 2007).

It is important to separate myth from reliable research findings, and to acknowledge that –

- o older workers are a diverse group whose ageing process will vary from one individual to another;

- chronological age is mediated by other variables, particularly health and education;
- these other variables (eg healthy lifestyles, education, health promotion, healthy workplaces) can be addressed in a proactive way which means intervening across the life course, not just during the later years;
- many of the functional changes associated with growing older can be delayed or reversed through interventions involving training;
- many of the workplace accommodations that address ageing-related need are of benefit to all workers, not only those who are older;
- the workplace has a critical role to play in promoting healthy workforces and workforces whose productive ability is not age-dependent.

The scope that exists for the workplace is illustrated in case studies exemplifying good practice in enabling older workers to perform to their maximum ability – an approach often described as ‘*age management*’. Australian initiatives that involve age management are also referred to as ‘*age balance*’ workforce strategies, and tend to be driven by a business case model that demonstrates the economic benefits of recruiting and retaining mature age workers.

A major research project auspiced by the Australian Employers Convention (2001) quantified the human resources (HR) costs and benefits to business of employing an age-balanced workforce, with 45 and over being taken as the definition of an ‘older’ worker. The study reviewed myths, assumptions and stereotypes associated with older workers, and compared the costs and benefits of workers aged 45 and over with those associated with workers aged 44 years and under. The project found that –

- Older workers were 2.6 times less likely to have left their jobs in the preceding 12 months than those aged 44 and under. ABS data showed that they remain on average in employment for 11.4 years compared with 4.8 years for those aged 44 and under.
- The ratio of duration of employment for older workers was 2.4 times greater than that for the younger age group.
- Workers aged 45 and over were most likely to have left their jobs due to retrenchment, not early retirement.
- Challenging the assumption that older workers are not worth the investment of time and training due to their likely retirement, the study found that some 45% of workers aged 45 or more intended to remain in the workforce until the age of 65-69. Therefore, they represented a potential 20 year investment for an employer providing training for them. By contrast, workers aged 30 to 39 remain with an employer for an average of 5.8 years. *The estimated net recruitment benefits of a worker aged 45 or over were found to be \$1424 per year, per worker.*
- In assessing costs associated with training, the study noted that a number of qualifications need to be taken into account – in particular, the longer duration of employment of older workers (and therefore, enhanced investment) but the likelihood that their educational qualifications will be lower than their younger counterparts. Overall, their longer duration was considered to make older workers’ training a benefit for business that involved a *net benefit of \$987 per year per older worker.*
- Older workers were found to take slightly more unscheduled absence leave – 10.4 days compared to 9.66 for those aged 44 and under. However, as this was based on a two week snapshot, the researchers advised caution in interpreting this finding. The cost of unscheduled leave (that is, excluding sick leave or other approved forms of leave) was found to involve a *net cost of \$116 more than for the rest of the workforce, per older worker per year.*
- Costs associated with work injury were found to involve a *net cost of \$330 more per older worker per year* (Australian Employers Convention, 2001: 6-12).

The conclusions drawn from this research were that older workers involved less costs than younger workers, and this was calculated to involve a **total net benefit of \$1956** compared to the rest of the workforce. Mature employees were also identified as bringing additional, but uncoded benefits that include avoidance of skill shortages and supporting longer term business strategies (Australian Employers Convention, 2001: 15-16).

In identifying the benefits of age management, the European Foundation's major research initiative known as the *Combating Age Barriers* project has been collecting data since the mid 1990s across a number of European Union countries yielding 117 case studies. Collectively the case studies represent a continuum of good practice that ranges from limited, narrowly focused approaches to **comprehensive** strategies that have these four components –

1. an emphasis on *prevention* (that is, addressing risk factors in the early stages of working life)
2. a focus on the *whole life course*, not just older age
3. a *holistic* focus (that is, addressing a range of issues including health, education, training, equal opportunity)
4. *compensatory* provision for older workers, particularly older women, who missed out on specific skills training, or whose health has suffered as a result of their employment (Taylor, 2006: 23).

Taken together, these four indicators of good practice in age management are part of wider workforce planning and development, focusing on workers across the life cycle, in order to maximise their productivity and prevent any decline in this due to the ageing process. At the same time, worker skill levels and capacity to participate are optimised, bringing benefits for the organisation as well as the individual employee. This achieves the dual and interdependent goals of workforce development and economic development.

1.1 Lessons learned from case studies of best practice

There are cautionary messages from the review of case studies, with a number of examples of pro-ageing initiatives that have not taken into account the impact on other workers. Some have led to reduced employment opportunities for younger workers, leaving an age-imbalanced workforce, and/or negative attitudes to older workers where resources were shifted to them without any benefit in overall organisational productivity.

Although research has identified the importance of a 'life course' approach to age management, that is, one that acknowledges that health promotion, learning and training have their greatest impact if applied at all stages of life, this concept was less understood in the workplaces studied. In developing age management strategies, it is important to ensure that employers, trade unions, and workers themselves, are clear about this concept and its application in the workplace.

Associated with this concept, is that of prevention – in workforce health, and capacity for learning and training. Although reactive approaches, usually intervening at the mature age end of the lifespan, can have some impact, proactive approaches are more likely to be sustainable. As they target all age groups, they avoid the stigmatisation that is associated with a focus on older age groups.

Effective age management emerges as a mechanism for work-life-balance, albeit involving reduced hours in the workplace leaving time for other life responsibilities (particularly care-giving). However, flexibility of work conditions and a degree of worker autonomy about the organisation of work has also been found to be a critical success factor in age management, and while focused on mature age workers, has benefits for all workers.

The costs associated with age management can act as a barrier to their implementation but can also be offset (at least partially) by the benefits that they generate. Those identified by the case studies involved reduced sickness liabilities and work absence, increased retention of older workers and their positive characteristics such as loyalty and reliability, retention of 'corporate memory' and facilitation of knowledge transfer between employee cohorts, and increased motivation of mature age workers, resulting in increased productivity and work quality. In reviewing the case study findings, it would seem that designing age management from a business case perspective, and with a view to enhancing productivity, is more likely to generate these outcomes.

Age management strategies, like any workforce planning and development initiative, must be linked to business goals and strategies, and their contribution to these must be evident to all stakeholders. Australian case studies have demonstrated the importance of the business case for age balanced workforce development.

To date, however, detailed cost-benefit analyses of specific interventions have not been completed, with the only study identified by us involving the Australian Employers Convention (2001). It is important to monitor costs and benefits and to do this over time, as part of the development of a reliable evidence base. *There is scope for research in South Australia which pilots age management models in different industry sectors and evaluates them for a range of impacts, including a cost-benefit analysis. This analysis should include those sectors, for example, transport, where the workforce ageing and claim incidence and frequency rates are relatively high.*

Another lesson emerging from the case studies is the importance of engaging all stakeholders in the age management process – older workers and the workforce as a whole, line managers and senior managers, HR managers, and trade union representatives. Without commitment and accountability for outcomes from these different participants, age management initiatives are unlikely to succeed or be sustainable. Engagement is fed by ongoing communication about the purposes and outcomes of these initiatives, and a gradual changing of ageist attitudes and workplace cultures.

The case studies have also highlighted the barrier that exists as a result of previous policy that encouraged early retirement, and that this undermines policy promoting active ageing. The strength of the 'early retirement mindset' is such that significant effort is required by governments to gain acceptance for delayed retirement, and for this to be reinforced by employer associations and trade unions. At the same time, European Foundation research has found that it is also important for delayed retirement policy to take into account individual worker need, acknowledging that some occupations are more inviting to early than to delayed retirement.

CHART 2 and CHART 3 summarise the benefits identified for employees and employers.

CHART 2: BENEFITS FOR OLDER WORKERS

Type of benefit	Specific benefit for older workers
Employment-related	<ul style="list-style-type: none"> ⇒ Job offers ⇒ Career advancement ⇒ Role enhancement ⇒ Job security
Health and well-being related	<ul style="list-style-type: none"> ⇒ Improved health and well-being ⇒ Better work-life-balance ⇒ Increased motivation ⇒ Increased job satisfaction
Learning and skills related	<ul style="list-style-type: none"> ⇒ Skills development ⇒ Adaptability to different methods ⇒ Continued usage of skills
Workplace relationships	<ul style="list-style-type: none"> ⇒ Greater trust in management ⇒ Better intergenerational relations ⇒ Feelings of belonging and being appreciated
Retirement prospects	<ul style="list-style-type: none"> ⇒ Better preparedness for retirement

Source: Taylor, 2006: 65

CHART 3: BENEFITS FOR EMPLOYERS

Type of benefit	Specific benefit for employers
Securing of labour supply <i>leading to</i> Reduced labour costs and greater productivity	<ul style="list-style-type: none"> ⇒ Greater staff commitment ⇒ Less stress among staff ⇒ Reduced staff turnover rate ⇒ Decreased sickness absence rate ⇒ Reduced early retirement
Maximisation of workforce utility <i>leading to</i> Increased labour productivity, company competitiveness and share value	<ul style="list-style-type: none"> ⇒ Increased participation in learning and training ⇒ Enhanced innovative capacity ⇒ Increased manager and supervisor competence ⇒ Better knowledge sharing ⇒ Reduced conflict and better team cooperation
Wider benefits	<ul style="list-style-type: none"> ⇒ Improved cooperation between management & trade unions ⇒ Development of HR functions ⇒ Improved public relations image among customers ⇒ Perception of the company as an employer of choice

Source: Taylor, 2006: 71

2 INTRODUCTION

The ageing of South Australia's workforce is one of the State's major policy challenges over the next decade. By early next decade labour demand is expected to exceed supply. To manage this it will be necessary to introduce a range of policies and strategies designed to boost labour force participation and manage skill shortages in innovative ways. Injury prevention and the timely and successful return to work of injured workers will be important elements in achieving this. Understanding the implications of an ageing workforce for workers compensation arrangements in South Australia is timely in the face of such significant demands. This report prepared by the Australian Institute for Social Research (AISR) is designed to assist *WorkCover SA* to better understand and respond to the benefits and challenges associated with an ageing workforce in South Australia.

2.1 Project purpose and methodology

In preparing the report the AISR addresses the following questions identified by *WorkCover SA*.

A: PROFILING THE SA WORKFORCE

- 1 *What is the profile of the current South Australian workforce in terms of age, gender, cultural background, disability, occupation, and industry?*
- 2 *Using projected population data, what will be the future South Australian workforce (in 10 years; in 20 years) look like in terms of age, gender, cultural background, disability?*
- 3 *What are the current rates of injury, illness and recovery of older workers in South Australia? In comparison to other age groups, are these rates higher, lower, or similar? Can comparisons be made with other States?*
- 4 *In terms of workplace injury and illness, what do research and claims-related data tell us about the risk posed by different age groups? By different occupations? By different industries? What factors interrelate in relation to risk (eg age and occupation)?*

B: RESEARCH FINDINGS ON THE IMPACT OF AGEING ON ABILITY TO WORK

- 5 *What is known about ageing-related health conditions and ability to work? For example, do trends in increased conditions like cardiovascular disease, arthritic/osteoporotic disorders, diabetes II and obesity, present as greater risks for older workers? What population groups (including age groups) represent the greatest risks of acquiring these conditions? Can these conditions pre-dispose workers to injuries such as, falls?*
- 6 *What is known about older workers in terms of capacity for ongoing learning, re-training and contribution to the workplace? In other words, what does research tell us about the positive impact of older workers in the workplace?*

- 7 *Do research findings assist in developing a model of risk assessment based on the ‘trade-off’ between ageing-related illness or disability and the positive impact of older workers? Has this modelling been undertaken? If so, what were the findings?*
- 8 *Does existing research establish a relationship between stress-related conditions and age? If so, which age groups appear to be most at risk of acquiring stress-related disorders?*
- 9 *What is known about the relationship between workforce participation and health? What is the likely impact of health promotion and prevention policy on ‘healthy ageing’ and workforce participation? Conversely what are the likely health impacts of policies designed to increase and sustain workforce participation?*
- 10 *What is the impact of policy and social or economic change on the workforce participation of older workers? For example, are there older workers participating reluctantly due to insufficient superannuation to match expected longevity in living? Or to changes in retirement age, or age pension eligibility?*

C: GOOD PRACTICE IN WORKPLACE AGE MANAGEMENT

- 11 *Are there examples of good practice in ‘age management’ that can be applied in developing workplace cultures that maximise the contribution of older workers while minimising age-related risks for injury or illness?*

D: ASSESSING THE IMPACT OF AN AGEING SA WORKFORCE

- 12 *What is the likely impact of the ageing (defined as 55 years and over) workforce for WorkCover SA in terms of the structure of its liabilities?*

These research questions have been explored through a mixed methodology involving –

- o Literature Search and Review
- o Review of policy
- o Case Studies of good practice in age-management drawn from the literature
- o Analysis of ABS, 2006 Census of Population and Health data to develop a South Australian profile of workforce ageing, broader population ageing, and health-related trends by age.
- o Analysis of *WorkCover SA* data relating to claims
- o Identification of factors that need to be taken into account in modelling the likely impact of an ageing South Australian workforce on WorkCover SA’s future liabilities.

Definition:

Through this report we use the terms ‘older worker’ or ‘mature age worker’. There is no agreement in the research literature about what age separates older workers from others. Some reports include people as young as 40 or 45, others take the ages of 50 or 55 as their reference point, while others use the retirement and pre-retirement ages of 60 or 65. 45 and over has been the age group used by the United Nations and World Health Organisation to encompass older workers, and the Australian Bureau of Statistics (ABS) classifies people aged 45 and over as ‘older jobseekers’.

Our view, supported by research findings, is that chronological age is not a relevant marker because there is much variation in pre-disposition to illness and injury due to individual health and fitness as well as genetic factors. It can however, be regarded as a generic guide that enables comparison between different groups of workers for research purposes. Furthermore, human beings can be a number of different ages simultaneously - chronological, biological, and psychological ages, each determining capacity for life and for work. However, the ageing process is unique to each individual (even identical twins do not grow old similarly), and chronological age can be rather misleading when used to describe ageing, for example, in worklife (Ilmarinen, 2005: 127).

Finally, it is clear that workplace interventions are most effective when the focus is on the lifecourse as a whole, because of the importance of health promotion and prevention of illness, education, training, lifelong learning and workplace design.

2.2 The changing age profile of the South Australian population

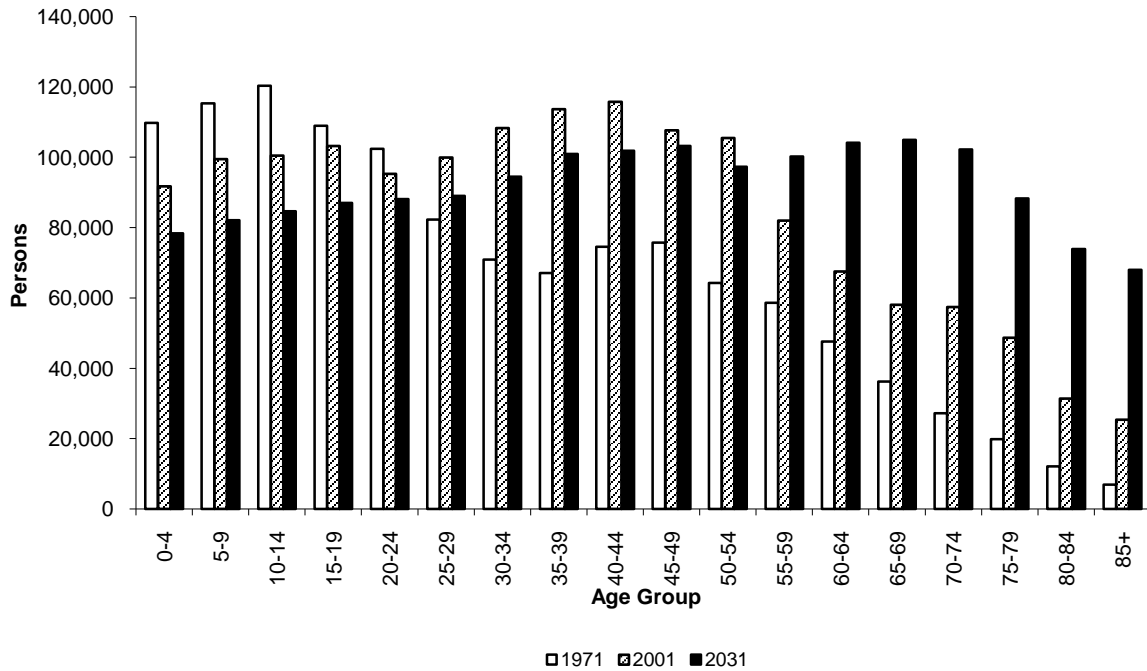
Like the nation as a whole, South Australia's population and workforce are ageing. This is a function of the combined impact of lower fertility rates and lower infant mortality as well as the large number of births in the post World War II period (producing the so called *Baby Boomer* generation)¹. Furthermore, the impact of the Baby Boomer years is exacerbated by the low levels of fertility prior to 1946 and following 1965.

South Australian population ageing is part of a broader national demographic trend, which in turn, is consistent with population ageing in other OECD countries. One-quarter of Australians will be aged 65 years or more by 2044-45, approximately double the present proportion. As more people move into older age groups, overall workforce participation rates are projected to drop from around 63.5% in 2003-04 to 56.3% by 2044-45 (in the absence of significant policy intervention and based on current participation rates by people aged 55 and over) (Productivity Commission: 2005).

Figure 1 illustrates the shift over the sixty years from 1971 to 2031 in the State's population profile, from one that was predominantly young to one that is predominantly ageing. By 2012 there will be more South Australians who are aged over 65 than are aged less than 15 - for the first time in the State's history (Hugo: 2008).

¹ Baby Boomers are usually considered to be those born during the period 1946 to 1965

Figure 1: South Australia: Population by 5-Year Age Cohort, 1971, 2001 and 2031

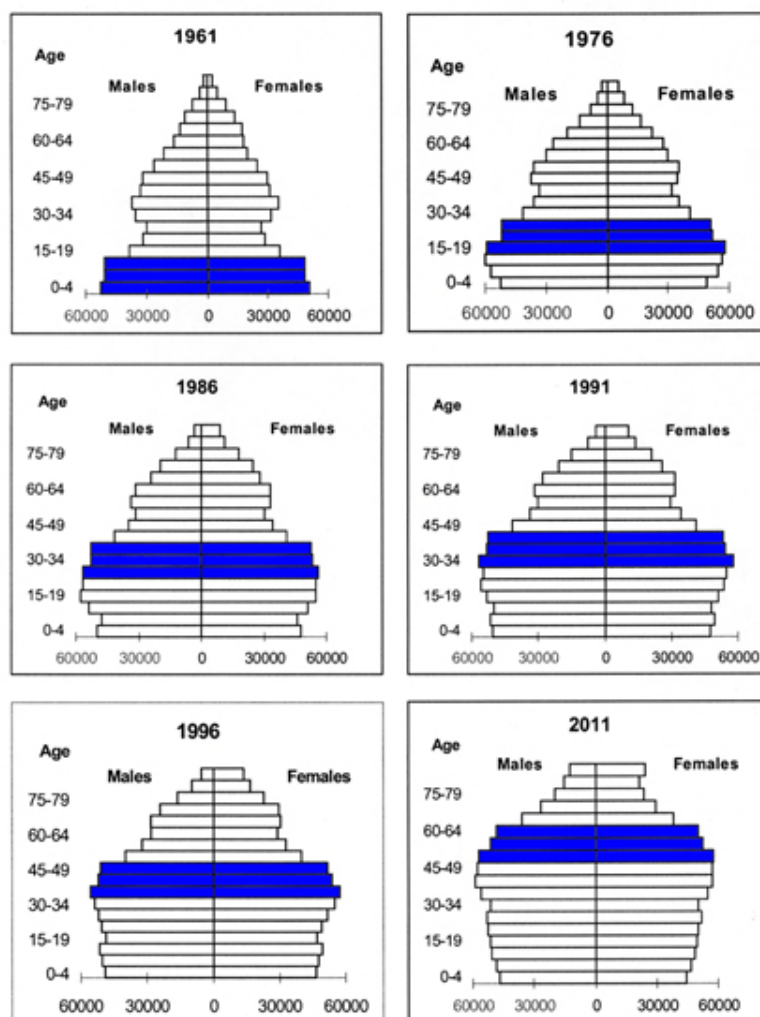


Source: Hugo (2008) using ABS population data

The impact of the ageing of South Australia’s Baby Boomers is illustrated in Figure 2 which shows the movement of that cohort through the population over the fifty year period 1961-2011 and the subsequent shift in the State’s age profile.

The net result of population ageing is expected to result in the **median age** of South Australians rising from 37.6 years in 2001 to between 42 and 45 years by 2031 (Planning SA: 2007). It is projected that there will be a loss (and therefore a need for replacement) of **one third** of the State’s workforce over the next two decades as the baby boomers retire (Hugo: 2008) – assuming that most leave at traditional retirement age, or earlier (in response to previous policy that encouraged retirement at 55 years).

Figure 2: South Australia: Age and Sex Structure of the Population, 1961-2011



Source: Hugo (2008) based on ABS Censuses and Projections

It is also the case that the Baby Boomers are not a homogenous cohort – there is substantial diversity within the cohort based on gender, educational level, health and a range of other factors, all of which will affect workforce participation and the decision to retire. *Section 1.4* overviews key policy, social and economic changes that are affecting the participation of mature age people in the labour force.

2.3 Other factors shaping South Australia’s population

Hugo (2008) emphasises the importance of linking population policy to broader social, economic and political change, and ageing must also be located against other factors that shape a population’s profile. The South Australian government’s population policy (Government of South Australia: 2004) was developed in response to the challenges presented by slow population growth, low and falling fertility rates and a rapidly ageing population. ABS data confirmed the slow growth rate of the State’s population at the time of the 2001 Census (0.5% compared with 1.2% for Australia as a whole), reflecting low economic and population growth during the 1990s. However, South Australia has subsequently achieved a population growth rate of 1.0% (in 2006-2007) which is the most rapid annual rate of population growth the State has

experienced since 1983. While lower than the national average of 1.5%, it exceeds ABS projections and approximates those of Planning SA (2005). If this annual growth rate is maintained, it will see South Australia reach its target of 2 million people by 2034, rather than 2050 - which is the goal set by State government population policy (Hugo: 2008).

South Australia's increased population growth can be attributed to two main factors –

- *Natural increase* (births minus deaths) has been evident since 2002-2003 but has been growing significantly between 2005-06 and 2006-7. During this period the fertility rate has shown an 8.3% increase, which is faster than that of Australia as a whole and has exceeded expectations.
- *Net migration* is responsible for the greatest part of the growth in population. Net gains from international migration have more than quadrupled between 2001-02 and 2006-07 – an increase which, if it continues, will produce the second large post-World War II migration (following the 1950s and 1960s).

This is very much due to the State government's promotion of the *State Specific and Regional Migration System*, with South Australia having become the destination of between approximately 16.0% and 37% of all immigrants to Australia between 1998 and 2007. Although net migration loss to other Australian States has continued, **total net migration**² has increased at a level that exceeds the targets set in the State Strategic Plan (Hugo: 2008).

With regard to interstate migration, outflow largely involves a loss of skilled and highly educated young people while inflow mainly involves older and less well off people – creating a major population challenge for the State, and its workforce (Hugo: 2008). The increase in population due to overseas migration can be expected to increase the number of younger workers and the number of workers from diverse cultural backgrounds – requiring employers to provide more culturally inclusive workplaces that remove barriers based on culture and on language.

Although migration is an important influence on population growth, fertility levels have more far reaching impact and this is recognised in the State's population policy which aims to sustain fertility at the Australian average or better. Although women in Australia and South Australia would like to have, on average, two children, they are having 0.3 less, indicating the need to remove the barriers preventing them from realising their preference (Hugo: 2008). A key workplace factor is the capacity to provide family-friendly conditions while policy that supports paid parental leave and accessible child care will also be critical in removing disincentives to combining child rearing with workforce participation. Broader work-life-balance initiatives become increasingly important in the face of under-achievement of fertility rate targets.

² ie net interstate migration plus net overseas migration.

2.4 Policy, social and economic change affecting older workers

Research Question Addressed

- *What is the impact of policy and social or economic change on the workforce participation of older workers?*

Workforce ageing is occurring against a broader landscape of economic, social, technological, environmental and political change. Collectively, these changes are having a profound impact on the way people live and work, and on the relationship between both.

Changing labour market conditions have seen mature aged employees being encouraged to pursue early retirement³ in times of under supply of jobs, and in recent years, encouraged to delay their retirement in the face of skill shortages and the expected departure from the labour force of many Baby Boomers who are now reaching retirement age. Governments in developed countries have been introducing a range of measures to encourage and enable older workers to remain in the paid workforce. These measures include removing compulsory retirement ages, raising the entry age for aged pensions, enabling flexible retirement, and addressing direct and indirect discrimination⁴. Active labour market measures that are designed to integrate older workers, for example, financial incentives for employers who hire mature aged people, are also evident, but their impact is not yet evident (Taylor: 2006).

Since 1996, the Australian Government has implemented a number of policies that are designed to encourage workforce participation and remove disincentives to this – for example, changed superannuation arrangements, removing barriers for older people to participate in paid employment, and increasing the flexibility of the labour market (Australian Government: 2005). Interventions include removal of the restriction on access to superannuation by those in employment to enable older workers to move gradually into retirement by supplementing reduced employment earnings with superannuation entitlements. Services designed to assist mature age job seekers to find work have been a feature of both federal and state government policy.

The Australian Government's Productivity Commission has produced several reports analysing the economic impact of an ageing population in order to shape policy in a number of areas. The 2004 *Economic Implications of an Ageing Australia* report reinforced the importance of prolonging workforce participation in employment, and of ensuring that older workers (and all workers) had the necessary skills to do so. The Productivity Commission has made it clear that immigration cannot resolve the loss of labour force, and that increasing taxes is not sustainable. Instead, it points to addressing the source of the challenge – sustaining and supporting workforce participation (for example, through flexible working arrangements).

³ The age of 55 is often the target age for early retirement and has been encouraged by employers, trade unions and workers themselves

⁴ For example, the European Council Directive 2000/78EC required all EU countries to legislate by 2006 against age-based discrimination in labour market activities and vocational training.

Policies to encourage workforce participation by older workers have been particularly apparent in European Union countries. In March 2001, the European Council of Stockholm set a target of 50% of workers aged 55 to 64 years being in paid employment by 2010. The Stockholm target was reinforced by the goal set a year later by the 2002 Barcelona European Council which sought by 2010 to increase the average age at which people stop working by five years. Analysis of progress undertaken by the European Commission in 2003 found that only three countries – Finland (50.9%), Sweden (69.1%) and the UK (56.2%) – had achieved this.

By comparison, Australia can be seen as doing better than most European countries in retaining mature age workers. Australian 2006 Census data show that **52.7%** of people aged 55 to 64 are in the workforce – a higher proportion (60.4%) are men while a lower proportion (44.4%) are women.

The promotion by governments of early retirement has been found by some researchers to have contributed to ageist expectations about the capacity of older workers to remain in the labour force, with a downward negative impact on how workers in their 40s are viewed by managers and supervisors (Guillemard: 2004). Higher rates of unemployment and age-based discrimination regarding vocational training experienced by mature age workers have been documented in most OECD countries, including Australia (Taylor & Urwin: 2001; Taylor: 2006).

The shift in expectations towards the continued participation of older workers to support labour market shortages cannot occur overnight given pre-existing expectations, and requires ownership by employers, trade unions and workers – not just government policy makers. Walker (1997: 686) has described the growing discrepancy of increasing life expectancy and low labour market participation of older workers as the *'age-employment paradox'*.

In assessing progress towards the Stockholm target, the European Commission (2003) argued that it was not sufficient to ensure those aged 55 to 64 remained in work, but the challenge included enhancing the employability of workers currently in their 40s and 50s (Taylor: 2006). It will also be important to monitor the quality of work provided to older workforce members.

Apart from achieving major shifts in expectations, workplaces will need to make equally major shifts in the conditions they provide in order to enable older workers to remain productive, safe, healthy and motivated to continue in paid employment. Changes are needed at both workplace (micro) level and labour market (macro) level. This is where *'age management'* has a crucial role to play – see *Section 5*.

The labour market driven policy of encouraging mature aged workers' ongoing workforce participation is supported by policy from ageing portfolios in developed countries, including Australia, that promote *'active'* or *'productive'* ageing. Australian ageing policy now reflects the heterogeneity of the experience of growing older. Where once policy was restricted to making provision for the care and support of frail and dependent people and their carers, in recent years increased emphasis has been placed on *'positive ageing'*. In turn, the needs of a group sometimes described as the *'young-old'* have been highlighted, with programs supporting healthy lifestyles, lifelong learning, the development of IT-related skills, and the promotion of the contribution made by older people.

The importance of *early intervention* is evident, ensuring that people have the information and connections needed to reduce dependency and to manage functional loss effectively.

Ageing policy in Australia and other OECD countries is further supported by health promotion policies that encourage healthy lifestyles and the prevention of ill health. Productive ageing and health promotion policies require a 'life course' approach, that is, one that intervenes early in adult life with a preventive focus, as opposed to previous ageing-related policies that were more reactive and focused on the care of frail older people only. Unlike their parents' and previous generations, the Baby Boomer generation has been exposed to these proactive policies and this should mean that not only will they live longer, but with a better quality of life.

The objective of a comprehensive strategy should be to maximise each individual's capacity to participate over his or her whole life cycle Prevention is the key to a successful integration of people in the labour market (European Commission, 2002: 9).

3 AGEING AND THE SOUTH AUSTRALIAN WORKFORCE

This section provides a profile of South Australia's current and projected workforce, together with an overview of available data on age-based workplace injury and illness.

In June 2008, the Economic Development Board released its *Review of Skills and Workforce Development in South Australia* report (Keating: 2008). The Keating Report is the most recent in a series of reports commissioned by or undertaken by the State Government to address current and emerging skill and workforce development issues facing South Australia⁵.

The Keating Report findings draw on the most recent projections being used by the State Government in forecasting the demand for labour and these include an analysis of the impact of major projects being planned in South Australia over the next decade. In quantifying workforce demand and supply, the Review has taken into account the following variables –

- o 'expansion demand' arising from economic growth, including from major projects
- o 'replacement demand' arising from population ageing and replacement of workers who retire, who move between occupations, or leave the workforce to undertake unpaid activities like care giving, or because of poor health.

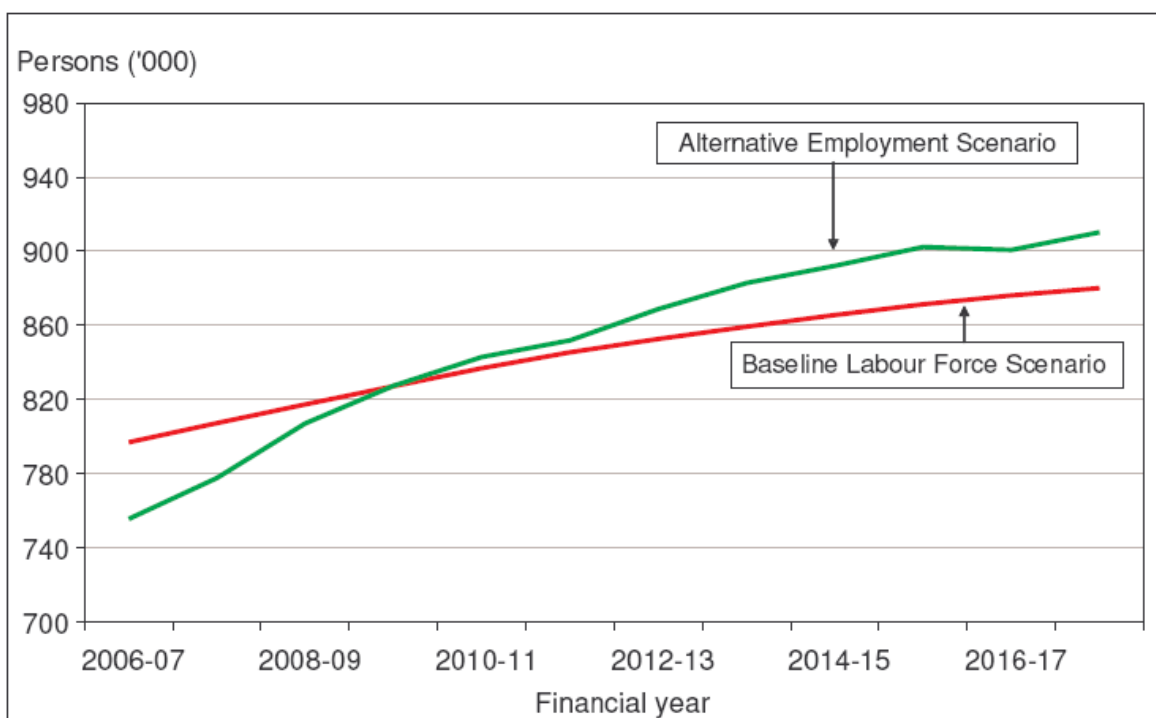
The Review findings estimate that over the next decade (between 2007-08 and 2017-18) –

- a) *Expansion demand* due to growth in the South Australian economy is expected to create **133,000 new jobs** (Keating: 2008).
- b) The number of net job openings from *replacement demand* is likely to be in the order of **206,000** – significantly more than estimated through growth in the economy. Due to the ageing of the workforce, the annual level of replacement demand rises over the decade (Keating: 2008).
- c) Therefore the Keating Report estimates that the combined impact of major projects plus the need to replace workers who exit the labour market or move between occupations results in *total job openings* over the decade in South Australia of some **339,000** (Keating: 2008).

Current trends in *labour supply* suggest that South Australia could have insufficient workers to meet the potential demand within just a few years from now, in the absence of major policy interventions. This is shown in Figure 3 below (taken from Keating: 2008).

⁵ See for example, the South Australian Workforce Development Strategy – *Better Skills, Better Work, Better State*, and Schofield, K (2003), *Skills South Australia – Final Report of the Ministerial Inquiry, Skills for the Future*.

Figure 3: Potential labour demand compared with current trends in labour supply, South Australia



Source: reproduced from Keating: 2008

Figure 3 indicates that the relationship between labour supply (labelled 'Baseline Labour Force Scenario' in the chart) and demand for labour (labelled 'Alternative Employment Scenario') will change dramatically, shifting from an excess of supply over demand to one of under supply of labour. This shift is occurring now, with a cross-over occurring around 2009-10 after which demand remains higher than supply until at least 2016-17. As a result, it is critical that action is taken as soon as possible to boost labour force participation (Keating: 2008). This will require the development of innovative workforce development strategies that attract and retain people in the workforce. In order to meet under-supply, a key strategy will involve retaining mature age employees, and attracting under-employed groups, including people with a disability.

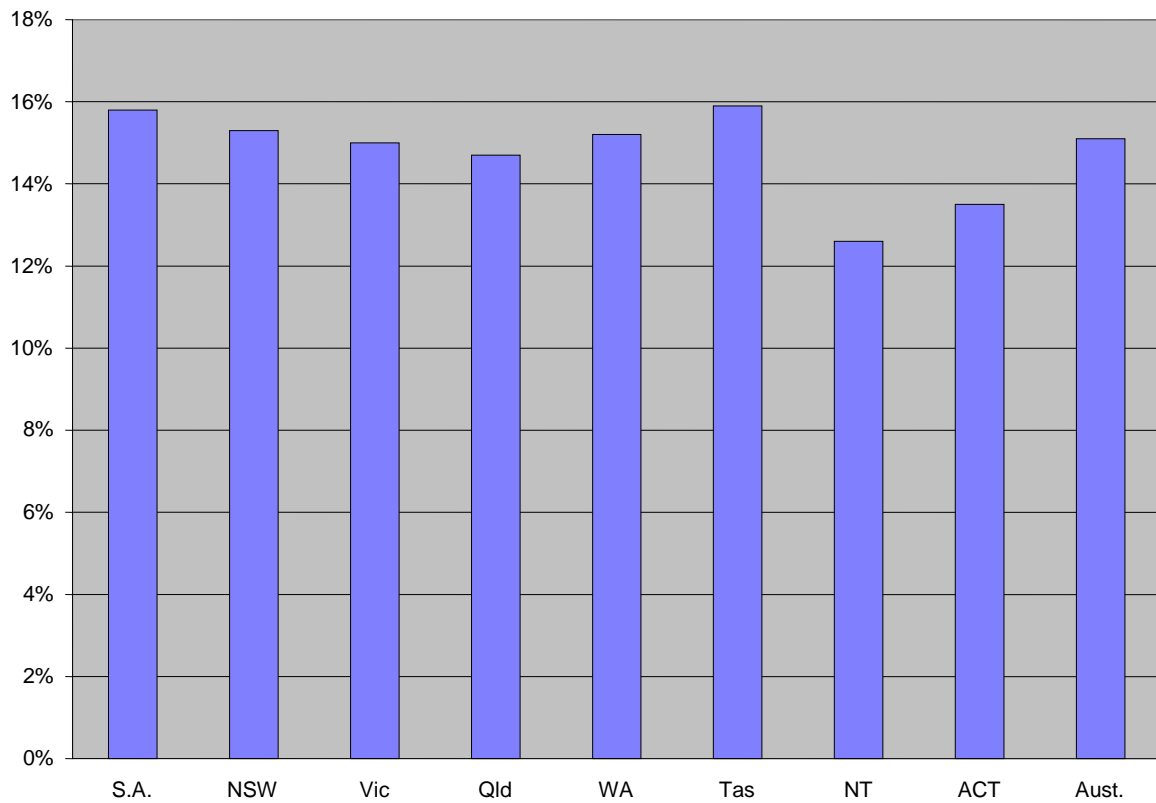
3.1 Profile of the South Australian workforce

Research Questions Addressed

- *What is the profile of the South Australian workforce in terms of age, gender, cultural background, disability, occupation and industry?*
- *Using projected data, what will the future South Australian workforce look like?*

Population and workforce ageing are more pronounced in South Australia than in most other States. At the time of the 2006 Census South Australia had the second oldest workforce of all States and Territories with **15.8% or 109,020** persons aged 55 and over (ABS: 2006). Figure 4 shows that only Tasmania has a higher proportion of people aged over 55 than South Australia.

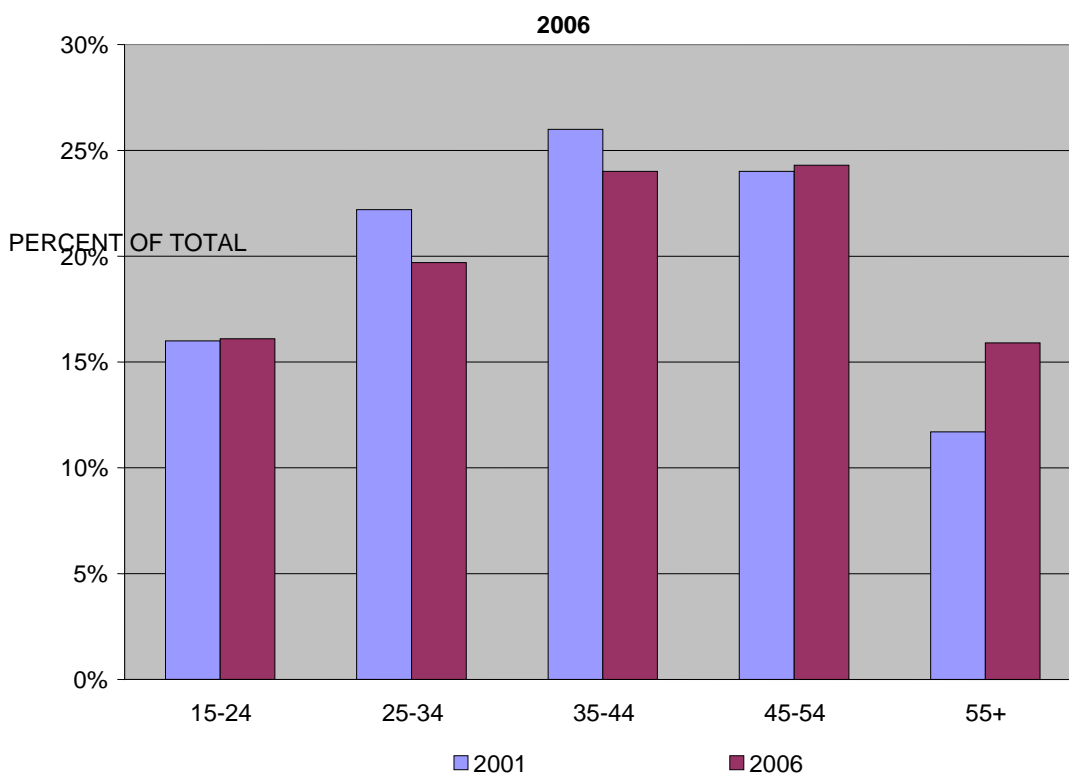
Figure 4: Percentage of workforce aged 55 and over, 2006



Source: ABS 2006 Census data

The age profile of the South Australian workforce (2001 to 2006) is illustrated in Figure 5 which shows that there has been a considerable increase in mature aged employment between the 2001 and 2006 Census periods. Across all age groups, the most significant increase has occurred for those aged 55 and over. In 2006, this group accounted for 15.9% of total employment in South Australia, up from 11.7% in 2001.

Figure 5: Age profile of workforce – South Australia 2001 and 2006



Source: ABS Census data

3.1.1 Gender profile of the South Australian workforce

The labour force participation of men and women has shown significant change over the past 20 years – see Table 1. For men, participation in the labour force since 1986 has fallen in each age group except those aged 55 and over. Conversely, women – except those under the age of 24 - have increased their participation since 1986. In some cases, the increases are significant – for example, the participation rate for women aged 55-64 has more than doubled over this period.

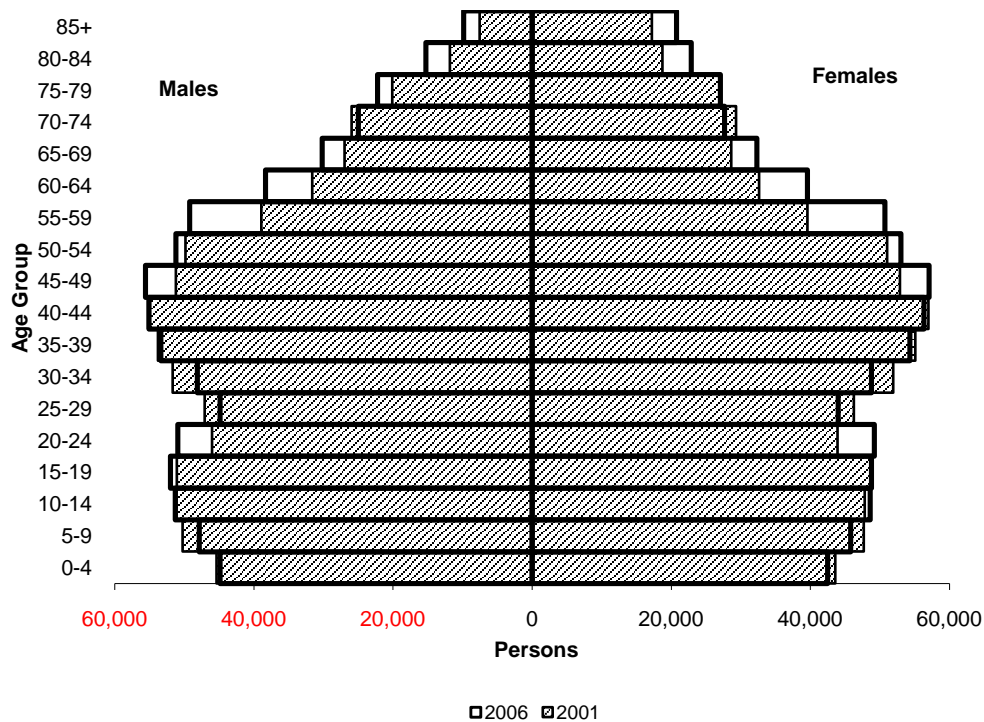
As Figure 6 shows, population gains have been most noticeable in the **45 years and over age** group (and particularly those aged **55 to 59**), and the pattern of ageing over the 5 year period to 2006 has been similar for both women and men. However, there has also been growth in the 20-24 age group due to the substantial influx of foreign students studying in South Australian tertiary institutions (Hugo: 2008). This illustrates the importance of migration in lowering the age profile of a population and in helping to compensate the net outflow of younger, more highly educated and skilled South Australians to other parts of Australia (as discussed in *Section 2.3*).

Table 1: Changes in workforce participation by age and gender, South Australia, 1986-2006

Age group	Males				Females			
	1986 (%)	1996 (%)	2001 (%)	2006 (%)	1986 (%)	1996 (%)	2001 (%)	2006 (%)
15-19	56.8	48.2	48.8	49.1	56.1	48.6	50.5	53.0
20-24	89.8	82.9	81.7	79.2	75.0	74.0	74.8	74.1
25-34	93.8	88.7	87.2	85.0	61.4	65.7	67.6	70.2
35-44	93.4	88.6	86.7	84.6	65.5	70.5	70.9	72.8
45-54	88.7	85.0	83.6	82.8	53.7	66.8	70.7	75.0
55-64	59.8	55.6	58.7	62.9	21.1	27.6	35.8	45.7
65 and over	7.6	7.8	8.8	10.6	2.5	2.6	3.4	4.2
Total	74.3	67.9	66.5	65.0	47.9	49.8	51.3	53.3

Source: Sharp & Broomhill: 2005; ABS Census data

Figure 6: South Australia: Age and Sex Distribution of the Population, 2001 and 2006



Source: Hugo (2008), based on ABS Censuses and Projections

Despite the significant increase in female labour force participation, occupational and industry gender-based segregation has remained largely unchanged over the past few decades and women generally continue to occupy a specific and frequently disadvantaged labour market position (Sharp & Broomhill: 2005). The occupations and industries in which women employees are clustered continue to attract the lowest rates of pay, and are often considered low-skilled or unskilled with little opportunities for training, including in occupational health and safety. Women predominate in part-time and casual employment – employment situations characterised by lower level of entitlement to sick leave, annual leave and superannuation (Sharp & Broomhill: 2005). According to ABS data cited by the Equal Opportunity for

Women in the Workplace Agency (EOWWA: 2008), as at November 2007, women's average weekly earnings (full-time ordinary time earnings) were 84.2% that of men's – a national gender pay gap of 15.8%.

Women currently account for some 32% of all *WorkCover SA* claims⁶. While this may appear low compared with their labour force participation (as women comprise around 46.4% of the workforce), in reality it reflects the part-time nature of women's employment⁷ and the fact that women are under-represented in many of the occupations which account for a significant proportion of total claims (for example, labourers and tradespersons). Therefore, analysis of the likelihood of claims from women in the labour market should not be based on their share of total claims.

A number of broad conclusions relating to women's labour force participation warrant attention:

- As female labour force participation is increasing, and especially within older age groups, workplaces need to adapt their workplaces to accommodate older women in a workplace environment that acknowledges both health issues and care-giving responsibilities (eg for older relatives or partners). The expected participation by older women in the workforce can also be linked to their greater longevity, compared with men (*see Section 2.2*).
- Low levels of superannuation held by many mature age women are likely to have the impact of prolonging workforce participation.
- The care-giving of older relatives or partners may have a negative impact on health and the propensity for injury, which in turn, will affect women's workplace productivity and may enhance the risk of workplace injury (for example, due to musculoskeletal strain, or higher levels of stress), or compound workplace injury or illness.
- As women are overrepresented in 'precarious' employment situations, in some cases they are more at risk of a workplace injury due to the lack of adequate training and unsafe working conditions associated with such employment.
- As older people have a greater incidence of injury than younger ones (detailed later in *Section 2.2.3*), and workforce participation among older South Australians is increasing – especially among women – the risk of injury requiring income maintenance is likely to increase.

3.1.2 English language proficiency of the South Australian workforce

The encouragement of increased levels of immigration is a key component of South Australian government population policy (as discussed in *Section 2.3*) and this will affect workplace culture while requiring accommodation for different language and cultural backgrounds. In addition, the large scale immigration to Australia during the post World War II period occurred at a time when English proficiency was not a required condition of entry or assisted as part of the settlement process. Those who migrated then are now ageing, and at a greater rate than the Australia-born population. At the same time, many face significant English language barriers.

This means that workplaces will have a cohort of ageing workers from non English speaking backgrounds with low levels of English language proficiency, and a newer cohort of younger migrants, some of whom will arrive under humanitarian programs - the Horn of Africa will be a key source – (Hugo: 2008). These

⁶ Based on an analysis of claims data for 2006-07 provided to AISR by WorkCover.

⁷ At the time of the 2006 Census, women comprised 70% of total part-time employment in South Australia (ABS: 2006).

changes in the workforce’s linguistic and cultural profile will require a range of adjustments to ensure that workplaces are culturally inclusive, in relation to workplace health and safety and to broader workplace culture.

Proficiency in English language is important for workplace injury as it relates to the ability to communicate effectively within the workplace and to understand occupational health and safety information. There are 32,700 South Australians who rate themselves as not proficient in English and almost half of them (46%) are in the prime workforce ages of 15-64 – see Table 2.

Table 2: Proficiency in Spoken English/Language by Age Group - 2006 Census

Age group	Speaks English only	Speaks other language & speaks English well or very well	Speaks other language & speaks English not well or not all	Speaks other language & proficiency in English not stated	Not stated	Total
0-4 years	74,174	3,534	3,816	1,331	4,478	87,333
5-14 years	168,683	15,918	1,649	297	6,944	193,491
15-24 years	166,872	23,396	1,819	327	8,451	200,865
25-34 years	152,455	22,731	2,326	310	7,925	185,747
35-44 years	181,683	25,097	3,466	361	8,456	219,063
45-54 years	184,102	20,792	3,903	266	7,825	216,888
55-64 years	151,678	16,130	3,647	211	6,155	177,821
65-74 years	90,688	13,962	5,526	195	4,727	115,098
75-84 years	67,863	9,222	4,995	170	5,184	87,434
85 years & over	24,583	1,914	1,595	63	2,442	30,597
Total	1,262,781	152,696	32,742	3,531	62,587	1,514,337

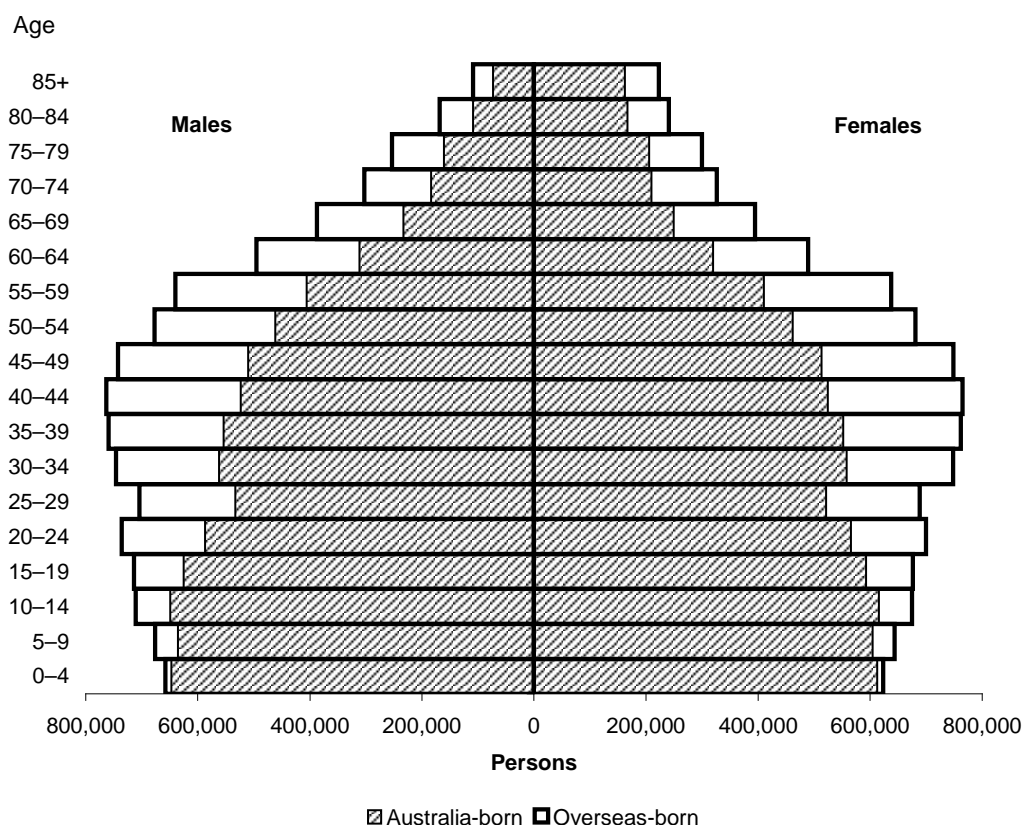
Source: ABS 2006 Census data

While this represents a small proportion of the overall population (2.2%) it is important to note that a further 66,118 people (4.4%) have not stated their proficiency. Given that the pertinent question in the Census provides the option of describing proficiency in positive terms, we suggest that the total proportion of the population who are not fluent in English is nearer to **6.6%**, while 10% of people for whom English is not their first language regard themselves as proficient.

Further analysis of ABS 2006 Census data shows that of those employed people who do not speak English well (or not at all), the largest numbers are concentrated within *manufacturing*, followed by the *accommodation and food services* industry, and *agriculture forestry and fishing*.

Figure 7 depicts the age profile of the overseas-born compared to those born in Australia. The profile indicates that the number of elderly born overseas can be expected to increase over the next decade. Particular attention should be paid to the Non English Speaking origin component of older people both nationally and in South Australia. Census data (ABS: 2006) reveal that they have been growing much faster than both the Australia-born and the overseas-born from Mainly English-Speaking (MES) countries.

Figure 7: Age and Sex Structure of the Australia-Born and Overseas-Born Population, 2006



Source: reproduced from Hugo: 2008 based on ABS Censuses

3.1.3 Disability and the South Australian workforce

The proportion of the workforce with a disability, whether present from birth, or acquired due to accident, illness or as part of the ageing process, will increase over the next few decades. People with disabilities present from birth are living longer, and as the population ages, the number of people with acquired disability will also increase. Consequently, workplaces will need to be designed to prevent or minimise the acquiring of work-related disability and to accommodate increasing numbers of workers with some form of disability.

Research by the ABS (2003) identified **20%** of Australians reporting some form of disability. A further **21%** had a long-term health condition that did not restrict their everyday activities. The remaining 59% had neither a disability nor a long term health condition. Other findings from this survey follow.

- o The unemployment rate for people with a disability at that time was 8.6% compared to 5% for those without a declared disability.
- o Only 53% of people of working age with a disability were in the labour force, compared to 81% of people without a disability.
- o People with a disability were more likely to work part-time than those without a disability.

- o 15.2% of people with a disability reported that the cause of their main health condition was accident or injury, 14% that it was disease, illness or heredity, and 11% that it was 'Working conditions, work or over-work'.
- o Using data adjusted to account for differences in age structures, South Australia, Tasmania and Queensland had the highest disability rates (23%).
- o Physical conditions were the most common form of disability (84%).
- o The disability rate increased with age, reaching 92% for those aged 90 years and over.

Workplace challenges involved in providing disability-friendly work environments can be expected, in most cases, to increase in proportion to the severity of a disability. The 'Core Activity Need for Assistance' variable has been developed by the ABS to measure the number of people with a profound or severe disability⁸. Approximately 68,000 people in South Australia have a profound or severe disability, and some **5,200** of them are currently employed, the majority in **part-time** jobs (ABS: 2006).

It is likely that widespread skills shortages will see under-employed people with a disability encouraged to enter the labour force, and government policy at national level, through the *Welfare to Work* initiative, has provided a framework for this to occur.

Table 3 depicts the age-related nature of acquired disability⁹, showing that the incidence of disability nationally has increased between 1981 and 2003, and is concentrated in older age groups. Specifically –

- o In 1981, 13.2% of Australians aged 35 and over had some form of disability. By 2003, this had increased to 20.0%, with an ageing population being the key influence.
- o However, the proportion of people with a declared disability had also risen over the same period in all age groups. This could be due to a number of factors, including great advances in medical technologies which are enabling people with disabilities to live longer, albeit with chronic conditions.
- o It can be seen that disability increases with age. In 2003, 14.2% of people aged 35 to 44 had a disability, compared with 30.3% of those aged 55 to 59 and nearly 68% of those aged 75 and over.

⁸ People with a profound or severe disability are defined as needing help or assistance in one or more of the three core activity areas of self-care, mobility and communication because of a disability, long term health condition (lasting six months or more), or old age.

⁹ 'Disability' was defined by the ABS as any limitation, restriction or impairment, which has lasted, or is likely to last, for at least six months and restricts everyday activities. Examples range from hearing loss requiring use of a hearing aid, to difficulty dressing due to arthritis, to advanced dementia requiring constant assistance.

Table 3: Australia – Proportion of Population with Disabilities/Handicaps, 1981 to 2003

Age group	1981 (%)	1988 (%)	1993 (%)	1998 (%)	2003 (%)
35-44	10.8	11.8	12.4	14.2	14.2
45-54	16.7	17.4	18.4	20.9	21.6
55-59	25.6	25.5	28.2	31.7	30.3
60-64	29.7	29.7	33.9	36.0	38.9
65-69	33.1	41.5	39.5	40.5	40.6
70-74	38.5	48.2	53.1	49.8	49.6
75 and over	53.1	63.4	64.0	67.5	67.9
All People	13.2	15.5	16.6	18.8	20.0

Source: ABS data quoted in Hugo (2008)

3.1.4 Occupation-based ageing in the South Australian workforce

Some occupations and industries have considerably older workforces compared with the workforce as a whole. This may not of itself bring greater numbers of *WorkCover SA* claims (because injury rates between industries and occupations are influenced by a number of factors, not least of which is the type of work done). However, if workforce ageing in general is associated with higher incidence and frequency of claims, then occupations and industries with *significantly ageing workforces* are more likely to be at the forefront of these trends.

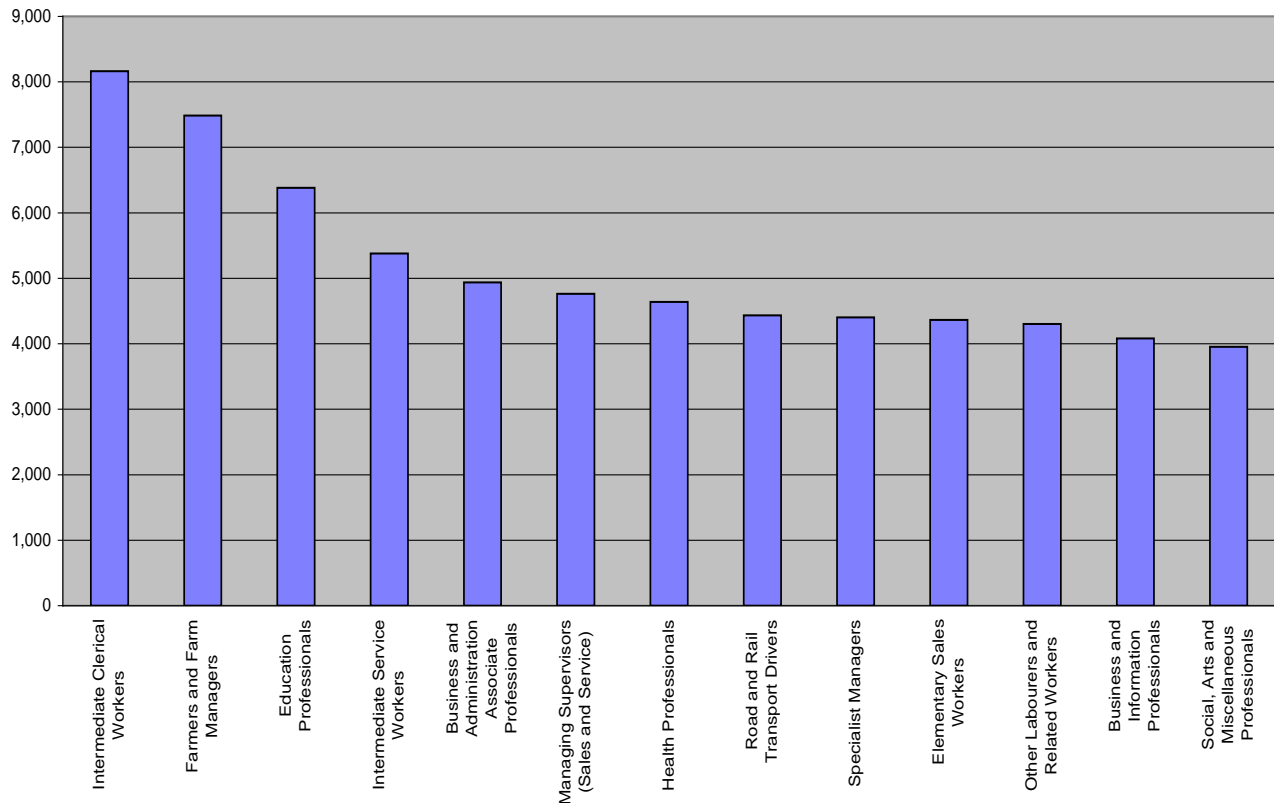
Appendix 1 lists all South Australian occupations (at the 2-digit level according to the ABS occupational classification) ranked from oldest to youngest and compared with Australia. Many of the older occupations are in *clerical and professional* occupations. The fact that many white collar occupations have an ‘older’ age profile may in part reflect that there are high rates of early exits from ‘manual’ occupations of tradespersons and labourers. Occupations with the **lowest** proportion of workers aged 55 and over in South Australia are those in sales and service occupations, certain trades and labourers and related occupations (ABS: 2006).

As Figure 8 indicates, the occupations with the **highest** number of workers aged 55 and over in South Australia are -

- o Intermediate clerical workers
- o Farmers and farm managers
- o Education professionals
- o Intermediate service workers.

Figure 8: Top oldest occupations by number, South Australia 2006

FIGURE 8: TOP 10 OLDEST OCCUPATIONS BY NUMBER, SOUTH AUSTRALIA 2006

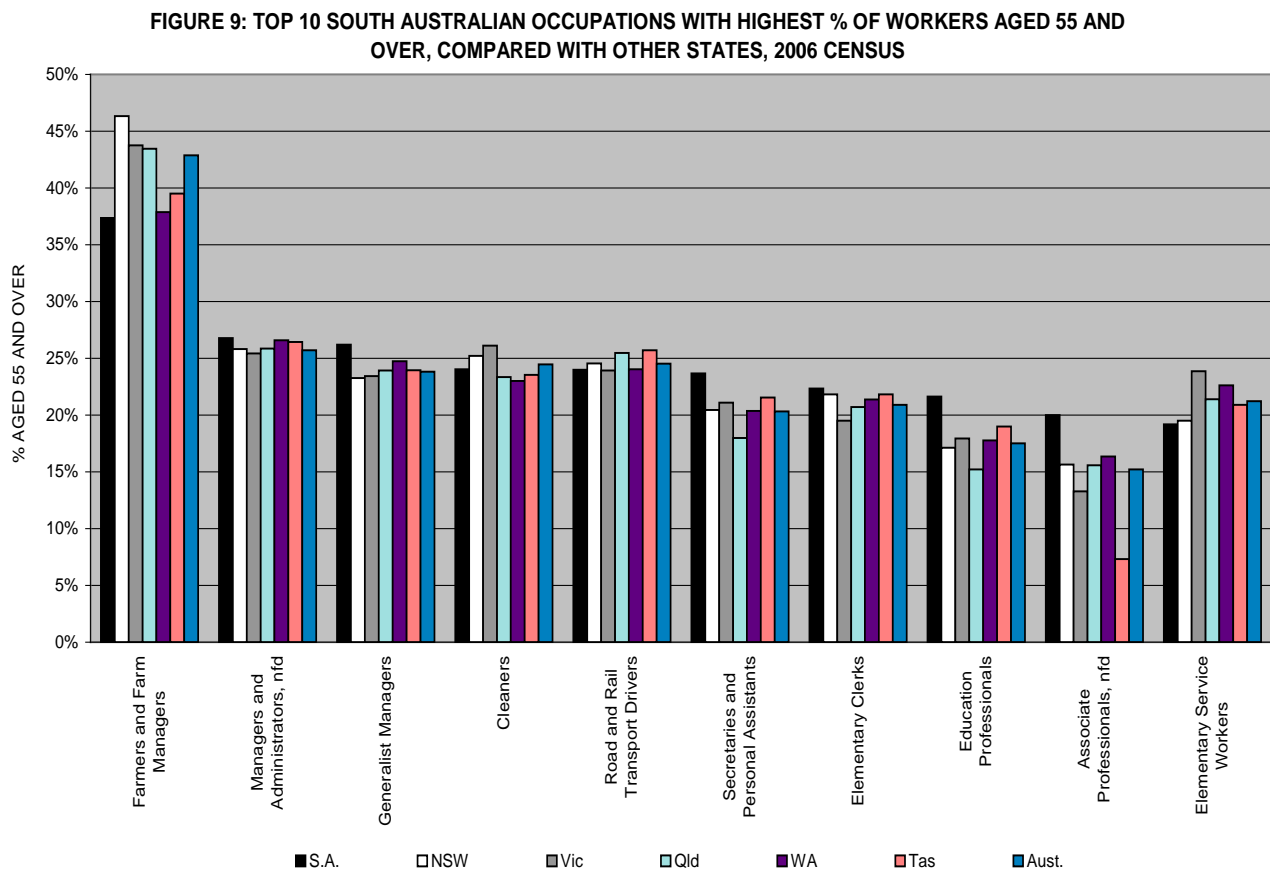


Source: ABS 2006 Census data

Viewed nationally, Figure 9 shows the ten “oldest” occupations in South Australia (those with the greatest *proportion* of the workforce aged 55 and over), compared with other States. It can be seen that South Australia has **six out of ten occupations** with a higher proportion of workers **over the age of 55** relative to Australia as a whole, and these are –

- o Secretaries and personal assistants
- o Elementary clerks
- o Education professionals
- o Associate professionals
- o Generalist managers
- o Managers and administrators nfd.

Figure 9: Top 10 South Australian occupations with highest % of workers aged 55 and over, compared with other States, 2006



Source: ABS Census data

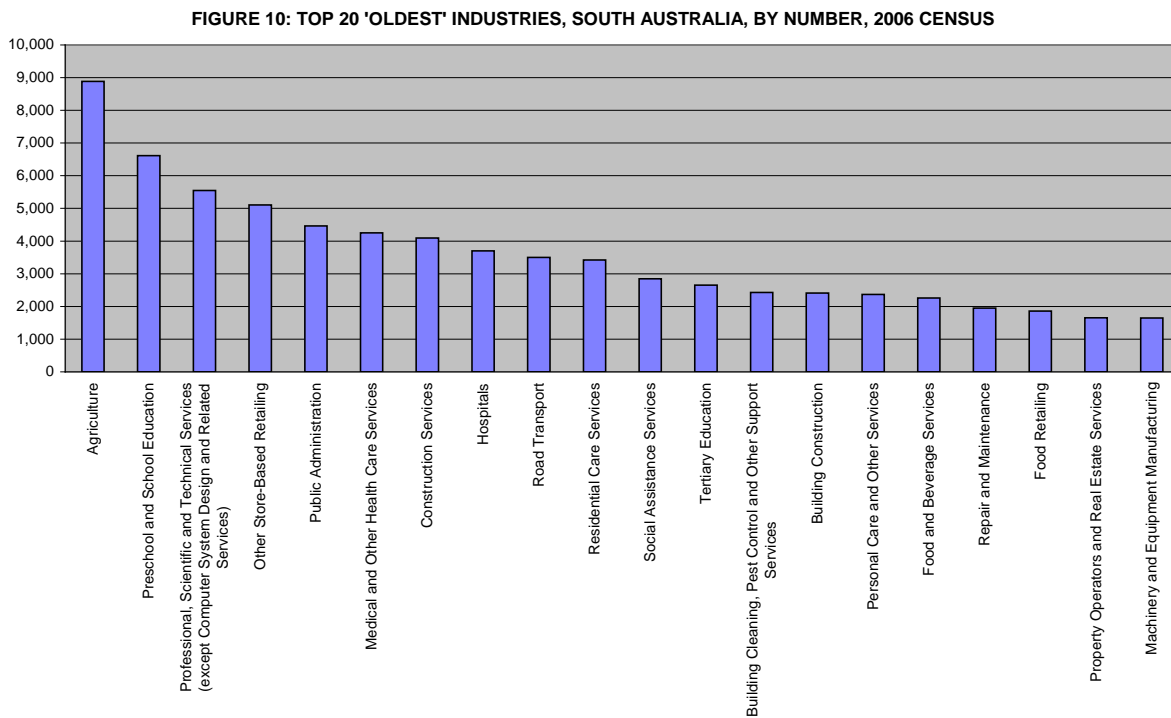
3.1.5 Industry-based ageing in the South Australian workforce

On an industry basis, the five industries with the highest **number** of employed people aged 55 and over in South Australia are, in order:

- o agriculture
- o pre-school and school education
- o professional scientific and technical services
- o other store based retailing
- o public administration.

This represents the industries in which the greatest numbers of people are likely to need to be replaced due to retirement over the next 10 years in South Australia, and those where a greater attention to 'ageing-friendly' occupational health and safety will be needed – see Figure 10 which depicts the top 20 'oldest' industries.

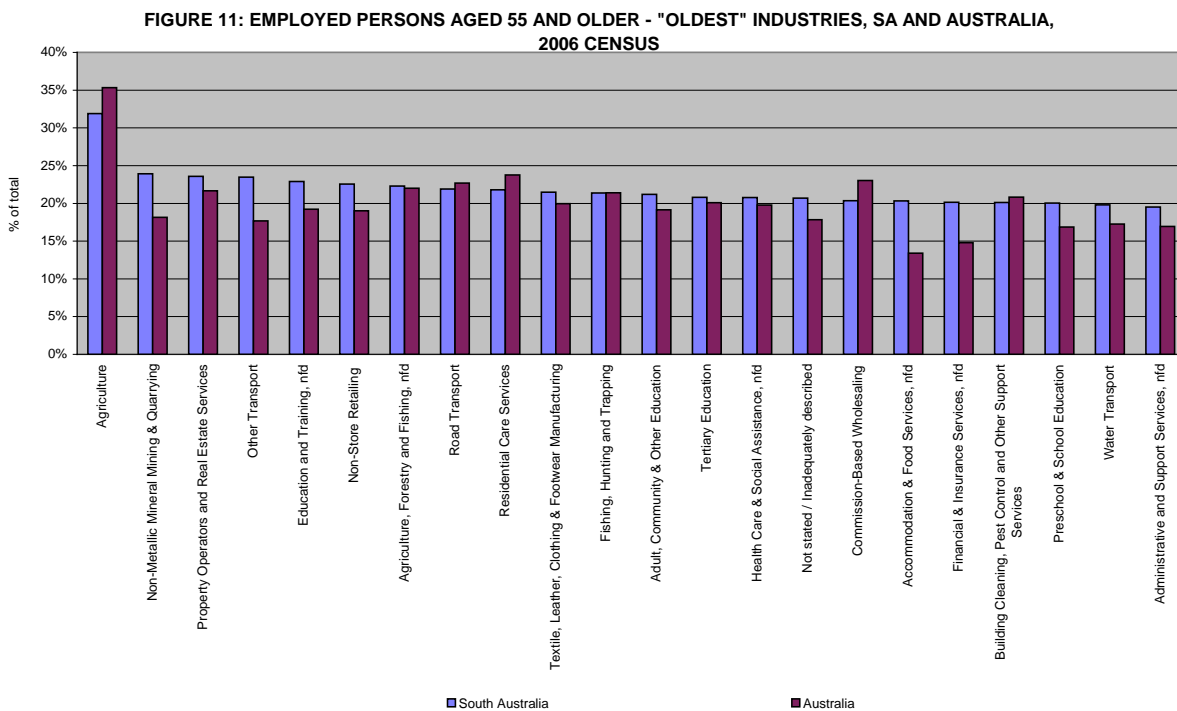
Figure 10: Top 20 'oldest' industries, South Australia, by number, 2006



Source: ABS Census data

Figure 11 provides a comparison of South Australian industry-based ageing with national trends. It shows the 20 “oldest” industries in South Australia (ie those with the greatest percentage of their workforce aged 55 and over), as well as the equivalent percentage nationally.

Figure 11: Employed persons aged 55 and older – ‘oldest’ industries, SA and Australia, 2006



Source: ABS Census data

It can be seen that South Australia has **15 out of 21 industries** with a higher proportion of workers **over the age of 55** relative to Australia as a whole, and these are (in order):

- o Non metallic mineral mining and quarrying
- o Property operating and real estate services
- o 'Other' transport
- o Education and training nfd
- o Non-store retailing
- o Agriculture forestry and fishing nfd
- o Textile, clothing and footwear manufacturing
- o Adult community and other education
- o Tertiary education
- o Health care and social assistance nfd
- o Accommodation and food services
- o Financial and insurance services nfd
- o Pre-school and school education
- o Water transport
- o Administrative and support services nfd.

The industry sectors with the **highest proportion of younger workers** are clustered around information technology activities, retailing, some manufacturing and defence.

The industries with the **highest number of male workers aged 55 and over** are –

- o Agriculture
- o Construction
- o Professional Scientific and Technical services
- o Road transport.

Those with the **highest number of women employees aged 55 and over** are –

- o Preschool and School Education
- o Hospitals
- o Residential Care Services (ABS: 2006).

3.2 Injury, illness and recovery rates of older South Australian workers

Research Question Addressed

- *What are the current rates of injury, illness and recovery of older workers in South Australia? In comparison to other age groups, are these rates higher, lower, or similar?*
- *In terms of workplace injury and illness, what do (research and) claims-related data tell us about the risk posed by different age groups? By different occupations? By different industries? What factors interrelate in relation to risk (eg age and occupation)?*

Understanding the structure and pattern of *WorkCover SA* claims is important in terms of assessing the risks that an ageing workforce may bring to future *WorkCover SA* liabilities. To this end, this section is based on a statistical overview of relevant unit record data of all *WorkCover SA* claims during 2006 and 2007¹⁰ and provides an age-based review of –

- o Distribution of claims
- o Incidence of claims
- o Frequency of claims
- o Duration of claims
- o Type of injury
- o Risk by size of employing organisation
- o Risk by industry
- o Risk by occupation.

The analysis which follows needs to be understood in the context of an overall *decline* during the last decade in the number of claims. Over the 8 year period to 2003-04, the total number of claims across all age groups nationally has declined from a total of 164,910 to 144,025. Preliminary figures for 2004-05 indicate that this downward trend has continued (ASCC: 2007).

While the number of claims has fallen in recent years, there has been a shift in the *distribution of claims* among different age groups. Reflecting Australia's ageing workforce, the distribution of claims has shifted towards the mature age groups – the proportion of claims for employees aged 45 and over increased from 32% in 1996-97 to 38% in 2003-04¹¹ (ASCC: 2007).

Similarly, the frequency and incidence of claims made to *WorkCover SA* have shown an overall decline – see Table 4 and Table 5.

3.2.1 Age-based distribution of claims

Of the **70,743** *WorkCover SA* claims in 2006 and 2007, **9,091** or **12.9%** were for people aged **55 and over**. As Figure 12 shows, the highest proportion of claims involves the **40 to 49** year age group, followed by those aged 35 to 39, and then by those aged 50-54, closely followed by those in the 20-24 year age group.

These proportions of claims need to be viewed in relation to the representation of different age groups within the South Australian workforce. Table 4 compares the age structure of *WorkCover SA* claims with the age structure of the South Australian workforce in 2006. It shows that –

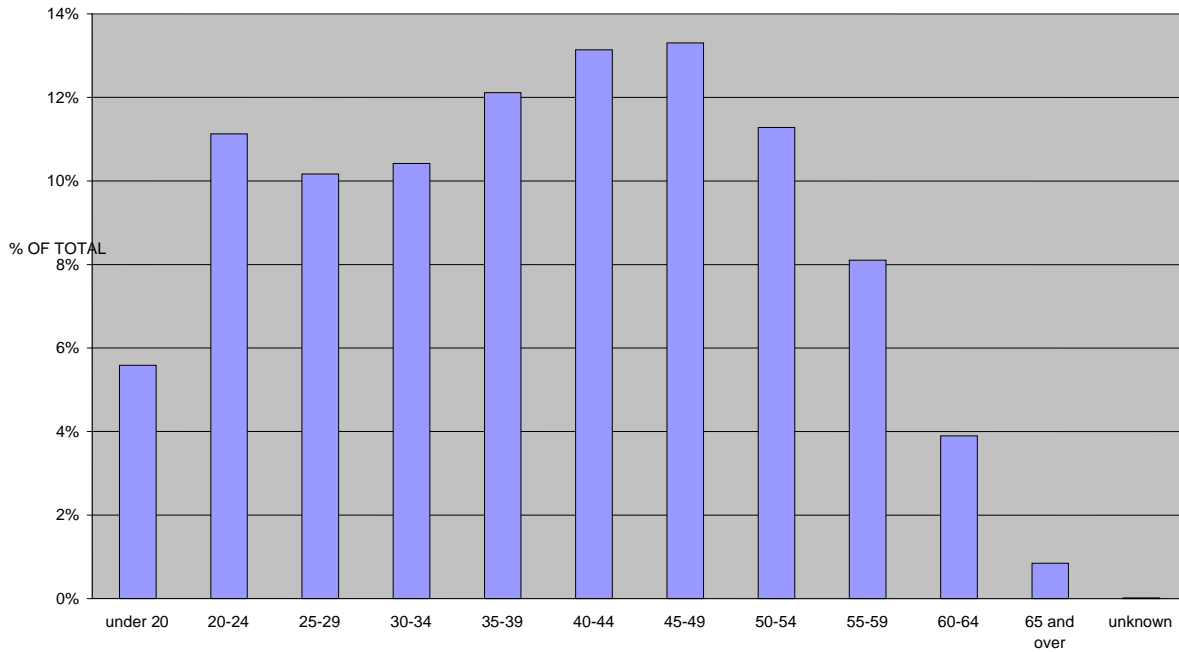
- o the percentage of claims for people aged 55 and over is **lower** than their workforce representation (12.9% of claims compared with 15.8% of the workforce).

¹⁰These provide information about date of claim, date of injury, claim status, age, gender, occupation, industry, employer size, status of organisation (ie self-insured or *WorkCover*), nature of injury, body location of injury, agency of injury, mechanism of injury and length of active claim.

¹¹Preliminary figures for 2004-05 show a further increase to 39%.

- o For all age groups from 20 to 54 years, the share of *WorkCover SA* claims made is **greater** than their total employment share.

Figure 12: Age distribution of WorkCover claimants 2006 and 2007



Source: WorkCover data provided to AISR

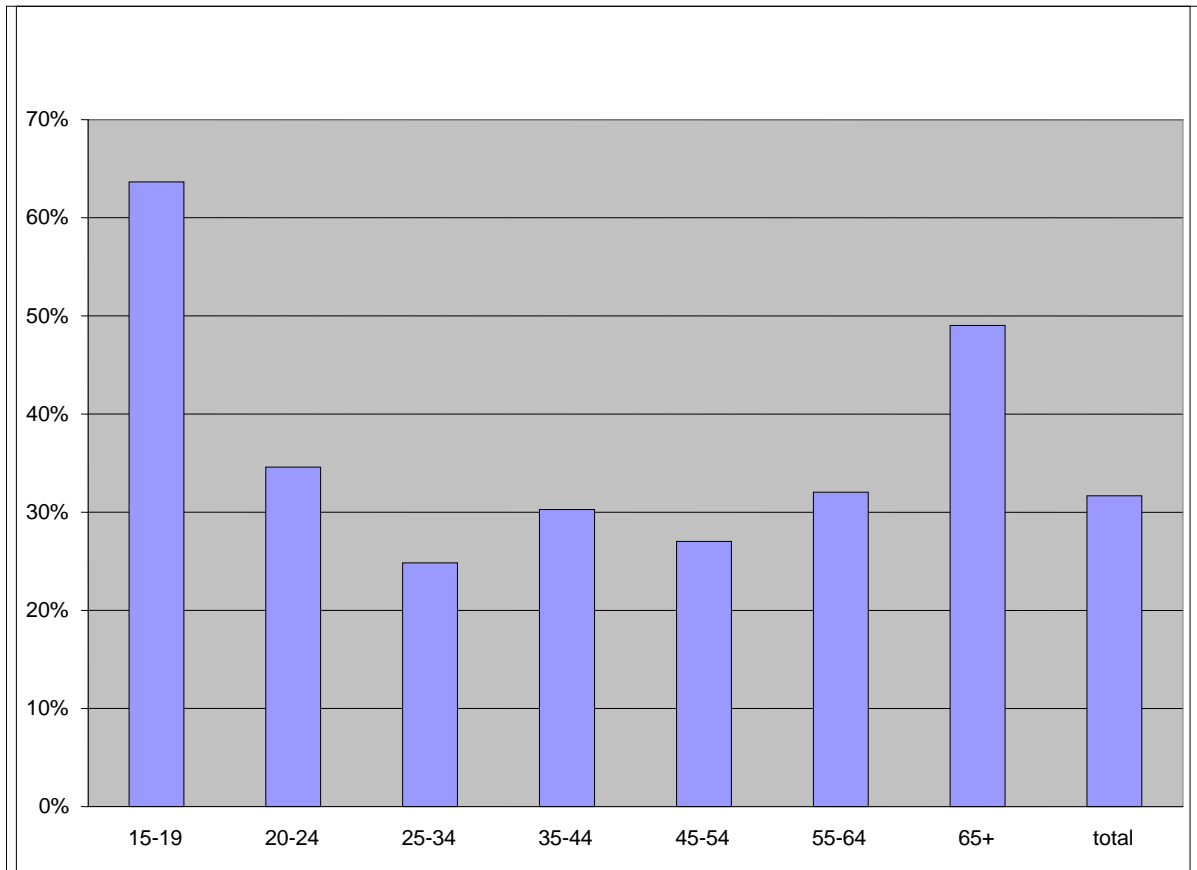
Table 4: Age-based Distribution of Claims, 2006-2007

Age of claimants	number	% of total	% of total employment
under 20	3,952	5.6	6.4
20-24	7,872	11.1	10.2
25-29	7,191	10.2	
30-34	7,370	10.4	
Sub-total: 25-34	14,561	20.6	19.7
35-39	8,568	12.1	
40-44	9,292	13.1	
Sub-total: 35-44	17,860	25.2	23.9
45-49	9,412	13.3	
50-54	7,980	11.3	
Sub-total: 45-54	17,392	24.6	24.0
55-59	5,733	8.1	
60-64	2,757	3.9	
Sub-total: 55-64	8,490	12.0	13.5
65 and over	601	0.8	2.3
Unknown	15	0.0	
Total	70,743	100.0	100.0

Source: *WorkCover SA* data provided to AISR, and ABS Census data

The under-representation of older workers in terms of claims may reflect the **number of hours worked** (see discussion later in *Section 3.2.4 on frequency rates*). Older people tend to work fewer hours than their younger counterparts and therefore are less likely to get injured in the workplace. People aged 55 and over have the greatest share of part-time employment (as a percentage of total employment) of all age groups with the exception of 15-24 year-olds (who are generally undertaking study) – see Figure 13.

Figure 13: Share of full-time employment to total employment, by age group, South Australia, 2006



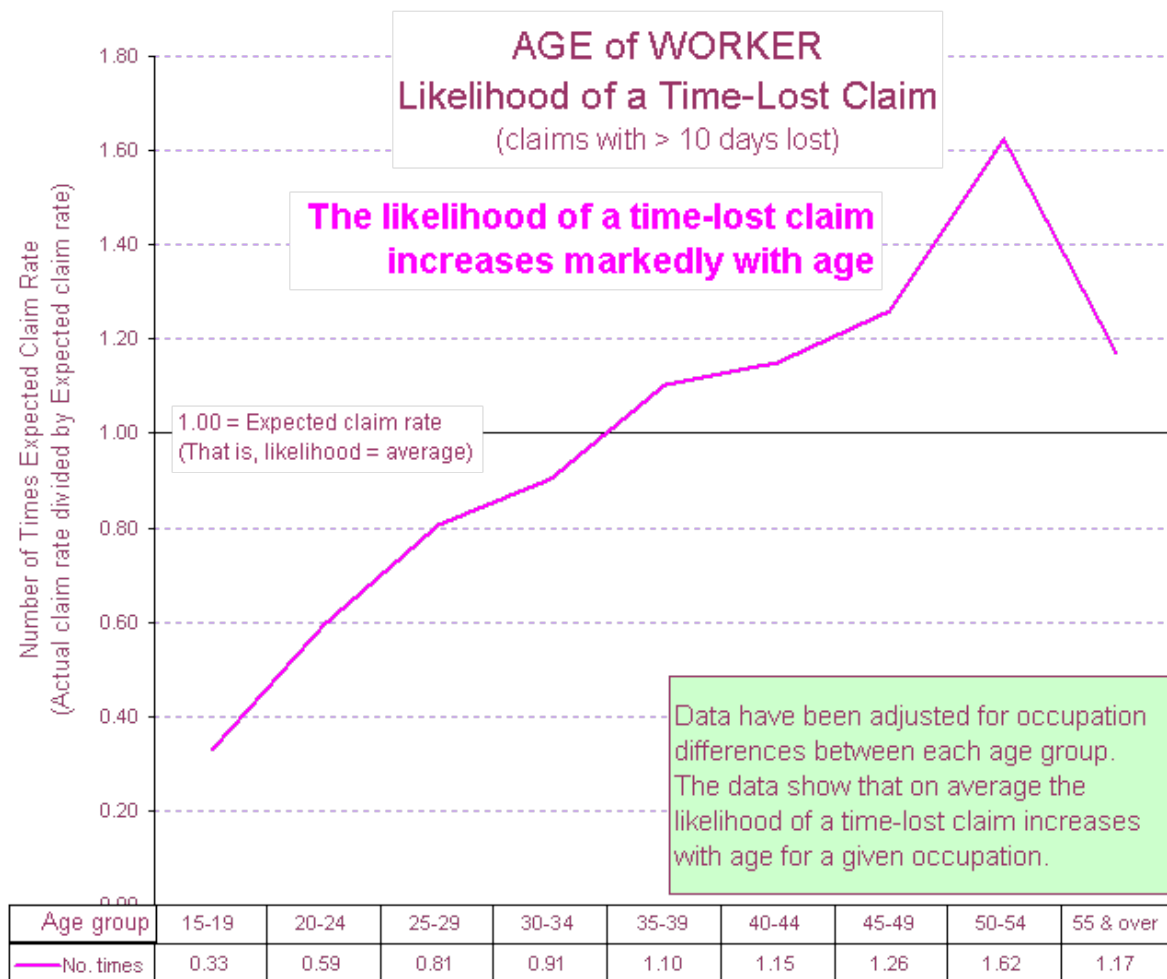
Source: ABS Census data

3.2.2 Duration of claims by age

Figure 14 depicts claim rates involving the loss of 10 days or more by age groups. It indicates that the likelihood of a time-lost claim increases significantly with age, peaking at the **50 to 54 age group**.

Within the same occupation, older workers (particularly those aged 50-54) are more likely to have a claim than younger workers. This pattern becomes more pronounced for claims with greater than 10 days lost, as Figure 14 illustrates.

Figure 14: Claims involving time lost from work, by age group



Source: Unpublished WorkCover SA (2001) analysis prepared for the Safe Work Strategy

3.2.3 Incidence of claims by age

The impact of age on WorkCover claims is complex, as there are a range of factors that interact with age, making it difficult to isolate the impact of age alone. The number of claims can also be affected by changes in the *size and composition* of the workforce. Therefore, to adjust for changes over time in the number of employees in each age group, a measure called the *incidence rate* has been developed. This measures *the number of compensated claims per 1,000 employees* and can be used to compare the relative likelihood of work-related injury or diseases at different ages and in different years.

Table 5 depicts changes in the incidence rate over time, using national data. It can be seen that -

- o The overall incidence rate, across age groups, has declined from 1996-7 to 2003-04.
- o The incidence rate **increases with each age group** until 65 and over, when it declines sharply.
- o The age groups with the **highest** incidence are between **50 and 64 years**, and **particularly those aged 55-64 years**.

- o The **lowest** incidence occurred among the youngest age group, those **under 20 years**.
- o While older workers had the highest incidence rates, they also had the **largest rate of decline in incidence** rates over the period to 2003-04. For example, for 60-64 year-olds, there were 22.7 claims per 1,000 employed in 2003-04, down from 35.9 in 1996-97.

Table 5: Incidence rate (claims per 1,000 employees), 1996-97 and 2003-04

Age Group	1996-97	2003-04
15-19	13.2	9.6
20-24	19.3	13.8
25-29	20.7	14.8
30-34	22.9	16.7
35-39	23.3	18.1
40-44	23.2	19.1
45-49	24.5	19.4
50-54	26.7	20.6
55-59	31.7	22.1
60-64	35.9	22.7
65 and over	15.5	12.6
Total Claims	22.6	17.2

Source: Australian Safety and Compensation Council: 2007

Preliminary figures for 2004-05 show a further decline across all age groups, with a total incidence rate of **16.6 per 1,000** employees (ASCC: 2007).

3.2.4 Frequency of claims by age

Another approach to analysing the relationship between age and claims involves the *frequency rate* which measures the *number of claims per million hours worked*. This negates differences in the proportion of workers who are employed part-time and the changes in those proportions over time. More generally, it eliminates the effect that differences in average hours worked by age group have on claims by age group. As identified previously, some age groups (eg those aged 55 and over) have a noticeably greater share of part-time employment relative to other age groups. Table 6 shows changes in the frequency rate over time and by age group.

While the incidence rate showed a steady increase with age, the increase in the frequency rate was more modest. It is evident from Table 6 that –

- o the overall frequency rate, across all age groups, has declined between 1996-7 and 2003-04;
- o the frequency rate decreases from 15 to 29 years and then **increases with each age group from 35 years to 64 years**, then declines sharply with the 65 and over age groups;

- o the age groups with the **highest** frequency rates are between **55 and 64** (as occurred with incidence rates);
- o while older workers had the highest frequency rates, they also had the largest **rate of decline** in frequency rates. For example, for 60-64 year-olds, there were 14.6 claims per million hours worked in 2003-04, down from 22.2 in 1996-97.

Preliminary data for **2004-05** show a **further decline** in the overall frequency rate to **10** (ASCC: 2007).

Table 6: Frequency rate (claims per million hours worked), 1996-97 and 2003-04

Age Group	1996-97	2003-04
15-19	12.6	9.7
20-24	11.8	8.9
25-29	11.5	8.4
30-34	12.9	9.6
35-39	13.2	10.5
40-44	12.8	10.9
45-49	13.5	11.0
50-54	14.7	11.7
55-59	18.4	13.0
60-64	22.2	14.6
65 and over	10.2	8.8
Total Claims	13.2	10.4

Source: Australian Safety and Compensation Council: 2007

3.2.5 Industry sector and age-based risk of claim

This section identifies those industry sectors which have higher levels of claims statistics. The share of total claims is then compared to the share of total employment by industry. With workforce ageing becoming more pronounced and with older people displaying greater relative incidence, frequency and time lost with respect to claims, some industry sectors are at greater risk than others in relation to ageing-related claims.

Table 7 compares employment shares by industry with the shares of *WorkCover SA* claims by industry for South Australia during 2006 and 2007. It shows that *WorkCover SA* claims are overwhelmingly concentrated in the **community services** and **manufacturing** sectors (in both cases well above their share of total employment), followed by the **wholesale and retail trade** sector.

Table 7: Employment share by industry and industry share of WorkCover SA Claims, 2005-06

Industry	Share of total employment SA 2006 (%)	Share for those aged 55 and over (%)	Share of all WorkCover Claims 06 and 07 (%)	Share of all WorkCover Claims for 55 and over 06 and 07 (%)
Agriculture, Forestry & Fishing	4.7	8.8	3.1	3.7
Manufacturing	13.3	11.7	27.2	24.0
Construction	6.5	6.4	7.1	7.4
Wholesale and Retail Trade	19.2	14.4	15.2	11.5
Transport & Storage	3.8	4.8	5.4	6.3
Finance, Property & Business Services	12.5	12.5	3.9	4.2
Government Administration & Defence	5.4	5.2	3.0	3.0
Community Services*	20.6	23.9	27.5	31.3
Recreational, Personal & Other Services	5.6	5.4	5.1	5.1
Mining	8.4	7.0	1.5	1.5
Total	100.0	100.0	100.0	100.0

* includes health and education

Source: ABS 2006 Census data; and WorkCover data provided to AISR

Furthermore, the community services sector makes up almost one-third of all claims for workers over 55 years of age, well above its employment share. More than half of all claims made by people aged 55 and over are associated with employees in the community services and manufacturing sectors. As discussed in *Section 3.1.4*, both of these industries have significant proportions of workers aged 55 and over, and as such, suggest a greater risk of claims.

3.2.6 Occupation and age-based risk of claim

It is difficult to draw many inferences from occupational data reported by WorkCover SA with respect to its claims, due to the way the data are aggregated. However, Table 8 provides total claims (both registered and self-insured) based on major occupational groups for 2006-07, as well as their equivalent employment share. It shows that the occupations with the highest share of claims were *labourers and related workers*, *tradespersons* and *intermediate production and transport workers* – all of whom have a share of total claims which far exceeds their share of total employment.

Table 8: Total Claims (percentage of total) by Occupational Group 2006-07 and Share of Total Employment 2006, South Australia

Occupational Group	% of total claims	% of total employment
Labourers and Related Workers	24.6	10.0
Tradespersons	21.0	12.0
Intermediate Production & Transport Workers	19.0	8.2
Intermediate Clerical, Sales & Service Workers	11.1	16.8
Associate Professionals	8.4	12.1
Professionals	7.8	18.0
Elementary Clerical, Sales & Service Workers	5.8	9.4
Managers & Administrators	1.6	9.2
Advanced Clerical & Service workers	0.5	2.8
Other & non-classified workers	0.3	1.5
Total	100.0	100.0

Source: ABS 2006 Census data; and *WorkCover Statistical Review 2006-07*

Analysis of *WorkCover SA* claims data on the basis of insurance status shows that occupations requiring significant physical input are associated with the greatest number of claims.

- o Among **registered** employers, the occupations with the largest number of claims are:
 - Heavy truck drivers and storepersons among males and
 - Personal care assistants and commercial cleaners among women.
- o For the **self-insured** sector, the occupations with the highest number of claims are:
 - Engineering production process workers, and storepersons for males and
 - Registered nurses and personal care assistants for females.

As discussed in *Section 3.1.4*, the ‘oldest’ occupations in South Australia (Intermediate clerical workers, Farmers and farm managers, Education professionals, Intermediate service workers) tend *not* to be the occupations with the greatest number of claims. Claims are highest in manual occupations in which many employees have left the labour force by the time they are 55. However, given continued health advances and increasing participation among older workers across all sectors, the potential exists for higher labour force participation by mature age workers from these occupations. Workplaces will require significant change to accommodate these workers in a safe and productive environment, and *Section 4* provides examples of how some organisations have addressed this challenge.

3.3 Conclusions

The key findings from this section are as follows:

- o Older people comprise an increasing share of the employed workforce and this trend can be expected to continue for some time as the Baby Boomer cohort reaches retirement age, and a range of economic, social and policy changes encourage them to delay their retirement.

- o The proportion of the workforce with a disability (whether acquired from the workplace or not) will **increase** over the next decade due to population ageing, the prolonged lifespan of people born with a disability, and the increasing availability of employment for under-employed people with a disability in response to significant skills shortages. **Acquired** disability becomes progressively more concentrated in **older age** groups and therefore the percentage of the workforce with a disability is likely to continue to increase over coming years.
- o Ageing is not uniform across industry sectors and occupational groups, with concentrations varying significantly.
 - ⇒ The industries with the highest proportion of workers aged 55 and over in South Australia are **agriculture, health care, education, public administration** and parts of retailing, construction and manufacturing.
 - ⇒ The occupations with the oldest profile are **farmers and farm managers, managers and administrators and generalist managers**.
- o *WorkCover SA* claims do not necessarily correspond with the age profiles of industries and occupations.
 - ⇒ Claims are overwhelmingly concentrated in the **community services** and **manufacturing** sectors, in both cases, well above their workforce representation, followed by the wholesale and retail trade sector.
 - ⇒ Occupations with the highest share of claims were **labourers and related workers, tradespersons and intermediate production, and transport workers** - all of whom have a share of total claims which far exceeds their share of total employment. Claims are highest in **manual** occupations and it is likely that older workers in these occupations have left the labour force or moved to less physically demanding work roles.
- o In common with national trends, there has been a **decline in the number of *WorkCover SA* claims**, and in the incidence rate **across all age groups**, with the **largest rate of decline** in incidence rates involving workers aged **60 to 64**.
- o While the total number of claims is falling, the **distribution of claims has shifted towards older age groups**. This is consistent with the observed ageing of the workforce. With the ageing of the workforce expected to accelerate over the coming decade, the share of claims among older workers is likely to increase.
 - ⇒ The **highest proportion of claims**, on an age basis, involves the **40 to 49 year** age groups, followed by 35 to 39 year olds, and then by those aged 50 to 54.
 - ⇒ For all age groups between **20 and 54**, the share of *WorkCover SA* claims is **greater** than their workforce representation.
 - ⇒ Those aged **55 and over** have a **lower** proportion of claims relative to their share of employment, and this is likely to reflect that they have the greatest share of part-time employment compared with all groups aged from 24 and over.
- o In order to better understand the implications of workforce ageing on *WorkCover SA* liabilities it is important to analyse claims on the basis of their *duration, incidence* (that is, number of compensated

claims per 1,000 employees) and *frequency* (that is, the number of claims per million hours worked by age group).

- ⇒ A within-occupation analysis of claim rates involving the loss of ten days or more indicates that the likelihood of a time-lost claim increases significantly with age, peaking at the **50 to 54 year** age group.
- ⇒ The incidence rate of claims has declined over time, across age groups, with the largest rate of decline involving 60-64 year olds. However, the incidence rate increases significantly with age and those with the highest incidence are aged between 50 and 65 years, particularly those aged **55-64 years**.
- ⇒ Frequency rates have also declined for each age group over the past decade. Frequency rates also increase with age, but not to the extent of incidence rates. As with incidence rates, the age group with the highest frequency rates are those between **55 and 64 years**.

The likelihood of liability arising from workplace illness or injury cannot easily be determined on the basis of chronological age. Age is one variable that is mediated by a range of workplace factors, by the individual health and fitness of workers, and the interactive effect between individual worker and their work environment. These issues are discussed in *Section 4* which follows.

4 AGEING AND CAPACITY TO WORK: RESEARCH EVIDENCE

In this section we review the research evidence relating to the impact of ageing on capacity for work. This involves research findings about health, functional status and ability to work, ageing-related changes in functional capacity (respiratory and cardiovascular, sensory, musculoskeletal, psychological, cognitive), capacity for learning and training, productivity and health and safety risks. The section concludes with a summary of the contributions and challenges of an ageing workforce and an overview of the myths associated with older workers balanced against research findings.

Research Questions Addressed

- *What is known about ageing-related health conditions and ability to work? What population groups are at greatest risk of acquiring such conditions?*
- *What is known about the relationship between workforce participation and health?*
- *Does the research establish a relationship between stress-related conditions and age? Which age groups appear most at risk of acquiring stress-related disorders?*
- *What is known about older workers in terms of capacity for ongoing training and contribution to the workplace?*
- *What does the research tell us about the positive impact of older workers in the workplace?*

4.1 Ageing-related health, functional status and ability to work

Age is only one of a number of determinants of health that are equally as (if not more) important than lifestyle, nutrition, fitness, education, socio-economic status and quality of health care (Benjamin & Wilson, 2005: 3). Many of these determinants are interdependent. **Longitudinal research has found factors within individual control, such as, lifestyle and fitness, are greater predictors of health in old age than chronological age** (Vaillant & Western: 2001).

The general health of older Australians has been improving for many years. The *2001 National Health Survey* by the Australian Bureau of Statistics (ABS), older Australians reported overwhelmingly that they had good, very good or excellent health. In fact, at least 60% of people in the 65-74, 75-84 and 85 and over age groups reported good to excellent health. Hence many are continuing to actively contribute to the community not only through paid employment, but also volunteer activities, extended family support, and participation in community social, sporting and cultural activities (AIHW: 2004).

Setting aside self-reported health, it is also the case that the health of older Australians is affected by exposure to risk factors throughout their lives, and that these health effects are often cumulative. People's health in later life is affected by their health behaviour earlier in life (AIHW: 2004a). Therefore, the onset of many diseases and injuries in older Australians is affected by risk factors present when they were younger, which are often preventable, and highlights the importance of community education and health promotion. Some risk factors have a cumulative effect over the life course, but there is potential for health improvement at all stages of life by managing risk behaviours and early health prevention behaviour (AIHW: 2004a). The major preventable risk factors for onset of disease and injury in older Australians are:

- o overweight and obesity;
- o inadequate physical activity;
- o smoking;
- o consumption of alcohol at levels considered at risk for health;
- o poor diet and nutrition; and
- o falls (AIHW: 2004).

In addition to these risk factors, high blood pressure and high blood cholesterol levels were major long-term problems of middle and older age reported in the ABS 2001 *National Health Survey*. These are risk factors for a range of cardiovascular diseases, but they can be managed with appropriate medical treatment. Changes in diet, alcohol and tobacco intake, and amount of exercise also treat and prevent such illnesses (Benjamin & Wilson: 2005). Risk behaviours tend to interact with each other, for example, physical inactivity and poor diet can increase body weight, blood cholesterol and blood pressure. Impaired glucose tolerance, a risk factor for Type 2 diabetes, is more common in older people where risk factors of inactivity and obesity exist (AIHW: 2004a).

Rates of chronic disease and disability increase significantly with age, which may or may not be work-related. While some long term exposures to occupational hazards are associated with an increased risk of illness, it is also true that the incidence of chronic disease is higher in the older population. This situation has been recognised as decreasing the safety margin which protects the worker against injury and work-related disease. However, older workers have been found to cope better with ill health than their younger colleagues (Ilmarinen: 1999).

The following data from the Australian Institute of Health and Welfare (2001) identify several age-related trends in relation to a number of common chronic diseases:

In the 2001 ABS National Health Survey, over 550,000 Australians reported that they had diabetes. Of these, 434,000 said they had **Type 2 diabetes** – which can be prevented with appropriate diet and lifestyle. However, it is recognised that many more people have undiagnosed diabetes, in part because the symptoms of the disease are not apparent in its early stages. The prevalence of Type 2 diabetes rises with age. The highest prevalence rates were among males aged 65-74 and females aged 75 and over.

- o **Colorectal cancer** is the second most frequently occurring cancer in Australian men and women if skin cancers other than melanoma are excluded. In 2000, there were 12,405 new cases (14.6% of all new cancer cases diagnosed), an incidence rate of 64.8 per 100,000 population. The risk of colorectal cancer increases with age, especially after the age of 45. The highest incidence was found in people aged 85 and over.
- o According to the National Cancer Statistics Clearing House, **lung cancer** is the fifth most commonly diagnosed cancer in Australia. There were 8,060 new cases in 2000, with an incidence rate of 42.1 per 100,000 population. New cases of lung cancer currently occur in males at more than twice the rate among females: 62.1 per 100,000 (age-standardised) compared to 27.4 per 100,000. Lung cancer incidence increases with age, with the highest incidence in those aged 75-79: 450.4 per 100,000 males and 156.4 per 100,000 females in 2000.

- o The incidence of **coronary heart disease** increases dramatically with age - rates among 75-90 year olds were 18 times those of 40-54 year olds.
- o The prevalence rates of both **osteoarthritis and rheumatoid arthritis** increase with age, and are highest among those aged 65 and above (AIHW: 2001).

When assessing the importance of general health on the structure of the workforce, it is particularly important to note that ABS data indicate that **health or injury** was the primary reason for retirement in approximately one-third of Australian men in 1997 (ABS: 2000). Research by the Australian Institute of Family Studies (Wolcott: 1999) also confirmed that health concerns were a major reason for retirement, with one-third of men and one-quarter of women citing their own or their partner's poor health as instigating their retirement. Premature retirement on health grounds creates a **self-selection factor** that needs to be taken into account when assessing the likely impact of older workers on workers compensation costs.

Given current policy directions which are designed to prevent premature retirement and to encourage prolonged workforce participation, health and injury are of critical importance to the retention of older workers. Poor health can be expected to have a negative impact on the ability to participate in the workforce, and chronic health conditions not only progress with age (depending on individual lifestyle) but are an acknowledged indicator of reduced labour force participation among mature age workers, leading to early retirement (Murphy: 2003; McGarry: 2002).

However, the relationship between health and premature retirement is not straightforward because of the relationship between good health and higher income. Having a higher level of retirement income can be a motivator for retirement, so that workers in good health may well leave the workforce before the usual retirement age years. It is also important to take into account individual skill levels, as some skills enable workers with health challenges to move into occupations that can accommodate these. Analysis by the Australian Treasury concludes that deteriorating health is probably a better predictor of mature age workers' continued participation in employment than poor health *per se*, significantly influencing retirement expectations than other variables, such as, changes over time in income (Murphy: 2003).

There is also increasing evidence that people with chronic disease are more likely to leave the paid work force (Crotty *et al*: 2002) and analysis of HILDA (Household, Income and Labour Dynamics in Australia) survey data shows that differences in the participation rates of people rating their health as 'poor' or 'fair' had lower rates and that this trend was more pronounced in older age groups, and among women compared to men (Murphy: 2003).

Current expenditure on those aged 65 and over is around four times more per person than those under 65, rising to 6 to 9 times more for people over the age of 85. Rising healthcare costs are often attributed to the higher usage of services by older people. However, Australian Institute of Health and Welfare analysis indicates that ageing as a single variable adds **0.6%** to annual health sector expenditure, while changes in medical practice due to *technological innovation* add significantly to health costs – at an estimated rate of **1.9%** per person for the past 22 years (AIHW, 2000: 316). While ageing has been the smallest of the contributors to increased health expenditure, the impact of current ageing trends is in its early stage and is

projected to have greater effect on the future rate of health expenditure (Productivity Commission, 2004a: 20 - 23).

These findings highlight the importance of activities that promote health and prevent illness, with the workplace having a key role to play in workforce health. A study by de Boer et al (2004) showed that targeted intervention (including scheduled consultations with an occupational physician, and development of a detailed work plan and regular assessment) for those 'at risk' of early retirement resulted in greater retention, improved work ability and less burnout. These impacts were present for 18 months post-intervention. The substantial research undertaken over the years by the Finnish Institute of Occupational Health (Ilmarinen, Tuomi and colleagues) shows that health promotion and prevention of illness is not solely the responsibility of public policy, nor is it effective if the work environment is excluded (Comcare: 2003; Ilmarinen: 1999).

... deteriorating health is not an inevitable consequence of ageing.... there is strong evidence that people aged 55 or older who follow an active lifestyle, have the daily functioning equivalent to less active people aged 15 years younger.

...the relationship between health and ageing is also affected by a range of other factors (such as, gender, marital status, education, income, occupation and employment, and country of birth, and ... strategies to promote a healthy old age must ... continue throughout the life course – including during the employment years. During these years the need for strategies to reduce damage (such as avoiding smoking), to protect against damage (such as by improving ergonomic intervention, job design and good nutrition), and to prevent loss through lack of use (such as through physical activity) have been identified (Comcare, 2003: 5-6).

4.1.1 Separating age-related ability to work from age-related working conditions

The European Foundation for the Improvement of Living and Working Conditions (EFILWC) has undertaken numerous studies designed to identify the impact and implications of an ageing workforce, including the *European Working Conditions Survey* which was undertaken in 2005 for the fourth time since 1995. The fourth wave of the survey involved a sample of 29,680 workers from 31 European Union countries. Survey findings were analysed against four areas – career and employment security, health and well-being, skills development, and reconciliation of working and non-working life. **Findings highlight significant differences in the working conditions of younger and older workers and therefore, in the way work life is experienced.** A summary of some of the findings against the four analytical themes is provided in CHART 4.

CHART 4: Key literature findings by analytical theme

Analytical theme	Key findings
Career and employment security	<ul style="list-style-type: none"> ⇒ Oldest and youngest groups face the highest risk of age discrimination in the workplace ⇒ Temporary employment contracts are concentrated among younger workers but increase among oldest age groups, especially women
Health and well-being	<ul style="list-style-type: none"> ⇒ Older workers report higher exposure to risks associated with heavy workloads, repetitive movement, physical position ⇒ Involvement in High Performing Work Organisations (HPWOs) is low among older workers, but more widespread among younger workers ⇒ Work intensity decreases while work autonomy increases with age ⇒ Young workers are least aware of the impact of work on their health while those aged 45-54 are significantly more likely to recognise this ⇒ The presence of discrimination or violence in the workplace, or low security employment contracts, significantly reduce expectations of remaining in the same job at 60 years of age
Skills development	<ul style="list-style-type: none"> ⇒ Workers with low education levels are mainly older workers ⇒ Older workers receive less training than younger workers, and women have less training opportunities than men ⇒ The largest improvement in the use of computers at work has occurred over time with older workers
Reconciliation of work and non-life	<ul style="list-style-type: none"> ⇒ Inflexible work arrangements are likely to discourage older workers from continuing to work due to work-family imbalance ⇒ Older workers have a higher likelihood of caring for an elderly or disabled relative than other age groups ⇒ The proportion of workers who have autonomy in structuring their work time increases with age

One of the conclusions drawn from the findings is their implications for preventing premature retirement. The authors recommend a focus on those aged between 45 and 54 years to identify work conditions that will encourage their continued participation in the workforce, and to take a preventive approach in doing so.

Research on the issue of older workers' employability ... has pointed out how the low participation of older people in the labour market is the result of a combination of wage conditions, rigidity in workplace organisation, inadequate skills and competencies and poor health status, rather than the wish to retire early (Villosio, 2008: 4).

An additional factor causing premature workforce retirement is negative employer attitudes and behaviours (Harper *et al*: 2006). Drawing on the findings of a global ageing survey on the future of retirement¹², the Oxford Institute of Ageing concluded that employers did not regard older workers in a less positive light than younger workers, with countries with more advanced economies being generally more

¹² Conducted in 21 countries in 2004 and 2005, involving some 10,000 people aged 18 and over

positive to older workers but agreeing that they could be offering them more opportunities to pursue new kinds of work. Less than one-third offer the opportunity to work fewer hours, while some two-thirds offer them the opportunity to mentor younger colleagues. Despite widespread workforce ageing, most employers did not regard the potential loss of a significant portion of their workforces as an immediate issue (Harper *et al*: 2006).

4.2 Changes in functional capacity

Ageing has a wide-ranging impact on functional capacity which is not uniform because of individual differences in lifestyle, nutrition, fitness, genetic predisposition to illness, educational level, and work and other environments. It is clear from the research that ageing *per se* is not the determining variable for decline in capacity, but that it interacts with a range of other factors that together affect functional capacity. The trend in findings is for differences in capacity to work to occur in relation to *individuals* rather than in relation to age groups (Ilmarinen: 2005). Nevertheless, numerous stereotypes and myths prevail about the ability of mature age people to participate effectively in work, and in life in general. These are discussed in the conclusion to this section of the report.

In reviewing the literature, we have drawn from a wide range of studies, but have focused on the findings of two literature reviews that have screened research for its methodology and have provided an overview of available data on older workers' injury and illness rates (Harper & Marcus: 2006; Benjamin & Wilson: 2005). In addition, we have given particular attention to the findings of the rigorous *Seattle Longitudinal Study*, (Schaie: 1996) which has continued at seven-year intervals since 1956, and is the only three-generation research undertaken in the USA, and possibly world-wide. Some 6,000 people ranging in age from 22 to 101 years, have participated in the study. In addition to the main study, data have been collected from the sample's relatives to determine family similarity (for example, between parents and children), and some participants have received training designed to slow or remediate changes in cognitive function. Finally, much of the review is informed by the work of the Finnish Institute of Occupational Health (Ilmarinen: 1995, 1999, 2001, 2005; Tuomi *et al*: 2001, 1998).

In structuring research findings about functional change due to ageing, we have adopted the categories used by Harper & Marcus (2006) and isolated their workplace implications:

- o Respiratory and cardiovascular
- o Sensory
- o Musculoskeletal
- o Psychological, including capacity to deal with stress
- o Cognitive.

4.2.1 Respiratory and cardiovascular function

Cardiovascular capacity and aerobic/respiratory power tends to decline with age, with examples of decline including decreased lung function, breathing capacity, tissue elasticity and ability to undertake aerobically demanding activities, as well as reduced cardiac output, increased heart rate and blood pressure recovery time following exercise, increased blood pressure due to thickening of arteries, and irregularities in heart beats (Harper & Marcus, 2006: 21).

This means that older workers are likely to have a reduced ability to do heavy work, particularly at a fast speed, and more generally to do work which tends to cause shortness of breath, to work in extreme heat or cold, a reduced capacity for shift work, and a need for longer recovery time following exertion. The cardio-respiratory load of even moderate tasks can become particularly critical for older unfit people (Comcare: 2003; ASCC: 2005; Harper & Marcus: 2006).

Workplace implications

Workplaces can be modified to address reduced respiratory and cardiovascular capacity through such changes as –

- ⇒ Job re-design
- ⇒ The use of equipment (eg for lifting) and other assistive technologies
- ⇒ Restrictions on heavy lifting and physically exerting tasks
- ⇒ Training in appropriate lifting
- ⇒ Allowance for recovery following exertion eg through small breaks, increased breaks
- ⇒ Provision of workplace exercise and fitness programs (Harper & Marcus, 2006: 21).

4.2.2 Sensory function

There are a number of research studies identifying a decline in sensory and sensorimotor abilities as part of the ageing process (Li: 2002). Sensory function is the only ageing-related change that declines due to chronological age alone, and even this will vary with environment - for example, ongoing exposure to loud noise and impact on hearing (Harper & Marcus, 2006: 20). Changes have been identified in hearing as early as the mid-forties, in vision and touch in the mid-fifties, in taste in the mid-sixties, and in smell in the mid-seventies.

However, loss of sensory abilities can be compensated – for example, through increased patience and judgement observed in older workers (Shephard: 1997a), but allowances need to be made for slower reaction time (Harper & Marcus: 2006). Deterioration in vision and hearing can be accommodated through aids (such as, spectacles and hearing aids) and workplace design that benefits all age groups while targeting older workers (for example, effective lighting and acoustic conditions (Benjamin & Wilson: 2005). For most people, *hearing* is normal until the age of sixty approximately, and then deteriorates due to such changes as damage to inner ear hair cells, loss of sensitivity to high frequency sound. Changes in *vision* include a decreased ability to see objects clearly, to function in low levels of lighting, to correctly judge distances, to perceive the speed of moving objects and to distinguish certain colour intensities. Ageing also brings the increased likelihood of conditions like glaucoma (especially if diabetes is present) and cataracts. In the 2001 *ABS National Health Survey*, 96-98% of men and women in each of the 65-74, 75-84 and 85 and over age groups reported that they were suffering from long-term diseases of the eye (in AIHW: 2001).

A recent report to *WorkCover SA* (Access Economics: 2007) analysed claims data for the period 2000/01 to 2006/07 and found that an average of 380 workers were compensated for hearing loss each year in South Australia. Over half of these workers were aged 55 to 64 years and 97.5% were male. A further 168 workers

per year were estimated to incur hearing loss from uncompensated workplace incidents. Other findings from this analysis were that –

- o Hearing claims represent some 1% of *WorkCover SA* claims and have risen a little in recent years (no doubt due to the ageing of the workforce).
- o It is important to note that 93% of claims for hearing loss did not involve any days lost from work, a further 2.7% returned to work within one week and approximately 5% had either longer periods off work, or returned to partial duties or did not return at all.
- o There was a strong and positive relationship between degree of hearing loss and average cost per claim. The median lump sum claim was \$7,778 and of hearing aids was \$5,860

Age-related changes in *balance* include greater difficulty in maintaining balance (due to changes in sensory cells and receptors that control balance) bringing an increased likelihood of falling over. Changes in *touch, skin and thermoregulatory* functions include reduced sensation to heat, cold, pressure and vibration, reduced skin elasticity, reduced ability to maintain body temperature (due to thinning of subcutaneous fat), reduced ability of sweat glands to be efficient in keeping cool and skin taking up to four times longer to heal if wounded (Harper & Marcus, 2006: 21-22).

These changes in sensory function mean that –

- a) In relation to hearing, older workers may not be able to hear alarms, instructions or be limited in their ability to converse with co-workers
- b) Older workers may be more sensitive to computer screen glare, less able to work in poorly lit workplaces, and to work in occupations that require the ability to distinguish colour intensity, gauge the speed of moving objects and to correctly judge distances (the last two capabilities have particular implications for older people whose work requires night driving).
- c) Declining balance function can bring an increase in falls among older workers and this highlights the importance of workplace design to minimise the likelihood of falls and the need for training in awareness about appropriate footwear and carrying techniques.
- d) Changes in touch, skin and thermoregulatory functions can increase susceptibility to dermatitis in certain occupations, and the need for protection from ultraviolet light for those working outdoors.

Workplace implications

Workplace conditions play a critical role in the impact of reduced sensory function on ability to work effectively.

- ⇒ There is a need to reduce overall workplace noise levels wherever possible – for example, by using quieter machines, or by reducing exposure time - and to offer protection to workers in noisy environments as well as training that encourages the use of safety and protective aids. Citing research by Daniell *et al* (2006), Harper and Marcus (2006) note that in the USA twenty years of hearing regulation have had minimal impact on employers (most doing little to reduce noise levels) and employees (most not using the protection they were offered).
- ⇒ The provision of protective gloves and other clothing, reduced contact with dermatitis-inducing working conditions (for example, contact with chemicals and other irritants) and protection from ultraviolet sunrays are all preventive strategies in the workplace that address age-related changes in thermoregulatory function, skin and touch.

- ⇒ A preventive approach to hearing loss is also recommended by some researchers, for example, through employers screening their workforces prior to exposure and monitoring at regular intervals (NIOSH: 2004; HSE: 2005).
- ⇒ Workplace lighting plays a key role in the older worker's productivity and safety, as does the provision of large font size on computers and written documentation, and anti-glare computer screens (Benjamin & Wilson: 2005).
- ⇒ A preventive approach to vision deterioration can include regular vision and workplace lighting testing, with some researchers (Ball: 2003) recommending that testing for functional ability (as opposed to diagnosing eye disorders or disease) be undertaken in the workplace. UK employers are required to pay for eye testing for employees working with display screen equipment (for example, computer users) every two years (Harper & Marcus: 2006; Benjamin & Wilson: 2005).
- ⇒ A preventive approach to workplace safety risk due to balance function decline is also identified, with effective lighting, tidy workplaces, non slip surfaces and clear walkways – all of which are beneficial to the workforce as a whole (Harper & Marcus: 2006).

4.2.3 Musculoskeletal function

Age is also associated with reduced elasticity in almost all tissues of the body, leading to a decreased range of movement, and increased time needed to repair damaged tissue. These changes in musculoskeletal capacity can begin in the mid 40s as bone density begins to decrease, in both men and women (Harper & Marcus: 2006). Bone density reduction is a key risk factor for osteo-arthritis, a leading cause of disability in industrialised countries and is particularly significant for women. Common musculoskeletal function changes include –

- o Decreased bone mass which increases the likelihood of fractures at the proximities of long bones and the spine.
- o Decreased muscle mass and subsequent decrease in muscle strength.
- o Reduced elasticity, tensile strength and ability to regenerate the connective tissue in the ligaments and tendons.
- o Decreased mobility (Harper & Marcus: 2006; ASCC: 2005).

These changes can also bring a deterioration of overall physical health, with back or neck pain being evident intermittently (Harper & Marcus: 2006). Risk factors for sickness due to low back pain identify a complex interaction between psycho-social work variables (such as, degree of autonomy and control) and musculoskeletal factors (Hemingway *et al*: 1997, cited by Harper & Marcus: 2006). The combination of flexion and rotation of the trunk, lifting, low levels of job satisfaction and low levels of social support in the workplace have been identified as risk factors for sickness absence due to low back pain (Hoogendoorn *et al*: 2002, 2000; Kerr *et al*: 2001, cited by Harper & Marcus: 2006).

These ageing-related losses in physical capacity are a particular concern for those working in physically demanding jobs. Some researchers note reductions in physical capacity can lead to excessive fatigue, loss of quality and an increased risk of industrial accidents (in ASCC: 2005). One such common industrial accident is falling. Laughton reports that older adults demonstrate increased amounts of postural sway, which may ultimately lead to falls, although the mechanisms contributing to age-related increases in postural sway and falls in the elderly remain unclear (Laughton: 2003). When comparing key muscle function characteristics of

older 'fallers' and 'non-fallers', the non-fallers demonstrated significantly greater muscle activation and co-activation compared with young subjects. The study suggests that high levels of muscle activity are a characteristic of age-related declines in postural stability and that such activity is correlated with short-term postural sway. These findings provide some insight into the reasons for falls being common in older workers and for the rate of injury due to falls being significantly higher in older workers than their younger counterparts.

However, physical strength and endurance is specific to individuals and is influenced by a number of factors of which age is only one. Consequently, some older workers can be as strong or stronger than their younger colleagues (Benjamin & Wilson: 2005; Shephard: 1997; Ilmarinen: 1997), and it is difficult to separate age from other causal changes to physical function - such as, work, fitness - (Ilmarinen: 2001). Researchers are also clear that physical strength and endurance can be improved upon, or compensated for (Shephard: 1997; Benjamin & Wilson: 2005).

Workplace implications

These changes have implications for tasks where workplace layout requires work at extremes of posture, although individual differences can be significant and can be enhanced through physical activity. Furthermore, the rate and extent of deterioration varies greatly from one person to another, depending on individual physical condition - for example, fit and active older workers may be able to outperform more sedentary younger workers. It is also evident from the research literature that while a range of individual, psycho-social and workplace variables determine the extent to which musculoskeletal deterioration causes sickness based absence from work, the way in which this occurs is less understood (Harper & Marcus: 2006).

- ⇒ Due to individual differences, the way in which the workplace is modified to address musculoskeletal change and vulnerability needs to be tailored to the needs and condition of each worker.
- ⇒ It is important that workplace culture and occupational health and safety policies are designed to encourage workers to identify any impact of musculoskeletal change on their ability to perform their work role.
- ⇒ Given the important role of physical fitness, workplaces can play a key role in supporting and encouraging workers to be fit and active prior to and during their older years.
- ⇒ Workplace culture is also important in encouraging workers to notify as early as possible about musculoskeletal difficulties in order to obtain early treatment and redesign of work activity and work space to accommodate these. Training programs that enable workers to understand the nature of musculoskeletal injury and the importance of early notification are part of developing a culture that promotes a preventive approach to health and safety.

4.2.4 Psychological function

As with physical deterioration associated with ageing, psychological impacts are not necessarily correlated with chronological age, as many individual and environmental factors influence individual capacity to manage stress.

A number of research studies have found that older workers are more susceptible to depression than other age groups with symptoms including increased irritability, declining interest in activities that are normally enjoyed, changes in weight and appetite, disrupted sleep patterns, reduced energy levels, lowered self-esteem, and decreased ability to concentrate or make decisions (Harper & Marcus: 2006). In their review of the literature Marcus & Harper (2006) identified numerous studies that found an elevated risk of adverse psycho-social health due to workplace stress (Pikhart *et al*: 2004; Godin *et al*: 2005; Weyers *et al*: 2006; Muntaner *et al*: 2006). Consistent with many other studies of occupational mental health, a Finnish study concluded that high levels of job strain compound the existence of stress and recovery from stress -

...psychologic distress is associated with long-term medically certified sickness absence in a large contemporary working population. High job strain has an adverse effect on prognosis among employees with psychologic distress (Virtanen et al, 2007: 186).

WorkCover SA data show that in 2006-7, some 313 stress-related claims were made by workers aged 55 years and over, out of a total of 1,798 stress-related claims for all workers¹³. This means that 17.4% of stress-related claims were made by those aged 55 and over, which is a greater proportion of claims than for all injury/illness types (approx 13%).

By contrast, Comcare data did not reveal a direct relationship between 'psychological injury' claims and age (but it needs to be noted that their data pertain to a more restricted number of industries than those of WorkCover SA and are not directly comparable). Nevertheless, Comcare data show two peaks in average total cost per claim for this type of injury – the highest for the 50-54 year group, and the second highest for those aged between 30 and 34 years. Those aged 55 and over had much lower rates, leading to ComCare to conclude that factors other than age are needed to explain these trends (2003: 11).

While it is difficult to directly compare the stress experience of younger and older workers due to the great number of variables that may impact on coping ability, there is some evidence to suggest that older workers experience significantly fewer problems with personal control on the job that might trigger stress, as well as less job tension, less generalized stress, less depression, and fewer stress-related disruptions of job performance (Hansson *et al*: 2001). Furthermore, Hansson *et al* note that while older men (aged 55 and over) reported more problems with health compared to men aged 45–54, they actually reported fewer problems associated with work.

However, stress can be a significant issue for older workers with particular triggers/causes of stress that include the fear of redundancy, lack of opportunities for career development, financial insecurity heading into retirement, and the capacity to adapt to changing technologies (Hansson *et al*: 2001). Ageist assumptions often underpin these triggers, and there are a number of research studies that have documented these among employers (Selby-Smith *et al*: 2007; Taylor & Walker: 1998). Analysis of data

¹³ Note: the definition of 'stress-related' claim was made based on the aggregation of data for 'injury types' that are directly related to stress or anxiety. It is likely that claims for other injury/illness types are also stress-related (either directly or indirectly).

regarding the Canadian workforce's participation in an Employee Assistance Program (EAP)¹⁴ found that older workers were more likely than younger workers to report more grief due to loss of family members and friends, less likely to report relationship problems, slightly more likely to report work relationship and conflict and workplace stress issues, slightly more likely to report personal stress, and more likely to access financial planning and eldercare support services (WarrenShepell: 2004).

4.2.5 Cognitive function

In assessing change in cognitive function with age, the quality of research methodology is critical. Longitudinal studies following individuals over time, find smaller amounts of age-based cognitive decline than do cross-sectional studies, wherein people of different ages are compared with each other at a single point in time (Benjamin & Wilson: 2005; Ardila *et al*: 2000). Harper & Marcus (2006: 24) concluded from their review of the literature that many studies of the effect of age on cognitive and other functional abilities lacked methodological soundness because they used small samples or samples that do not enable comparison between age groups or across the life spectrum. From those studies considered to be reliable they concluded that a gradual deterioration in mental and cognitive functions occurs with age, involving functions like memory, learning, thinking, concentration and attention. More specific changes that can be problematic include –

- o putting information into memory and retrieving it;
- o understanding text;
- o ability to concentrate;
- o making inferences;
- o working memory capability – the amount of information that can be used without losing any of it (Harper & Marcus, 2006: 24).

Considerable individual variability occurs in the timing, order and occurrence of cognitive changes, and some researchers dispute the assumption that age-related changes have negative implications for performance capacity. Others disagree, for example, Skirbekk (2004) cites a number of studies suggesting that cognitive speed, reasoning and episodic memory decline significantly from the age of 50.

In assessing cognitive capacity for different age groups, it is important to address the influence of other intervening factors, particularly level of education and training. Robertson and Tracy (1998) concluded that age-related changes in intellectual functioning are typically minimal for healthy workers with high levels of education and training who are exposed to appropriate stimulation by their surroundings. Level of education can protect against age-related cognitive deterioration (Ardila *et al*: 2000).

¹⁴ A national strategy designed to address and reduce psychological problems in the workplace. An EAP is a confidential, independent, early intervention counselling service for employees addressing issues that may be affecting employee performance. EAP services are provided by clinical and registered psychologists through a centralised phone system. The issues that may be addressed through the use of an Employee Assistance Program can be Personal (eg anxiety or depression, grief and loss, emotional or physical abuse), Family (financial, legal, relationship issues, work-life-balance issues) or Work (eg relationships with co-workers, managing conflict).

A number of studies have identified education as a useful predictor of return-to-work outcomes. For example, the likelihood of disability insurance claimants returning to work increases with every additional year of education. Improved outcomes for workers with higher levels of education may be attributed to greater adaptability to injury-related impairments and greater ability to accept changes in occupational activities and/or new job skills (Aust Institute for Primary Care: 2006).

Other studies have shown that while older workers were inferior to younger workers in laboratory tests, 'on the job' performance deficits were less apparent. It is evident from the review of research that the assessment of age-related ability needs to occur in real life environments, rather than relying solely on laboratory-based analysis. Task demands usually only cause a problem for older workers when they are accompanied by time constraints and where the employee has no control over such constraints (for example, Comcare: 2003; Skirbekk: 2004).

Some of the participants in the *Seattle Longitudinal Study*, (Schaie: 1996) have undergone cognitive training designed to slow or remediate cognitive change, enabling comparison with their peers who have not had such training. Among the study's findings are the following –

- o Decline in most psychometric¹⁵ abilities does not occur before age 60, even though there is a slowing in response speed during the testing process.
- o Some individuals show earlier decline due to other individually-based factors, including, genetic makeup and social disadvantage.
- o By age 74, decline is evident on all psychometric abilities, but individual differences occur, and even at age 81, less than half of those tested had shown decline in the preceding seven years.
- o The data suggest that there has been a slowing in the rate of average decline over successive generations.
- o The variables that reduce the risk of cognitive decline in old age include –
 - ⇒ absence of cardiovascular and other chronic illness;
 - ⇒ participation in an environment marked by complex and stimulating activities;
 - ⇒ a favourable environment mediated by high socioeconomic status;
 - ⇒ a flexible personality style at midlife;
 - ⇒ high cognitive status of spouse/life partner;
 - ⇒ maintenance of high levels of perceptual processing speed.
- o Decline is reversible and is likely to be a function of disuse. Approximately two-thirds of those studied showing significant improvement following cognitive training, and some 40% of those who had declined significantly over a 14 year period were returned to their pre-decline level (Seattle Longitudinal Study web site)¹⁶.

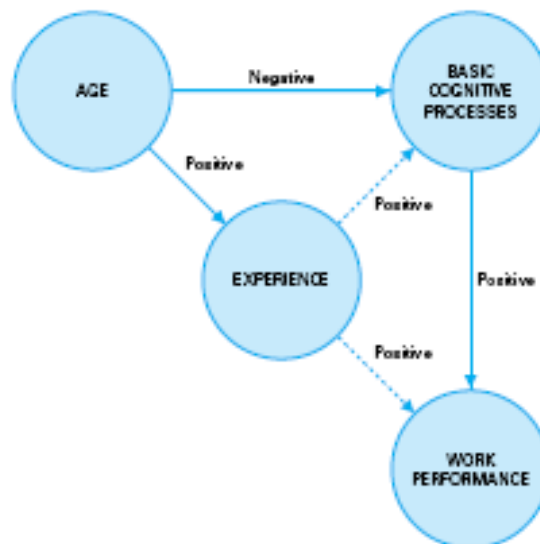
Of relevance to the workplace is the potential for reaction times to slow as a consequence of cognitive changes arising from the ageing process. These involve a general slowing of the functions controlled by the frontal lobe which is one of the first parts of the brain to be affected by ageing (Zimprich & Martin: 2002). However, reaction times have been found to vary with the type and complexity of task and the time given for decision-making. The more complex the task, the more time is needed (Harper & Marcus: 2006; Haight: 2003). Age differences in performance have been found to dissipate when older workers are familiar with

¹⁵ That is, measured knowledge, abilities, attitudes, and personality traits

¹⁶ www.geron.psu.edu/sls/researchers/index.htm

job requirements and are given longer periods of training, and can perform at the same level as younger colleagues when they can compensate for reduced speed (WarrenShepell: 2004). As the *Seattle Longitudinal Study* demonstrates, the environment in which the person is functioning is critical to cognitive response, and can be enhanced to improve that response. Modifying workplace time demands to meet the needs of individual workers is thus important, and is beneficial to all age groups, not only those who are older. Age-related cognitive decline is cumulative across the life course, and cognitive function relies not only on cognitive ability but also on motivation and persistence (Salthouse: 2004).

Importantly, cognitive impacts need to be differentiated from learning capacity. Ilmarinen (2001) asserts that actual functions of information processing change very little in the course of one's career and that moreover, some cognitive functions, such as control of use of language, complex reasoning skills and the ability to problem solve, improve with age. Further, even though the speed of learning may slow with age, the actual learning process is not dependent on a person's age (*see also Section 3.3*). Strong motivation to learn can also compensate for the slower learning speed. Ilmarinen's review of the literature found that some mental characteristics can also strengthen with age. The positive and negative impacts on cognitive ability as people age are presented in Ilmarinen's model below.



Relatively recent research using brain-imaging techniques suggests that the older brain functions differently rather than less effectively compared with younger adults. This is attributed to the humans' lifelong ability to compensate for decline in cognitive functioning by activating other parts of the brain (Reuter-Lorenz: 2002). Earlier research indicates that while some cognitive abilities may slow with age (for example, the speed of processing visual information), other abilities (such as, knowledge) remain the same or even increase (Griffiths: 1997). Certain skills, such as, vocabulary and writing speed, have been found to peak around the 40 to 50 year age period (Shephard: 1997) and cognitive abilities like the ability to process complex information in demanding situations, and the ability to reason, deliberate and comprehend a total situation, actually improve with age (Ilmarinen: 2001). Workforce ageing should be seen as a series of trade-offs rather than a problem, with any functional decline compensated for by increases in experience and knowledge, further training and the development of new abilities (Kumashiro: 2002).

Workplace implications

As with much of the other research findings on age-related functional change, the impact of individual health and educational level is critical, and for many people, interventions can be undertaken to address deterioration. The workplace can play a significant role in avoiding the creation of environments that exacerbate cognitive deterioration and in addressing this through training and work redesign.

- ⇒ Workplaces that require employees to make decisions in the face of time pressure are unlikely to provide appropriate environments in which older workers can perform to their maximum cognitive and psychological ability, and may also risk injury or illness. Conversely, making allowances for individual differences in response rate, and reducing the need for constant rushing to complete tasks, will create an environment that maximises the functioning of workers of all ages, especially those who are older.
- ⇒ It cannot be assumed that all older workers will be inhibited by cognitive decline as individual health, education and training will be critical to performance. Workplaces have an important role to play in supporting older workers in these three areas – all of which are critical to overall workplace and broader economic productivity.
- ⇒ Individual workers have a responsibility over the life course to remain fit and healthy, and to participate in ongoing (formal and informal) learning opportunities. Motivation to do this is essential and likely to be most effective when employers and employees work together to create workplaces that maximise participation for all age groups.
- ⇒ Shift work has been found to have a significant impact on cognitive function which appears to increase in later life (Harper & Marcus: 2006; ASCC: 2005). Tolerance for shift work itself also seems to reduce over time, which is likely due to age-related changes in circadian rhythms and preferred timing of sleep as well as reduced flexibility in sleep patterns (EFILWC: 2003). However, a study specifically designed to test the impact of shift work on older workers (Harma *et al*: 2006) found that a 'fast forward rotating shift system' improved psychomotor performance and alertness on the night shift and on general well being (cited in Harper & Marcus, 2006: 24).

4.3 Ageing and the capacity for learning and training

Ageism is no more evident than in the myths that exist, particularly in the work environment, regarding older workers' capacity for training and re-training. Some researchers report that older workers do not feel motivated or encouraged to participate in training activities, or face barriers based on perceptions that older workers are 'less trainable' than their younger counterparts, disinterested in training, represent a lower return on training investment, and are less competent because of their age (Taylor & Urwin: 2001; Taylor & Walker: 1998). Researchers have found that the older workers get, the less likely they are to receive training (EFILWC: 2003; Griffiths: 1997) which of course has the compounding effect of losing skills and confidence, creating a 'self fulfilling prophecy' of not being 'trainable'.

A key factor in the ability to benefit from training is confidence, with some researchers finding that mature workers may need to be encouraged and supported to participate in formal training, especially if they have lower levels of literacy and numeracy and little ongoing learning experience (Selby Smith *et al*, 2007: 16).

However, this does not mean that mature-aged workers should be 'pathologised' (Barnes, Bimrose and Brown, 2006). Rather, mature-aged workers need to be carefully encouraged by their employers to undertake training. This may be particularly true of assessment, where the fear of failure will be greatest and where demonstration of competency may be a major source of stress for mature-aged workers (Selby Smith et al, 2007: 17).

The way in which work-relevant training is delivered is always critical to its success, across all age groups. Research findings indicate that older workers prefer workplace based learning which is presented in a way which links the training to the workplace environment (Bowman and Kearns: 2007; Selby Smith et al: 2007) and self-paced learning with sufficient opportunity to practise or collaborative training where they can help and be helped by their peers (Filipczak: 1998). Older adults, like any age group, benefit from training that is tailored to individual need and this reflects good practice which is beneficial to workers of all ages (Benjamin & Wilson: 2005).

Other researchers have studied the appropriateness of new technologies in training older people, challenging the perception that older people do not respond well to learning modes that incorporate new technologies. For example, Wallen & Mulloy (2006) showed that computer-based training incorporating text, graphics and audio narration is most appropriate for workers over the age of 45 while Van Gerven et al (2003) found that multi-media learning tools are suitable and effective for older learners.

The mode or mechanism of training for older people has also been considered in the research. The emergence of *cognitive load theory* (CLT) is particularly relevant for older learners, as it aims to stimulate a learner to use more efficiently working memory which may be diminished with age (Van Gerven et al: 2003). It is acknowledged that even healthy older people are likely to experience a decline in working memory and cognitive speed, as well as the ability to suppress irrelevant information. Speed of learning can slow as part of the ageing process (Ilmarinen: 2001) and older workers may take longer to learn new information because of the time taken to filter pre-existing knowledge and experience (Filipczak: 1998). Van Gerven et al propose that CLT presents a framework for dealing with this decline while optimising learning opportunities for older people. In practical terms, this means designing instructional tools and processes in such a way that irrelevant operations (and information) are minimised and the most relevant operations maximised.

Motivation to learn can compensate for slower learning speeds (Ilmarinen: 2001). Research findings indicate that people's age and life phase shape the reasons they have for undertaking training – with graduates aged 45 and over being more likely than those 25-44 years to identify 'personal development' as the primary reason for training. For both groups, however, employment-related outcomes are the most significant driver (Karmel: 2007; Kennedy & Da Costa: 2006). Mature age workers are the fastest growing sector in the vocational education and training system (Selby-Smith et al: 2007) pursuing the dual goals of vocational and personal development. In the 'second age', lifelong learning and continuous education are particularly useful tools in enhancing participation and work ability. This requires a shift away from the 'front end loaded' rather than life-course approach of post secondary education, which traditionally has produced a student population profile dominated by younger people (Karmel: 2007; Martin: 2007). A key conclusion from research by Walker (2002) is that perceptions of trainability and interest in training for older workers should be the emphasis of future workforce education strategies.

Managing the functional changes brought by the ageing process so that older workers can participate in paid employment in a way that maximises their strengths and enables ongoing learning is usually referred to as 'age management'. Examples of this are provided in *Section 4*, with a number of the case studies identifying training and education as a mechanism by which workforce participation and safety can be enhanced for older workers.

4.4 Workplace assessment of ageing-related health and safety risks, and productivity

4.4.1 Workplace assessment of ageing-related health and safety risks

In their review of the literature Harper & Marcus (2006) found few studies on the health and safety needs of older workers, and extremely varied approach to addressing these issues between occupations, and between countries. They note that ideally, risk assessment should be holistic, taking into account ergonomics, design of workplace tools, equipment, workstations and organisation of work. A *Functional Capacity Evaluation* (FCE) is a systematic approach to assessing individual physical and functional capacity, matching performance to the demands of a specific job, work role or occupation. An FCE can be used for recruitment, work modification and return to work planning (Harper & Marcus: 2006).

In practice, assessment was found to be undertaken from the perspective of work rather than the worker, and in contrast to principles of 'workability'. What is consistent in their review of research in different countries, are the following approaches to creating workplaces that enable older workers to perform at optimal functional capacity –

- o Health promotion activities in the workplace.
- o Continuous opportunities for learning and training.
- o Matching work to individual worker ability to prevent function-based capacities from acting as barriers to performance.
- o Frequent risk assessments to monitor changing status and to design workplaces for age management.
- o Providing age management strategies across the life course
- o Modifying the work environment through strategies that include improved lighting, reduced noise, temperature control, avoiding excessive workload targets.
- o Flexible working patterns.
- o Ongoing training to update skills.
(Benjamin & Wilson: 2005; Scottish Executive: 2005; ASCC: 2005; HRSDC: 2005; APSC: 2003; OSSA: 2002; CCOHS: 2002).

4.4.2 Productivity and older workers

The filter of ageism means that older workers are often perceived to be less productive than younger workers, and much depends on whether both quality and quantity of output are taken into account (Benjamin & Wilson: 2005). Researchers have found that while some older workers may have a slower speed of working, this is offset by a higher quality of output (WarrenShepell: 2004; Shephard: 1997).

Productivity does not simply decline with age. health, cognitive, physical and sensory functioning; abilities to adapt to change and learn new information; and rates of absence and accidents do not simply deteriorate with age. Productivity, therefore, ... will be affected by factors such as days lost from absence and accidents, and there will be great individual variations in productivity with increasing age (Benjamin & Wilson, 2005: 20).

Longitudinal research in Finland, measured by the *Work Ability Index* (Ilmarinen: 1995) identified a general decline with age as well as great individual variation in the ability to work – a variation that increases with age. In other words, the trend to a general decline does not justify the exclusion of older people from work and demands individual assessment of this. Ilmarinen's research found three groups of risk factors which affect the decline in ability to work –

- 1 excessive physical demand, for example, repetitive movements
- 2 stressful and dangerous work environments
- 3 poorly organised work, including lack of control or discretion over the way in which work tasks are performed.

More recently, Ilmarinen (2005: 408) has presented findings on functional capacity in terms of physical, mental and social functional capacity. These show that only physical function decreases – and with individual variation, and depending on remediating or preventive interventions, while social functional capacity improves with age. Mental function can improve in some areas and deteriorate in others, again mediated by individual differences and subject to cognitive training and practice. There is a trend for older people to use many of their physical and mental capabilities less, especially if they are not working. Whether this is due to ageist expectations is difficult to determine from existing research.

These three factors have an especially negative impact on older workers, but all are preventable through appropriate workplace design and accommodation of individual workers. Summarising the importance of the workplace in supporting their productivity, the WarrenShepell Research Group draw this conclusion from their review of research –

Older workers perform well when there are few time pressures and when quality of work is judged over quantity. They especially thrive when they are allowed to compensate for age-related changes and employers are willing to accommodate them...

Given the advantages and costs that have been linked to older workers, it is our position that older workers are a net competitive advantage rather than a liability for employers. The advantages outweigh the costs when workplaces are healthy, and programs and services exist to address their unique needs and issues (2004: page 3, page 6).

A general conclusion of the studies that have been carried out is that differences in *individual performance and everyday work tasks* are greater than the differences *between age groups* reflecting differences in work experience, educational level, and profession (Ilmarinen, 2005: 126).

According to the concept of promoting work ability during aging, it is not only possible to obtain good work ability and health, but also a high quality of work and production, a high quality of life and well-

being, and an active and meaningful retirement. An important conclusion ...[is] that health promotion should shift its focus from protection against illness to promotion of health and work ability (Tuomi et al, 2001: 318

4.5 Summarising the contributions and challenges of an ageing workforce

It is important not to pathologise mature-aged workers. There is a tendency in the current debates to view mature-aged workers as a “problem” which needs to be solved. This pathologisation of mature-aged workers may arise from the prevalent bio-medical attention to old age in which older people have been traditionally characterized as suffering from a range of problems – physical, social and intellectual. This view of old age as a medical problem tends to colour our views of mature-aged workers and their learning. In fact, recent theories of ageing have tended to depart from this pathological approach and stress instead that old age is simply part of an ageing continuum and that we should speak of successful ageing rather than the problems of old age (Selby Smith, Smith & Smith, 2007: 44).

Ageism generates a number of myths and stereotypes about older people and the ageing process, and these are particularly evident in relation to the perceived capacity for workforce participation. Myths and stereotypes leave no room for individuality – they assume a homogeneity that is not possible when such large numbers of very different people are involved, and are evident in widely used terms like ‘the aged’ or ‘the youth of Australia’. Myths and stereotypes are based on perceptions, rather than reality, and underpinned by prejudice. In the face of a larger cohort of older people (the Baby Boomer generation) proportionate to the population as a whole, coupled with the need to retain mature workforce members, ageism is under siege. In drawing our conclusions from the available research, we present key myths and assess them against research findings. The Chart below summarises all of this information.

CHART 5: Workforce Ageing: Myths and Evidence

MYTH	RESEARCH EVIDENCE
<i>Ageing brings ill health and disease</i>	<ul style="list-style-type: none"> ⇒ Age alone is not the key determinant of health. Other factors include education, lifestyle, fitness, nutrition, socio-economic status, and environment. ⇒ These factors are more reliable predictors of health in old age than chronological age. Much depends on the individual.
<i>Older workers have more sickness based absence</i>	<ul style="list-style-type: none"> ⇒ Rates of chronic diseases and acquired disability increase with age. ⇒ However, most chronic illnesses linked with older age can be minimised or prevented.
<i>Older workers have more injuries</i>	<ul style="list-style-type: none"> ⇒ Factors other than age affect sickness (eg individual health and fitness, lifestyle). ⇒ Older workers take less non-certified sickness but more certified sickness absence. Non-certified absence can be of greater concern to employers. ⇒ Ergonomic and workplace design addresses the most usual cause of absence in older workers – musculoskeletal issues. Workplace environment, including degree of control/autonomy, plays a key role in worker illness and injury, and absence
<i>Older workers have more injuries</i>	<ul style="list-style-type: none"> ⇒ There is little conclusive evidence to suggest older workers are a greater accident or injury risk in the workplace. ⇒ Older workers have fewer accidents, but when they are injured, their injuries are usually more severe. ⇒ However, older workers have a greater risk of fatal injury. ⇒ International research findings show that the incidence of injury decreases with age, but much depends on the definition of the term ‘incidence’. If defined as ‘injuries per thousand employed in that age group’, the incidence of injury increases with age (based on <i>WorkCoverSA</i> claims data). However, if the meaning of incidence is simply the <i>number</i> of people injured in that age group, then it does decrease with age. ⇒ International research findings indicate that older workers may take longer to recover from their injuries but <i>WorkCover SA</i> claims data do not show any increased duration times for older injured workers. ⇒ Different types of injury are associated with different age groups (eg sprains, falls are more likely for older workers). ⇒ These can be prevented or minimised through training and workplace design. ⇒ It is not necessarily the person’s chronological age that predisposes them to injury at work but their prolonged exposure to health and safety risk factors over time. ⇒ Older workers usually are more responsible regarding health and safety issues.
<i>The increasing number of older people are responsible for rising health costs</i>	<ul style="list-style-type: none"> ⇒ Expenditure on people aged 65 and over is higher than for younger age groups. ⇒ However, the costs associated with advances in medical technology have a greater impact on the health budget.
<i>Older workers are less able to adapt to change</i>	<ul style="list-style-type: none"> ⇒ Older workers can adapt to change, including in the workplace. ⇒ Adaptation is influenced by a range of factors, rather than by age. ⇒ Resistance to change can be reduced through appropriate consultation, training, support and flexible adjustment to individual need.

MYTH	RESEARCH EVIDENCE
<p><i>Older people have reduced functional capacity and therefore are less able to work</i></p>	<ul style="list-style-type: none"> ⇒ Cardiovascular and respiratory capacity declines with age, and this is exacerbated if people are unfit. ⇒ However, workplaces can be modified to address this. ⇒ Sensory and sensorimotor ability declines with age, but varies with the amount of previous exposure to certain environmental factors eg loud noise. These changes can begin in the mid-forty years. ⇒ However, accommodation can be made through aids (eg spectacles) and workplace design (eg effective lighting). ⇒ Changes in balancing ability increase susceptibility to falls and changes in thermoregulatory functions make it more difficult to manage extremes of temperature. ⇒ Workplaces can be designed to address these issues. ⇒ Ageing brings declines in musculoskeletal functioning, increasing the risk of injury and reducing physical strength and endurance. ⇒ However, appropriate training can reduce the risk of injury as can workplace design. Individual physical strength and endurance can be improved upon or compensate, and overall decline in this area can be minimised through preventive measures (eg maintaining fitness). ⇒ Ageing can bring greater susceptibility to a range of psychological issues including stress, but much depends on individual circumstances and on workplace factors. ⇒ Cognitive functioning shows a gradual deterioration with age (eg in relation memory, learning, thinking, concentration and attention) but with considerable variation from one individual to another. ⇒ Decline in most abilities does not occur before 60 years, and is usually evident around 74 years of age, and there has been a slowing in the rate of average decline over successive generations. ⇒ Decline is reversible and usually due to lack of use of cognitive abilities. It can also be prevented through active usage and practice. ⇒ Although speed of learning declines with age, this can be compensated for by strong motivation to learn, and actual learning is not dependent on a person's age. ⇒ Some cognitive functions eg problem solving, complex reasoning, use of language, improve with age ⇒ Individual health and education critically affects age-related functional change.
<p><i>Older workers represent a lower return on the training investment</i></p>	<ul style="list-style-type: none"> ⇒ Although they may have less time until retirement, older workers usually have lower turnover rates, which increases their potential return on a training investment. In fact the training provided may ensure that they are able to remain in the workplace. ⇒ Due to increased longevity, those currently in the pre-retirement age group are likely to work for longer than previous generations, provided they are given flexible working conditions and the training needed for their work.

MYTH	RESEARCH EVIDENCE
<i>Older workers lack the capacity for training and re-training, including in the use of new technologies</i>	<ul style="list-style-type: none"> ⇒ Learning is not dependent on age, but people learn in different ways at different ages. ⇒ Learning is facilitated by educational level and older generations are now more highly educated than their predecessors. ⇒ The way in which training is delivered is critical. Older workers usually need training to be applied to the workplace, and respond well to self-paced learning and collaborative (eg with peers) learning. They usually require more time to learn and to practise new learning. ⇒ Cognitive changes do not mean that older workers are unable to learn new information but the way in which they learn is likely to be different. ⇒ Therefore, training should be tailored to individual need – which represents good practice in training for all age groups.
	<ul style="list-style-type: none"> ⇒ Mature workers require confidence to benefit from training and may need encouragement and support to participate in formal training, especially if they have low levels of literacy and numeracy and little ongoing learning experience. ⇒ Older workers tend to receive less formal training, reducing their confidence to participate and increasing the perception that they are less trainable.
<i>Older workers are less productive</i>	<ul style="list-style-type: none"> ⇒ Productivity does not simply decline with age. ⇒ Much depends on individual health, cognitive functioning, ability to adapt to change and learn new information. ⇒ Older workers are more likely to have a slower speed of working but this is offset by a higher quality of output. ⇒ Reducing time pressures and giving preference to quality rather than quantity of output enhances the productivity of older workers.
	<ul style="list-style-type: none"> ⇒ Three factors have been found to affect decline in ability to work – ⇒ Excessive physical demand, including repetitive movement ⇒ Stressful and dangerous work environments ⇒ Poorly organised work. ⇒ These are all preventable through workplace design.

As CHART 5 shows, there are some forms of decline associated with the ageing process, but most of these can be prevented, minimised, reversed or accommodated. In addition, older workers bring a range of positive attributes that have been identified by researchers, and which more than offset any deterioration. Those benefits include the following –

- o Broader experience from having worked in a variety of jobs, industries and organisations
- o Wisdom acquired from having lived longer and having made mistakes over time from which they have learned
- o Higher rates of retention;
- o Greater reliability;
- o Reduced ‘unsubstantiated absenteeism’;
- o Lower rates of absenteeism;
- o More responsible attitude to workplace safety (Benjamin & Wilson: 2005; Berger: 2005; Brooke: 2003; Critchley: 2006; Ilmarinen: 2001; Selby Smith *et al*: 2007).

It is important to separate myth from reliable research findings, and to acknowledge that –

- older workers are a diverse group whose ageing process will vary from one individual to another;
- chronological age is mediated by other variables, particularly health and education;
- these other variables (eg healthy lifestyles, education, health promotion, healthy workplaces) can be addressed in a proactive way which means intervening across the life course, not just during the later years;
- many of the functional changes associated with growing older can be delayed or reversed through interventions involving training;
- many of the workplace accommodations that address ageing-related need are of benefit to all workers, not only those who are older;
- the workplace has a critical role to play in promoting healthy workforces and workforces whose productive ability is not age-dependent.

The scope that exists for the workplace is explored in *Section 5*, which provides a series of case studies exemplifying good practice in enabling older workers to perform to their maximum ability – an approach often described as ‘age management’.

5 GOOD PRACTICE IN WORKPLACE AGE MANAGEMENT

Research Questions Addressed

- *Are there examples of good practice in 'age management' that can be applied in developing workplace cultures that maximise the contribution of older workers while minimising age-related risks for injury/illness?*
- *What is the impact of policy and social or economic change on the workforce participation of older workers? For example, are there older workers participating reluctantly due to insufficient superannuation to match expected longevity in living? Or to changes in retirement age, or age pension eligibility?*

In this section, we review the research literature on good practice in workplace age management, drawing on the extensive work of the European Foundation for the Improvement of Living and Working Conditions. This is the most comprehensive research available at the time of writing, being based on large scale and representative survey samples, and studies over time of models of good practice. The European Union is faced with similar challenges arising from population and workforce ageing as are present in Australia, and the lessons drawn are transferable to Australian workplaces.

Although age management strategies are in place in parts of the Australian workforce, most lack a research foundation, making it difficult to elicit reliable lessons of good practice. A recent review of available research by Monash University (Farrell, 2005: 59-60) concluded that despite the widespread availability of research and reports on population ageing, there have been few research projects or case studies identifying good practice in recruiting and retaining mature age workers. Citing research by Hudson, it was noted that less than one in three Australian employers were pursuing age management initiatives.

However, we have presented the small number that are of relevance to this report. These are largely due to the work of Swinburne University's Business Work and Ageing researchers and the Australian Employers Convention (AEC) which was established in 1999 by the Area Consultative Committee for Melbourne's eastern region, to promote to Australian businesses the benefits of an age-balanced workforce. The AEC draws on available research and commissions research to provide an evidence base for a range of information products and resources for business. In addition, the Department of Employment Education and Workplace Relations (DEEWR) implemented the *Mature Age Employment and Workplace Strategy* which provides funding to increase mature age Australians' participation in the workforce, and we briefly overview this strategy to highlight Australian government policy, but note its current lack of accompanying research and evaluation.

DEEWR – Information and Awareness Raising for Employers, and Job Searching skills for Mature Aged Workers

The Department of Education Employment and Workplace Relations (DEEWR) supports a range of initiatives designed to retain mature age workers under the umbrella of the *Mature Age Employment and Workplace Strategy* which was announced in the 2004-05 Budget. It provides \$12.1 million over four years

for assistance and aims to increase workforce participation by mature aged Australians. The three major elements in the package are:

1. [Jobwise Outreach](#)
2. [Mature Age Workplace Strategy](#)
3. [Mature Age Industry Strategy](#)

Jobwise Outreach has two components - Jobwise Workshops and Jobwise Job Seeker Self-Help Groups.

- o **Jobwise Workshops** are held nationally for mature age job seekers and workers to provide them with information on the changing nature of the labour market, including their own local labour markets, effective job search strategies and available assistance measures. Those eligible are linked to their chosen provider.
- o **Jobwise Self Help Groups** are networks of mature age job seekers that provide the opportunity to exchange experiences, mutual support, the development of job search techniques and improved career decisions.

The **Mature Age Workplace Strategy** is aimed at employers and has three components - The Wise Workforce Program, the Jobwise Website and the Mature Age Employment Practical Guide.

- o **Wise Workforce** workshops have been established at a regional level to raise awareness about demographic changes affecting labour supply amongst employers, particularly small to medium sized enterprises. The workshops aim to provide employers with practical tools and networks that could assist them implement workplace policies and practices to attract and retain experienced workers including mature age workers. *Jobwise Outreach* and *Wise Workforce* are delivered in ten specified regions each year. These regions are selected because they have a high population of mature age people and a relatively high level of mature age unemployment, as well as employment opportunities. For the 2007-2008 year, the South Australian region being supported is Southern and Eastern SA which encompasses the Fleurieu Peninsula and Kangaroo Island, Southern Adelaide Hills, Murraylands, and South East SA.
- o **Jobwise** is a website dedicated to promoting mature age employment. It contains information for employers, mature age job seekers and mature age workers, including links to providers of age management training, case studies of good practice, and links to a range of resources, see - <http://www.jobwise.gov.au/>.
- o **The Mature Age Employment Practical Guide** is designed to be a comprehensive guide for employing people over 45 in Australia. It includes case studies, checklists examples, 'how to' information, and links to additional resources that can be used by businesses to help implement mature age friendly workplace practices and processes.

Under the [Mature Age Industry Strategy](#), DEEWR manages cooperative industry initiatives that improve recruitment and retention measures for mature age job seekers and workers. Outcomes of these projects are showcased to employers and employment service providers nationally. Activity is concentrated in those industries considered to offer mature age job seekers the greatest opportunity for employment. These industries include health and community services, retail, manufacturing, property and business services and the accommodation, cafes and restaurant sector.

5.1 The growth of ‘age management’

5.1.1 Defining ‘age management’

Diversity in the workforce presents a range of challenges, and organisations vary in their capacity to address potential barriers that arise from factors like cultural and linguistic difference, disability, and gender and in the process, to derive benefits from these differences. There has been a discernible shift from a social justice approach to managing diversity, to a business case approach. For example, a workforce that has significant numbers of employees from diverse cultural backgrounds is one that is better positioned to operate in the increasingly global environment of business. If not understood and managed, this diversity has the potential to be problematic.

As older workers are encouraged to delay retirement, workforces will have the most age-based diversity ever experienced. From a business perspective, this needs to be ‘managed’ – that is, understood and with specific strategies designed to ensure that each worker can participate to the maximum of their capacity. Age management is designed to achieve these objectives –

- o Assist organisations to adjust to the ageing of their workforces.
- o Enhance the competitiveness and productivity of ageing workforces.
- o Improve the employability of ageing women and men workers.
- o Assist in prolonging working life.
- o Ensure more equal opportunities between workers of different ages (Naegele & Walker, 2006: 2).

Age management is regarded by *European Foundation for the Improvement of Living and Working Conditions* (EFILWC) researchers as good practice in the employment of older workers and involves –

... establishing employment conditions for older and ageing workers that provide an environment in which each individual can achieve their full potential without being disadvantaged by their age (Taylor, 2006: 25).

In particular, we need to ensure that working conditions and the quality of work is such that the people are not worn out by their jobs and forced to quit early. And we have to ensure that their skills are kept constantly up to date, over the life cycle. In these terms, the way in which periods of work, leisure, learning and caring are distributed over the life cycle should be rethought by policymakers (Quintin: 2001, cited in Taylor, 2006: 4).

There are **seven dimensions** identified for structuring age management initiatives –

- o Job recruitment – ensuring that mature workers are not discriminated against and have equal access to available jobs.
- o Learning, training, and development– ensuring that opportunities for training are offered throughout the working life, and positive action is taken to redress past discrimination, creating learning environments in the workplace, and tailoring training to the needs of older workers.
- o Promotion and internal job changes.
- o Flexible working practice – in the hours of work and the offering of reduced hours.

- o Workplace design and health promotion – includes ergonomics, designing jobs and workplaces to prevent or address functional decline.
- o Employment exit and the transition to retirement - in the timing and nature of retirement, including gradual or phased retirement.
- o Changing attitudes to ageing workers within organisations – includes addressing ageism and raising awareness about the benefits of retaining older workers (Taylor, 2006: 24).

In the European Union, the development of age management practices has significantly affected the extension of work careers of employees in enterprises adopting these strategies. Key measures of age management have, included the following:

- o decreasing work hours, part-time work, and gradual retirement
- o career planning
- o life-long learning and continuous training of seniors
- o improving work ergonomics
- o increasing mobility according to suitable work
- o changing entry requirements to aged pensions to prolong working lives
- o preventing age discrimination
- o training good age management practices in enterprises (Ilmarinen, 2005: 394).

The EFILWC has undertaken numerous case studies that exemplify each of these dimensions and some are presented in this section of our report. These are part of a major research initiative known as the *Combating Age Barriers* project, which has been collecting data since the mid 1990s across a number of European Union countries. The 117 case studies represent a cross-section of the public and private sectors (but with greater participation from private sector organisations¹⁷), larger and smaller enterprises, and manufacturing and services sectors. Designed to inform debate in the European Union about age and employment and to enhance the development of age management strategies, they have been made available by the European Foundation for the Improvement of Living and Working Conditions (EFILWC) (www.eurofund.europa.eu).

The case studies do not provide longitudinal data and they are difficult to compare because of the number of different countries involved. However, they illustrate the range of age management strategies possible and provide a guide for good practice. Discussion of case study findings is provided in *Section 5.3*.

5.1.2 The business case for 'age management'

Australian initiatives that involve age management are also referred to as 'age balance' workforce strategies, and tend to be driven by a business case model that demonstrates the economic benefits of recruiting and retaining mature age workers. A major study commissioned by the Australian Employers Convention (2001) identified specific costs and benefits associated with older workers, with a view to addressing ageist stereotypes, and providing concrete information for employers about the business case associated with age management.

¹⁷ The researchers were surprised to find that public sector organisations were less willing to participate in the project, and offer as one reason the likelihood that age management policy may be less developed due to ongoing pressure to rationalise workforces (Taylor, 2006: 85).

Assessing the HR costs and benefits of an age-balanced workforce – the Australian Employers Convention (2001)

This research project was designed to identify the human resources (HR) costs and benefits to business of employing an age-balanced workforce, with 45 and over being taken as the definition of an 'older' worker. The study reviewed myths, assumptions and stereotypes associated with older workers, and compared the costs and benefits of workers aged 45 and over with those associated with workers aged 44 years and under. Project methodology had 3 components –

- 1 Data from the ABS and Victorian WorkCover were used to compare the labour force participation and mobility of both groups of workers (that is, aged 45 and over and aged 16 to 44 years). The purpose of this was to investigate age-based differences in retention and mobility.
- 2 Fixed (eg recruitment, training) and variable (eg overtime due to absenteeism, WorkCover payments) human resource costs to employers of workers aged 45 or more were analysed using the Australian Human Resource Benchmarking Report 1999 Edition, which contains national cost benchmarks on human resources practices across all industry sectors, and is based on responses from 187 companies and 484,070 employees. The Australian Human Resources Institute uses the study as baseline HR data. These HR costs were applied to the two groups of workers, using ratios based on aggregated demographic data identified in Component 1. The ratio is described as an average estimate, varying between industries and organisations but used an 'indicative multiplier of costs and benefits' (Australian Employers Convention, 2001: 7).
- 3 The net human resource benefits were calculated by adding the benefits minus the costs for each group of workers, and then comparing both.

The project found that –

- o Older workers were **2.6 times less likely to have left their jobs in the preceding 12 months** than those aged 44 and under. ABS data showed that they remain on average in employment for 11.4 years compared with 4.8 years for those aged 44 and under.
- o The **ratio of duration of employment for older workers was 2.4 times greater** than that for the younger age group. Focus group research conducted for the project identified a likely cause of this longer duration being a 'culture of loyalty to a single employer' while those aged 44 and under were viewed as more 'opportunistic' and 'self interested'.
- o Workers aged 45 and over were **most likely to have left their jobs due to retrenchment, not early retirement.**
- o Challenging the assumption that older workers are not worth the investment of time and training due to their likely retirement, the study found that some 45% of workers aged 45 or more intended to remain in the workforce until the age of 65-69. Therefore, they represented a **potential 20 year investment** for an employer providing training for them. By contrast, workers aged 30 to 39 remain with an employer for an average of 5.8 years.

The estimated net recruitment benefits of a worker aged 45 or over were found to be \$1424 per year, per worker.

- o In assessing costs associated with training, the study noted that a number of qualifications need to be taken into account – in particular, the longer duration of employment of older workers (and therefore, enhanced investment) but the **likelihood that their educational qualifications will be lower** than their younger counterparts. Overall, their longer duration was considered to make older workers' training a benefit for business that involved a **net benefit of \$987 per year per older worker**.
- o Older workers were found to **take slightly more unscheduled absence leave** – 10.4 days compared to 9.66 for those aged 44 and under. However, as this was based on a two week snapshot, the researchers advised caution in interpreting this finding.

The cost of unscheduled leave (that is, excluding sick leave or other approved forms of leave) was found to involve a **net cost of \$116 more than for the rest of the workforce, per older worker per year**.

- o Costs associated with work injury were found to involve a **net cost of \$330 more per older worker per year** (Australian Employers Convention, 2001: 6-12).

The conclusions drawn from this research were that older workers involved less costs than younger workers, and this was calculated to involve a **total net benefit of \$1956** compared to the rest of the workforce. Mature employees were also identified as bringing additional, but uncosted benefits that include avoidance of skill shortages and supporting longer term business strategies (Australian Employers Convention, 2001: 15-16).

Some of Australia's largest organisations have also pursued 'age balanced' workforce developed, particularly the major banks, and case study examples appear in the boxes below. Tasmania's Aurora Energy is also included in this overview.

ANZ Bank - Age Diversity Strategy

In February 2004 ANZ launched its *Age Diversity Strategy* which was designed to create a workplace culture where 'age is no barrier', by:

- Retaining skills and experience;
- More effectively recruiting mature age workers;
- Better reflecting the age profile of customers and the wider community;
- investigating the business and customer benefits of mixed-age teams;
- emphasising flexible work practices, and marketing these to mature age employees;
- creating an inclusive culture where experience is valued.

The Age Diversity strategy has multiple components, all underpinned by a range of information and awareness raising provision, including the following initiatives.

- o **Career Extensions Program** - This is designed to help employees to manage their lifestyle decisions while simultaneously assisting ANZ to retain employee knowledge and experience. The program involves three career extension options:

- *Rejuvenate* – by providing flexible leave options such as lifestyle leave, flexible long service leave and career breaks;
 - *Rebalance* - with options such as job sharing, telecommuting and working part-time or full-time, and/or on a cyclical or seasonal basis; and
 - *Reshaping* - by taking a gradual approach to retirement and changing pace through exploring roles with less pressure or with greater emphasis on knowledge and experience sharing.
- o **Removal of qualifications-based career advancement barriers** - ANZ changed its tertiary qualification policy, in response to feedback from ageing workforce focus groups and findings of more general research. This showed that mature-age workers were less likely to have a tertiary qualification than their younger counterparts. ANZ aspires to improve the educational attainment levels of staff, but in recognition of this feedback revised its policy to ensure that mature-age workers were not indirectly disadvantaged in promotions by their lack of tertiary qualification. With approval from the Managing Director, business units can waive the tertiary qualification requirement where experience compensates, and a basic entry assessment is successfully completed.
 - o **Changes to recruitment advertising** - Drawing upon research which found that mature candidates are more likely to be attracted to advertisements emphasising attributes like ‘experience’, ‘knowledge’, ‘expertise’, ‘insight’ and ‘confidently grounded’, ANZ has revised the language used in recruitment advertisements. The tag line “*Age is no barrier*” now appears on all ANZ job advertisements.
 - o **ANZ Alumni** - Through ANZ Alumni, communication channels between ANZ and past employees remain active and can be used to convey job opportunities. Research shows that many employees who retire or leave the organisation, may later return. ANZ Alumni ensures the door is open to these former employees.

The CEO has been a champion of the Age Diversity Strategy which he regards as ‘good business practice’ and a recent assessment of progress made that the average age of retirement had increased from 54.8 years in 2001 to 57.8 years in 2005; some 30% of the workforce was aged 45 or older; turnover of employees in the 55 and over age group had decreased from 18% in 2003 to 14% in 2005 and there had been an increased use of flexible leave in the over 45 year age group (www.dca.org.au/content/documents/Shane%20Freeman%20presentation.doc).

Commonwealth Bank of Australia

The Commonwealth Bank had been aware of the ageing population and its implications for the workforce for some time and commenced in depth research into workforce trends. One of the major findings of this research was that employees were interested in delaying retirement, providing they had access to flexible hours. To address this finding the Commonwealth Bank now offers a range of flexible work practices which include:

- o **Part-time work** - Part time workers receive pro-rata full time pay and conditions of service. Training and career progression opportunities parallel those of full time employees.
- o **Career breaks** - offering employees the opportunity to take up to three years unpaid leave from the workforce and at the end of this time return to a role with comparable skills and experience.

- o **Job share arrangements** - whereby two employees may share one position, providing an opportunity for an employee to reduce hours in the lead up to retirement.
- o **Flexible start/finish times and use of AWAs** - Enterprise Bargaining Agreements (EBAs) do not prescribe set/start finish times; neither do the Bank's AWAs, which also provide flexibility.
- o **Future Opportunities** - Two proposed additional initiatives to assist in the managing of work/life balance are the purchasing of additional leave and taking accrued long service in more flexible ways. These policy initiatives will be available to all staff and will be implemented through policy action by the Bank and appropriate industrial instruments.

In June 1994, 12% of the Bank's workforce was made up of employees 45 years and over, and by June 2004 this group had almost doubled and accounted for 21% of the workforce.

Westpac - Age Balance Strategy

Westpac sought to develop a workforce that reflected the profile of the broader Australian community, and more specifically, its own customer base, and realised that it needed to achieve 'age balance' across the organisation. In 2002, its CEO announced the recruitment of 900 employees aged 45 and over. During 2003 and 2004 Westpac established a number of call centres and specifically recruited more mature workers to staff them.

The bank also broadened its Age Balance Strategy to include retention as well as recruitment. It conducted an 'age audit' with Swinburne University's Business Work and Ageing centre, and this found that the workforce profile did not reflect that of its customers or the wider community. Since then Westpac has provided age management training that is focused on accommodating an intergenerational workforce and combating ageist stereotypes. One of its biggest challenges has been to educate and engage managers with hiring responsibilities. The commercial benefits of hiring mature workers (eg higher retention rates, lower absenteeism and higher productivity given appropriate working conditions) were demonstrated to managers as part of the strategy. Commercial benefits were modelled on HR management costs and an assessment made of the cost-age relationship. This established a substantial cost benefit for age balance in the workforce.

Westpac's Age Balance Strategy pursues both business case and corporate social responsibility principles. In a recent interview for Human Resources, one of the bank's executives identified a range of positive outcomes from the Strategy – including, an increase in employees aged 45 and over from 18% of the workforce in 2001 to 23% in 2004. He emphasised the importance of presenting a business case for age management, saying –

'Whether it's a branch manager or senior executive, the business case for age balance must be tangible for people to understand in their day-to-day work To win the hearts and minds of senior managers, they need to be able to see both our short term and long term benefits. It has to be grounded in the value that it will deliver to Westpac, including shareholders, our people, our customers and the wider community'.
(www.humanresourcesmagazine.com.au/articles/5b/Oc02c65b.asp)

Aurora Energy is Tasmania's electricity distribution and retail company and employs more than 900 staff, whose average age is about 40. Given this age profile within the context of Tasmania's labour market, Aurora recognised that it needed both to encourage young people to enter the industry, and to retain and develop its current employees. Aurora has developed a range of strategies to do this, including:

- A phased retirement process – for example a person in their 50s contemplating retirement may work part-time at 3 days a week for a year, reducing to 2 days a week the next year. This phased retirement can include mentoring one or more successors, to pass on skills and knowledge.
- Providing flexible working arrangements, which enable employees to balance their work/home needs.
- Finding alternative roles for older workers who have had roles that were physically demanding.
- Ensuring that, as the company responds to structural changes, employees are found alternative roles within the organisation.
- Recruiting local people for local jobs, irrespective of age. Because it has depots all around Tasmania, Aurora finds this is an effective way of having employees who are committed to staying and working in the local area. This can be through adult apprenticeships or traineeships.
- Former employees of Aurora continuing to contribute their expertise as temporary employees, contractors and consultants.
- Looking after the health of employees by offering discounted gym memberships, fitness evaluations and fitness programs.

As a result of its strategies to make the company attractive to both new recruits and current employees, Aurora has a turnover of less than 5%, with an average tenure of around 15 years. It has won national recognition for its HR practices from the Australian Human Resources Institute and was a recent finalist in the Australian Chamber of Commerce national work/family awards.

In reviewing case study findings, European Union researchers concluded that –

... age management tended to become a central feature of strategic HRM when driven by business (Taylor, 2006: 48).

Their analysis identified different drivers of age management policy in relation to labour shortage and labour over-supply and these are summarised in CHART 6.

CHART 6: DRIVERS OF AGE MANAGEMENT POLICY

Drivers in times of labour shortage	Drivers in times of labour over-supply
Need for skills maintenance and development	Need for knowledge capture and retention
Need for a working environment conducive to retaining staff	Cost reduction at a time of organisational crisis
Awareness of alternatives to targeting younger labour market entrants	Planning for the future – estimating labour requirements post-organisational crisis
Existence of policies on equality and diversity management	Social acceptability of different approaches (eg promotion of early retirement)
Legacy of earlier approaches to workforce management (eg early retirement)	Legacy of earlier approaches to workforce management (eg early retirement)

Source: Taylor, 2006: 53

In identifying the benefits of age management, the European Foundation’s analysis of case study findings found positive outcomes for both employers and employees, with the nature of the benefit dependent on the interventions undertaken (Taylor, 2006: 65). CHART 7 summarises the benefits identified for employees, grouping these into employment opportunities, maintenance or enhancement of health and well-being, opportunities for learning and utilisation of skills, workplace relationships, and improved retirement preparation.

CHART 7: BENEFITS OF AGE MANAGEMENT FOR EMPLOYEES

Type of benefit	Specific benefit for older workers
Employment-related	<ul style="list-style-type: none"> ⇒ Job offers ⇒ Career advancement ⇒ Role enhancement ⇒ Job security
Health and well-being related	<ul style="list-style-type: none"> ⇒ Improved health and well-being ⇒ Better work-life-balance ⇒ Increased motivation ⇒ Increased job satisfaction
Learning and skills related	<ul style="list-style-type: none"> ⇒ Skills development ⇒ Adaptability to different methods ⇒ Continued usage of skills
Workplace relationships	<ul style="list-style-type: none"> ⇒ Greater trust in management ⇒ Better intergenerational relations ⇒ Feelings of belonging and being appreciated
Retirement prospects	<ul style="list-style-type: none"> ⇒ Better preparedness for retirement

Source: Taylor, 2006: 65

In analysing benefits for employers, the European Foundation identified two main categories – the securing of labour supply and the maximisation of workforce capability, as well as a number of wider benefits. These are described in CHART 8.

CHART 8: BENEFITS OF AGE MANAGEMENT FOR EMPLOYERS

Type of benefit	Specific benefit for employers
Securing of labour supply <i>leading to</i> Reduced labour costs and greater productivity	<ul style="list-style-type: none"> ⇒ Greater staff commitment ⇒ Less stress among staff ⇒ Reduced staff turnover rate ⇒ Decreased sickness absence rate ⇒ Reduced early retirement
Maximisation of workforce utility <i>leading to</i> Increased labour productivity, company competitiveness and share value	<ul style="list-style-type: none"> ⇒ Increased participation in learning and training ⇒ Enhanced innovative capacity ⇒ Increased manager and supervisor competence ⇒ Better knowledge sharing ⇒ Reduced conflict and better team cooperation
Wider benefits	<ul style="list-style-type: none"> ⇒ Improved cooperation between management & trade unions ⇒ Development of HR functions ⇒ Improved public relations image among customers ⇒ Perception of the company as an employer of choice

Source: Taylor, 2006: 71

A commonly identified reason for retaining older workers, apart from addressing workforce shortages, is the capturing of experience and skills acquired over time. The European Foundation described the benefit in this way –

Older workers, with their long professional experience, possess knowledge and skills that cannot be acquired through formal education alone. This knowledge gives older workers confidence, independence and problem –solving skills. Moreover, older workers do not require as much induction and adjustment when they join the company: as a result, training costs have been reduced. Older workers have lower turnover rates and display greater loyalty to the company. Finally, increased efficiency is gained as a result of older workers supervising younger ones (Taylor, 2006: 73-74).

Many of the case studies involved strategies designed to retain the knowledge and experience of mature aged workers, based on a recognition of the risk contained in losing unique knowledge and capabilities. Swedish nuclear power company *OKG* is one example and has adopted two approaches to knowledge transfer – *parallel duty* and *role takeover*. Parallel duty involves a mentor and trainee working side by side while role takeover involves the trainee moving into the role of their mentor.

In preparation for privatisation in Austria’s *Post Branch Network*, management sought to draw on the expertise of mature age workers because their customer knowledge was considered to be of critical importance in making the transition to a market operation. Among the changes implemented were the dual management of post offices by older and younger managers, as well as a wider guarantee of continued job security. Outcomes achieved involved a 23% reduction in sickness absence, a 5% increase in staff productivity, and a reduction of 8.7% in personnel costs.

Another case study example involved the Belgian company *Proviron*, whose *Knowledge Pool 50+* initiative was designed to record and transfer in-service knowledge from its ageing workforce. Part of this age management project involved participation in a training program which was the gateway to involvement in

a pool of recognised experienced employees who pass on their expertise to younger employees. For participating mature age employees, the project was seen as a career boost which added variety to their work at a time when it had become monotonous for many of them. Similarly, Bulgarian paper manufacturer, *Stamboliiski Plc*, provided temporary contracts for retired employees in its factory, under which their professional experience is transferred to younger workers. This strategy was found to be very effective, and appears to help retired employees feel both valued and motivated.

5.2 European Union case studies of good practice in age management

In selecting case studies, at least two of the following criteria were required –

- o **Sustainability of approach** – rather than once off or short term initiatives, an approach embedded in human relations management (HRM) or corporate culture.
- o Application of a **life course or preventive approach** – applicable to all age groups with a proactive orientation.
- o A **gender-sensitive approach** – with specific attention to the employment risks faced by older women.
- o **Transferability of approach** – able to be followed by other organisations or sectors (Taylor, 2006: 27).

Collectively the case studies represent a continuum of good practice that ranges from limited, narrowly focused approaches to **comprehensive** strategies that have these four components –

- ⇒ an emphasis on *prevention* (that is, addressing risk factors in the early stages of working life)
- ⇒ a focus on the *whole life course*, not just older age
- ⇒ a *holistic* focus (that is, addressing a range of issues including health, education, training, equal opportunity)
- ⇒ *compensatory* provision for older workers, particularly older women, who missed out on specific skills training, or whose health has suffered as a result of their employment (Taylor, 2006: 23).

Taken together, these four indicators of good practice in age management are part of wider workforce planning and development, focusing on workers across the life cycle, in order to maximise their productivity and prevent any decline in this due to the ageing process. At the same time, worker skill levels and capacity to participate are optimised, bringing benefits for the organisation as well as the individual employee. This achieves the dual and interdependent goals of workforce development and economic development.

Examples of case studies for each of these four indicators of good practice are provided in the following sections.

5.3 Case studies illustrating an emphasis on prevention

A common strategy adopted by organisations case studied by the European Foundation involved a focus on health promotion and the prevention of ill-health and chronic disease. Although such strategies are usually

seen as being driven by individual employers, there is also scope for health insurance organisations to offer incentives that encourage health promotion - for example, by rewarding health promoting organisations with lower premiums (Naegele & Walker, 2006: 18).

Common across many case studies, was prevention that involved reducing the working hours of older employees, often with the result that rates of sickness leave were reduced. This was evident in the case study of transport group VAG (see Section 4.7).

Finnish research has led the development of a number of occupational health developments, including the *Work Ability Index* (WAI) (Ilmarinen: 1995; Tuomi *et al*: 1998). One company in Finland reported using the WAI to target health promotion activities for employees. Assessing against the 7 domains of the WAI, the company introduced language and information technology courses, new-employee orientation, supervision of work and a program for all employees whose WAI was rated below 35. (A WAI score of between 28–36 is considered moderate and an improvement of the ability to work is recommended.) Evaluation of this intervention found that there were fewer work accidents in the new unit, benchmarked against other companies in the technology industry. Absence due to sickness was also lower than 4%, about the same as in other companies, despite the high average age of workers.

To maintain the working capacity of employees in its food processing plant, Finnish company *Ruoka-Saarioinen Oy* has developed a range of initiatives to extend the working life of older employees (those aged 55 years and over). These are undertaken as part of the company's central operating process and include regular surveys on workplace climate, personal health examinations, and facilitation of physical exercise and a healthier lifestyle. Occupational health professionals, in cooperation with employees and health and safety representatives, carry out work analyses, recommend ergonomic improvements and implement changes in work content.

In Denmark, IKEA promotes the health of senior employees by providing:

- o a massage twice a month;
- o a course in healthy lifestyle comprising a personal diet program, and advice on losing (or gaining) weight;
- o assistance to stop smoking, handle stress or cope with situations of conflict;
- o discount on fees to a series of fitness centres;
- o extended health insurance coverage providing medical treatment and rehabilitation therapy in private clinics to promote quick recovery and return to the workplace after illness;
- o an initiative that promotes good working postures in standing, sitting and lifting correctly.

A local council in Ireland offers a course on 'Well-being for Older Employees'. Although promoted to employees of all ages, the content is designed to attract staff aged 50 and over and is delivered in three sessions, each session lasting two hours. Upon completion, it is expected that participants are able to:

- o identify the dimensions of health;
- o assess eating habits;
- o identify healthy food choices based on the food pyramid;
- o complete a personal plan in relation to eating well;
- o identify stages of change for eating well and physical activity;
- o know their current physical activity recommendations;

- o define the components of fitness;
- o plan and implement a safe and effective exercise session;
- o list the benefits of and barriers to physical activity;
- o identify strategies to overcome barriers;
- o outline long- and short-term physical activity goals and translate these into a personal plan;
- o define the concept of stress;
- o list coping strategies for dealing with stress;
- o develop a personal plan in relation to dealing with stress.

A UK human research consulting agency provides health and well-being support including, for example, gym membership and visits from a masseuse. These measures were designed to counteract the physical impact and repetitive strain experienced through office-based and desk-based work, which is particularly important for its older workers. The organisation sought to promote a healthy workplace and encourage a healthy lifestyle, and one strategy to achieve this was allowing staff to arrange their working time in order to access gym facilities, such as taking a longer lunch break for health-promoting activities. The program was found to have had a positive impact on work quality and productivity, and on the development of a health-focused workplace culture.

5.4 Case studies illustrating a focus on the whole life course

While there are many interventions that are important for accommodating ageing-related functional changes, it is also important to view the later parts of the life cycle as part of a continuum, with the foundations for older age being built in earlier years. Taking a view of the entire life phase is often known as a 'life course perspective'. In relation to workplace productivity, the rationale for this approach is clear –

As work-related illnesses typically have their roots in earlier phases of the working life, health protection and promotion measures should not be deferred until the employees are older. In this regard, an age-neutral approach is particularly appropriate (Naeyele & Walker, 2006: 18).

In reviewing the case studies, European Foundation researchers have noted that examples of life cycle or life course perspectives are often overlooked, as are approaches designed to address barriers faced by women in reconciling caring and employment responsibilities (Taylor: 2006). In addition, the researchers found that understanding of the 'life course' concept was less understood in the workplaces studied and that this was a gap that needed to be addressed.

Key features of a life course approach to age management include –

- o health promotion
- o lifelong learning
- o career management and
- o long term workforce planning and development (Taylor, 2006: 89).

Although presented in the context of 'age-friendly' workplace interventions, these four strategies are relevant to all employees.

5.4.1 The importance of managing transitions

A life course perspective also understands that the life cycle involves transitions from one life phase to another, and that these usually require specific attention and varying degrees of support. The transition from childhood to teenager to adult and the challenges involved is widely understood, but less acknowledged are transitions made in mature adult years. These include moving from parenting as children grow from dependency to independence, and from having independent parents to supporting ageing parents who require significant assistance. The transition from paid work to retirement has become less transparent, and understanding of the needs of mature workers who blend a range of work and non-work roles is evolving but under-developed. Effective age management strategies are those that address work and life transitions, and organisations that enable this outcome will increasingly be seen as employers of choice.

In the UK, the *Flexible Decade* strategy¹⁸ responds to challenges associated with an ageing **transport industry** workforce and enables older workers to adopt flexible working arrangements in conjunction with graduated access to pension and superannuation resources. In addition, *Flexible Decade* initiatives are linked to nationally accredited training programs that support access to diverse learning opportunities. Employees are able to switch to part-time work and draw a reduced pension after the age of 60 years, or to continue to work full or part time beyond 65 years of age, while drawing, continuing to accrue, or deferring their pension.

A multinational telecommunications enterprise – *Telecommunications Company (TC)* - instituted five options that allowed staff to gradually reduce their work levels, encouraging greater workforce participation up to (and beyond) retirement age. These were the choices available:

- o 'wind down' - provided the opportunity to work part time or to job-share;
- o 'step down' - involved taking up a position with less responsibility;
- o 'time out' - enabled employees to take full-time or part-time sabbaticals;
- o 'helping hands' - encouraged employees to pursue charity or community work;
- o 'ease down' - allowed employees to gradually reduce working hours and/or responsibilities, particularly in the 12 months prior to leaving the company.

The *Newham NHS Trust* in the UK introduced a flexible retirement strategy that enables its nurses to retire at any time after the age of 55 up to the normal age of retirement of 65. The Trust also allows many staff to continue working past the normal retirement age, if they choose to do so, and if they have particular skills. In addition, staff can retire at 60, take their pension and then be reemployed until the age of 65 at a lower level with fewer responsibilities.

Some transitional arrangements incorporate an element of intergenerational exchange of knowledge. For example, an academic institution in Romania with an ageing workforce provided older staff with the opportunity to focus on publishing rather than active research, and simultaneously enabled an extension of

¹⁸ This concept acknowledges the years 60 to 70 as a decade where retirement should not be associated with a fixed age, and has been pursued by other EU countries, for example, Sweden

their working. This strategy also involved a planned process of knowledge transfer from mature age employees to newly recruited and younger staff members.

5.5 Case studies illustrating a holistic, comprehensive approach to age management

The case studies also included few examples of comprehensive, holistic approaches to age management. The *Ovako Koverhar and Ovako Dalsbruk* steel plants in Finland have implemented a comprehensive program to maintain the health of older employees. These included work analyses, ergonomic improvements, redeployments carried out in consultation with occupational health personnel, workshops on ageing, five-day rehabilitation courses in the spa for all employees after their 54th, 59th and 63rd birthdays, individual health examinations, and partial retirement.

Voestalpine, an Austrian steel company, initiated a 'LIFE' program (Light-hearted, Innovative, Fit, Efficient) with a number of aims including the retention of older employees, intergenerational knowledge transfer, and the ergonomic redesign of tasks bringing risk of injury. The 'LIFE toolbox' included a range of strategies, such as, a participatory working time reform process, age-neutral training provisions and the age-specific ergonomic assessment of workplaces.

Aware of the significant ageing profile of its workforce, the *Finnish News Agency (STT)* implemented an age management initiative that was linked to its core business and had a life course focus. In order to promote the working capacity of its entire staff, STT implemented a comprehensive strategy that included leadership training for supervisors, improved workplace communication, physical training and fitness tests, ergonomic analyses, part-time pensions and flexible working hours.

Germany's *KSB Corporation*, a pump and valve manufacturing company, sought to retain its older workers beyond the usual retirement age and implemented a multi-faceted age management strategy that included integrated appraisals and advice on in-house vocational pathways, the provision of specialised further training, release from night shifts, flexible working hours, mentoring systems that facilitate knowledge transfer and relieve the workload of older employees, health checks and wage safeguards in case of in-house relocations to new tasks.

Mercer Australia (2008) have modelled a number of scenarios relating to the **Australian workforce** in 2012 as it responds to the dual challenges of workforce ageing and meeting the demand for a skilled workforce. Their recommended directions for employers involve a multi-faceted reinvention of the workplace that has four elements –

- o *Addressing the 'workplace paradox'* – that is, the blurring of the boundaries between home and work, work and retirement and between work roles. This means that the relationship between workers and the workplace will be less structured, or designed to embrace the fluidity of less rigid separations between work and life. In their view, workplaces will increasingly become the focal point for health promotion and general health and well-being, financial advice (especially relating to superannuation), for ongoing learning and for involvement in community life. In their view –

... by 2012 the most successful employers will be those that create an environment where paradoxes and ambiguities thrive, where employers provide space for individual expression, as well as where there is a sense of belonging and engagement (Mercer, 2008: 14).

- o *Redefining the job* – the move away from a linear relationship between education and training, work, and retirement, and the movement of employees between different roles and employers, together with the blending of work with child rearing, elder care, travel, and ongoing learning means that employers need to be responsive to these changes in the way people live their lives. By 2012, the increase in the proportion of workers aged 55 or more, and especially women in this age, means that employers need to become employers of choice for older workers, and for older women workers. Given the high levels of part-time employment in Australia, employers also need to design work roles that support part-time employment and job sharing

Part-time work will no longer be the domain of mothers of young children and older workers transitioning to retirement. Employees will demand part-time hours to allow for caring for grandchildren, caring for elderly family, volunteer community work, further education, general health and wellbeing and travel (Mercer, 2008: 15).

- o *Addressing the emergence of the 'Employment Market of One'* – as skilled employees increasingly shop around for jobs, employers will need to move away from a 'one size fits all' model of employment to one of flexibility and a tailoring of work roles around individual employees. This will demand an understanding of the employee market and its segments, in much the same way as retailers have developed an understanding of the consumer market. Balancing this against considerations of cost will be a key challenge for employers (Mercer, 2008: 17).
- o *Looking outside the generational boxes to manage work and life transitions* – employers will also need to move beyond the labelling of different population cohorts – the 'alphabet soup' of Generations X, Y, Z and Baby Boomers – to make provision for the differences within these categories. Employee needs change as they move through the different levels of an organisation and the different stages of their personal lives. Rather than viewing employees 'through the context of the generational lens', employers will need to focus on the transitions they make across the life course.

Working with your employees to help manage their work and life transitions generates another perspective through which you can develop the 21st century workplace (Mercer, 2008: 18).

5.6 Case studies illustrating compensatory provision for older workers

Age management also involves making specific provisions that accommodate changing functional capacity and other ageing-related issues (as described in *Section 3*) that can affect worker productivity. A common strategy involves redeployment or allocation to different work roles or work units, and while this involves a compensatory form of intervention, it can also be used as a preventive measure, especially if it has a health promotion purpose or is used positively as part of career development (Naegele & Walker: 2006). Good practice in redeployment links this to organisational productivity, as opposed to providing a 'sheltered workplace' where loss of status and deskilling are likely. Poor practice in redeployment can have a demotivating effect on employees, as well as a stigmatising effect, and detracts from a productive and health work culture, leading to '*premature inner retirement*' (Naegele & Walker, 2006: 19).

A case study of a German public transport company (*VAG – Verkehrs Aktiengesellschaft* in Nuremberg) demonstrated that age management can be addressed effectively, even in physically demanding jobs. In recognition of the fact that some 85% of staff were leaving before retirement age due to ‘unfitness to work’, VAG implemented a number of strategies that included health promotion measures, ergonomically improved workplaces and a reduction in working hours, all of which led to a decline in high levels of sick leave among older employees. They also established the ‘special driver group’ who were rostered to work on the same shifts, with reduced working hours for those over 57 years, regardless of their health status. The regular shift pattern had a rotation of six days, with five days on and one day off duty. Older drivers were released from duty on the fifth day, after a short morning shift, while retaining the same level of pay. This strategy has seen a halving of rates of sickness absence and premature retirement.

A similar transport industry case study in Estonia saw the *Tallinn* bus company redeploy older bus drivers whose reaction times had slowed or whose capacity for dealing with stress had reduced, and rostered them to less demanding routes (for example, suburbs with less traffic). Those who were no longer able to drive safely were redeployed as guards in a parking lot.

During the 1990s increasing automation combined with economic recession brought about substantial change in the way work was organised at *Volvo Cars Torslanda* in Sweden. Company management perceived the potential pressure these changes brought for older workers and sought to avoid redundancies by establishing the Special Vehicle and Services unit. This unit was designed to take care of older, long service employees who were not coping with the changed conditions in production and offered them alternative tasks, *provided these tasks contributed to company profitability*. Applicants for a place in the unit were interviewed, in the presence of a trade union representative, to identify individual need. Over time, more activities have been developed within the unit, there has been a steady increase in its workforce, and the unit has run at a profit.

The case study of the Spanish workers’ cooperative *Mataró Glassworks* involved an initiative designed to integrate into the labour market workers aged 50 and over, and women who were unemployed but had previously worked in companies in the region. The project simultaneously supported local and regional employment and most employees were from the Mataró or its district. The company organised special recruitment that included initial training and orientation, a welcome program and internal training. A related project was designed to capture the skills and experience of workers aged 50 and over who had nominated for early retirement. They received additional training to play a role in the training of new younger workers and older women recruited to the company, and this applied to both executive and employee training and coaching.

The Swedish City of Malmö’s education department was facing a reduced supply of teachers in the late 1990s and the looming retirement of a significant part of its workforce. Its age management strategy was an intergenerational strategy with three components. The ‘50-teacher project’ involved the appointment of 50 graduate teachers each of whom received mentor support during their first year of employment. The second component involved supplementary training for approximately 30 part-time staff without formal teacher qualifications. The third component drew on older teachers’ competence and encouraged them to delay their retirement. It identified tasks that were tiring or stressful (this usually involved classroom teaching) and replaced them with other tasks based on their skills. These included library duties, the

development of workshops, school administration tasks, environmental tasks, the mentoring of new teachers, issues of school development and the competence development of other teachers.

The key outcome of this initiative was that teacher shortages were removed, health levels improved, absenteeism rates fell, while health promotion components of the age management strategy were found to have brought benefits in improved work environment and improved work capacity. Education authorities believe that there has been an improvement in teaching quality, and in staff relations, as a result of the initiative.

Volkswagen Commercial Vehicles in Germany implemented a collective labour agreement that guaranteed employee security until 2011, and to ensure the continued productivity of older workers with reduced work capacity, introduced in 2002 the four step *Cascade Model*. This has four steps - *prevention, integration, integration department* and *special assembly* that collectively are designed to reintegrate older workers into the production process, to maintain and restore employability, and to delay retirement. The model also includes preventive initiatives in building and retaining skills, health promotion, and work organisation. Transfer and temporary employment in the integration department are the first step, and if these measures fail, special assembly assigns tasks that are not subject to the normal performance requirements. The rehabilitation model considers the entire workplace as an opportunity for returning to work or re-deployment, rather than simply returning to the same job or even work unit. At the same time, there is a reduction in both working hours and pay.

A car manufacturer in Slovenia developed a system of workplace analysis according to the physical and mental demands of the workplace. The company's goal was to better organise workplaces and to ensure that working conditions were acceptable for employees aged over 45 years (target level). Re-configuration of work processes, ergonomic interventions and team structures based on these assessments were considered to have drastically increased the 'employability' of those over 45 years. Total workload was rated on a scale of one to five based on four criteria –

- o posture
- o effort
- o complexity (how taxing the quantity, type and variety of information the employee has to process is) and
- o adjustment (measuring the worker's flexibility in mastering changing environments).

Using this method, the most onerous operations were identified and assessed in terms of employee age. The rating method classified workplaces as:

- o appropriate for employees with impaired productivity (levels 1 and 2);
- o appropriate with acceptable limitations for male and female workers aged over 45 years (level 3);
- o potentially threatening to health, appropriate for young workers (level 4); and
- o dangerous for health (level 5).

Driven by the high costs of hiring and training new personnel and the ability of mechanised production to prolong the working life of older employees, one company in Cyprus developed an age management model that focused on retraining and retaining existing employees. This included implementing a process whereby older workers involved in manual tasks were first considered for promotion, or for transfer to less

demanding roles, with training made available to support this transition. This was found to enhance individual career prospects while reducing the incidence of workplace illness and injury.

In Slovenia, a timber processing operation introduced an initiative aimed at retaining older workers and reducing the sick leave liability in the 50 years and over age group. It led to the development of a 'Protection of Older Workforce' section in collective agreements. This provision enabled older workers with (medically endorsed) reduced capacity due to illness or injury to change their role to a less demanding one while retaining their salary and conditions. Workers sign a revised employment contract to reflect the agreed role changes. In this project, it was found that the cost differential in wages was generally offset by increases in productivity within the worker's new role, increased quality of work, and a reduction in sickness liabilities.

The catering service *Food Service Centrum* in the Finnish city of Espoo implemented multiple measures to promote work capacity among older workers, and in particular, mature age women. Where individual work capacity was assessed as limited, daily work tasks were reduced accordingly, and interventions were applied to increase skill levels and functional capacity. A group was established to focus on the health issues facing women over the age of 45 (for example, osteoporosis, prevention and treatment of incontinence, fitness and relaxation). Among the outcomes achieved by this initiative were improved skill levels, improved workplace relations, increased job satisfaction, and increased levels of work capacity.

5.6.1 Age management and shift work

Age management in a workplace that depends on shift work can be particularly challenging, but a number of the European Foundation's case studies exemplify that the challenge can be met – in most cases, through some form of reduction in hours worked by older employees. Austrian manufacturer *Polyfelt Geosynthetics* reorganised its shift work system to retain valued mature age workers who traditionally retired in their early 50s. Their new approach involved a five-shift rather than a four-shift system - one shift being devoted to training, a Health Promotion Week that provided training in fitness, nutrition and relaxation for both employees and their partners (to encourage a transfer of learning to private life), and an 11% reduction in weekly working hours coupled with a 5% reduction in monthly wages. Evaluation of this age management strategy found improved sleep quality, better work-life-balance, significant decreases in stress levels and sickness absence, and significant improvement in self rated health.

5.7 Case study conclusions

5.7.1 Key success factors

In revisiting earlier research from the *Combatting Age Barriers* project (Walker: 1998) and combining those findings with the case study analysis, six critical and interrelated success factors were identified:

- 1 public policy (the only factor external to participating organisations)
- 2 management commitment and competence
- 3 the industrial relations climate
- 4 the process of implementation
- 5 flexibility and responsiveness
- 6 devolution of responsibility (Taylor, 2006: 75).

Public policy

While a supportive policy framework for age management was not found to be essential, it did increase the likelihood of successful implementation of such initiatives. For example, in the United Kingdom, a lack of interest by employees in flexible working conditions was often a reflection of concerns of loss of pension entitlement. In a number of countries, workplace policies that seemed to contradict broader national policy (in particular, regarding early retirement) were viewed with suspicion by older employees.

Having previously promoted retirement before the usual age, public policy now has a central role to play in reversing the 'early retirement mindset' that prevails among managers, trade unions and workers themselves (Taylor, 2006: 85).

Management commitment and competence

The importance of effective leadership in age management was described as an 'unambiguous finding' in both the earlier *Combating Age* project and the current case study research project. In terms of competence, management expertise in workforce planning and organisational change was found to be critical, as was the ability to align age management with central business strategy, and being able to articulate this relationship to the rest of the workforce. By contrast, initiatives that were not perceived as linking directly to organisational priorities had little sustainability.

Unfortunately, decades of early retirement policy and practice were found to have deprived managers of the experience needed to manage older workers – a situation that was common where companies had downsized by reducing their mature employee workforce. Case study findings that could demonstrate the cost-effectiveness of age management were found to have challenged traditional expectations of early retirement.

Industrial relations climate

European Foundation researchers concluded that the main driving sources of age management initiatives had been HR departments, at least in the initial stages. However, it was essential that commitment was secured from three main sources - trade unions, senior management and the workforce as a whole (Taylor, 2006: 78). The case study of the Swedish City of Malmö's education department exemplified this finding, with close cooperation between management and unions within an 'open and creative' organisational climate, supported by adequate resourcing, central to workforce acceptance of this age management initiative.

The Belgian company *Proviron's* age management project (*Knowledge Pool 50+*) involved both blue and white collar workers and depended on voluntary participation. A key to its success was their engagement during the formative phase of the project. As the researchers concluded –

... change can only be achieved if the workforce is willing, or can be persuaded of the benefits. This becomes easier when they participate in the initiative's conception, development and execution (Taylor, 2006: 78).

Devolution of responsibility

Case study findings indicate that devolving responsibility for management of age management strategies is one valuable means of engaging the workforce in them. In some instances, organisations formed teams to undertake this role, with representation from trade unions, management, occupational health and safety experts and researchers. Implementation was also found to be successful when responsibility was given to either work teams or line managers, supported by HR departments and others.

Conversely, lack of commitment by line managers was seen to account for lower than expected take up rates of some age management initiatives. Competing priorities played a role in this, identifying the importance of supporting or encouraging line managers to give priority to age management. One strategy for achieving this involved the adoption of relevant indicators, such as, sickness absence among older employees, to measure managers' effectiveness (Taylor, 2006: 82).

Implementation process

Frequently, the case studies faced challenges in the implementation of age management strategies, and the researchers concluded that effective intervention usually involved –

- o a preliminary age-focused audit designed to provide a framework for the initiative and to articulate its objectives and benchmarks or indicators to assess its progress;
- o the development of a business case for the initiative;
- o the development of a monitoring strategy;
- o ongoing communication about the rationale, process and its impact;
- o obtaining and sustaining the commitment of the workforce and of management;
- o reframing the attitudes of the workforce and management, using the research evidence base, and often an external expert perspective to bring new ways of thinking, to challenge traditional processes, and to ensure that other organisational policies did not counteract the age management initiative;
- o in some instances, individual 'success stories' became champions of the initiative and were used to encourage its wider adoption (Taylor, 2006: 79).

Flexibility and responsiveness

Fluctuations in economic cycles and conditions require organisational responsiveness and the ability to adapt to change. The case studies highlight the importance of extending this flexibility to working conditions in order to meet both individual and organisational need. There were instances identified of the application of a flexible method of working that was almost undone by rigidities elsewhere. For example, Netherlands construction company *Hazenberg Bouw BV* implemented a flexible working condition that allowed employees aged 55 and over to work a four day week in order to reduce fatigue. However, its implementation was inhibited by tightly scheduled on-site construction activities and work organisation (Taylor, 2006: 80-81).

Success has been reported with workforce self-organisation of work schedules – with benefits accruing to workers of all ages. For example, *Coop Adriatica*, a large Italian retail trade cooperative successfully

implemented the *orario a isole* ('island timetable') model, wherein groups of 20-25 employees collectively manage their own schedules. This has produced improved organisation of time, particularly for older workers who constitute 20% of the workforce. A similar program called *Organising Differently* was developed in the Dutch postal service and was found to have reduced both the incidence and duration of absenteeism due to sickness.

Most of the case studies where successful use of flexibility was identified involved strategies of work to retirement *transition* – as discussed in *Section 5.5*.

5.7.2 Summarising the critical success factors and strategies for their achievement

The chart below summarises the critical success factors identified by researchers reviewing the European Foundation age management case studies, and strategies found to assist in their achievement.

Critical success factor	Strategies for achievement
Public policy	⇒ National/State policy framework that encourages age management at the organisational level and reverses the 'early retirement mindset'
Management commitment and competence	<ul style="list-style-type: none"> ⇒ Strategic vision and clear leadership of management ⇒ Experience, competence in age and change management ⇒ Expertise in workforce planning and development ⇒ Alignment of age management with central business strategy ⇒ Adequate resourcing of age management initiative
Wider benefits	<ul style="list-style-type: none"> ⇒ Improved cooperation between management & trade unions ⇒ Development of HR functions ⇒ Improved public relations image among customers ⇒ Perception of the company as an employer of choice
Industrial relations climate	<ul style="list-style-type: none"> ⇒ Trade union and management cooperative involvement ⇒ Workforce participation in design and implementation
Implementation process	<ul style="list-style-type: none"> ⇒ Preliminary age audit to provide framework, including benchmarks to monitor impact of strategy ⇒ Identification + articulation of business case for strategy ⇒ Communication strategy for rationale, process, and impact - including individual success stories and champions ⇒ Use of evidence base to change attitudes and reframe attitudes
Flexibility and responsiveness	<ul style="list-style-type: none"> ⇒ Measures that address changing individual + organisational need ⇒ Worker design of work organisation schedules ⇒ Transitional strategies based on flexible working conditions
Devolution of responsibility	<ul style="list-style-type: none"> ⇒ HR goals integrated as key performance indicators ⇒ Line management to implement and be accountable ⇒ Use of work teams for formulation, implementation + review

Source: adapted from Taylor, 2006: 83

5.8 Lessons learned

There are cautionary messages from the review of case studies, with a number of examples of pro-ageing initiatives that have not taken into account the impact on other workers. Some have led to reduced employment opportunities for younger workers, leaving an age-imbalanced workforce, and/or negative attitudes to older workers where resources were shifted to them without any benefit in overall organisational productivity.

Although research has identified the importance of a 'life course' approach to age management, that is, one that acknowledges that health promotion, learning and training have their greatest impact if applied at all stages of life, this concept was less understood in the workplaces studied. In developing age management strategies, it is important to ensure that employers, trade unions, and workers themselves, are clear about this concept and its application in the workplace.

Associated with this concept, is that of prevention – in workforce health, and capacity for learning and training. Although reactive approaches, usually intervening at the mature age end of the lifespan, can have some impact, proactive approaches are more likely to be sustainable. As they target all age groups, they avoid the stigmatisation that is associated with a focus on older age groups.

Effective age management emerges as a mechanism for work-life-balance, albeit involving reduced hours in the workplace leaving time for other life responsibilities (particularly care-giving). However, flexibility of work conditions and a degree of worker autonomy about the organisation of work has also been found to be a critical success factor in age management, and while focused on mature age workers, has benefits for all workers.

The costs associated with age management can act as a barrier to their implementation but can also be offset (at least partially) by the benefits that they generate. Those identified by the case studies involved reduced sickness liabilities and work absence, increased retention of older workers and their positive characteristics such as loyalty and reliability, retention of 'corporate memory' and facilitation of knowledge transfer between employee cohorts, and increased motivation of mature age workers, resulting in increased productivity and work quality. In reviewing the case study findings, it would seem that designing age management from a business case perspective, and with a view to enhancing productivity, is more likely to generate these outcomes.

Age management strategies, like any workforce planning and development initiative, must be linked to business goals and strategies, and their contribution to these must be evident to all stakeholders. Australian case studies have demonstrated the importance of the business case for age balanced workforce development.

To date, however, detailed cost-benefit analyses of specific interventions have not been completed, with the only study identified by us involving the Australian Employers Convention (2001). It is important to monitor costs and benefits and to do this over time, as part of the development of a reliable evidence base. *There is scope for research in South Australia which pilots age management models in different industry sectors and evaluates them for a range of impacts, including a cost-benefit analysis. This analysis should*

include those sectors, for example, transport, where the workforce ageing and claim incidence and frequency rates are relatively high.

Another lesson emerging from the case studies is the importance of engaging all stakeholders in the age management process – older workers and the workforce as a whole, line managers and senior managers, HR managers, and trade union representatives. Without commitment and accountability for outcomes from these different participants, age management initiatives are unlikely to succeed or be sustainable. Engagement is fed by ongoing communication about the purposes and outcomes of these initiatives, and a gradual changing of ageist attitudes and workplace cultures.

The case studies have also highlighted the barrier that exists as a result of previous policy that encouraged early retirement, and that this undermines policy promoting active ageing. The strength of the ‘*early retirement mindset*’ is such that significant effort is required by governments to gain acceptance for delayed retirement, and for this to be reinforced by employer associations and trade unions. At the same time, European Foundation research has found that it is also important for delayed retirement policy to take into account individual worker need, acknowledging that some occupations are more inviting to early than to delayed retirement. The need for a unified promotion of age management policy also underscores the importance of collaboration and partnership between these key stakeholders and with researchers.

Given the role that early retirement continues to play in organisational life, it might be expected that older workers would not necessarily be quick to embrace a new vision of working life. It seems that, for many, the rhetoric of active ageing is far from being realised, although some case organisations have clearly taken major steps in this regard. In some instances, older workers appear suspicious of the notion of flexible retirement and the motives of employers. This suggests a need for policymakers and trade unions to do more to raise awareness, and for policies that offer realistic alternatives to early retirement or full-time employment (Taylor, 2006: 87-88).

6 CONCLUSION: ASSESSING THE IMPACT OF AN AGEING SOUTH AUSTRALIAN WORKFORCE

Research Questions Addressed :

- *What is the likely impact of the ageing workforce for WorkCover SA in terms of the structure of its liabilities?*
- *Do research findings assist in developing a model of risk assessment based on the trade-off between ageing-related illness or disability and the positive impact of older workers? Has this modelling been done?*

6.1 The impact of ageing on WorkCover Liabilities

Section 2 of this report discussed in some detail the issue of compensation claims and ageing. It found that the claims rate increases with worker age, suggesting that older workers are at greater risk of making a workers' compensation claim than their younger counterparts. To a large degree, *WorkCover* liabilities are based on injury rates and durations, so the key factor in addressing the ageing issue is whether as people get older, their probability of being injured increases, and the severity of their injury intensifies (therefore affecting the length of time away from the workplace).

Specifically the findings from *Section 3* of this report were that:

- o The incidence rate **increases with each age group** until 65 and over, when it declines sharply.
- o The frequency rate decreases from 15 to 29 years and then **increases with each age group from 35 years to 64 years**, then declines sharply with the 65 and over age groups.
- o The likelihood of a time-lost claim increases significantly with age, peaking at the **50 to 54 age group**.
- o Within the same occupation, older workers (particularly those aged 50-54) are more likely to have a claim than younger workers. This pattern becomes more pronounced for claims with greater than 10 days lost.

This section explores the impact of ageing on *WorkCover SA* liabilities in greater detail.

WorkCover SA's actuarial projections¹⁹ are based on the number of existing claims and the weekly payments arising from those claims. The model is based on predicting the probability of moving from one of three states to another in the next development quarter after accounting for redemptions. These three *States* are modelled in regard to where workers are on the claims spectrum, namely:

¹⁹ Based on discussions held between the AISR researchers and WorkCover actuarial staff

- ⇒ *State 0*: claim with no cost
- ⇒ *State 1*: claim with cost but no income maintenance
- ⇒ *State 2*: claim on income maintenance (ie an active claim).

The conclusion from this modelling is that caution is required when modelling for age as there are other confounding effects such as the development time on the claim, redemptions, gender etc. It is also the case that an older worker has had more opportunity to have a longer claim than a younger person, because of a longer time spent in the workforce.

It is important to identify the separate impact of age (if it is present) after accounting for other effects such as, length of time in a particular *State*, gender, length of time on income maintenance and other factors. A model is run which determines the probability of moving from one *State* to another, and this is estimated from trends in historical data. Projections are then undertaken over a 40 year horizon. Some relevant models based on logistic regression are described below:

- (i) Age is statistically significant and negative when predicting the probability of a claim discontinuing (moving from being an active income claim to one with no costs) - so as age increases the probability of the claim closing decreases (*State 2* to *State 0*) but the extent of the effect is not known.
- (ii) Going from *State 2* to *State 1* is also statistically significant and negative - so as age increases the probability of the claim moving to being one with costs but not on income maintenance decreases. However, the extent of the effect has not been quantified.
- (iii) The probability of a claim re-opening shows that age is statistically significant but positive so with increasing age there is more likelihood of the claim re-opening.

It should be noted that –

- o *WorkCover SA* actuarial modelling is based on people who are already (or have been) injured. Therefore the modelling does not explicitly model the impact of age on workers who are not injured.
- o Workers cease all *WorkCover SA* payments (ie income maintenance and medical expenses) at the age of 65. Therefore, ageing is not a factor post 65 years in terms of *WorkCover* liabilities.

The Clayton Review (Bracton Consulting Services Pty & PricewaterhouseCoopers: 2007) produced a series of recommendations which in their entirety are projected to return *WorkCover SA* to a sustainable financial position over the next decade. However, there are a number of ageing-related factors which warrant consideration but are extremely difficult to model and include:

- o an increase in the legislated retirement age (which would mean that *WorkCover SA* payments may need to be made post aged 65);
- o an increase in the workforce participation of older workers may increase *WorkCover SA* liabilities (given the increased incidence of *WorkCover SA* claims for older workers);

- o advances in medical treatment that lead to improved health outcomes for the types of injuries and illnesses that are disproportionately found among older people (and may therefore reduce the incidence of *WorkCover SA* claims for older workers);
- o workplace interventions that improve the health of all workers (and may therefore reduce the incidence of *WorkCover SA* claims for older workers).

As the workforce continues to age over the next decade and governments remain committed to increasing the workforce participation of older workers, the share of employment for workers aged 55 and over will increase, and therefore the share of *WorkCover SA* claims for this age cohort can be expected to similarly increase.

6.2 Modelling the trade-off between age-related illness and the positive impact of older workers

Based on the above analysis, should *WorkCover SA* decide to model the direct impact of ageing on its liabilities, the AISR proposes the following methodology:

1. Obtain the dollar value of the total number of claims by age groups, industry sector, and occupational group.
2. Estimate the number of employees currently covered by *WorkCover SA* (ie working for registered employers) by age group, industry sector, and occupational group.
3. This allows an estimate to be calculated of the average cost of claims per employee - by age group, industry, and occupation.
4. Extract data on the average hours worked by age group - by industry sector, and by occupational group.
5. Combined with (3), this enables current *WorkCover SA* claim costs (\$ value) to be expressed per hour worked by age group - by industry sector, and by occupational group.
6. Projections are then made of the changing age structure and industry and occupation composition over the forecast period.
7. This then enables projections to be made of *WorkCover SA* claim costs (\$ value) per hour worked by age group - by industry sector, and by occupational group.

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APPENDIX 1: NUMBER OF PEOPLE EMPLOYED AGED 55 AND OVER, 2006 CENSUS, SOUTH AUSTRALIA AND AUSTRALIA, 2 DIGIT OCCUPATION

	South Australia	Australia
Intermediate Clerical Workers	8,165	109,891
Farmers and Farm Managers	7,484	75,074
Education Professionals	6,383	70,162
Intermediate Service Workers	5,378	63,738
Business & Administration Associate Professionals	4,936	61,608
Managing Supervisors (Sales and Service)	4,763	63,846
Health Professionals	4,641	57,411
Road and Rail Transport Drivers	4,436	63,742
Specialist Managers	4,403	57,044
Elementary Sales Workers	4,365	59,256
Other Labourers and Related Workers	4,302	50,442
Business and Information Professionals	4,083	55,535
Social, Arts and Miscellaneous Professionals	3,955	49,989
Cleaners	3,682	43,772
Generalist Managers	3,588	45,080
Construction Tradespersons	2,574	33,665
Secretaries and Personal Assistants	2,200	28,169
Factory Labourers	1,981	21,196
Other Tradespersons and Related Workers	1,893	22,031
Other Advanced Clerical and Service Workers	1,824	24,269
Mechanical & Fabrication Engineering Tradespersons	1,806	24,199
Other Intermediate Production Transport Workers	1,805	24,969
Science, Building and Engineering Professionals	1,742	25,860
Intermediate Sales and Related Workers	1,711	22,804
Intermediate Plant Operators	1,626	22,109
Science, Engineering & Related Assoc Professionals	1,555	18,897
Elementary Service Workers	1,522	24,609
Electrical and Electronics Tradespersons	1,432	17,305
Elementary Clerks	1,213	14,697
&& Not stated	1,174	15,815
Inadequately described	1,174	17,646
Automotive Tradespersons	1,132	12,874
Skilled Agricultural and Horticultural Workers	1,090	12,301
Food Tradespersons	1,009	11,560
Other Associate Professionals	836	8,685
Health and Welfare Associate Professionals	809	7,999
Managers and Administrators, nfd	808	12,874
Intermediate Machine Operators	734	11,516
Tradespersons and Related Workers, nfd	188	2,172
Professionals, nfd	185	2,388
Labourers and Related Workers, nfd	182	2,679
Intermediate Production and Transport Workers, nfd	134	1,682
Associate Professionals, nfd	53	450
Intermediate Clerical, Sales and Service Workers, nfd	47	251
Elementary Clerical, Sales and Service Workers, nfd	16	214
Total Occupations	109,019	1,372,475