



**NCETA**

*Australia's National Research Centre  
on AOD Workforce Development*



**Flinders**  
UNIVERSITY

# **OLDER WORKERS: SOUTH AUSTRALIAN WORKERS' COMPENSATION CLAIMS 2004-2013**

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## About NCETA

NCETA is based at Flinders University in South Australia and is an internationally recognised research and training centre that works as a catalyst for change in the alcohol and other drug (AOD) field. NCETA's areas of expertise include training needs analyses, the provision of training and other workforce development approaches. We have developed training curricula, programs and resources, and provided training programs, to cater for the needs of: specialist AOD workers; frontline health and welfare workers; Indigenous workers; community groups; mental health workers; police officers; and employers and employee groups. The Centre focuses on supporting evidence-based change and specialises in change management processes, setting standards for the development of training curriculum content and delivery modes, building consensus models and making complex and disparate information readily accessible to workers and organisations.

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## Terminology Notes

- ReturnToWorkSA refers to activities undertaken by the Return to Work Corporation of South Australia (formerly WorkCover Corporation of South Australia).
- The term 'injury' includes all injuries and diseases

*SafeWork SA and the South Australian Government do not endorse the content of this material and the views expressed herein are not reflective of SafeWork SA or the South Australian Government.*

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## 1. EXECUTIVE SUMMARY

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South Australia (SA) has an ageing workforce. As a result, occupational health and safety issues concerning older workers are increasingly in focus.

South Australian workers' compensation data were examined to identify:

- The number and rate of workers' compensation claimants and claims submitted by workers aged 55+ years between 2004 and 2013
- The characteristics of claims made by 55+ year old workers
- Comparisons of the above with workers aged 15-54 years.

Data comprised accepted and pending claimants and claims submitted by eligible workers to ReturntoWorkSA for the period 2004-2013 inclusive. A **claimant** is defined as the person who submits a workers' compensation claim. A **claim** is a submission for compensation for medical expenses, loss of wages, or both.

Where applicable, 2006 and 2011 Australian Bureau of Statistics Census data for the South Australian working population were used for comparisons between age groups.

Key findings:

- Older workers had a lower rate of claims than younger workers. For example, in 2011, there were 31.40 claimants per 1,000 South Australian workers aged 55+ years compared with 39.66 per 1,000 South Australian workers aged 15-54 years. Consistent with the international literature, these findings suggest that older age does not seem to be a risk factor for work-related injuries/accidents leading to a workers' compensation claim.
- Workers' compensation claimants and claims overall most commonly emanated from the community, manufacturing and wholesale and retail trade industries. However, among workers employed in these industries, the claimant and claim rates for those aged 55+ years were lower than for those aged 15-54.
- The nature of injuries experienced by older workers changed between 2004 and 2013. The proportion of older worker claimants with mental diseases and musculoskeletal and connective tissue diseases rose in absolute terms during this period by 63.7% and 45.6%, respectively, while wounds, lacerations, amputations and internal organ damage, and nervous system and sense organ diseases decreased by 25.4% and 25.5%, respectively.
- Injury outcomes differed between older and younger workers. Older workers were less likely to have 1-30 days off as a result of their injuries than younger workers. However, they were slightly more likely to have 31-183 days off. Among workers who had more than 184 days off, there was no difference between age groups.
- Older workers were less likely than younger workers to be hospitalised for their injuries, but were much more likely to die from them.
- Older workers' compensation claims were likely to cost more. This may be due to older workers earning higher wages. In addition, recovery from certain injuries may take longer for older workers.

- In 2011, the death rate among workers aged 55+ years was 6.44 per 100,000 claimants, compared to 2.50 per 100,000 claimants aged 15-54 years. The work-related death rate among older claimants is concerning.

Older workers have a lower rate of compensation claims than their younger counterparts. However, the higher rate of fatalities among older workers may warrant interventions that are specifically tailored to address the risks faced by these workers.

## 2. INTRODUCTION

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South Australia has an ageing workforce and into the future a larger number of workers aged 55+ years will be engaged in the workforce than ever before (Australian Treasury, 2015). Accordingly, a greater number of older South Australians will be exposed to the risk of an occupational accident or injury.

The impact of an ageing workforce on the incidence, frequency, and severity of work-related injuries is not well understood. On the one hand, ageing produces a number of changes in older people's physiological and cognitive abilities, depending on quality of life, age, fitness level, and genetics (Nicholas and Roche, 2014; Nicholas et al., 2015; Roche et al., 2016; Safe Work Australia, 2005). Older workers may face specific health and safety concerns due to a decline in physical abilities and endurance. This includes physical capacity, visual and other perceptual problems, an increase in musculoskeletal disorders and systemic illness and disease (Guest et al., 2014). In addition, acquired disabilities become 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 (Barnett et al., 2008). On the other hand, the risk of work-related injury decreases with age (Jones et al., 2013; Salminen, 2004). Factors contributing to the lower rate of work-related injury/illness include:

- older workers having greater experience
- less exposure to hazards as a result of job selection or seniority
- the healthy worker and hiring effect<sup>1</sup>. However, the protective benefits of the 'healthy worker' phenomenon and hiring 'selection' strategies may diminish with an ageing population.
- greater commitment to work safety (Jones et al., 2013; Mitchell and Boufous, 2005).

Furthermore, the relationship between age and risk of injury differs according to the nature of injury and physicality of the occupation (Schwatka et al., 2013). For example, older workers have a higher risk of musculoskeletal injuries and fatal workplace incidents while younger workers have a higher overall injury risk (Salminen, 2004; Smith and Berecki-Gisolf, 2014). A higher rate of fatalities among workers aged 55+ years has also been widely reported (Brooke, 2003; Jones et al., 2013; Safe Work Australia, 2012). In Australia in 2014, there were 7.10 fatalities per 100,000 workers among those aged 65 years and over, compared with 1.08 among those aged 25-34 years, a six-fold difference (Safe Work Australia, 2015b). Reasons for this difference are unclear, particularly given that older workers are at lower risk of injury than younger workers (Jones et al., 2013; Salminen, 2004). One possibility is that a workplace incident that may result in a severe injury to a younger worker may prove fatal for an older worker due to greater physical vulnerability (Adams et al., 2013; Jones et al., 2013; Ozanne-Smith et al., 2012).

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<sup>1</sup> The healthy worker and healthy hiring effect proposes that only the healthiest workers remain in the workforce due to self-selection and the recruitment and retention strategies employed by workforces (Safe Work Australia, 2005; Smith and Berecki-Gisolf, 2014).

While a substantial body of research has investigated age-related workforce participation barriers and perceived age discrimination (Taylor et al., 2016), little Australian research has examined work-related injuries experienced by older workers (aged 55+ years). There is a need to understand the current extent, nature and age distribution of work-related injuries and fatalities among older workers to inform prevention activities that could counter them and reduce the associated expenditure (Jones et al., 2013).



### 3. RESEARCH QUESTIONS

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In undertaking the project, the following questions were addressed:

1. What is the number and rate of compensation claimants and claims arising from older workers (aged 55+ years) in South Australia?
2. What is the pattern of claimants and claims by older workers across industries?
3. What are the workers' compensation claim and claimant characteristics of older workers in South Australia?
4. Have older workers' compensation claim characteristics in South Australia changed over time (i.e., 2004-2013)?
5. How do the workers' compensation claim characteristics of South Australian workers aged 55+ years compare to workers aged 15-54 years?

## 4. METHOD

### 4.1 STUDY POPULATION

The study population comprised all workers who submitted a compensation claim and were aged 55+ years at the time of the injury<sup>2</sup>. Age at time of injury was calculated by determining the difference between the worker's birth date and the injury claim date. This was then recoded into a bivariate variable indicating whether the claimant was 55+ years old (yes/no).

Under the *Return to Work Act 2014*, a worker is defined as a person working within an employment relationship. All workers, as defined by the Act, have the right to submit a claim for compensation for a workplace accident or injury. Compensation covers medical expenses, loss of wages, or both (South Australian Government, 2014). This definition is consistent with previous iterations of legislation underpinning workers' compensation in South Australia.

### 4.2 DATA SOURCES

#### **Workplace Health and Safety Tabulator (Tabulator)**

The data used to examine workers' compensation claims in South Australia were drawn from the *Workplace Health and Safety Tabulator* (hereafter referred to as the Tabulator). The Tabulator comprises raw data on work-related injuries and diseases in South Australia that:

- Have been accepted as a claim by ReturntoWorkSA; or
- Are likely to become an accepted claim (i.e., pending claims)<sup>3</sup>.

The Tabulator excludes ReturntoWorkSA claims that are withdrawn or rejected; and work-related injuries and diseases incurred by self-employed workers and Comcare service workers (SafeWork SA, 2016).

#### **South Australian Working Population Data**

Australian Bureau of Statistics Census data (2006 and 2011) were used to identify the numbers and characteristics of all South Australians in the working population in the 55+ and 15-54 year age groups. This data allowed rates of injuries among older workers to be calculated. Only two years of census data (2006 and 2011) were used since the Australian Census occurs every four years and the 2002 and 2016 censuses were outside the study period. See Appendix A for census data containing details of the South Australian working population by age group and industry.

### 4.3 MEASURES

In this study, measures were grouped into four domains: claims and claimants, industry, injury characteristics, and injury outcomes.

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<sup>2</sup> This definition is consistent with the work of Barnett and colleagues (Barnett et al., 2008).

<sup>3</sup> Historically, approximately 95% of pending claims will become an accepted claim (SafeWork SA, 2016).

## Claims and Claimants

A *claimant* is defined as the person who submits the workers' compensation claim. Over the study period (2004-2013), a claimant may have more than one claim and claims may be active over more than one calendar year. Where data is presented here for the full study period, it contains only unique claimants (i.e., claimants are counted only once, regardless of how many claims they submitted). However, when data is presented for individual years within the study period all claimants within a given year are included. For example, if an individual submits one claim in 2005 and one claim in 2010, they will be counted once *in each year*. If all individual year data is tallied, it can result in a larger number of claimants than the total number of unique claimants in the study period 2004-2013.

A *claim* is a submission for compensation for medical expenses, loss of wages, or both. Over time, a worker (claimant) may submit more than one claim. Hence, there are fewer claimants than claims in the data.

## Industry

The Tabulator uses the Australian and New Zealand Standard Industrial Classification (ANZSIC) to classify industry of employment. ANZSIC is the standard classification for the collection, compilation and publication of statistics by industry (Australian Bureau of Statistics, 2006). The Divisional level ANZSIC code was applied.

## Injury Characteristics

Injury characteristics are coded in the Tabulator according to the *Type of Occurrence Classifications System, Version 3.1* (TOOCS3.1) (Australian Safety and Compensation Council, 2008b). The first digit classification was used for the following variables:

- *Body location* is the part of the body affected by the most serious injury or disease.
- *Mechanism of injury* is the action, exposure or event, which was the direct cause of the most serious injury or disease.
- *Agency of injury* is the object, substance or circumstance that was principally involved in, or most closely associated with, inflicting the injury or disease.
- *Agency of accident* is the object, substance or circumstance that was principally involved in or most closely associated with the injury or disease.

## Injury Outcomes

Four injury outcomes were examined: death, hospitalisation, days off work, and expenditure.

*Death* is recorded in the Tabulator with a flag. The flag indicates that the worker died from the injuries which resulted in the claim. Death is only recorded when the deceased had dependents for whom a payout could be provided. If a worker has no dependents, no payout is provided. Death was coded as a bivariate variable (yes/no).

*Hospitalisation* is also recorded in the Tabulator with a flag. The flag indicates that the worker was hospitalised for the injury which resulted in the claim. Hospitalisation was coded as a bivariate variable (yes/no).

*Days off work* is defined as the number of days a worker was absent from work due to the injury, rounded to the nearest day. The number of days lost is in effect a 'running total' for an individual, as some claims may take years to finalise (Australian Safety and Compensation Council, 2008a). Days off work were recoded into a categorical variable (zero, 1-5, 6-10, 11-30, 31-183, 184 or more days).

*Expenditure* is the estimated value of the potential full cost of a claim. The mean, median, standard deviation, minimum, and maximum expenditure are reported.

#### **4.4 ANALYSES**

Data was transferred into STATA, where analyses were undertaken to examine workers' compensation claimants and claims submitted by workers aged 55+ years and to compare these with workers aged 15-54 years. ABS census data from 2006 and 2011 were used as the workforce denominator. Rates for workers aged 55+ years and 15-54 years were calculated per 1,000 or 100,000 South Australian workers, as appropriate. Data used in some analyses involved a high proportion of missing data. No imputations were made for missing data. Therefore, the number of claimants and claims may vary between measures.

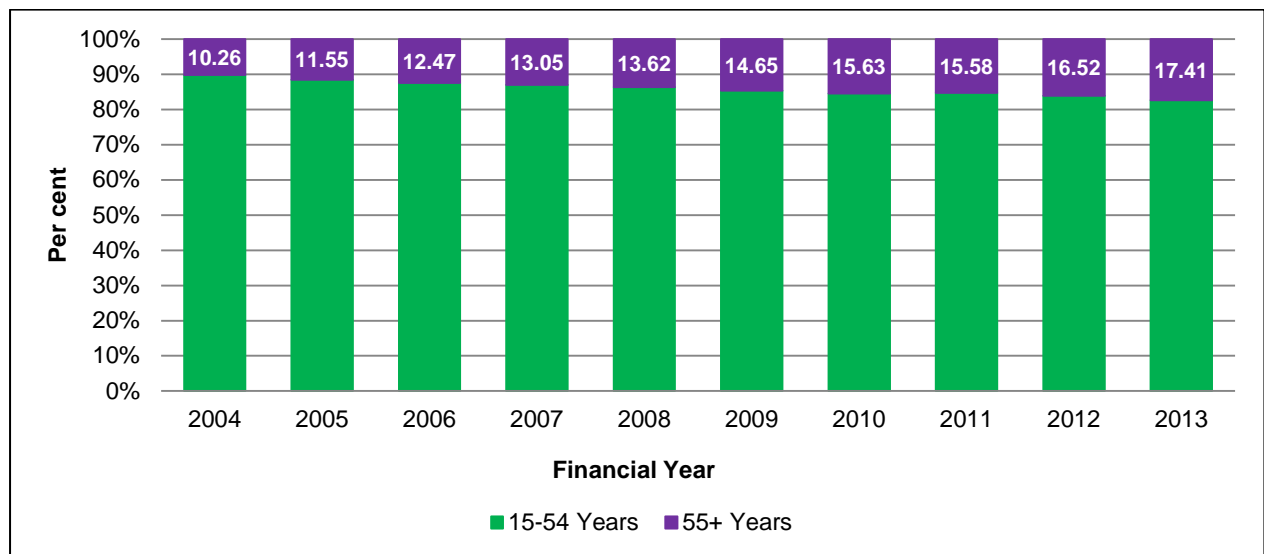
## 5. RESULTS

The results are presented in four sections. The first considers the number and rate of claims and claimants across the period 2004 and 2013 among older workers (55+ years) compared to younger workers (15-54 years). The second identifies claims (prevalence and count) by older workers (55+ years) by industry. The third examines injury characteristics among claims/claimants aged 55+ years. The final section compares injury outcomes among older workers (55+ years) and younger workers (15-54 years).

### 5.1 CLAIMANTS AND CLAIMS

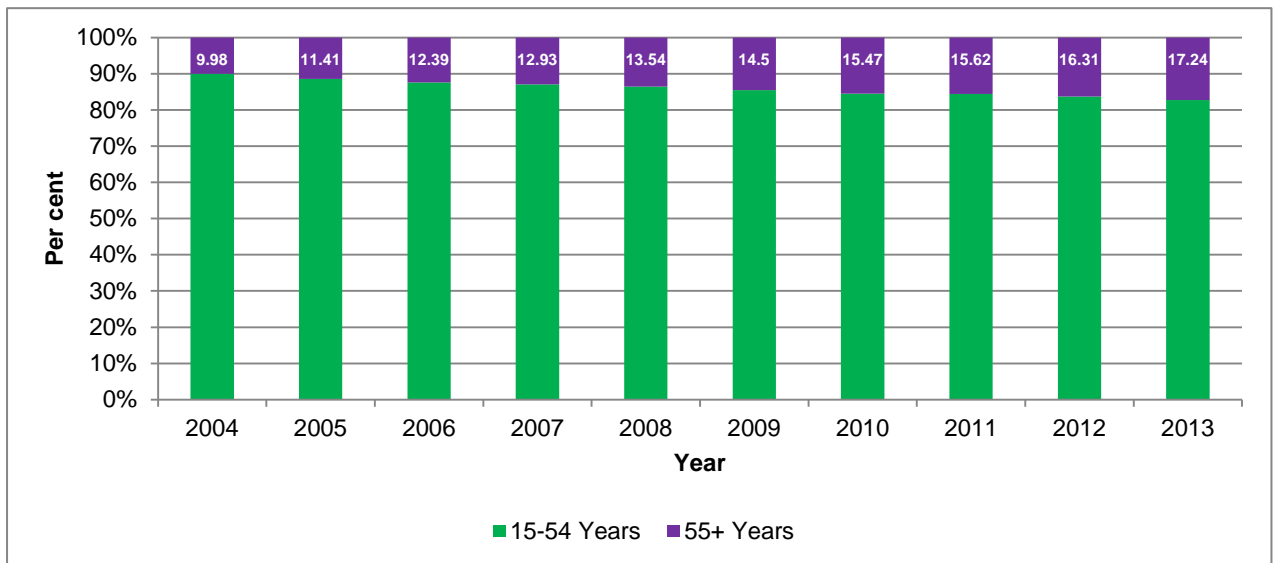
A total of 333,344 workers' compensation claims were submitted in South Australia in 2004-2013. Of these, 13.72% (n=45,746) were submitted by claimants aged 55+ years (Table not shown). When all claims in each year (2004–2013) were tallied, the cumulative number of claimants was 294,061, of which there were 196,623 unique individual claimants. Of the 196,623 unique claimants, 27,728 (14%) were aged 55+ years.

The proportion of both claimants and claims from workers aged 55+ years increased over time. The proportion of claimants aged 55+ years increased from 10.3% in 2004 to 17.4% in 2013, an increase of 69% in absolute terms (Figure 1).



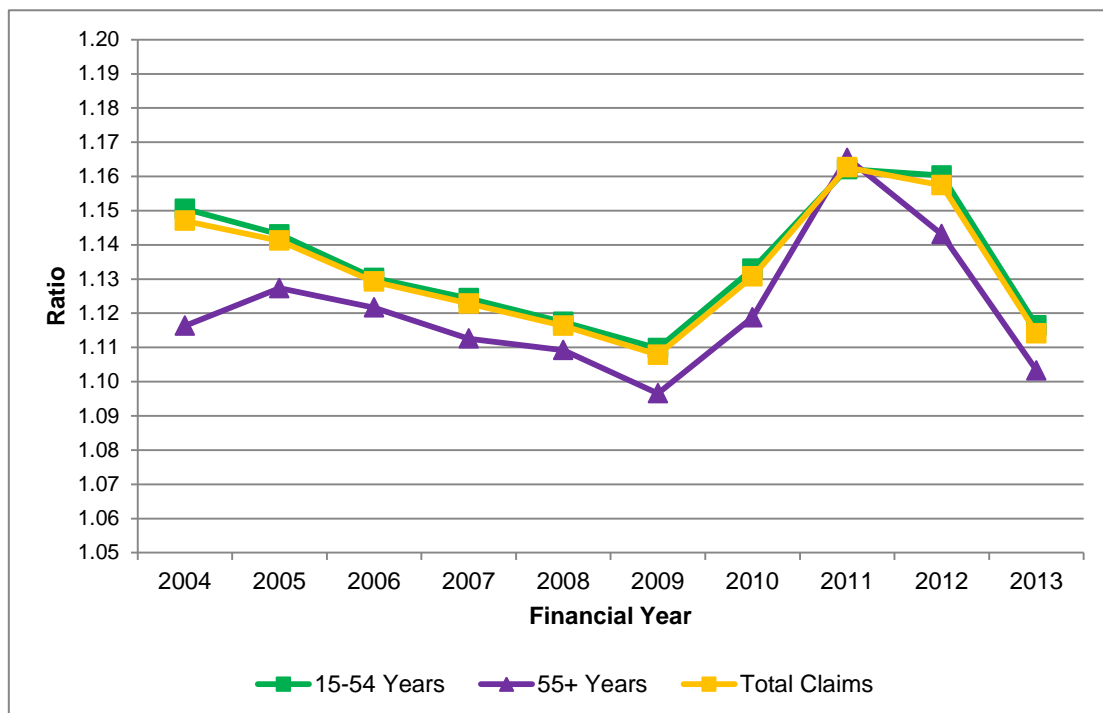
**Figure 1 Workers' compensation claimants aged 55+ years as a proportion of all claimants, 2004-2013**

Similarly, in 2004 the proportion of all claims made by persons aged 55+ years was 9.98%. By 2013, this had risen to 17.2% of all claims, an increase of 72% in absolute terms (Figure 2).



**Figure 2 Workers' compensation claims from workers aged 55+ years as a proportion of all claims, 2004-2013**

For the period 2004 to 2013, workers aged 55+ years submitted fewer claims than workers aged 15-54 years. Apart from 2011, the ratio of claims to claimants was generally lower for workers aged 55+ years than for workers aged 15-54 years (Figure 3).



**Figure 3 Ratio of workers' compensation claims to claimants, 55+ year and 15-54 year olds, 2004-2013**

## Claimants and claims per 1,000 South Australian Workers Aged 55+ and 15-54 Years

The rate of claimants and claims per 1,000 South Australian workers was examined using 2006 and 2011 Census data. At both time points (i.e., 2006 and 2011), the rate of claimants and claims was lower for those aged 55+ years than for those aged 15-54 years.

In 2011 there were 31.4 claimants per 1,000 workers aged 55+ years, compared to 39.7 claimants per 1,000 workers aged 15-54 years. Similarly, there were 36.6 claims per 1,000 workers aged 55+ years, compared to 46.1 claims per 1,000 workers aged 15-54 years (Table 1).

**Table 1 Rate of compensation claimants and claims per 1,000 South Australian workers, by age group, 2006 and 2011**

Census Year	Age Group	SA Working Population N <sup>1</sup>	Individual Claimants Per Year		Claims	
			n <sup>2</sup>	per 1,000	n <sup>2</sup>	per 1,000
2006	15-54	580,878	27,981	48.17	31,627	54.45
	55+	109,020	3,986	36.56	4,471	41.01
	<b>Total</b>	<b>689,898</b>	<b>31,967</b>	<b>46.34</b>	<b>36,098</b>	<b>52.32</b>
2011	15-54	599,598	23,778	39.66	27,633	46.09
	55+	139,761	4,389	31.40	5,115	36.60
	<b>Total</b>	<b>739,359</b>	<b>28,167</b>	<b>38.10</b>	<b>32,748</b>	<b>44.29</b>

<sup>1</sup> 2006 and 2011 Census Community Profiles – Working Population (2006: B42 Industry of employment by age by sex; 2011: Table B43 Industry of employment by age by sex); <sup>2</sup> 2006 and 2011 claimant and claims, ReturnToWorkSA Tabulator data

## 5.2 CLAIMANTS AND CLAIMS BY INDUSTRY

Claims were most commonly made by workers of all ages employed in the community services, manufacturing, or wholesale and retail trade industries in 2004-2013. These were also the industries in which claimants aged 55+ years were most commonly employed at the time of injury.

Compared to workers aged 15-54 years, more claimants aged 55+ years were employed in community services (34.4 % vs 28.5%) and fewer were employed in manufacturing (19% vs 21.2%) or wholesale and retail trade (12% vs 17.3%) (Table 2).

**Table 2 Number and percentage of workers' compensation claimants, by age group and industry of employment, 2004-2013**

Industry	Claimant Age Group				Total	
	15-54 years		55+ years		N	%
	n	%	n	%		
Community Services	48,125	28.49	9,525	34.35	57,650	29.32
Manufacturing	35,782	21.19	5,256	18.96	41,038	20.87
Wholesale & Retail Trade	29,277	17.33	3,314	11.95	32,591	16.58
<i>Subtotal</i>	<i>113,184</i>	<i>67.01</i>	<i>18,095</i>	<i>65.26</i>	<i>131,279</i>	<i>66.77</i>
Other Industries	55,711	32.99	9,633	34.74	65,344	33.23
<b>Total</b>	<b>168,895</b>	<b>100.00</b>	<b>27,728</b>	<b>100.00</b>	<b>196,623</b>	<b>100.00</b>

**Industry Claimants and Claims per 1,000 South Australian Workers Aged 55+ and 15-54 Years**

The number of claimants and claims in each of the three industries: community services, manufacturing and wholesale and retail trade, were calculated for the South Australian working population in the years 2006 and 2011. Rates were calculated per 1,000 South Australian workers aged 55+ years and 15-54 years. In both 2006 and 2011, the rate of claimants and claims in community services, manufacturing, and wholesale and retail trade was lower for workers aged 55+ years than for workers aged 15-54 years (Table 3).



**Table 3 Rate of compensation claimants and claims per 1,000 South Australian workers by age group and industry, 2006 and 2011**

Census Year	Age Group	Industry	SA Working Population N <sup>1</sup>	Individual Claimants Per Year		Claims	
				n <sup>2</sup>	Per 1,000	n <sup>2</sup>	Per 1,000
2006	15-54	Community Services	112,989	7,722	68.34	8,483	75.08
		Manufacturing	76,579	7,716	100.76	9,034	117.97
		Wholesale & Retail Trade	94,214	4,429	47.01	4,953	52.57
		<i>Subtotal</i>	<i>283,782</i>	<i>19,867</i>	<i>70.01</i>	<i>22,470</i>	<i>79.18</i>
		Other Industries	297,096	8,114	27.31	9,157	30.82
		<b>Total</b>	<b>580,878</b>	<b>27,981</b>	<b>48.17</b>	<b>31,627</b>	<b>54.45</b>
	55+	Community Services	25,604	1,262	49.29	1,375	53.70
		Manufacturing	11,910	978	82.12	1,122	94.21
		Wholesale & Retail Trade	12,976	437	33.68	499	38.46
		<i>Subtotal</i>	<i>50,490</i>	<i>2,677</i>	<i>53.02</i>	<i>2,996</i>	<i>59.34</i>
		Other Industries	58,530	1,309	22.36	1,475	25.20
		<b>Total</b>	<b>109,020</b>	<b>3,986</b>	<b>36.56</b>	<b>4,471</b>	<b>41.01</b>
2011	15-54	Community Services	122,384	6,520	53.27	7,245	59.20
		Manufacturing	64,992	4,172	64.19	4,986	76.72
		Wholesale & Retail Trade	93,084	3,822	41.06	4,283	46.01
		<i>Subtotal</i>	<i>280,460</i>	<i>14,514</i>	<i>51.75</i>	<i>16,514</i>	<i>58.88</i>
		Other Industries	319,138	9,264	29.03	11,119	34.84
		<b>Total</b>	<b>599,598</b>	<b>23,778</b>	<b>39.66</b>	<b>27,633</b>	<b>46.09</b>
	55+	Community Services	36,855	1,506	40.86	1,656	44.93
		Manufacturing	12,899	720	55.82	856	66.36
		Wholesale & Retail Trade	15,844	501	31.62	577	36.42
		<i>Subtotal</i>	<i>65,598</i>	<i>2,727</i>	<i>41.57</i>	<i>3,089</i>	<i>47.09</i>
		Other Industries	74,163	1,662	22.41	2,026	27.32
		<b>Total</b>	<b>139,761</b>	<b>4,389</b>	<b>31.40</b>	<b>5,115</b>	<b>36.60</b>

<sup>1</sup> 2006 and 2011 Census Community Profiles – Working Population (2006: B42 Industry of employment by age and sex; 2011: Table B43 Industry of employment by age by sex); <sup>2</sup> 2006 and 2011 claimant and claims ReturnToWorkSA Tabulator data

### 5.3 INJURY CHARACTERISTICS

The injury characteristics of claimants aged 55+ years were examined. Injury characteristics of interest were: body location, mechanism of injury, agency of injury, and agency of accident.

#### 5.3.1 Body Location

The most common injury body locations for older worker claimants and claims were upper limbs (30.93% and 31.30%, respectively); trunk (19.25% and 20.16%, respectively); and lower limbs (18.40% and 18.58%, respectively) (Table 4).

**Table 4 Body location of injury cited by compensation claimants and claims involving workers aged 55+ years, 2004-2013**

Body Location	Claimants 2004-2013		Claims 2004-2013	
	n	%	n	%
Head	3,923	14.94	6,017	14.01
Neck	634	2.41	1,075	2.50
Trunk	5,056	19.25	8,659	20.16
Upper limbs	8,123	30.93	13,446	31.30
Lower limbs	4,834	18.40	7,982	18.58
Multiple locations	1,687	6.42	2,774	6.46
Systemic locations	286	1.09	470	1.09
Non-physical locations	1,674	6.37	2,475	5.76
Unspecified locations	48	0.18	62	0.14
<b>Total</b>	<b>26,265</b>	<b>100.00</b>	<b>42,960</b>	<b>100.00</b>

These three injury body locations (upper limbs, trunk, and lower limbs) were consistently the most commonly reported. However, between the year 2004 and the year 2013, there were proportional increases in the percentage of older claimants and claims citing non-physical (63.7% and 65.74%, respectively) and systemic body locations (46.05% and 60.56%, respectively) (Table 5).

**Table 5 Changes over time in the body location of injury cited by compensation claimants and claims involving workers aged 55+ years, 2004 and 2013**

Body Location	Individual Claimants Per Year					Claims				
	2004		2013		Proportion Change %	2004		2013		Proportion Change %
	n	%	n	%		n	%	n	%	
Head	490	13.83	421	10.90	- 21.19	574	14.51	450	10.70	-26.26
Neck	105	2.96	84	2.18	- 26.35	116	2.93	97	2.31	-21.16
Trunk	795	22.43	779	20.17	-10.08	868	21.94	850	20.21	-7.89
Upper limbs	1,101	31.07	1193	30.89	-0.58	1,228	31.04	1,313	31.22	+0.58
Lower limbs	640	18.06	767	19.86	+9.97	709	17.92	836	19.88	+10.94
Multiple locations	221	6.24	290	7.51	+20.35	255	6.45	309	7.35	+13.95
Systemic locations	27	0.76	43	1.11	+46.05	28	0.71	48	1.14	+60.56
Non-physical locations	159	4.49	284	7.35	+63.70	171	4.32	301	7.16	+65.74
Unspecified locations	6	0.17	1	0.03	-82.35	7	0.18	2	0.05	-72.22
<b>Total</b>	<b>3,544</b>	<b>100.00</b>	<b>3,862</b>	<b>100.00</b>	<b>NA</b>	<b>3,956</b>	<b>100.00</b>	<b>4,206</b>	<b>100.00</b>	<b>NA</b>

NA: Not Applicable

### 5.3.2 Nature of Injury

The nature of injury most commonly cited by older claimants and claims was traumatic joint/ligament and muscle/tendon injury (37.11% and 39.06%, respectively), followed by wounds, lacerations, amputations, and internal organ damage (16.24% and 15.78%, respectively) (Table 6).

**Table 6 Nature of injury cited by compensation claimants and claims involving workers aged 55+ years, 2004-2013**

Nature of Injury	Claimants 2004-2013		Claims 2004-2013	
	n	%	n	%
Intracranial injuries	162	0.62	252	0.59
Fractures	1,746	6.65	2,459	5.73
Wounds, lacerations, amputations and internal organ damage	4,261	16.24	6,774	15.78
Burns	314	1.20	502	1.17
Injury of nerves and spinal cord	25	0.10	44	0.10
Traumatic joint/ligament and muscle/tendon injury	9,737	37.11	16,761	39.06
Other injuries	913	3.48	1,694	3.95
Musculoskeletal and connective tissue diseases	3,534	13.47	6,058	14.12
Mental diseases	1,675	6.38	2,474	5.76
Digestive system diseases	431	1.64	697	1.62
Skin and subcutaneous tissue diseases	317	1.21	583	1.36
Nervous system and sense organ diseases	2,692	10.26	3,993	9.30
Respiratory system diseases	102	0.39	154	0.36
Circulatory system diseases	162	0.62	209	0.49
Infectious and parasitic diseases	59	0.22	97	0.23
Neoplasms (cancer)	28	0.11	46	0.11
Other diseases	24	0.09	45	0.10
Other claims	54	0.21	74	0.17
<b>Total</b>	<b>26,236</b>	<b>100.00</b>	<b>42,916</b>	<b>100.00</b>

Traumatic joint/ligament and muscle/tendon injury remained the most frequent nature of injury throughout the study period. In contrast, between the year 2004 and the year 2013 there were large proportional increases in the percentage of older worker claimants and claims citing mental diseases (63.70% and 65.51%, respectively) and musculoskeletal and connective tissue diseases (45.60% and 45.96%, respectively). However, despite the proportional increase seen over time, the number of claimants and claims citing mental diseases remained relatively small (Table 7).

**Table 7 Changes over time in the nature of injury cited by compensation claimants and claims involving workers aged 55+ years, 2004 and 2013**

Nature of Injury	Individual Claimants Per Year					Claims				
	2004		2013		Proportion Change %	2004		2013		Proportion Change %
	n	%	n	%		n	%	n	%	
Traumatic joint/ligament and muscle/tendon injury	1,453	41.01	1,480	38.42	-6.32	1,603	40.53	1,631	38.87	-4.10
Wounds, lacerations, amputations and internal organ damage	636	17.95	516	13.40	-25.35	715	18.08	553	13.18	-27.10
Musculoskeletal and connective tissue diseases	439	12.39	695	18.04	+45.60	499	12.62	773	18.42	+45.96
Mental diseases	159	4.49	283	7.35	+63.70	171	4.32	300	7.15	+65.51
Fractures	180	5.08	267	6.93	+36.42	193	4.88	278	6.63	+35.86
Nervous system and sense organ diseases	327	9.23	265	6.88	-25.46	381	9.63	282	6.72	-30.22
Other	349	9.85	346	8.98	-8.83	393	9.94	379	9.03	-9.15
<b>Total</b>	<b>3,543</b>	<b>100.00</b>	<b>3,852</b>	<b>100.00</b>	<b>NA</b>	<b>3,955</b>	<b>100.00</b>	<b>4,196</b>	<b>100.00</b>	<b>NA</b>

NA: Not Applicable

### 5.3.3 Mechanism of Injury

The most common mechanisms of injury cited by older claimants and claims in 2004-2013 were body stressing (32.91% and 35.52%, respectively); falls, trips and slips of a person (23.16% and 21.57%, respectively); and being hit by moving objects (12.94% and 13.26%, respectively) (Table 8).

**Table 8 Mechanism of injury cited by compensation claimants and claims involving workers aged 55+ years, 2004-2013**

Mechanism of Injury	Unique Claimants		Claims	
	n	%	n	%
Falls, trips & slips of a person	6,087	23.16	9,268	21.57
Hitting objects with a part of the body	2,017	7.68	3,439	8.00
Being hit by moving objects	3,399	12.94	5,698	13.26
Sounds and pressure	2,276	8.66	3,224	7.50
Body stressing	8,649	32.91	15,263	35.52
Heat, electricity & other environmental factors	379	1.44	655	1.52
Chemical and other substances	486	1.85	816	1.90
Biological factors	107	0.41	166	0.39
Mental stress	1,656	6.30	2,445	5.69
Vehicle incidents and other	1,221	4.65	2,002	4.66
<b>Total</b>	<b>26,277</b>	<b>100.00</b>	<b>42,976</b>	<b>100.00</b>

The most common mechanisms of injury cited in claims remained consistent between the year 2004 and the year 2013. The proportion of older claimants citing body stressing also remained largely unchanged as the most common mechanism of injury over the study period. However, different patterns were observed over time among older claimants for falls/trips/slips (an increase of 12.32%) and being hit by moving objects (a decrease of 24.36%) (Table 9).

**Table 9 Changes over time in the mechanism of injury cited by compensation claimants and claims involving workers aged 55+ years, 2004 and 2013**

Mechanism of Injury	Individual Claimants Per Year					Claims				
	2004		2013		Proportion Change %	2004		2013		Proportion Change %
	N	%	N	%		N	%	N	%	
Falls, trips and slips of a person	722	20.37	884	22.88	+12.32	784	19.82	952	22.63	+14.18
Hitting objects with a part of the body	307	8.66	253	6.55	-24.36	349	8.82	272	6.47	-26.64
Being hit by moving objects	453	12.78	464	12.01	-6.03	528	13.35	513	12.19	-8.69
Sounds and pressure	259	7.31	217	5.62	-23.12	303	7.66	228	5.42	-29.24
Body stressing	1,364	38.49	1,416	36.65	-4.78	1,510	38.17	1,558	37.03	-2.99
Heat, electricity and other environmental factors	43	1.21	62	1.60	+32.23	50	1.26	64	1.52	+20.63
Chemical and other substances	66	1.86	69	1.79	-3.76	75	1.90	74	1.76	-7.37
Biological factors	10	0.28	19	0.49	+75.00	12	0.30	20	0.48	+60.00
Mental stress	157	4.43	279	7.22	+62.98	169	4.27	295	7.01	+64.17
Vehicle incidents and other	163	4.60	201	5.20	+13.04	176	4.45	231	5.49	+23.37
<b>Total</b>	<b>3,544</b>	<b>100.00</b>	<b>3,864</b>	<b>100.00</b>	<b>NA</b>	<b>3,956</b>	<b>100.00</b>	<b>4,207</b>	<b>100.00</b>	<b>NA</b>

NA: Not Applicable

### 5.3.4 Agency of Injury

The most common agencies of injury cited by older claimants and claims (excluding “other and unspecified agencies”) were environmental agencies (29.57% and 27.18%, respectively), non-powered hand-tools, appliances and equipment (16.10% and 16.48%, respectively), and materials and substances (12.50% and 13.72%, respectively) (Table 10).

**Table 10 Agency of injury cited by compensation claimants and claims involving workers aged 55+ years, 2004-2013**

Agency of Injury	Claimants		Claims	
	n	%	n	%
Machinery and (mainly) fixed plant	1,145	4.36	1,934	4.50
Mobile plant and transport	1,986	7.56	3,295	7.67
Powered equipment, tools and appliances	1,130	4.30	1,817	4.23
Non-powered hand-tools, appliances and equipment	4,228	16.10	7,078	16.48
Chemicals and chemical products	385	1.47	674	1.57
Materials and substances	3,282	12.50	5,894	13.72
Environmental agencies	7,765	29.57	11,673	27.18
Animal, human and biological agencies	1,915	7.29	3,174	7.39
Other and unspecified agencies	4,424	16.85	7,412	17.26
<b>Total</b>	<b>26,260</b>	<b>100.00</b>	<b>42,951</b>	<b>100.00</b>

The most common agencies of injury (environmental agencies and non-powered hand-tools; appliances and equipment; materials and substances) remained relatively constant among older claimants across the study period (2004-2013) (Figure 4).



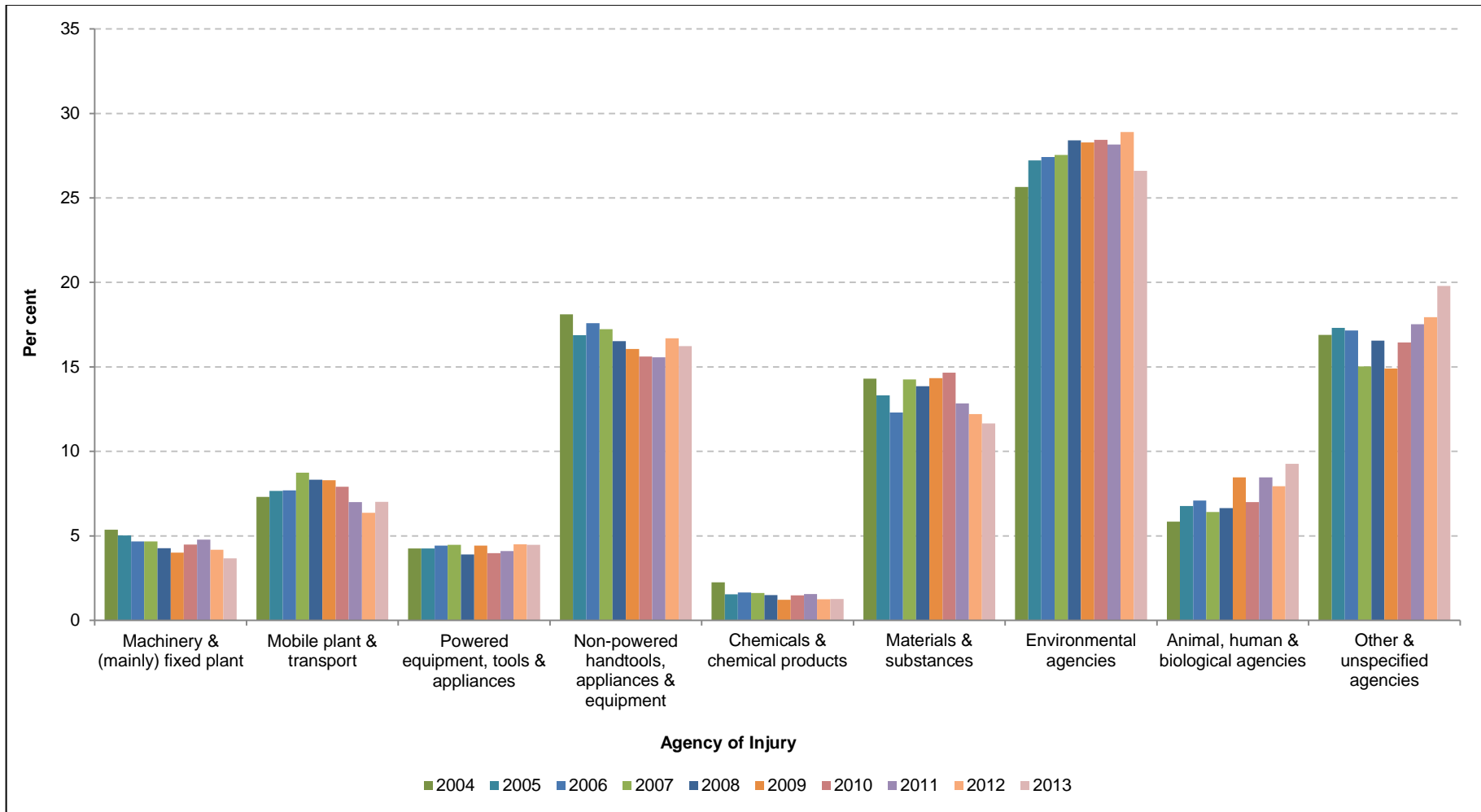


Figure 4 Agency of injury among 55+ year old workers' compensation claimants, 2004-2013

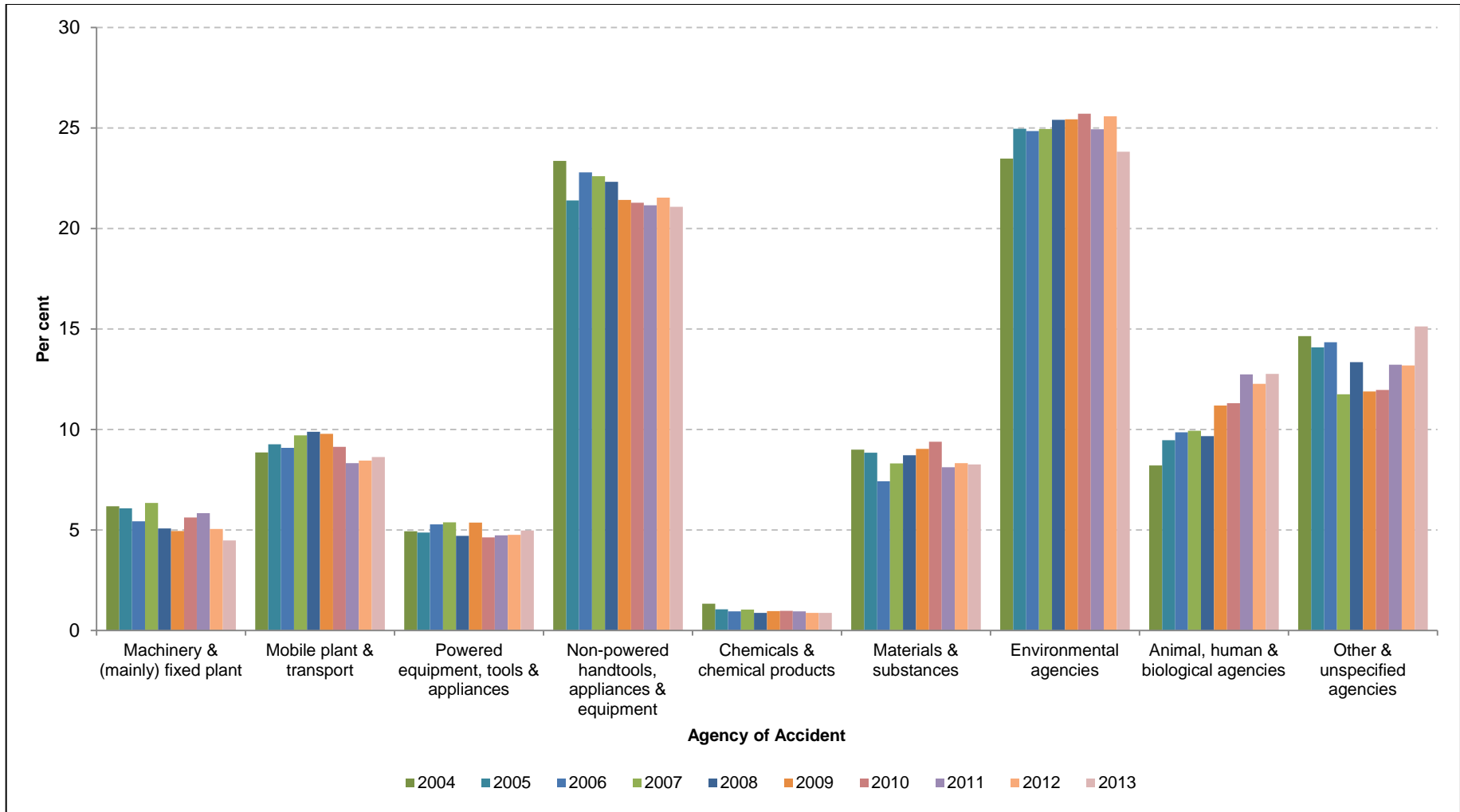
### 5.3.5 Agency of Accident

The most common agencies of accident reported by older claimants and claims were environmental agencies (26.68% and 24.55%, respectively) and non-powered hand-tools, appliances and equipment (21.39% and 21.62%, respectively) (Table 11).

**Table 11 Agency of accident cited by compensation claimants and claims involving workers aged 55+ years, 2004-2013**

Agency of Accident	Claimants		Claims	
	n	%	n	%
Machinery and (mainly) fixed plant	1,366	5.20	2,390	5.56
Mobile plant and transport	2,379	9.06	3,913	9.11
Powered equipment, tools and appliances	1,283	4.89	2,135	4.97
Non-powered hand-tools, appliances and equipment	5,617	21.39	9,289	21.62
Chemicals and chemical products	249	0.95	441	1.03
Materials and substances	2,071	7.89	3,782	8.80
Environmental agencies	7,006	26.68	10,546	24.55
Animal, human and biological agencies	2,807	10.69	4,622	10.76
Other and unspecified agencies	3,486	13.27	5,837	13.59
<b>Total</b>	<b>26,264</b>	<b>100.00</b>	<b>42,955</b>	<b>100.00</b>

The most commonly cited agencies of accident (environmental agencies and non-powered hand-tools, appliances and equipment) have remained relatively constant or decreased slightly across time. By contrast, animal, human and biological agencies have increased slightly since 2004 (Figure 5).



**Figure 5 Agency of accident for 55+ year old claimants, 2004-2013**

## 5.4 INJURY OUTCOMES

The following injury outcomes were examined: death, hospitalisation, days off work, and expenditure.

### 5.4.1 Death

There were 195 work-related deaths in South Australia in the period 2004-2013. Of the 195 work-related deaths, 69 occurred among workers aged 55+ years and 126 occurred among workers aged 15-54 years (Table not shown).

#### ***Deaths per 100,000 South Australian Claimants and Claims by Workers Aged 55+ Years and 15-54 Years***

Death rates for claimants and claims per 100,000 South Australian workers aged 55+ years and 15-54 years were examined. In both 2006 and 2011, the death rate per 100,000 SA workers was higher among those aged 55+ years than among those aged 15-54 years. For example, in 2011 the death rate among South Australian workers aged 55+ years was 5.01 claimants per 100,000, compared to 2.50 claimants per 100,000 workers aged 15-54 years (Table 12).

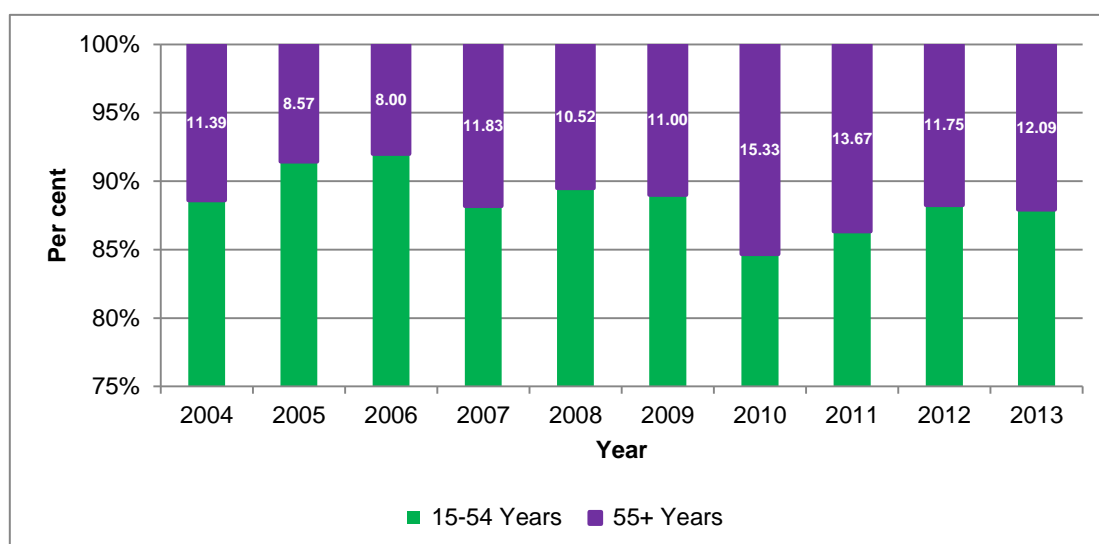
**Table 12 Death rate of compensation claimants and claims per 1,000 South Australian workers by age group and industry, 2006 and 2011**

Census Year	Age Group	SA Working Population N <sup>1</sup>	Deceased Claimants		Claims Made on Behalf of Deceased Claimants	
			n <sup>2</sup>	Per 100,000	n <sup>2</sup>	Per 100,000
2006	15-54	580,878	18	3.10	19	3.27
	55+	109,020	10	9.17	11	10.09
	<b>Total</b>	<b>689,898</b>	<b>28</b>	<b>4.06</b>	<b>30</b>	<b>4.35</b>
2011	15-54	599,598	15	2.50	15	2.50
	55+	139,761	7	5.01	9	6.44
	<b>Total</b>	<b>739,359</b>	<b>22</b>	<b>2.98</b>	<b>24</b>	<b>3.25</b>

<sup>1</sup> 2006 and 2011 Census Community Profiles – Working Population (2006: B42 Industry of employment by age by sex; 2011: Table B43 Industry of employment by age by sex); <sup>2</sup> 2006 and 2011 claimant and claims ReturnToWorkSA Tabulator data

## 5.4.2 Hospitalisation

In the period 2004-2013, 1.43% of all claimants (N=2,805) were hospitalised as a result of their injury/accident. Of these hospitalised claimants, 11.87% were aged 55+ years (n=333). The proportion of hospitalised claimants aged 55+ years varied across time, but was consistently lower than the proportion of hospitalised claimants aged 15-54 years (Figure 6).



**Figure 6 Proportion of 55+ year old claimants who were hospitalised as a consequence of their accident/injury, 2003-2014**

### *Hospitalisation per 100,000 South Australian workers aged 55+ years and 15-54 years*

The work-related hospitalisation rate per 100,000 South Australian workers was lower for workers aged 55+ years than for those aged 15-54 years in both 2006 and 2011. For example, in 2011 the hospitalisation rate among South Australian workers aged 55+ years was 45.08 claimants per 100,000, compared to 66.38 claimants per 100,000 workers aged 15-54 years (Table 13).

**Table 13 Hospitalisation rate of compensation claimants and claims per 100,000 South Australian workers by age group and industry, 2006 and 2011**

Census Year	Age Group	SA Working Population N <sup>1</sup>	Claimants		Claims	
			n <sup>2</sup>	Per 100,000	n <sup>2</sup>	Per 100,000
2006	15-54	580,878	253	43.55	268	46.14
	55+	109,020	22	20.18	27	24.77
	<b>Total</b>	<b>689,898</b>	<b>275</b>	<b>39.86</b>	<b>295</b>	<b>42.76</b>
2011	15-54	599,598	398	66.38	422	70.38
	55+	139,761	63	45.08	68	48.65
	<b>Total</b>	<b>739,359</b>	<b>461</b>	<b>62.35</b>	<b>490</b>	<b>66.27</b>

<sup>1</sup> 2006 and 2011 Census Community Profiles – Working Population (2006: B42 Industry of employment by age by sex; 2011: Table B43 Industry of employment by age by sex); <sup>2</sup> 2006 and 2011 claimant and claims ReturnToWorkSA Tabulator data

### 5.4.3 Days off Work

Claimants aged 55+ years were slightly more likely to have zero days off of work as a result of their injuries than those aged 15-54 years, and less likely to have 11-30 days off work. However, older workers were slightly more likely to have 31-183 days off work. Among those workers who had 184 days or more off work, there was no difference between the age groups (Figure 7). The count and proportion of number of days off work by age is shown in Table 14.

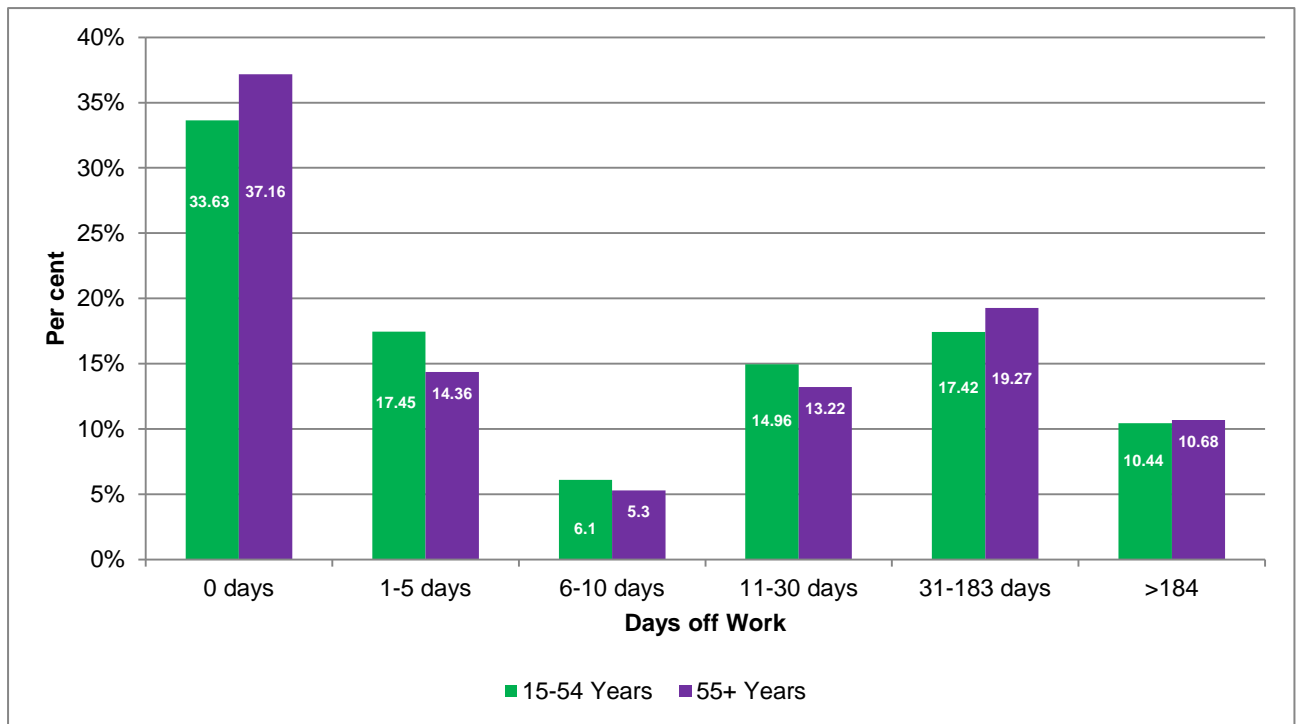


Figure 7 Days off work by workers' compensation claimant age groups, 2004-2013

**Table 14: Days off work cited by workers' compensation claimants and claims, by age group, 2004-2013**

Days Off Work	Claimants						All Claims					
	N			%			n			%		
	15-54 Years	55+ Years	Total	15-54 Years	55+ Years	Total	15-54 years	55+ Years	Total	15-54 Years	55+ Years	Total
0 days	28,125	5,927	34,052	33.63	37.16	34.2	47,927	9,525	57,452	34.09	36.65	34.49
1-5 days	14,591	2,291	16,882	17.45	14.36	16.95	25,740	3,976	29,716	18.31	15.3	17.84
6-10 days	5,104	846	5,950	6.10	5.30	5.98	8,807	1,440	10,247	6.26	5.54	6.15
11-30 days	12,511	2,108	14,619	14.96	13.22	14.68	21,026	3,586	24,612	14.95	13.8	14.77
31-183 days	14,564	3,074	17,638	17.42	19.28	17.71	23,651	4,873	28,524	16.82	18.75	17.12
184-365 days	2,857	633	3,490	3.42	3.97	3.5	4,580	999	5,579	3.26	3.84	3.35
366+ days	5,874	1,070	6,944	7.02	6.71	6.97	8,874	1,591	10,465	6.31	6.12	6.28
<b>Total</b>	<b>83,626</b>	<b>15,949</b>	<b>99,575</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>	<b>140,605</b>	<b>25,990</b>	<b>166,595</b>	<b>100.00</b>	<b>100.00</b>	<b>100.00</b>

### Days off Work per 1,000 South Australian Workers aged 55+ Years and 15-54 Years

Fewer claimants aged 55+ years had at least one day off work as a consequence of their injury than claimants aged 15-54 years in both 2006 and 2011.

In 2011, there were 12.46 claimants per 1,000 South Australian workers aged 55+ years who had at least one day off work, compared to 13.59 claimants per 1,000 workers aged 15-54 years. In the same year, 14.00 claims per 1,000 workers aged 55+ years resulted in at least one day off work, compared to 15.27 claims per 1,000 workers aged 15-54 years (Table 15).

**Table 15 Days off work<sup>1</sup> rates for South Australian claimants and claims, by age group, 2006 and 2011**

ABS Census Year	Age Group	SA Working Population N	Claimants		Claims	
			n <sup>4</sup> At least one day off work	per 1,000 Workers	n <sup>4</sup> At least one day off work	per 1,000 Workers
2006 <sup>2</sup>	15-54	580,878	8,765	15.09	9,789	16.85
	55+	109,020	1,321	12.12	1,483	13.60
	<b>Total</b>	<b>689,898</b>	<b>10,086</b>	<b>14.62</b>	<b>11,272</b>	<b>16.34</b>
2011 <sup>3</sup>	15-54	599,598	8,151	13.59	9,153	15.27
	55+	139,761	1,742	12.46	1,956	14.00
	<b>Total</b>	<b>739,359</b>	<b>9,893</b>	<b>13.38</b>	<b>11,109</b>	<b>15.03</b>

<sup>1</sup> Only one or more days off work has been included; <sup>2</sup> Australian Bureau of Statistics (2007) South Australia (Statistical District) 2006 Census Community Profile Series, Basic Community Profile: Table B42 Industry of Employment by Age by Sex (3 of 3), Catalogue Number 2001.0; <sup>3</sup> Australian Bureau of Statistics (2012) South Australia (Statistical District) 2011 Census of Population and Housing, Basic Community Profile: Table B43 Industry of Employment by Age by Sex (3 of 3), Catalogue Number 2001.0; <sup>4</sup> 2006 and 2011 claimant and claims ReturnToWorkSA Tabulator data

#### 5.4.4 Expenditure

The mean cost of claims per claimant was higher for those aged 55+ years (\$17,819.10; SD: \$49,037.15) than for those aged 15-54 years (\$15,018.71; SD: \$54,197.39) in the period 2004-2013. Given the wide standard deviation (SD), the median expenditure for claims is also reported. The median claim for 55+ year old workers was for \$1,577.08, whilst for workers aged 15-54 years it was \$766.25 (Table 16).

**Table 16 Cost of workers' compensation injury claims, by age group, 2004-2013**

Expenditure Characteristics	Workers 15-54 years \$	Older workers 55+ years \$
Mean	15,018.71	17,819.10
Standard Deviation	54,197.39	49,037.15
Median	766.25	1,577.08
Minimum	0.01	0.01
Maximum	5,318,894	1,578,519.10



## 6. DISCUSSION

This Report presents findings from an examination of older workers' compensation claims and characteristics in South Australia during the period 2004-2013, compared to workers aged 15-54 years. The main findings are discussed below.

### 6.1 RATE AND PROPORTION OF CLAIMS/CLAIMANTS AGED 55+ YEARS

While the overall number of worker's compensation claims has decreased since 2004, the *proportion* of workers' compensation claims by claimants aged 55+ years has increased. This likely reflects the ageing workforce and the fact that the proportion of employed South Australians aged 55+ years is increasing (Barnett et al., 2008), while the proportion of younger workers has decreased (Hugo, 2014).

However, across the study period, workers aged 55+ years submitted a lower *rate* of claims than workers aged 15-54 years. This is consistent with research demonstrating that younger workers are at higher risk of work-related injuries/accidents than older workers (Breslin et al., 2007; Loeppeke et al., 2013; Safe Work Australia, 2015a). It is also consistent with the international literature which has found little direct evidence of increased work-related accidents and injuries associated with older workers (Farrow and Reynolds, 2012).

A possible reason for a lower injury rate among older workers may be that older workers self-select out of occupations with strenuous working conditions and move into occupations with fewer hazards (Jones et al., 2013). Warr (2007) concluded that age is positively associated with an increased preference for physical security, salary and opportunities for skill utilisation, and negatively associated with high job demands. Jones and colleagues (2013) argued that these factors might help explain the decreased incidence of work-related health complaints among older workers.

### 6.2 INJURY CHARACTERISTICS

Over time the injury characteristics of older workers have changed. This is apparent across most types of injury. For example, the proportion of older claimants citing non-physical and systemic body locations increased proportionately between 2004 and 2013. Similarly, the proportion of older claimants citing the nature of injury as mental diseases or musculoskeletal and connective tissue injuries increased. The reasons for these changes are unclear.

If these changes in injury characteristics are age-related, opportunities exist to address these issues in the workplace. A systematic review by Crawford and colleagues (Crawford et al., 2010) found that although a number of negative physical and psychological changes occur with ageing, these changes can be ameliorated by increased physical and intellectual activity, and other lifestyle factors. Another study found that although ageing was associated with specific physical decline and risks, this could be effectively addressed in the working environment (Farrow and Reynolds, 2012).

A recent summit, *Advancing Workplace Health Protection and Promotion in the Context of an Aging Workforce Invitational* (Loeppke et al., 2013), proposed a series of Consensus Statements and Action Steps (below) as a means of addressing work-related injury among older employees both indirectly (through integrating health protection with health promotion to create a culture of health throughout the workplace) and directly (through implementing age-friendly programs and policies).

**Box 1: Action steps for implementing age-friendly programs and policies**

- Prioritize workplace flexibility, and give additional control over work schedules, work conditions, and work location, which benefit workers of all ages
- Use adaptive technology and design work tasks to meet older workers' physical needs
- Manage noise hazards, slip and trip hazards, physical hazards, and conditions that are more challenging to older workers
- Provide ergo-friendly work environments, such as workstations, tools, floor surfaces, adjustable seating, better illumination where needed, screens and surfaces with less glare
- Provide health promotion and lifestyle interventions
- Accommodate medical self-care in the workplace and time away for health visits
- Invest in training and skills-building at all age levels
- Proactively manage reasonable accommodations and the return-to-work process after illness or injury absence
- Require ageing workforce management skills training for supervisors that addresses the specific needs of older workers in addition to the needs of all generations of workers.

Source: Loeppke et al., 2013

### 6.3 INJURY OUTCOMES

Injury outcomes differed between older and younger workers. Older workers were less likely to have 1-30 days off as a result of their injuries than younger workers. However, they were slightly more likely to have 31-183 days off. Among workers who had more than 184 days off, there was no difference between age groups.

Older workers were less likely to be hospitalised as a consequence of their injuries but they were much more likely to die from them. Older workers' compensation claims were also likely to cost more. This may be explained by the fact that older workers earn higher wages. In addition, recovery from certain injuries may take longer for older workers.

Older worker deaths are a significant problem which will likely grow with an ageing workforce (Ozanne-Smith et al., 2012). Although this is a particular issue in the agriculture, transport and construction industries (Jones et al., 2013; Ozanne-Smith et al., 2012), several researchers have argued that there is a need for employers and policy makers to consider

the characteristics and particular vulnerabilities of older workers in general (Adams et al., 2013; Jones et al., 2013; Ozanne-Smith et al., 2012).

## **6.4 LIMITATIONS AND FUTURE RESEARCH**

This study has several limitations. These limitations, described below, are concerned with technical issues, submission of compensation claims, and analyses that were unable to be carried out.

### **Technical Issues**

There are a number of limitations associated with the Tabulator data used in this study. For example, Kloeden and colleagues (Kloeden et al., 2015) argued that Tabulator data is not designed for research purposes, but rather for managing claims, tracking premiums and assisting injured workers to return to work.

Furthermore, during the study time period (2004-2013) there were changes in Tabulator coding requirements as a consequence of national initiatives, as well as legislative amendments affecting South Australian workers' compensation policies and procedures. These changes may have had an impact on the overall precision of the results.

### **Submission of Compensation Claims**

Tabulator data does not include the self-employed, minor injuries that do not result in lost time, or injuries suffered by those who, for various reasons, do not make a claim (Mitchell and Boufous, 2005). In addition, the data provide little insight into how illnesses and injuries sustained outside the workplace may impact productivity and/or willingness to work.

### **Analyses Not Undertaken**

In this study, we only used South Australian working population census data for the years 2006 and 2011. These were the only years in which census data concurrent with the workers' compensation data examined here were available. Therefore, annual changes in the South Australian working population over the period 2004-2013 were not able to be calculated. Further research is required to more precisely examine annual rates of workers' compensation claims among employed South Australians aged 55+ years.

In addition, detailed analyses taking into account demographic (e.g., gender, occupation and locality) and work characteristics (e.g., number of hours worked) were beyond the scope of this project. There are a number of variables that future research should explore in more detail:

- The "rising participation of women" (Hugo, 2014; Hugo et al., 2009) in the South Australian labour force. Between 1978 and 2008, female participation in the South Australian labour force rose from 45% to 56.2% (Hugo, 2014; Hugo et al., 2009). Hugo and colleagues (2009) argue that the increasing number of women in the labour market mean that analyses should be conducted through a gender-based lens.

- Fewer females than males aged 55+ years are engaged in employment, particularly full-time (Barnett et al., 2008). Although women aged 55+ years have increased their participation since 1986 (Barnett et al., 2008), fewer women aged 55+ years are exposed to the risk of a work-related injury or accident.
- Work is gendered. For instance, certain industries (such as agriculture, construction, manufacturing, mining, utilities, and transportation) comprise at least 70% male workers (Australian Human Rights Commission, 2013), whilst in other industries (e.g., community services) women dominate. Hence, patterns of work-related injuries by male and female workers may vary according to the proportional gender composition of respective occupations.
- The Tabulator does not include self-employed persons. As such, self-employed farmers were omitted from this examination of workers' compensation claims. This is significant because farmers and farm managers have one of the highest number of workers aged 55+ years in South Australia (Barnett et al., 2008). Therefore, despite agriculture being a priority industry group (SafeWork SA, 2013), characteristics of workplace injuries sustained by farmers are not addressed in this Report. The fact that most farmers are self-employed (and not covered in the Return to Work Act) means that alternative research methods need to be used in the context of an ageing agriculture industry.
- Workers aged 55+ years are less likely to work full-time than younger workers (Hugo, 2014; Hugo et al., 2009). Therefore, workers aged 55+ years have less time to be exposed to the potential of a work-related injury/accident than younger workers. However, it is uncertain how employment hours may confound the relationship between a workers' age and the risk of a work-related accident/injury.

In addition, age is only one factor impacting the likelihood of work-related injury or accident (Barnett et al., 2008). Further research on workers' compensation claims in South Australia is needed that takes a more nuanced approach which recognises the range of factors that impact on labour force participation (Hugo, 2014; Hugo et al., 2009).

## 7. CONCLUSION

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The findings of this study indicate that employer concern regarding occupational health and safety risks posed by older workers is largely unwarranted. Indeed, older workers have a lower rate of compensation claims than their younger counterparts. Nevertheless, the higher rate of fatalities among older workers is concerning. Tailored interventions may be required to address the risk of work-related fatalities among workers aged 55+ years.

## REFERENCES

- Adams, G. A., DeArmond, S., Jex, S. M., & Webster, J. R. (2013). Older workers, occupational stress and safety. In J. Field, R. J. Burke, & C. L. Cooper (Eds.), *The Sage handbook of aging, work and society* (pp. 266-282). London: SAGE Publications Ltd.
- Algarni, F. S., Gross, D. P., Senthilselvan, A., & Battié, M. C. (2015). Ageing workers with work-related musculoskeletal injuries. *Occupational Medicine*, 65(3), 229-237. doi:10.1093/occmed/kqu213.
- Australian Bureau of Statistics. (2004). *Australian Social Trends: Paid Work: Mature Age Workers*. <http://www.abs.gov.au/AUSSTATS/abs@.nsf/2f762f95845417aeca25706c00834efa/3c1b29bbc2c1d573ca256e9e00288ddf!OpenDocument>. Accessed 28 March 2016.
- Australian Bureau of Statistics. (2006). *Australian and New Zealand Standard Industrial Classification (ANZSIC), 2006*. 1292.0. <http://www.abs.gov.au/ausstats/abs@.nsf/mf/1292.0>. Accessed 27 April 2016.
- Australian Human Rights Commission. (2013). *Women in Male-Dominated Industries: A Toolkit of Strategies*. <https://www.humanrights.gov.au/our-work/sex-discrimination/publications/women-male-dominated-industries-toolkit-strategies-2013>. Accessed 4 May 2016.
- Australian Safety and Compensation Council. (2008a). *Technical Manual for the National Data Set for Compensation-Based Statistics (NDS)*. <http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/sr200803technicalmanualforndsetforcompensationbasedstatistics>. Accessed 1 Feb 2016.
- Australian Safety and Compensation Council. (2008b). *Type of Occurrence Classifications System, Version 3.1 (TOOCS3.1)*. <http://www.safeworkaustralia.gov.au/sites/swa/about/publications/pages/sr20080501toocs3rdeditionrevision>. Accessed 1 Feb 2016.
- Australian Treasury. (2015). *Intergenerational Report 2015*. Canberra: Commonwealth of Australia: <http://www.treasury.gov.au/PublicationsAndMedia/Publications/2015/2015-Intergenerational-Report>
- Barnett, K., Spoehr, J., & Parnis, E. (2008). *Exploring the impact of an ageing workforce on the South Australian Workers' Compensation Scheme: key findings*. Adelaide: The Australian Institute for Social Research, University of Adelaide: <http://www.sapo.org.au/binary/binary10402/Exploring.pdf>.
- Barrett, J., & Bourke, J. (2013). Managing for inclusion: engagement with an ageing workforce. *Employment Relations Record*, 13(1), 13-24.
- Berecki-Gisolf, J., Clay, F. J., Collie, A., & McClure, R. J. (2012). The impact of aging on work disability and return to work: insights from workers' compensation claim records. *Journal of Occupational and Environmental Medicine*, 54(3), 318-327.
- Bernacki, E. J., Yuspeh, L., & Tao, X. (2007). Determinants of escalating costs in low risk workers' compensation claims. *Journal of Occupational and Environmental Medicine*, 49(7), 780-790.
- Besen, E., Young, A. E., Gaines, B., & Pransky, G. (2015). Relationship between age, tenure, and disability duration in persons with compensated work-related conditions. *Journal of Occupational and Environmental Medicine*, 58(2), 140-147.
- Billett, S., Dymock, D., Johnson, G., & Martin, G. (2011). Overcoming the paradox of employers' views about older workers. *The International Journal of Human Resource Management*, 22(6), 1248-1261. doi:10.1080/09585192.2011.559097.
- Breslin, F. C., Polzer, J., MacEachen, E., Morrongiello, B., & Shannon, H. (2007). Workplace injury or "part of the job"? towards a gendered understanding of injuries and complaints among young workers. *Social Science & Medicine*, 64(4), 782-793.
- Brooke, L. (2003). Human resource costs and benefits of maintaining a mature-age workforce. *International Journal of Manpower*, 24(3), 260-283.

- Business Council of Australia. (2003). *Age can work: A business guide for supporting older workers*. <http://www.bca.com.au/publications/age-can-work-a-business-guide-for-supporting-older-workers> Accessed 12 May 2016.
- Connell, J., Nankervis, A., & Burgess, J. (2015). The challenges of an ageing workforce: an introduction to the workforce management issues. *Labour and Industry*, 25(4), 257-264.
- Crawford, J. O., Graveling, R. A., Cowie, H. A., & Dixon, K. (2010). The health safety and health promotion needs of older workers. *Occupational Medicine*, 60(3), 184-192.
- Farrow, A., & Reynolds, F. (2012). Health and safety of the older worker. *Occupational Medicine*, 62(1), 4-11.
- Gringart, E., Helmes, E., & Speelman, C. P. (2005). Exploring attitudes toward older workers among Australian employers. *Journal of Aging and Social Policy*, 17(3), 85-103. doi:10.1300/J031v17n03\_05
- Guest, M., Boggess, M. M., Viljoen, D. A., Duke, J. M., & Culvern, C. N. (2014). Age-related injury and compensation claim rates in heavy industry. *Occupational Medicine*, 64(2), 95-103. doi:10.1093/occmed/kqt166.
- Hugo, G. (2013). The changing demographics of Australia over the last 30 years. *Australasian Journal on Ageing*, 32(SUPPL.2), 18-27. doi:10.1111/ajag.12113.
- Hugo, G. (2014). *State of ageing in South Australia*. Paper presented at the CPA Congress, South Australia, Hilton Hotel, Adelaide. <http://www.cpaaustralia.com.au/cpd/Congress%202014/Adelaide%20Congress/2014%20SA%20Congress%20-%20KN4%20-%20Graeme%20Hugo%20-%20PPTX.pdf>.
- Hugo, G., Luszcz, M., Carson, E., Hinsliff, J., Edwards, P., Barton, C., et al. (2009). *State of ageing in South Australia*. [http://apo.org.au/files/Resource/state\\_of\\_ageing\\_full\\_report.pdf](http://apo.org.au/files/Resource/state_of_ageing_full_report.pdf). Accessed 4 May 2016.
- Jones, C., Routley, V., Trytell, G., Ibrahim, J., & Ozanne-Smith, J. (2013). A descriptive analysis of work-related fatal injury in older workers in Australia 2000–2009. *International Journal of Injury Control and Safety Promotion*, 20(1), 85-90. doi:10.1080/17457300.2012.679001.
- Kloeden, C. N., Hutchinson, T. P., & Harrison, J. (2015). *An examination of trends in South Australian workers compensation claims*. Adelaide: Centre for Automotive Safety Research, University of Adelaide.
- Kucera, K. L., Lipscomb, H. J., Silverstein, B., & Cameron, W. (2009). Predictors of delayed return to work after back injury: a case–control analysis of union carpenters in Washington State. *American Journal of Industrial Medicine*, 52(11), 821-830.
- Loeppke, R. R., Schill, A. L., Chosewood, L. C., Grosch, J. W., Allweiss, P., Burton, W. N., et al. (2013). Advancing workplace health protection and promotion for an aging workforce. *Journal of Occupational and Environmental Medicine*, 55(5), 500-506.
- Mitchell, R., & Boufous, S. (2005). Self-reported work-related injury and illness in NSW. *Journal of Occupational Health and Safety - Australia and New Zealand*, 21(3), 229-236. Retrieved from <https://www.scopus.com/inward/record.url?eid=2-s2.0-33747519916&partnerID=40&md5=76292a3862f3436e7f05c467684fcf43>.
- Mountford, H. (2009). *Older workers: still an important part of the staffing mix*. Paper presented at the Proceedings of the 15th International Industrial Relations Association World Congress.
- Nicholas, R., & Roche, A. (2014). *The silver tsunami: The impact of Australia's ageing population*. Adelaide: National Centre for Education and Training in Addiction (NCETA), Flinders University.
- Nicholas, R., Roche, A., Lee, N., Bright, S., & Walsh, K. (2015). *Preventing and reducing alcohol-and other drug-related harm among older people: A practical guide for health and welfare professionals*. Adelaide: National Centre for Education and Training in Addiction (NCETA), Flinders University .
- Office for the Ageing. (2014). *Prosperity Through Longevity: South Australia's Ageing Plan 2014-2019*. <http://www.sahealth.sa.gov.au/wps/wcm/connect/public+content/sa+health+internet/about+us/publications+and+resources/plans/prosperity+through+longevity+south+australias+ageing+plan>. Accessed 6 May 2016.

- Ozanne-Smith, J., Jones, C., Watson, W., & Kitching, F. (2012). Fatal injury in the ageing workforce. *Injury Prevention*, 18(Suppl 1), A12-A12.
- Productivity Commission. (2013). *An ageing Australia: Preparing for the future*. <http://www.pc.gov.au/research/completed/ageing-australia>. Accessed 7 May 2016.
- Roche, A., Pidd, K., Fischer, J., Lee, N., Scarfe, A., & Kostadinov, V. (2016). Men, work, and mental health: a systematic review of depression in male-dominated industries and occupations. *Safety and Health at Work*, 1-16. doi:doi:10.1016/j.shaw.2016.04.005.
- Safe Work Australia. (2005). *Surveillance Alert: OHS and the Ageing Workforce*. <http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/503/OHSandAgeingSurveillanceAlert2005.pdf>. Accessed 6 May 2016.
- Safe Work Australia. (2012). *Work-related Traumatic Injury Fatalities, Australia 2009-10*. Canberra: Safe Work Australia.
- Safe Work Australia. (2015a). *Australian Workers' Compensation Statistics, 2013-14*. <http://www.safeworkaustralia.gov.au/sites/SWA/about/Publications/Documents/897/australian-workers-compensation-statistics-2012-13.pdf>. Accessed 3 May 2016.
- Safe Work Australia. (2015b). *Work-related Traumatic Injury Fatalities, Australia 2014*. Canberra: Safework Australia.
- SafeWork SA. (2013). *Work Health and Safety Strategic Framework for South Australia*. [http://www.safework.sa.gov.au/show\\_page.jsp?id=5177#.V1-IXLcrJHc](http://www.safework.sa.gov.au/show_page.jsp?id=5177#.V1-IXLcrJHc). Accessed 8 May 2016.
- SafeWork SA. (2016). *Understanding the data*. <http://www.safework.sa.gov.au>. Accessed 9 May 2016.
- Salminen, S. (2004). Have young workers more injuries than older ones? an international literature review. *Journal of Safety Research*, 35(5), 513-521.
- Schwatka, N. V., Butler, L. M., & Rosecrance, J. C. (2013). Age in relation to worker compensation costs in the construction industry. *American Journal of Industrial Medicine*, 56(3), 356-366. doi:10.1002/ajim.22093.
- Smailes, P., Griffin, T., & Argent, N. (2014). Demographic change, differential ageing, and public policy in rural and regional Australia: a three-state case study. *Geographical Research*, 52(3), 229-249. doi:10.1111/1745-5871.12067.
- Smith, P. M., & Berecki-Gisolf, J. (2014). Age, occupational demands and the risk of serious work injury. *Occupational Medicine*, 64(8), 571-576. doi:10.1093/occmed/kqu125.
- South Australian Government. (2011). *SA Strategic Plan*. [http://saplan.org.au/media/BAhbBIsHOgZmSSlhMjAxMS8xMS8wNC8wMV8wMI8xNF8yMjNfZmlsZQY6BkVU/01\\_02\\_14\\_223\\_file](http://saplan.org.au/media/BAhbBIsHOgZmSSlhMjAxMS8xMS8wNC8wMV8wMI8xNF8yMjNfZmlsZQY6BkVU/01_02_14_223_file) Accessed. Accessed 1 May 2016.
- Return to Work Act (SA), (2014). <https://www.legislation.sa.gov.au/LZ/C/A/Return%20to%20Work%20Act%202014.aspx>. Accessed 9 May 2016.
- Steele, R. (2011). *Population Ageing in South Australia, 2006-36*. <https://www.sa.gov.au/topics/housing-property-and-land/building-and-development/land-supply-and-planning-system/planning-data-for-research-and-mapping/population-and-demographics/ageing-population>. Accessed 3 May 2016.
- Taylor, P. (2013). *Older workers in an ageing society*. Cheltenham UK: Edward Elgar.
- Taylor, P., Earl, C., & McLoughlin, C. (2016). *Public policy, age discrimination and Australian older workers: Solutions in search of a problem?* Melbourne: Monash University. [http://www.superresearchcluster.com/\\_\\_\\_data/assets/pdf\\_file/0007/439774/CP102016-02-Public-policy-and-age-discrimination-in-Australia.pdf](http://www.superresearchcluster.com/___data/assets/pdf_file/0007/439774/CP102016-02-Public-policy-and-age-discrimination-in-Australia.pdf).
- Walter, M., Jackson, N., & Felmingham, B. (2008). Keeping Australia's older workers in the labour force: A policy perspective. *Australian Journal of Social Issues*, 43(2), 291-309.
- Warr, P. (2007). *Work, happiness, and unhappiness*. London: Lawrence Erlbaum Associates.



## **APPENDIX**

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### **Appendix 1 2006 and 2011 Census Data – SA working population by industry and age**

**AUSTRALIAN BUREAU OF STATISTICS 2006 Census of Population and Housing**

South Australia (STE 4) 985446.2 sq. Kms

B42 INDUSTRY OF EMPLOYMENT(a) BY AGE BY SEX (3 of 3)<sup>1</sup>

Count of employed persons aged 15 years and over

Based on place of usual residence

	15-19 years	20-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	Total
<i>PERSONS</i>										
Agriculture, forestry & fishing	1,034	1,924	4,777	6,996	7,649	6,420	2,439	639	96	31,974
Mining	76	432	1,444	1,726	1,551	671	60	9	0	5,969
Manufacturing	3,576	8,467	19,506	24,403	20,627	10,577	1,141	150	42	88,489
Electricity, gas, water & waste services	165	575	1,422	2,090	2,064	1,050	60	6	3	7,435
Construction	2,472	5,091	9,589	11,753	10,057	6,089	946	59	27	46,083
Wholesale trade	1,027	2,290	5,497	6,740	6,034	3,597	518	80	8	25,791
Retail trade	15,471	13,445	14,647	15,329	13,734	7,582	1,049	103	39	81,399
Accommodation & food services	10,194	7,851	6,948	6,197	5,584	3,053	467	54	23	40,371
Transport, postal & warehousing	538	1,774	4,930	7,733	8,103	4,962	639	51	14	28,744
Information media & telecommunications	482	1,286	2,643	2,664	2,383	1,138	129	14	6	10,745
Financial & insurance services	356	2,136	5,690	6,017	5,005	2,407	282	74	19	21,986
Rental, hiring & real estate services	602	969	1,697	2,091	2,266	1,536	331	72	12	9,576
Professional, scientific & technical services	738	3,668	9,185	8,747	7,816	4,966	927	113	15	36,175
Administrative & support services	910	2,246	4,612	5,766	5,808	3,493	389	35	7	23,266
Public administration & safety	505	2,862	10,108	11,904	13,161	5,899	387	33	14	44,873
Education & training	804	3,098	8,876	11,884	17,013	9,720	908	56	16	52,375
Health care & social assistance	1,406	6,255	15,091	21,759	26,803	13,348	1,372	143	41	86,218
Arts & recreation services	811	1,147	1,720	1,712	1,441	881	205	28	3	7,948
Other services	1,671	3,179	5,230	6,156	5,685	3,630	614	71	16	26,252
Inadequately described/Not stated	1,342	1,622	2,622	3,005	2,691	1,944	638	279	86	14,229
<b>Total</b>	<b>44,180</b>	<b>70,317</b>	<b>136,234</b>	<b>164,672</b>	<b>165,475</b>	<b>92,963</b>	<b>13,501</b>	<b>2,069</b>	<b>487</b>	<b>689,898</b>

(a) Industry of employment was coded to the 2006 Australian and New Zealand Standard Industrial Classification (ANZSIC) edition. This has replaced the 1993 ANZSIC edition.

<sup>1</sup> Only the part of the 2006 census table "B42 Industry of employment (A) by age by sex<sup>1</sup> (3 of 3)" which refers to total persons is used in this study and provided here.

AUSTRALIAN BUREAU OF STATISTICS 2011 Census of Population and Housing

South Australia (4) 984179.3 sq Kms

Count of employed persons aged 15 years and over

B43 INDUSTRY OF EMPLOYMENT BY AGE BY SEX (3 of 3)<sup>1</sup>

	Age									Total
	15-19 years	20-24 years	25-34 years	35-44 years	45-54 years	55-64 years	65-74 years	75-84 years	85 years and over	
<i>PERSONS</i>										
	755	1,513	4,244	5,697	6,556	6,222	2,996	754	57	28,794
Mining	102	799	2,556	2,629	2,304	1,101	153	5	0	9,649
Manufacturing	2,796	5,864	16,116	20,074	20,142	11,133	1,597	148	21	77,891
Electricity, gas, water and waste services	256	746	2,169	2,497	2,508	1,592	156	3	0	9,927
Construction	2,785	6,808	12,566	12,635	11,887	7,482	1,358	72	5	55,598
Wholesale trade	814	2,086	5,208	6,401	6,370	4,090	793	86	12	25,860
Retail trade	14,551	13,255	15,157	14,706	14,536	8,961	1,730	164	8	83,068
Accommodation and food services	11,515	8,776	8,697	6,482	6,183	3,816	709	71	0	46,249
Transport, postal and warehousing	445	1,740	5,331	7,077	8,702	6,149	1,185	69	3	30,701
Information media and telecommunications	395	1,399	2,790	2,330	2,158	1,267	225	18	3	10,585
Financial and insurance services	263	1,730	5,668	6,008	4,952	2,938	431	48	11	22,049
Rental, hiring and real estate services	388	871	1,697	2,015	2,251	1,629	507	77	13	9,448
Professional, scientific and technical services	548	3,143	10,513	10,097	8,230	6,217	1,665	130	7	40,550
Administrative and support services	725	2,132	5,297	5,694	6,273	4,504	765	44	6	25,440
Public administration and safety	484	3,055	11,427	13,276	14,463	8,701	806	46	7	52,265
Education and training	923	3,474	10,642	13,048	15,735	12,905	1,814	94	3	58,638
Health care and social assistance	1,599	6,994	18,909	22,588	28,472	19,123	2,710	195	11	100,601
Arts and recreation services	939	1,435	1,999	1,776	1,643	1,166	303	39	7	9,307
Other services	1,613	3,368	5,596	6,562	6,173	4,409	990	127	5	28,843
Inadequately described/Not stated	997	1,436	2,841	2,799	2,729	2,003	723	293	75	13,896
<b>Total</b>	<b>42,893</b>	<b>70,624</b>	<b>149,423</b>	<b>164,391</b>	<b>172,267</b>	<b>115,408</b>	<b>21,616</b>	<b>2,483</b>	<b>254</b>	<b>739,359</b>

This table is based on place of usual residence.

<sup>1</sup> Only the part of the 2011 census table "B43 Industry of employment by age by sex (3 of 3)" which refers to total persons is used in this study and provided here.