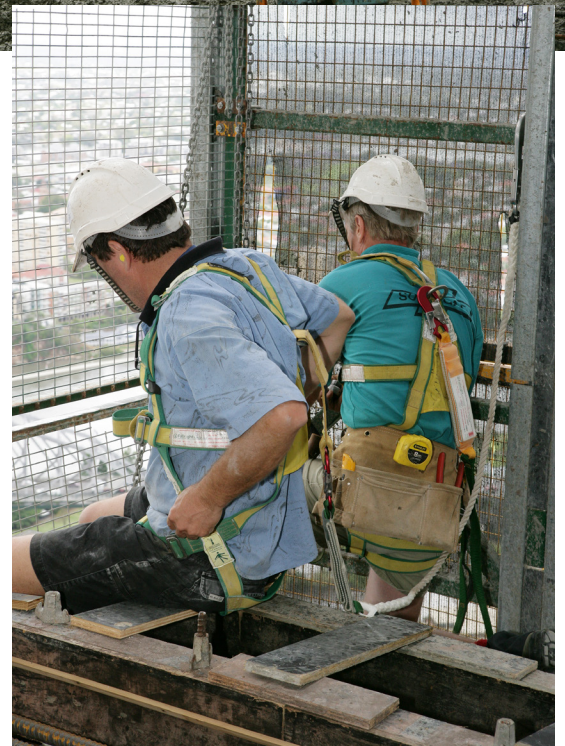


WORK-RELATED INJURIES AND FATALITIES INVOLVING A FALL FROM HEIGHT, AUSTRALIA



OCTOBER 2013

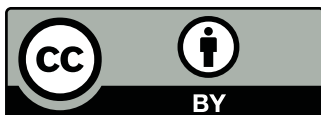


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SAFE WORK AUSTRALIA

**WORK-RELATED
INJURIES AND FATALITIES
INVOLVING A
FALL FROM HEIGHT,
AUSTRALIA**

October 2013



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Foreword

Falls are a major cause of death and serious injury in Australian workplaces. Fall hazards are found in many workplaces where work is carried out at height, for example stacking shelves, working on a roof, unloading a large truck or accessing silos. Falls can also occur at ground level by falling into holes, trenches or service pits.

Employers should ensure that safety measures are in place where there is risk of a fall. Risk of a fall means a circumstance that exposes a worker while at work, or other person while at or in the vicinity of a workplace, to a risk of a fall that is reasonably likely to cause injury to the worker or other person. This includes circumstances in which the worker or other person is:

- in or on plant or a structure that is at an elevated level
- in or on plant that is being used to gain access to an elevated level
- in the vicinity of an opening through which a person could fall
- in the vicinity of an edge over which a person could fall
- on or in the vicinity of a surface through which a person could fall, and/or
- on or near a slippery, sloping or unstable surface.

This report presents an analysis of data on fatalities, serious injuries and hospitalisations resulting from a fall from height while working or in a workplace.

The persons included in the fatalities analysis were all workers who were fatally injured, directly or indirectly, as a result of a fall from a height of approximately one metre or more. This included workers who:

- fell and sustained fatal injuries when they struck something (usually the ground)
- fell and were exposed to another fatal hazard as a result of the fall (such as drowning after falling into water, being run over by a tractor, or being asphyxiated after falling and being exposed to a harmful atmosphere)
- fell from an animal and suffered fatal injuries when hitting the ground or were struck by the animal or another animal
- fell from ground level into a hole or trench, or
- fell from a vehicle, as long as the fall did not occur as part of a motor vehicle crash.

Fatalities were excluded when the worker:

- was exposed to a fatal hazard (usually electricity) and subsequently fell, but was dead prior to the fall, or
- fell from a vehicle involved in a motor vehicle crash.

The persons included in the analysis of serious injuries included all workers who were eligible for workers' compensation and lodged a claim for injuries from a fall from height that resulted in one or more weeks off work. The inclusion of claims in this analysis is dependent on the quality of the coding attached to each claim.

The persons included in the analysis of hospitalisations data are those who were admitted to hospital and cited that they had been working for income and that their injuries were the result from a fall from height. These data do not include attendances at emergency rooms.

Serious injury and sometimes death can occur from a fall at the same level, such as from tripping over an object on the ground. This report excludes such deaths and is focused solely on deaths and injuries that were the result of falling from one level to another. While the injury and hospitalisation data may not have captured information on all falls from height incidents, the information contained in this report solely relate to falls from height and do not include falls on the same level. Therefore, the term 'falls-related' in this report should be interpreted as solely referring to falls from a height.

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Summary of Findings

Fatalities due to falls from height

Over the eight-year period from 1 July 2003 to 30 June 2011, 232 workers were killed following a fall from a height, 11% of all workers killed over this period. In 2010–11, 29 workers died following a fall from height equating to 0.25 fatalities per 100 000 workers.

While there has been no improvement in the number of fatalities or the fatality rate in the past eight years, comparison with figures from 20 years ago shows that the number of workers who die each year due to a fall from height has halved.

Age

Workers aged 45 years and over made up 70% of those who died following a fall from height. The highest fatality rate over the 2008–11 period was recorded by workers aged 65 years and over with 1.97 fatalities per 100 000 workers, nearly eight times the overall rate.

Industry

The Construction industry accounted for 37% of falls-related fatalities and recorded a fatality rate four times the overall rate in the 2008–11 period. At a lower level of the industry classification and using the full eight years of the series, the highest numbers of falls-related fatalities were in House construction (14 fatalities), Painting and decorating services (13), Roofing services (9), Fabricated metal product manufacturing (9), Horse & dog racing activities (9) and Road freight transport (8).

Occupation

Using the full eight years of the fatalities series the occupation groups with the highest number of falls-related fatalities were Painting trades workers (14 fatalities), Building & plumbing labourers (12), Truck drivers (10), Plumbers (10), Deck & fishing hands (9), Electricians (8), Handypersons (8) and Storepersons (8).

Height and origin of fall

Half of the falls that resulted in a fatality involved distances of three metres or less in the eight years 2003–11. Falls from ladders accounted for the greatest number of fatalities (37 fatalities - 16%). This was followed by falls from vehicles (27) and falls from roofs (25).

Injuries due to falls from height

In 2010–11, 7730 claims for serious injury were lodged due to a fall from a height. This means that 21 employees each day lodged a claim for a falls-related injury that required one or more weeks off work. Males accounted for three-quarters of the falls-related claims.

A typical falls-related claim in 2010–11 involved 6.2 weeks off work, which is considerably longer than the 4.4 weeks for all serious injury claims.

Age

The rate of injury due to a fall from height increased with age from 0.6 serious claims per 1000 employees for those aged under 25 years to 1.0 for employees aged 55 years and over.

Industry

In 2010–11 the Construction industry recorded a falls-related incidence rate of 2.1 serious claims per 1000 employees, three times the overall injury incidence rate for falls from height of 0.7. This was closely followed by the Agriculture, forestry & fishing industry (2.0) and the Transport & storage industry (1.9). At a more detailed level of the industry classification, the Road freight transport sector recorded the highest rate – 4.1 serious claims per 1000 employees over the three years 2008–2011. This is five times the overall falls-related injury rate over this period of 0.8. Grain, sheep and beef cattle farming (3.9), Building structure services (3.6) and Building completion services (3.6) also recorded high falls-related incidence rates.

Occupation

At the detailed occupation level Road & rail transport drivers recorded the highest falls-related incidence rate with 3.9 serious claims per 1000 employees over the three years 2008–2011. This is five times the overall rate for falls from heights. This was followed by Structural construction tradespersons (3.7) and Final finishes construction tradespersons (3.6).

Nature and type of injury

Nearly half (46%) of the falls-related claims resulted in *Sprains & strains*. This was followed by *Fractures* (25%) and *Contusion & crushing injury* (9%). Injuries to the *Knee, Ankle* or *Back* accounted for nearly half (46%) of all serious claims due to a fall from height.

Origin of fall

Falls from *Ladders* and *Steps & stairways* accounted for 15% each of falls-related claims. This was closely followed by falls from *Trucks, semi-trailers, lorries* (12%) and *Buildings & other structures* (10%).

Hospitalisations due to falls from height

Approximately 6900 workers were hospitalised following a fall from height in the three-year period from July 2006 to June 2009. This is 9% of all workers who were hospitalised.

Falls from ladders accounted for 28% of the falls-related hospitalisations followed by falls from one level to another (23%) and falls on stairs or steps (14%).

The Construction industry accounted for 35% of falls-related hospitalisations where the industry was known, with falls from ladders and off roofs accounting for half of the hospitalisations in this industry.

The Agriculture, forestry & fishing industry accounted for 13% of falls-related hospitalisations where the industry was known, with falls from horses accounting for nearly half (46%) of the hospitalisations.

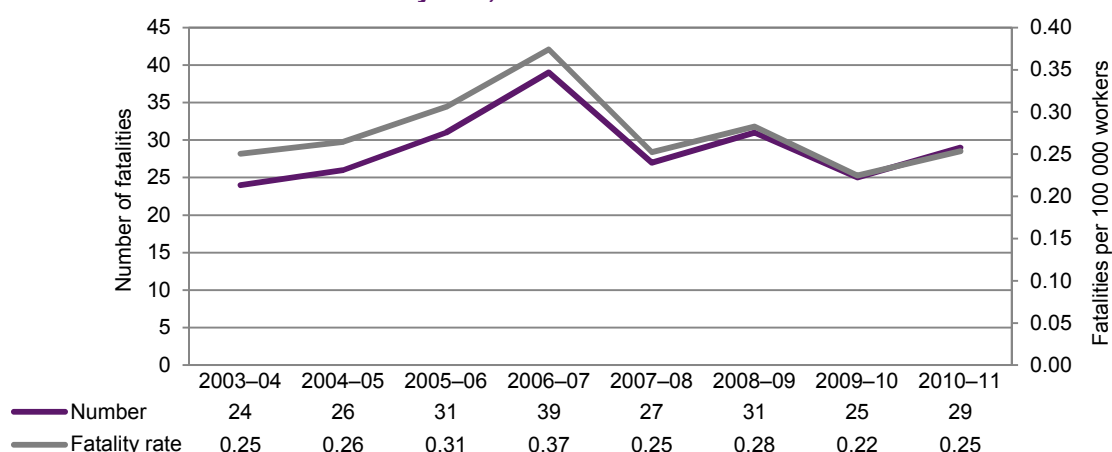
Fatalities involving a fall from height

Over the eight-year period from 1 July 2003 to 30 June 2011, 232 workers died following a fall from a height. This number includes 4 workers who died from falls following an explosion and 2 workers who fell when an object knocked them from where they were standing at height. The 232 fatalities represent 11% of all workers killed over this period.

There has been no improvement in the rate of falls from height in the past eight years

The number of falls-related fatalities in each year ranged from 24 in 2003–04 to 39 in 2006–07. The 29 workers who died in falls-related incidents in 2010–11 equates to 0.25 fatalities per 100 000 workers. Nearly all of the deaths involved male workers (98% - 223 fatalities). Figure 1 shows that the number of falls-related fatalities and the fatality rate (fatalities per 100 000 workers) has recorded no improvement over the last eight years.

Figure 1: Worker fatalities involving a fall from height: number and fatality rate, 2003–04 to 2010–11



A similar study of fatalities was undertaken over the 1989–92 period. These data were published in the report *Work-related fatalities involving falls in Australia, 1989 to 1992*. The report concluded that there were 214 fatalities from falls in the four year period, equating to a fatality rate of 0.67 fatalities per 100 000 workers. This number of deaths represented 12% of all worker deaths in that period.

The number of workers who have died from a fall from height has halved in the past 20 years

Table 1 shows a comparison of these two studies. These data indicate that there has been a significant reduction in the number and incidence of death from a fall from height in the past 20 years. Over the four year period from 1 July 2007 to 30 June 2011 (referred to as 2008–11 from this point on) there were 112 fatalities involving a fall from height. This is a 48% reduction from the previous study undertaken nearly 20 years prior.

The fatality rate for 2008–11 of 0.25 fatalities per 100 000 workers is a 63% reduction from the previous study (0.67 fatalities per 100 000 workers). Interestingly the ratio of worker deaths involving a fall from height to all worker deaths has remained about the same between the two studies. This indicates that the fall in the number of deaths from height is similar to the fall in the total number of worker deaths.

Table 1: Worker fatalities involving a fall from height: number and fatality rate, 1989–92 compared with 2008–11

Year	No. of fatalities	Average number per year	Fatality rate (fatalities per 100 000 workers)	% of worker deaths
1989–92	214	54	0.67	12%
2008–11	112	28	0.25	11%

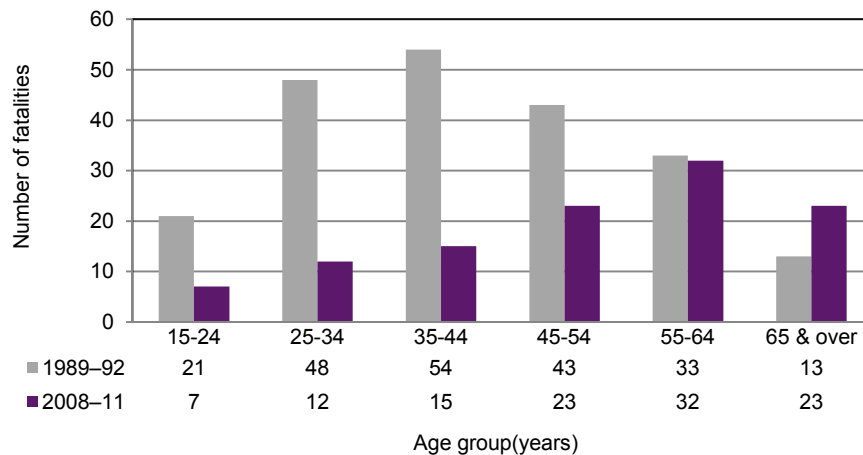
Age group

Workers aged 45 & over made up 70% of those who died from a fall from height

The number of fatalities involving a fall from height increases with age. Figure 2 shows that the 55–64 years age group accounted for the highest number of falls-related fatalities in the four year period 2008–2011 (32 fatalities – 29%). This was followed by the 45–54 and the 65 years & over age groups (both with 23 fatalities – 21%). This means that 70% of workers killed following a fall from height were aged 45 years and over.

The pattern from 20 years ago was quite different with the 35–44 years age group recording the highest number of fatalities (54) followed by the 25–34 years age group (48).

Figure 2: Worker fatalities involving a fall from height: number by age group, 1989–92 compared with 2008–11

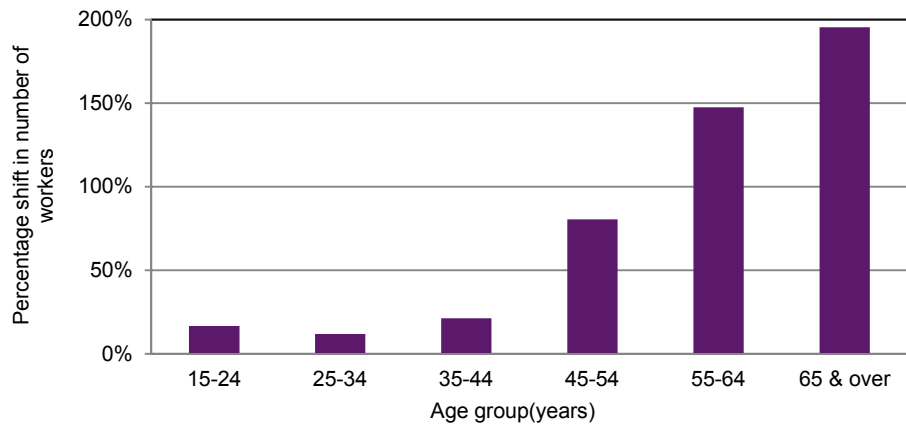


This change in the age profile of falls-related fatalities is partly explained by the change in the worker profile from 20 years ago. Figure 3 shows that there has been only small percentage increases in the number of workers aged under 45 but substantial increases in the number of older workers. There are now twice as many workers aged 65 years and over than there were 20 years ago and one and a half times as many workers in the 55–64 years age group. Overall the workforce has grown by 39%.

Workers aged 65 & over have a fatality rate eight times the overall rate

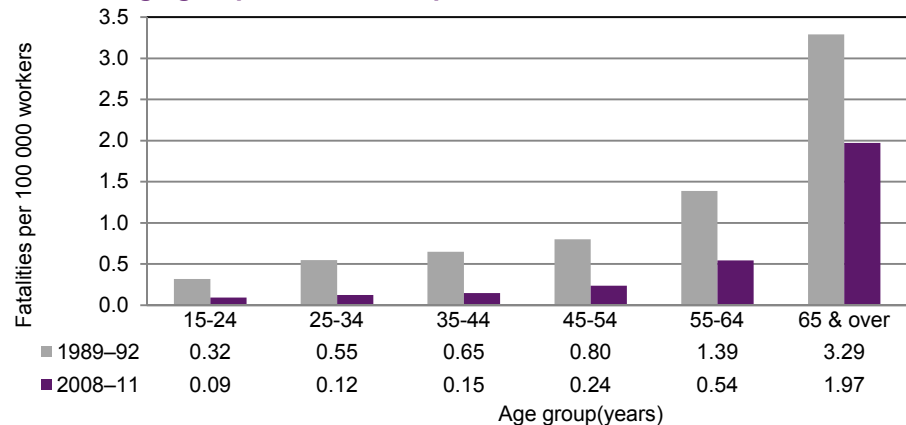
Figure 4 shows that falls-related fatality rates increased with age from 0.09 fatalities per 100 000 workers aged 15–24 years to 1.97 for those aged 65 years and over. The rate of 1.97 fatalities per 100 000 workers was nearly eight times the overall rate of 0.25. In 1989–92, this oldest age group recorded a fatality rate of 3.29 which was five times the overall rate at that time.

Figure 3: Workers: percentage change in the number of workers between 1989–92 and 2008–11



Decreases in fatality rates were recorded for all age groups from 20 years ago. The four youngest age groups recorded falls in fatality rates of between 70% and 78% while for the oldest age groups the reduction in the rate was smaller, a 61% reduction for workers aged 55–64 years and a 40% reduction for workers aged 65 years and over.

Figure 4: Worker fatalities involving a fall from height: fatality rate by age group, 1989–92 compared with 2008–11



State/territory of death

Table 2 shows the most populous states recorded the highest numbers of falls-related fatalities. The exception to this is Western Australia, which recorded the second highest number of fatalities (25) behind New South Wales (32) in the three years 2008–11. All states and territories recorded a decrease from the previous study, except for Western Australia where there were 10 more deaths in 2008–11 compared with 1989–92.

For Western Australia the 2008–11 period includes 10 falls-related deaths in 2010–11, the highest number for this state in the eight years of the series. The 25 fatalities included 8 workers in the Construction industry and 4 in the Mining industry. In the four years just prior to this period (2004–07) Western Australia recorded 16 fatalities, which was similar to the 1989–92 study (15), indicating an ongoing pattern of falls-related fatalities.

Table 2: Worker fatalities involving a fall from height: number of fatalities and fatality rate (deaths per 100 000 workers) by state/territory of death, 1989–92 compared with 2008–11

State/territory	2008–11		1989–92	
	Number	Fatality Rate	Number	Fatality Rate
New South Wales	32	0.23	73	0.66
Western Australia	25	0.53	15	0.51
Queensland	22	0.24	54	1.03
Victoria	21	0.19	39	0.49
South Australia	8	0.25	17	0.62
Northern Territory	2	0.43	11	2.58
Tasmania	2	0.21	4	0.51
Australian Capital Territory	0	0	1	0.17
Total	112	0.25	214	0.67

The highest falls-related fatality rate was recorded by Western Australia

As Western Australia accounted for 22% of the falls-related fatalities in the period 2008–11 but accounted for only 11% of workers, it recorded the highest fatality rate of 0.53 fatalities per 100 000 workers. Western Australia was the only state or territory to record an increase in its fatality rate since the previous study.

The Northern Territory recorded the greatest percentage fall in its fatality rate, falling from a rate nearly four times the national rate in 1989–92 (2.58 deaths per 100 000 workers) to a rate less than twice the national rate in 2008–11 (0.43). Queensland also recorded a substantial reduction in fatality rate between the two periods (1.03 down to 0.24).

Industry

The Construction industry accounted for over one-third of falls-related fatalities and recorded a fatality rate four times the overall rate for falls from height

The Construction industry accounted for 37% (41 fatalities) of falls-related fatalities in the four years 2008–11. Table 3 shows that this is more than three times the numbers recorded by the next highest industries: Agriculture, forestry & fishing (12), Transport, postal & warehousing (12) and Manufacturing (11).

These data also show that the Construction industry not only had the highest number of fatalities, it also had the highest falls-related fatality rate with 1.03 deaths per 100 000 workers. This is four times the overall fatality rate for falls from height (0.25). When all work-related deaths are considered, the Construction industry has the fourth highest fatality rate. The difference in relative ranking for the Construction industry is due to the fact that 25% of all Construction fatalities resulted from a fall from height. This is twice the proportion for all industries (11%).

The Agriculture, forestry & fishing industry recorded the second highest falls-related fatality rate with 0.84 deaths per 100 000 workers, which is more than three times the overall fatality rate for falls from height.

While the Mining industry recorded a relatively small number of fatalities (5), it recorded the third highest fatality rate (0.72 deaths per 100 000 workers) due to its smaller number of workers. It is a similar story for the Electricity, gas, water and waste services industry, which

had 3 fatalities over the period but recorded a fatality rate of 0.56 due to its relatively low employment.

While the Transport, postal & warehousing industry recorded the same number of deaths as the Agriculture, forestry & fishing industry, its higher number of workers means that its fatality rate is substantially smaller (0.52 deaths per 100 000 workers). However, it is still more than twice the overall falls-related fatality rate.

The considerably higher number of workers in the Manufacturing industry was the reason why its falls-related fatality rate is similar to the overall industry rate. This is despite recording a similar number of fatalities to both the Transport, postal & warehousing industry and the Agriculture, forestry & fishing industry.

Table 3: Worker fatalities involving a fall from height: number and percentage of fatalities and fatality rate (deaths per 100 000 workers) by industry, 2008–11

Industry	Number	Percentage	Fatality Rate
Construction	41	37%	1.03
Agriculture, forestry & fishing	12	11%	0.84
Transport, postal & warehousing	12	11%	0.52
Manufacturing	11	10%	0.27
Mining	5	4%	0.72
Retail trade	5	4%	0.10
Administrative & support services	4	4%	0.27
Other services	3	3%	0.16
Professional, scientific & technical services	3	3%	0.09
Electricity, gas, water and waste services	3	3%	0.56
Public administration & safety	3	3%	0.11
Rental, hiring & real estate services	3	3%	0.38
Arts & recreation services	2	2%	0.25
Information media & telecommunications	2	2%	0.23
Accommodation & food services	1	1%	0.03
Wholesale trade	1	1%	0.06
Health care & social assistance	1	1%	0.02
Education & training	0	0%	0.00
Total	112	100%	0.25

A more detailed industry breakdown using the full eight years of the fatalities data series is shown in Table 4. These data show that within the Construction industry the services sector accounted for 64% of the falls-related fatalities. The services sectors with the highest number of fatalities due to a fall from height were Painting & decorating services (13 fatalities), Roofing services (9) and Electrical services (6). In addition, 14 workers in the House construction sector died from a fall.

Other sectors with high numbers of fatalities due to falls were Fabricated metal product manufacturing (9), Horse & dog racing activities (9), Road freight transport (8), Non-residential building construction (8), Beef cattle farming (7) and Grain-sheep or grain-beef cattle farming (6).

Table 4: Worker fatalities involving a fall from height: number and percentage by industry, 2003–04 to 2010–11 combined

Industry division, sub-division and group	No. of fatalities	% of total
Construction	86	37%
Construction services	55	23%
Painting & decorating services	13	6%
Roofing services	9	4%
Electrical services	6	3%
Plumbing services	5	2%
Concreting services	3	1%
Carpentry services	2	1%
Bricklaying services	2	1%
Building construction	23	10%
House construction	14	6%
Non-residential building construction	8	3%
Heavy & civil engineering construction	8	3%
Agriculture, forestry & fishing	31	13%
Agriculture	20	9%
Beef cattle farming (specialised)	7	3%
Grain-sheep or grain-beef cattle farming	6	3%
Fishing	7	3%
Fish trawling, seining & netting	4	2%
Agriculture, forestry & fishing support services	4	2%
Manufacturing	20	9%
Fabricated metal product manufacturing	9	4%
Food product manufacturing	4	2%
Transport, postal & warehousing	20	9%
Road transport	9	4%
Road freight transport	8	3%
Transport support services	5	2%
Administrative & support services	12	5%
Building cleaning, pest control & other support services	9	4%
Gardening services	4	2%
Arts & recreation services	11	5%
Sports & recreation activities	11	5%
Horse & dog racing activities	9	4%
Mining	10	4%
Metal ore mining	5	2%
Other industries	42	18%
Total	232	100%

To undertake a comparison with the previous study by industry it is necessary to concord the current industry data to the industry classification that was used in the 1989–92 period. Figure 5 shows that there have been significant decreases in the number of falls-related fatalities in a number of industries. However, the Construction industry recorded the highest number of fall-related fatalities in both periods.

The Farming, fishing & hunting industry recorded the greatest decrease in the number of fatalities

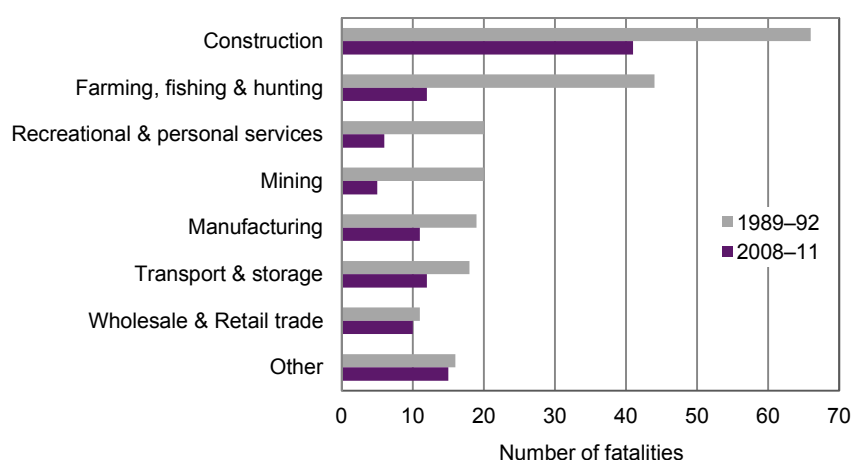
The greatest percentage decrease (75%) in the number of falls-related fatalities was recorded by the Mining industry, which decreased from 20 in 1989–92 to 5 in 2008–11.

The Farming, fishing & hunting sector recorded the second highest percentage decrease (73%) and the largest decrease in the number of fatalities (down from 44 in 1989–92 to 12 in 2008–11).

The Recreational & personal services industry also recorded a notable percentage reduction (70%) with the number of fatalities decreasing from 20 down to 6.

In contrast the Wholesale & retail trade industry recorded little change in the number of falls-related fatalities between the two periods.

Figure 5: Worker fatalities involving a fall from height: number by industry, 1989–92 compared with 2008–11



Occupation

Technicians & trades workers recorded the highest number of falls-related fatalities and the highest rate of fatality

Table 5 shows that over the 2008–11 period Technicians & trades workers accounted for 41% of deaths from a fall from height (43 fatalities). This was followed by Labourers (26% - 30 fatalities) and Machinery operators & drivers (15% - 17 fatalities). There were no fatalities due to a fall from height among Clerical & administrative workers in the 2008–11 period.

Table 5: Worker fatalities involving a fall from height: number and percentage of fatalities and fatality rate (deaths per 100 000 workers) by occupation, 2008–11

Industry	Number	Percentage	Fatality Rate
Technicians & trades workers	43	41%	0.65
Labourers	30	26%	0.64
Machinery operators & drivers	17	15%	0.59
Managers	10	9%	0.18
Professionals	7	6%	0.08
Community & personal service workers	3	3%	0.08
Sales workers	2	2%	0.05
Clerical & administrative workers	0	0%	0.00
Total	112	100%	0.25

These data also show that the occupations with the highest number of falls-related fatalities also had the highest falls-related fatality rates. Over the 2008–11 period Technicians & trades workers recorded 0.65 fatalities per 100 000 workers followed by Labourers (0.64) and Machinery operators & drivers (0.59). These fatality rates are two to three times the overall falls-related fatality rate (0.25).

A more detailed breakdown by occupation using the full eight years of the fatalities data series is shown in Table 6. These data show that, within the Technicians & trades workers occupation group, half of the fatalities involved Construction trades workers with Painting trades workers accounting for 14 fatalities and Plumbers 10. Also within the Technicians & trades workers occupation group were Electricians who accounted for 7 fatalities.

Other occupations with high numbers of falls-related fatalities were Building & plumbing labourers (12), Truck drivers (10), Deck & fishing hands (9), Handypersons (8) and Storepersons (8).

Labourers & related workers recorded the greatest decrease in the number of fatalities

To undertake a comparison by occupation with the previous study it is necessary to concord the current occupation data to the occupation classification that was used in the 1989–92 period. The greatest percentage decrease (73%) in the number of falls-related fatalities was among Labourers & related workers. Figure 6 shows that the number of fatalities for this group reduced from 80 (the highest number of falls-related fatalities of all the occupations in 1989–92) to 22 (the third highest number of falls-related fatalities of all the occupations in 2008–11).

Managers & administrators also recorded a large percentage decrease (67%) with the number of falls-related fatalities reducing from 24 in 1989–92 to 8 in 2008–11. This was followed by Associate professionals with a 53% fall (17 fatalities down to 8).

While Tradespersons & related workers recorded the second highest number of falls-related fatalities in 1989–92, this occupation group has not recorded the same level of improvement as some of the other occupation groups. With only a 38% decrease this occupation group had the highest number of falls-related fatalities in 2008–11.

Figure 6: Worker fatalities involving a fall from height: number by occupation, 1989–92 compared with 2008–11

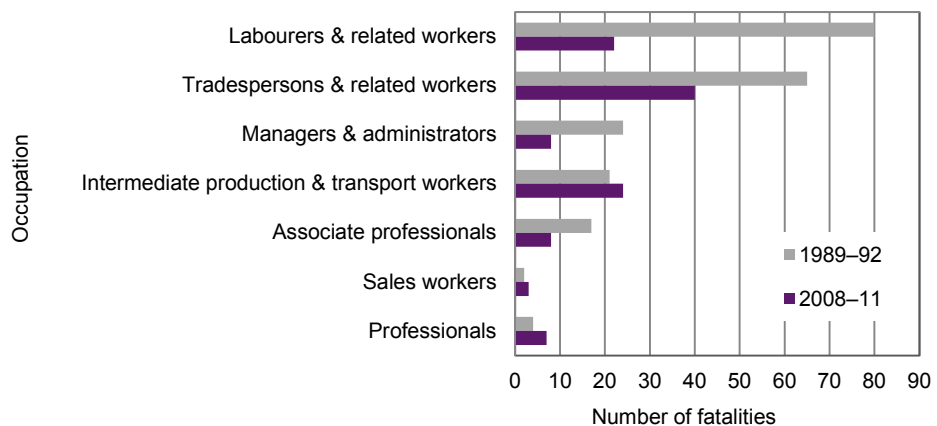


Table 6: Worker fatalities involving a fall from height: number and percentage by occupation, 2003–04 to 2010–11 combined

Occupation major, sub and minor group	No. of fatalities	% of total
Technicians & trades workers	87	36%
Construction trades workers	47	20%
Painting trades workers	14	6%
Plumbers	10	4%
Bricklayers, carpenters & joiners	6	3%
Carpenters & joiners	5	2%
Roof tilers	5	2%
Electrotechnology & telecommunications trades workers	13	5%
Electricians	7	3%
Automotive & engineering trades workers	13	5%
Structural steel & welding trades workers	5	2%
Metal fitters & machinists	4	2%
Skilled animal & horticultural trades workers	7	3%
Animal attendants & trainers	5	2%
Labourers	67	28%
Construction & mining labourers	24	10%
Building & plumbing labourers	12	5%
Structural steel construction workers	6	3%
Farm, forestry & garden workers	15	6%
Crop farm workers	7	3%
Other labourers	23	10%
Deck & fishing hands	9	4%
Handypersons	8	3%
Machinery operators & drivers	32	13%
Road & rail drivers	12	5%
Truck drivers	10	4%
Storepersons	8	3%
Storepersons	8	3%
Machine & stationary plant operators	7	3%
Mobile plant operators	5	2%
Managers	23	10%
Farmers & farm managers	10	4%
Livestock farmers	5	2%
Specialist managers	7	3%
Hospitality, retail & service managers	4	2%
Professionals	10	4%
Design, engineering, science & transport professionals	5	2%
Business, human resource & marketing professionals	4	2%
Community & personal service workers	9	4%
Sports & personal service workers	7	3%
Sports coaches, instructors & officials	6	3%
Sales workers	3	1%
Clerical & administrative workers	1	0%
Total	232	100%

Cause of death

Three-quarters of falls-related fatalities involved head injuries

Of the 112 workers who died from a fall from a height in the four years 2008–11, 76% died due to head injuries, some in combination with major injuries to other parts of the body. Injuries to the chest and torso accounted for 8% of the worker fatalities while 7% died from drowning after falling into water. There were also 3 workers who died from deep vein thrombosis after falling and bruising an area of the body.

Head injuries were the most common cause of death for all origins of fall. The exception was falls from boats where all 4 workers died from drowning.

Of the 23 deaths in this period due to a fall from a ladder, 18 (78%) involved head injuries while 3 (13%) died from injuries to the torso.

Falls from horses had a similar profile to ladder falls with 75% involving injuries to the head and 13% due to injuries to the torso.

Head injuries accounted for a higher proportion of fatalities due to falls from roofs (90%), buildings under construction (86%) and vehicles (83%).

Height of fall

Half of the fatalities involved falls of 3m or less

The height of the fall was only recorded for 203 of the 232 fall-related fatalities in the eight year period. The heights ranged from one metre to 54 metres. Table 7 shows that 31% of the falls were from a height of two metres or less with a further 19% involving falls from between two and three metres. This means that half of the falls involved distances of three metres or less.

Table 7: Worker fatalities involving a fall from height: percentage by height of fall*, 2003–04 to 2010–11 combined

Height of fall (metres)	Number	Percentage of where height was known
1 or less	11	5%
>1 to 2	52	26%
>2 to 3	39	19%
>3 to 4	22	11%
>4 to 5	17	8%
>5 to 6	10	5%
>6 to 7	9	4%
>7 to 8	4	2%
>8 to 9	4	2%
>9 to 10	10	5%
>10 to 15	6	3%
>15 to 20	4	2%
>20 to 30	10	5%
>30	5	2%
Unknown	29	n/a
Total	232	100%

* For this analysis a fall from a horse has been included in the one to two metres category. Similarly where not specified a fall from a utility or truck has also been included in the one to two metres category.

Origin of fall

One in six fatalities due to fall from height involved a fall from a ladder

Table 8 shows where the worker was at the time of the fall. These data show that falls from ladders accounted for the greatest number of falls-related fatalities (37 fatalities - 16%). This was followed by vehicles and roofs with 26 and 25 fatalities (11%) respectively.

Table 8: Worker fatalities involving a fall from height: number by origin of fall, 2003–04 to 2010–11 combined

Origin of fall	Number	Percentage of total
Ladder	37	16%
Vehicle	26	11%
Roof	25	11%
Horse	21	9%
Building under construction	20	9%
Platform	19	8%
Hoist	14	6%
Pit/hole	12	5%
Boat	10	4%
Tank/silo	9	4%
Other building	8	3%
Forklift	7	3%
Stairs	3	1%
Tree	3	1%
Cliff	2	1%
Other	16	7%
Total	232	100%

Falls from ladders mainly involved older workers while falls from horses mainly involved younger workers

Older workers accounted for the greatest proportion of fatalities for all the main origins of falls except for falls from horses, which is dominated by younger workers. Table 9 shows that one-third of fatalities due to a fall from a horse involved workers aged less than 25 years.

The oldest age profile was for fatalities due to falls from ladders with 49% involving workers aged 65 years & over. Falls from vehicles also showed an older age profile with only 24% of fatalities involving workers aged less than 45 compared with 36% for all fatalities.

Table 9: Worker fatalities involving a fall from height: proportion by age group within selected origins of fall, 2003–04 to 2010–11 combined

Origin of fall	Age group (years)						Total
	15–24	25–34	35–44	45–54	55–64	65 & over	
Ladder	3%	0%	11%	16%	22%	49%	100%
Vehicle	0%	12%	12%	23%	27%	27%	100%
Roof	4%	8%	12%	24%	32%	20%	100%
Horse	33%	19%	10%	10%	24%	5%	100%
Building under construction	10%	15%	5%	25%	40%	5%	100%
Platform	0%	11%	21%	21%	32%	16%	100%
All origins	6%	14%	16%	19%	27%	18%	100%

Table 10 shows what were the key origins of the fall for the industries with the highest numbers of fatalities. Within the Construction industry there were four main objects or structures from which the worker fell. Falls from ladders and buildings under construction accounted for 21% of the fatalities in the Construction industry each followed by falls from platforms (19%) and falls from roofs 17%.

Table 10: Worker fatalities involving a fall from height: proportion by industry and origin of fall, 2003–04 to 2010–11 combined

Industry/ Origin of fall	Number of fatalities	% of industry	% of all fatalities
Construction	86		37%
Ladder	18	21%	8%
Building under construction	18	21%	8%
Platform	16	19%	7%
Roof	15	17%	6%
Pit/hole	3	3%	1%
Hoist	3	3%	1%
Agriculture, forestry & fishing	31		13%
Horse	11	35%	5%
Vehicle	6	19%	3%
Boat	6	19%	3%
Manufacturing	20		9%
Ladder	4	19%	2%
Forklift	3	14%	1%
Transport, postal & warehousing	20		9%
Vehicle	9	45%	4%
Boat	3	15%	1%
Administrative & support services	12		5%
Ladder	3	25%	1%
Arts & recreation services	11		5%
Horse	9	82%	4%
Mining	10		4%
Pit/hole	6	60%	3%
Other industries	42		18%
Ladder	9	21%	4%
Roof	7	17%	3%
Vehicle	5	12%	2%
Total	232		100%

Falls from horses accounted for one-third of fatalities in the Agriculture, forestry & fishing industry followed by falls from vehicles (19%) and falls from boats (19%). Falls from horses also dominated the count in the Arts & recreation services industry with 9 of the 11 fatalities in this industry related to horse racing and training activities.

It is not surprising that falls from vehicles accounted for 45% of the falls-related fatalities in the Transport & storage industry with falls from boats accounting for a further 15%.

Falls from ladders

In the eight years from 1 July 2003 to 30 June 2011, 37 workers died following a fall from a ladder. The reason for the fall was only known in 20 of the incidents:

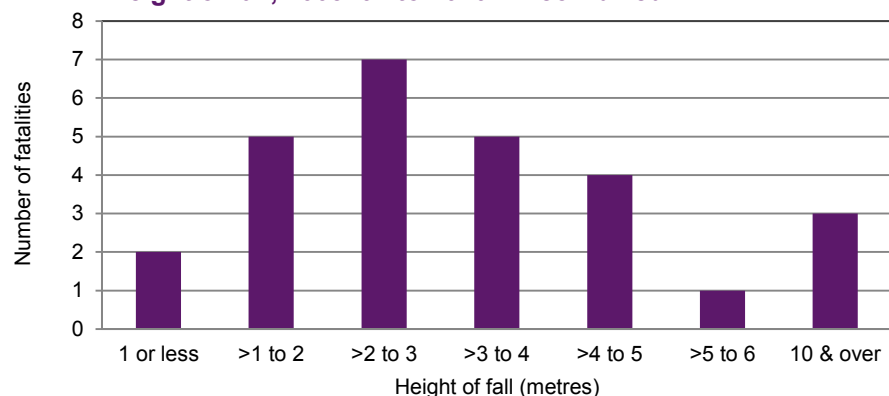
- 6 occurred while the worker was climbing up or down the ladder
- 4 were due to over-balancing on the ladder
- 3 incidents were thought to have been precipitated by a medical event prior to the fall
- 3 workers fell when the ladder moved
- 1 fell due to the ladder collapsing, and
- 1 worker was knocked off the ladder by a falling tree branch.

One-third of the incidents (12 of 37) occurred on construction sites, 10 occurred at commercial premises, 8 in residential premises, 2 on a farm and 5 in other locations.

The workers were employed in many different occupations. The most common were handyman (6), electricians (4), painters (4), commercial cleaners (3) and plumbers (3).

The height of the fall was known in 27 of the incidents. Figure 7 shows that a distance of between two and three metres accounted for one-quarter (7 fatalities) of the falls from ladders where the height was known. This was followed by falls between one and two metres and falls between three and four metres both of which accounted for 5 fatalities.

Figure 7: Worker fatalities involving a fall from a ladder: number by height of fall, 2003–04 to 2010–11 combined

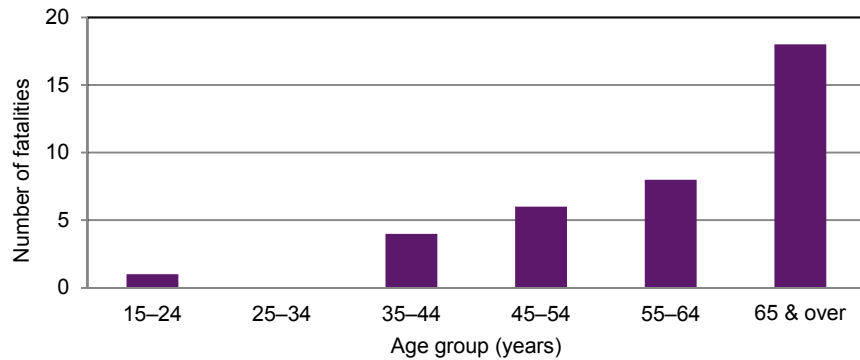


These data show that even a fall of one metre or less can result in death depending on what part of the body is affected. The 2 deaths from one metre or less resulted from falls from step ladders. Both workers were aged over 65 years and sustained head injuries.

Figure 8 shows that nearly half of the workers who were killed due to a fall from a ladder were aged 65 years or over. Most of these older workers were working on established buildings at the time of the incident with 6 falling from ladders while working on commercial premises and 7 on ladders at residential premises. There were a range of reasons for the falls.

Half of the falls from ladder fatalities involved workers aged 65 & over

Figure 8: Worker fatalities involving a fall from a ladder: number by age of worker, 2003–04 to 2010–11 combined



Comparison with the 1989–92 results shows there has been a fall in the number of fatalities due to falls from ladders from 33 in 1989–92 down to 23 in 2008–11. Interestingly, there were 14 fatalities from falls from ladders in the four year period from 2003–07. This indicates that while the number of fatalities has fallen from 20 years ago, they have risen again from what they were eight years ago. Over the four year period 1989–92 there was an average of 8 fatalities from falls from ladders each year. In 2010–11 there were 9 and in 2007–08 there were 7.

Falls from vehicles

Falls from vehicles typically involved loading or unloading a truck

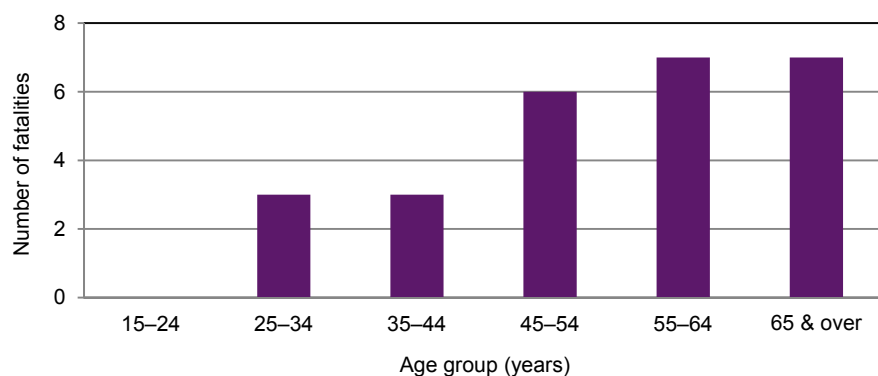
In the eight years from 1 July 2003 to 30 June 2011, 26 workers died following falls from vehicles. Trucks were involved in 70% of the incidents (18 fatalities). In 12 of the 18 fall from truck incidents the worker was loading or unloading items from the vehicle. In 4 other incidents utilities were involved with 2 of these incidents also involving loading or unloading activities.

Four workers fell off slow moving vehicles, 2 of which occurred on farms. Other activities that were being undertaken at the time of the fall were cleaning the vehicle (3 fatalities), repairing the vehicle (1) and exiting the vehicle (1). A medical event precipitated 2 of the falls.

Figure 9 shows that three-quarters of the workers who died following a fall from a vehicle were aged 45 years and over.

Comparison with the 1989–92 results shows there has been little change in the number of fatalities due to falls from vehicles. In 1989–92 there were 13 while in 2008–11 there were 12.

Figure 9: Worker fatalities involving a fall from a vehicle: number by age of worker, 2003–04 to 2010–11 combined



Falls from roofs

Falls from roofs typically involved repair or replacement activities

In the eight years from 1 July 2003 to 30 June 2011, 25 workers died from falls from roofs. The activities at the time of the fall included:

- 9 were repairing the roof
- 5 were undertaking removal of old roof sheeting
- 3 were painting residential premises
- 3 were installing services to premises, and
- 2 were replacing guttering.

The places of occurrence included 10 residential houses, 7 industrial premises, 3 commercial premises, 2 high rise residential premises and 2 schools.

The workers were employed in many different occupations. The most common were plumbers (4), building and plumbing labourers (3), handypersons (2), painters (2) and roof tilers (2).

Figure 10 shows that one-half (12) of the falls from roofs involved falls of three metres or less. Most of these (8) involved residential properties. Other heights were evenly spread.

Figure 10: Worker fatalities involving a fall from a roof: number by height of fall, 2003–04 to 2010–11 combined

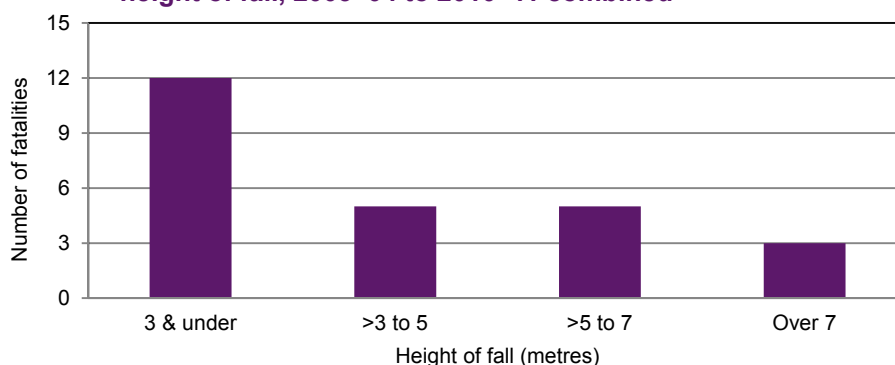
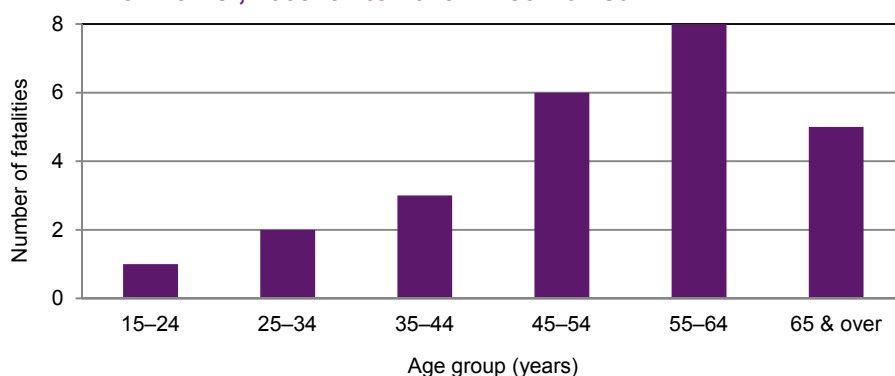


Figure 11 shows that three-quarters of the workers who fell from a roof were aged 45 years or over.

Figure 11: Worker fatalities involving a fall from a roof: number by age of worker, 2003–04 to 2010–11 combined



Comparison with the 1989–92 results shows there has been a decrease in the number of fatalities due to falls from roofs from 22 in 1989–92 to 11 in 2008–11. The previous four year period from 2004–07 recorded 15 fatalities from falls from roofs indicating there has been a consistent decrease.

Falls from horses

Falls from horses typically involved mustering, racing or training activities

In the eight years from 1 July 2003 to 30 June 2011, 21 workers died following a fall from a horse. Half of these occurred on a farm. The activity at the time of the fall was known in 18 of the incidents:

- 6 occurred while mustering
- 6 occurred while racing
- 5 occurred while training the horse, and
- 1 occurred while undertaking general riding activities.

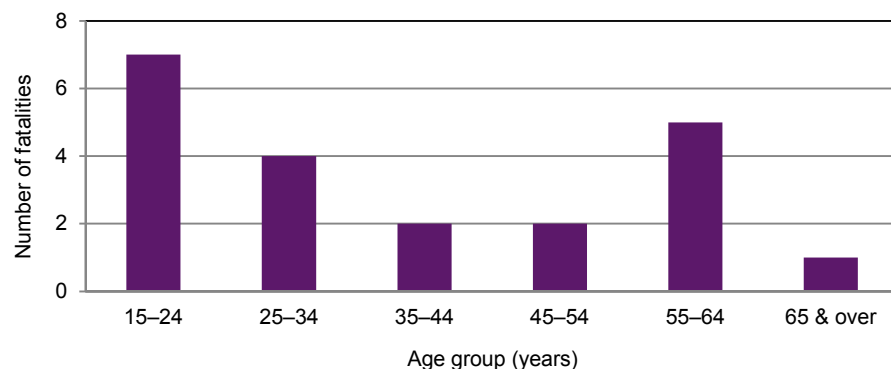
Four of the 21 workers who died while riding a horse were female. This is nearly half of all the female workers who died following a fall from a height.

The age profile for worker fatalities due to falls from horses involved a much higher proportion of young workers compared with the other falls categories. Figure 12 shows that 39% of the workers who died from a fall from a horse (7 fatalities) were in the 15–24 years age group. This is considerably higher than the 6% of all falls-related fatalities that this age group represents.

While the number of fatalities fell as age increased the 55–64 years age group recorded the second highest number of fatalities due to a fall from a horse (5).

Comparison with the 1989–92 results shows there has been a fall in the number of fatalities due to falls from horses from 19 in 1989–92 to 8 in 2008–11. This reduction could be due to the increased use of quad bikes and motorbikes on farms for mustering and other activities.

Figure 12: Worker fatalities involving a fall from a horse: number by age of worker, 2003–04 to 2010–11 combined



Falls from buildings under construction

Falls from buildings typically involved residential construction

In the eight years from 1 July 2003 to 30 June 2011, 20 workers died following a fall from a building under construction. Not surprisingly, all but 2 of these workers were working for a construction company.

Half of the workers (11) were constructing houses at the time of the fatal incident with 2 other workers constructing high rise accommodation. In addition 3 workers were constructing commercial buildings and 4 were constructing industrial structures when they fell.

Figure 13 shows that one-third of fatalities (7) due to a fall from a building under construction involved falls of between two and four metres with 6 fatalities involving falls of between four and six metres and 5 fatalities involving falls of seven or more metres. These data show that deaths while undertaking residential construction are associated with smaller heights. This is not surprising as commercial and industrial premises are usually taller than houses.

Figure 13: Worker fatalities involving falls from buildings under construction: number by height of fall, 2003–04 to 2010–11 combined

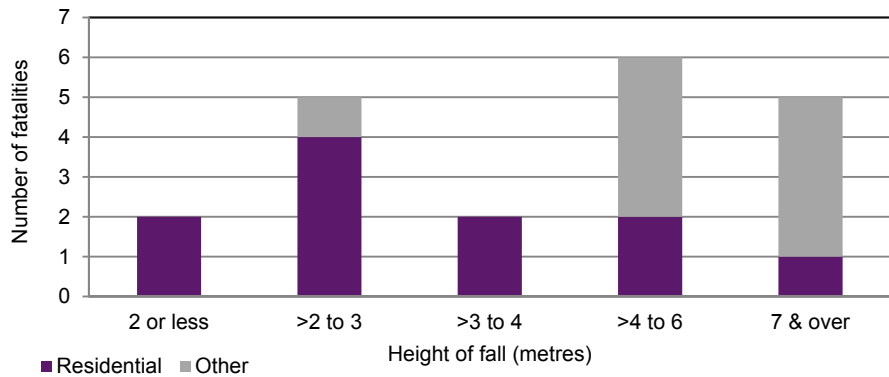
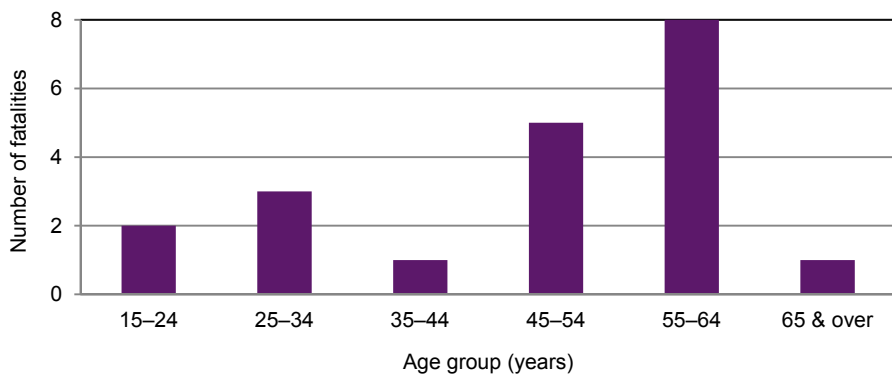


Figure 14 shows that 70% of the workers who fell from a buildings under construction were aged 45 years or over.

Figure 14: Worker fatalities involving falls from buildings under construction: number by age of worker, 2003–04 to 2010–11 combined



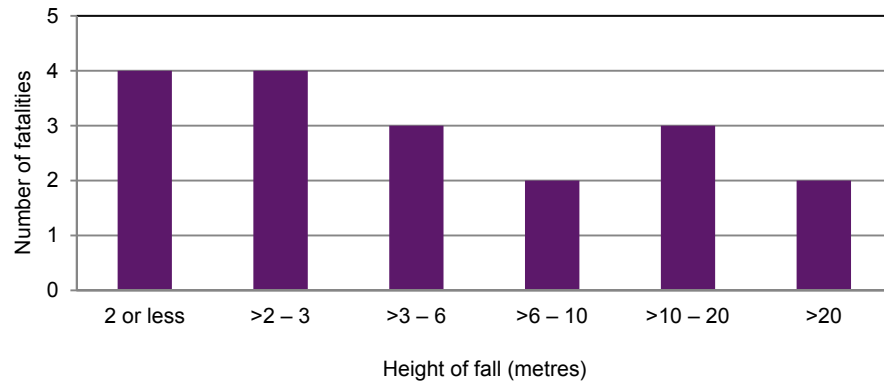
Falls from platforms

In the eight years from 1 July 2003 to 30 June 2011, 19 workers died due to a fall from a platform. The platforms included 5 trestles, 3 mobile scaffolds and 3 suspended scaffolds. The remaining 8 fatalities resulted from falls from some type of fixed scaffolding.

Figure 15 shows that falls from platforms tended to involve falls from greater heights than from the other origins. The highest falls were from mobile scaffold. Two of the mobile scaffold fatalities occurred in the same incident and involved a fall of 54 metres while another incident involved a fall of 20 metres.

Falls from trestle platforms were associated with shorter distances with 4 of 5 trestle platform fatalities involving heights of three metres or less.

Figure 15: Worker fatalities involving falls from platforms: number by height of fall, 2003–04 to 2010–11 combined



Falls from hoists

In the eight years from 1 July 2003 to 30 June 2011, 14 workers died following a fall from a hoist, of which 12 were elevated work platforms (EWP). The height of the fall ranged from two metres to 20 metres.

The fatalities can be grouped into three main reasons:

- 5 workers died when the EWP fell over as it was moved to a new position
- 5 workers died due to a failure of the hoist to maintain its height, and
- 3 workers died when they fell out of the basket attached to the hoist.

Falls into pits or holes

In the eight years from 1 July 2003 to 30 June 2011, 12 workers died following a fall into a pit or hole. Half of these occurred at mines with workers falling into shafts or other openings. The mine workers who died fell distances of between seven and 30 metres. In addition there were 3 workers who died after falling into sewer pits. These workers died from asphyxiation rather than injuries from the fall.

Falls from boats

In the eight years from 1 July 2003 to 30 June 2011, 10 workers died due to a fall from a boat. The incidents can be grouped as follows:

- 5 workers fell overboard during rough weather
- 2 workers fell overboard while undertaking cleaning activities
- 2 workers went missing from their vessels at night, and
- 1 worker fell overboard while trying to reach a rope.

Trawlers were the most common vessels associated with falls from height (6) with 2 fatalities associated with yachts and the others being a sailing boat and a barge.

Serious workers' compensation claims due to falls from a height

Each day 21 employees lodge a claim for a week or more off work due to a fall from height

In 2010–11, 7730 workers' compensation claims for serious injury were lodged due to a fall from a height. This means that each day 21 employees experienced a fall and were unable to work for at least one week.

Falls from height accounted for 6% of all serious workers' compensation claims in 2010–11. A workers' compensation claim is classed as serious when it involves a fatality, a permanent incapacity or a temporary incapacity that requires one or more weeks off work. The data in this section comes from the National Data Set (NDS) for compensation based statistics. Unlike the fatalities information, data from the NDS do not contain narrative information and claims are included in this analysis if the Mechanism of incident is coded to *Falls from a height*. The Mechanism classification is designed to identify the overall action or event that best describes the circumstances that resulted in the most serious injury.

Workers' compensation covers around 88% of all workers in Australia and generally does not cover self-employed workers. Around half of the workers in the Agriculture, forestry & fishing industry and one-third of the workers in Construction industry are self-employed. The statistics in this chapter provide information on claims lodged by employees. It is unknown whether or not employees and self-employed workers differ with respect to injuries caused by falls from height.

Table 11 shows that the number of serious claims due to a fall from a height for the past eight years. These data indicate a steady increase in claim numbers for the first few years and then a major increase for the 2007–08 and 2008–09 years. Since this time the numbers have decreased to be similar to 2005–06 but are still higher than in 2003–04 and 2004–05. The preliminary data for 2011–12 (not shown in table) indicate that a continuing decrease in the number of claims is likely.

It is not possible to determine how many employees are at risk of a fall from height in their job. Therefore incidence rates are calculated using all employees. The incidence rate data in Table 11 show very little change over the eight years with 0.8 or 0.9 serious claims per 1000 employees in most years. However, the latest year recorded 0.7. As employment has increased 21% over this period, the latest result shows a genuine improvement in claims due to a fall from height.

Table 11: Serious claims due to falls from a height: number and incidence rate by sex and year

	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Number of claims								
Male	5 785	5 910	5 940	6 235	6 880	6 805	6 130	5 795
Female	1 755	1 710	1 800	1 910	2 075	2 230	2 080	1 930
Total	7 545	7 620	7 745	8 145	8 950	9 040	8 210	7 730
Incidence rate (claims per 1000 employees)								
Male	1.3	1.3	1.2	1.2	1.3	1.3	1.2	1.1
Female	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4
Total	0.9	0.9	0.8	0.9	0.9	0.9	0.8	0.7

Sex

Male employees account for three-quarters of claims due to falls from height

On average male employees accounted for 75% of serious falls-related claims. This is higher than the 66% that males accounted for of all serious claims. The higher proportion is probably linked to male employees being more likely to work at height than female employees. This proportion is also substantially different to fatalities where 98% of falls-related fatalities involved male workers.

The major increase in claim numbers in the 2007 to 2009 period was evident for both sexes though the decrease in numbers since this time is more pronounced for males than females. The number of claims for males in 2010–11 is similar to 2003–04 levels while for females the number is still higher than in 2006–07. This could be linked to higher female employment as the incidence rates have been flat for the full eight years of the time series.

The incidence rate of falls-related claims for males was generally three times the rate for females.

Time lost from work

A typical claim due to a fall from height involved 6 weeks off work

Table 12 shows that the median time lost from work for serious falls-related claims has increased gradually from 5.2 working weeks in 2003–04 to 6.2 in 2010–11. This duration of absence is substantially above the median time lost for all serious injury and disease claims, which rose from 3.6 to 4.4 over the same period. Time lost from work is calculated as the number of working weeks that compensation is paid following a work-related injury. The period does not have to be continuous.

The increase over time in the median time lost from work for falls-related claims was similar to all serious claims. This indicates that the factors that are influencing this increase are not specific to the injuries incurred following a fall from height.

Table 12: Serious claims due to falls from a height: median time lost from work (working weeks) by sex and year

Sex	2003–04	2004–05	2005–06	2006–07	2007–08	2008–09	2009–10	2010–11
Male	5.6	5.6	6.0	5.8	6.2	6.2	6.3	6.8
Female	4.2	4.1	5.0	4.4	4.6	5.0	5.0	4.6
Total	5.2	5.2	5.7	5.5	5.8	6.0	6.0	6.2
All claims	3.6	3.6	4.0	4.0	4.0	4.2	4.2	4.4

These data also show that a typical claim for a male employee involved a longer period of time off work compared with females. Over the eight years, the median time off from work for males has increased from 5.6 working weeks to 6.8. For females, there has not been the steady increase seen for male workers with time lost ranging from a low of 4.1 working weeks in 2004–05 to 5.0 recorded in three of the eight years. A typical falls-related claim for a female employee involved 4.6 working weeks of time lost in 2010–11.

The claims can be further analysed by different periods of time off from work. Data from 2008–09 is used to allow sufficient time for the claims to finalise. Table 13 shows that falls-related claims generally

11% of claims due to a fall from height involved one year or more off work

result in longer periods off work than the all claims average. Half of the serious falls-related claims had less than six weeks off work. This is lower than the 57% of all serious claims involving all Mechanisms of incident with this period of time lost. For all other periods of time lost, falls-related claims accounted for higher proportions than the proportions for all serious claims. These data show that 11% of seriously injured employees required one year or more off work following a fall.

Table 13: Serious claims due to falls from a height: number and percentage of claims by time lost from work, 2008–09

Time lost from work	Number of claims	% of falls claims	% all serious claims
1 to 5 weeks	4 495	50%	57%
6 to 11 weeks	1 545	17%	15%
12 to 25 weeks	1 295	14%	11%
26 to 51 weeks	720	8%	6%
52 weeks & over	980	11%	10%
Total	9 040	100%	100%

Age group

Injury incidence rates due to falls from height increased with age

Table 14 shows that in 2010–11 there were greater numbers of claims in the older age groups for falls-related claims and that these older age groups had higher incidence rates. Workers less than 35 years had 0.6 serious claims per 1000 employees due to a fall from height with the rate increasing with age to 1.0 for employees aged 55 years and over. This pattern is similar for all years in the time series.

Table 14: Serious claims due to falls from a height: number and percentage of claims, incidence rate (claims per 1000 employees) and median time lost by age group, 2010–11

Age group (years)	Number of claims	% of claims	Incidence rate	Median time lost (weeks)
Less than 25	1 120	14%	0.6	4.2
25–34	1 410	18%	0.6	6.0
35–44	1 750	23%	0.8	6.2
45–54	1 935	25%	0.9	7.0
55 & over	1 510	20%	1.0	7.8
Total	7 730	100%	0.7	6.2

The age distribution of claims displays a different pattern to the age distribution of fatalities. The highest proportions of serious claims occurred in the middle age groups rather than the oldest age groups as with fatalities. The fatalities data show that 23% of deaths involve workers aged 65 years and over. This age group is not shown for claims as it accounted for just 2% of claims in 2010–11. This different age profile between fatalities and claims may be related to older workers being more likely to be self-employed and therefore not being able to claim workers' compensation. It could also be due to a higher risk of dying from a fall when older.

In 2010–11, the median amount of time off from work following a fall from height increased with age from 4.2 working weeks for employees aged under 25 years to 7.8 working weeks for employees aged 55 years and over.

Jurisdiction

Queensland has highest rate of injury due to fall from height

The following data refer to the workers' compensation jurisdiction in which the claim was lodged rather than the state or territory in which the incident occurred.

As New South Wales accounts for one-third of employees it is not surprising that it also accounted for one-third of falls-related claims. The New South Wales incidence rate of 0.8 serious claims per 1000 employees due to a fall from height serious claims in 2010–11 was slightly above the national rate (0.7).

Table 15 shows that the 14% decrease in the number of falls-related claims over the last three years was largely driven by Queensland. However, over this period Queensland accounted for the second highest proportion (29%) of falls-related claims and since it accounts for just 19% of employees, Queensland recorded the highest incidence rate in two out of the last three years. Due to a 30% fall in the number of falls-related claims in this period, Queensland's incidence rate of 1.0 serious claims per 1000 employees in 2010–11 is now the third highest behind the Northern Territory (1.2) and the Australian Capital Territory (1.1) which together account for just 3% of falls-related claims. The Australian Capital Territory was the only jurisdiction to record an increase in the incidence of falls-related claims over the three years.

While Western Australia accounted for the highest proportion of fatalities (23% over the four years 2008–11) it accounted for just 13% of serious claims over the past three years, a figure closer to its proportion of employees (11%). Western Australia has recorded one of the smallest improvements in the number of falls-related claims while Victoria recorded a small increase.

These data show that the lowest incidence rate (0.3) of falls-related claims was recorded by the Commonwealth. The Commonwealth includes Australian Government public servants and national companies who are self-insuring through Comcare. The lower rate in the Commonwealth is linked to the lower risk of a fall from height when primarily doing desk-based work. It is therefore possible that the higher rates in Queensland and the Northern Territory are linked to higher proportions of jobs that involve working at heights.

Table 15: Serious claims due to falls from a height: number and incidence rate (claims per 1000 employees) by jurisdiction, 2008–09 to 2010–11

Jurisdiction	Serious claims			Incidence rate		
	2008–09	2009–10	2010–11	2008–09	2009–10	2010–11
Northern Territory	150	140	135	1.4	1.2	1.2
Australian Capital Territory	120	110	140	0.9	0.8	1.1
Queensland	2 855	2 485	1 985	1.5	1.3	1.0
New South Wales	2 690	2 515	2 475	0.9	0.8	0.8
Western Australia	1 150	980	1 075	1.1	0.9	1.0
Victoria	1 310	1 305	1 335	0.5	0.5	0.5
Tasmania	200	155	115	1.0	0.8	0.5
South Australia	400	375	325	0.6	0.5	0.4
Commonwealth	135	125	125	0.4	0.3	0.3
Total	9 040	8 210	7 730	0.9	0.8	0.7

Industry

The industries with the highest numbers of serious falls-related claims in 2010–11 were Construction (20% of claims), Manufacturing (12%) and Transport & storage (11%). Together with Agriculture, forestry & fishing, these three industries also recorded the highest number of fatalities. However, the Agriculture, forestry & fishing industry accounted for just 5% of serious claims.

Table 16 shows that decreases in the number of falls-related claims were recorded in all but two industries. The Construction, Manufacturing and Transport & storage industries recorded decreases of between 18% and 20%, notably higher than the 14% decrease overall.

The Agriculture, forestry & fishing, Construction and Transport & storage industries had the highest falls-related incidence rates

For the Construction industry, the decrease in the number of claims combined with rising employment has seen the incidence rate of falls-related claims decrease 25% from 2.8 serious claims per 1000 employees to 2.1 in three years. Despite this decrease the Construction industry still had the highest falls-related incidence rate of serious claims in 2010–11, three times the overall rate.

The Agriculture, forestry & fishing industry recorded a 29% decrease in the incidence rate of serious claims from 2.8 claims per 1000 employees to 2.0. This is the second highest industry incidence rate for serious falls-related claims. The Transport & storage industry's falls-related incidence rate fell 21% to 1.9 serious claims per 1000 employees and was the third highest industry rate.

The Manufacturing industry, which had the second highest number of serious claims, recorded the sixth highest injury incidence rate (0.9 serious claims per 1000 employees) due to its much larger employment compared to other industries.

Table 16: Serious claims due to falls from a height: proportion and incidence rate (claims per 1000 employees) by industry, 2008–09 to 2010–11

Industry	Serious claims			Incidence rate		
	2008–09	2009–10	2010–11	2008–09	2009–10	2010–11
Construction	1 900	1 660	1 560	2.8	2.4	2.1
Agriculture, forestry & fishing	480	460	355	2.8	2.5	2.0
Transport & storage	1,035	865	825	2.4	2.0	1.9
Cultural & recreational services	400	375	365	1.4	1.3	1.2
Personal & other services	390	400	370	1.1	1.1	1.0
Manufacturing	1 080	915	865	1.1	1.0	0.9
Wholesale trade	445	405	395	1.1	0.9	0.9
Mining	175	165	165	1.1	1.0	0.8
Property & business services	705	650	655	0.6	0.5	0.5
Education	480	440	450	0.6	0.5	0.5
Electricity, gas & water supply	45	35	45	0.4	0.4	0.4
Retail trade	655	640	600	0.4	0.4	0.4
Accommodation, cafes & restaurants	310	265	245	0.6	0.5	0.4
Government administration	265	280	230	0.5	0.5	0.4
Communication services	80	95	75	0.3	0.4	0.3
Health & community services	530	505	445	0.5	0.4	0.3
Finance & insurance	60	45	60	0.2	0.1	0.1
Total	9 040	8 210	7 730	0.9	0.8	0.7

Males had high falls-related incidence rates in the Agriculture, Construction and Transport industries while females had high rates in Health, Education and Retail trade

Industry by sex

As male employees accounted for three-quarters of the claims arising from a fall from height, the industry profile is similar to the profile for all falls-related claims. The Construction, Transport & storage and Agriculture, forestry & fishing industries recorded the highest incidence rates of serious claims for males. The rates for these industries were twice the overall falls-related incidence rate for males (1.1 serious claims per 1000 employees in 2010–11).

Table 17 shows that the profile for female employees was different to the profile for males. The Health & community services industry accounted for the highest proportion of falls-related claims (17%) for females followed by the Education (16%) and Retail trade (15%) industries. As these sectors also accounted for the highest proportions of female employees, the incidence rates for falls-related claims for females were similar to the overall falls-related incidence rate for females (0.4 serious claims per 1000 employees).

The highest falls-related incidence rate of serious claims for females was recorded by the Agriculture, forestry & fishing industry with 1.7 serious claims per 1000 employees. This was four times the overall falls-related incidence rate for females. The next highest industries for females were Cultural & recreational services (0.8), Transport & storage (0.6) and Construction (0.6).

Table 17: Serious claims due to falls from a height: percentage of claims and employees and incidence rate (claims per 1000 employees) by industry and sex, 2010–11

Industry	Male			Female		
	% of claims	% of employees	Incidence rate	% of claims	% of employees	Incidence rate
Construction	26%	12%	2.3	3%	2%	0.6
Transport & storage	13%	6%	2.3	4%	2%	0.6
Agriculture, forestry & fishing	5%	2%	2.2	4%	1%	1.7
Cultural & recreational services	4%	3%	1.6	6%	3%	0.8
Personal & other services	5%	3%	1.5	4%	4%	0.5
Manufacturing	13%	13%	1.1	5%	5%	0.4
Wholesale trade	6%	5%	1.1	3%	3%	0.5
Mining	3%	3%	0.9	1%	1%	0.5
Property & business services	8%	13%	0.7	9%	11%	0.3
Education	3%	5%	0.6	16%	12%	0.5
Health & community services	2%	5%	0.5	17%	21%	0.3
Accommodation, cafes & restaurants	2%	5%	0.5	6%	7%	0.4
Government administration	2%	5%	0.5	5%	6%	0.3
Retail trade	5%	13%	0.4	15%	17%	0.3
Total (incl industries not shown)	100%	100%	1.1	100%	100%	0.4

Industry by jurisdiction

Table 18 shows falls-related incidence rates by selected jurisdictions for the industries with high numbers of claims and high incidence rates for the three year period from 2008–09 to 2010–11 hereafter referenced as 2009–11. While the Northern Territory and the Australian Capital Territory recorded the highest falls-related incidence rates, further analysis by industry has not been shown due to the small numbers of claims involved. Of the states and industries shown in Table 18, Queensland recorded the highest falls-related

incidence rates for six of the seven industries.

Table 18: Serious claims due to falls from a height: incidence rates (claims per 1000 employees) for selected industries by selected jurisdictions, 2009–11

Industry	New South Wales	Victoria	Queensland	Western Australia	South Australia
Agriculture, forestry & fishing	2.2	1.2	4.7	2.2	1.1
Construction	2.3	1.8	3.3	3.0	1.8
Transport & storage	2.0	1.4	2.9	2.5	1.9
Cultural & recreational services	1.1	1.2	1.7	1.9	1.3
Personal & other services	1.2	0.7	1.6	0.8	0.5
Manufacturing	1.1	0.6	1.6	1.4	0.5
Wholesale trade	1.0	0.7	1.5	1.0	0.5

Queensland had high falls-related incidence rates in most industries

For the Agriculture, forestry & fishing industry, Queensland's incidence rate of 4.7 serious claims per 1000 employees over the 2009–11 period was more than twice the rates of New South Wales (2.2) and Western Australia (2.2) and more than four times the rates of Victoria (1.2) and South Australia (1.1). Queensland accounted for 36% of all falls-related claims lodged in the Agriculture, forestry & fishing industry over the three year period yet accounted for just 19% of employees.

For the Construction industry, Queensland's incidence rate of 3.3 serious claims per 1000 employees was slightly higher than Western Australia (3.0) but nearly twice the rate of Victoria (1.8) and South Australia (1.8). It was a similar story for the Transport & storage and Manufacturing industries.

Western Australia recorded the highest falls-related incidence rate for the Cultural & recreational services industry, 1.9 serious claims per 1000 employees, closely followed by Queensland (1.7).

Detailed industry

Road freight transport had five times the national rate of claims for falls from a height

Table 19 shows the industry groups with the highest incidence rates of falls-related claims in the period 2009–11. This is the lowest level of the industry classification that has reliable employee estimates. These data show that Road freight transport, with 4.1 serious claims per 1000 employees, recorded the highest incidence rate of claims due to a fall from a height. This is five times the overall incidence rate (0.8) during this period. Road freight transport accounted for 6.6% of falls-related claims and 1.3% of employees in the three years 2009–11.

The second highest incidence rate was recorded by Grain, sheep & beef cattle farming with 3.9 serious claims per 1000 employees. This industry sector accounted for 2.3% of falls-related claims but only 0.5% of employees.

Building structure services and Building completion services both recorded 3.6 serious claims per 1000 employees. Building structure services includes carpentry, painting and plumbing services. Building completion services includes workers engaged in concreting, bricklaying and roofing services. Sectors within the Construction industry accounted for six of the twelve industry groups shown in Table 19.

Table 19: Serious claims due to falls from a height: percentage of claims and employees and incidence rates (claims per 1000 employees) for selected industries*, 2009–11

Industry group	% of claims	% of employees	Incidence rate
Road freight transport	6.6%	1.3%	4.1
Grain, sheep & beef cattle farming	2.3%	0.5%	3.9
Building completion services	3.6%	0.8%	3.6
Building structure services	2.3%	0.5%	3.6
Site preparation services	1.7%	0.4%	3.4
Non-building construction	2.1%	0.6%	2.7
Installation trade services	5.0%	1.6%	2.5
Sport	3.4%	1.2%	2.4
Other construction services	1.6%	0.6%	2.2
Public order & safety services	3.2%	1.3%	2.0
Horticulture & fruit growing	1.3%	0.5%	2.0
Building construction	4.1%	2.2%	1.5

* Industry groups with the highest incidence rates and more than 300 claims in the three year period.

Occupation

The highest incidence rates were recorded by labourers, tradespersons and production workers

Three occupations accounted for two out of every three (64%) serious claims due to a fall from height over the three years 2009–11. These were Intermediate production & transport workers (23% of claims), Tradespersons & related workers (22%) and Labourers & related workers (19%). Intermediate production & transport workers includes truck drivers and mobile plant operators. These occupation groups accounted for 38% of employees in this time period.

These three occupations also recorded the highest incidence rates: Intermediate production & transport workers with 2.1 serious claims per 1000 employees, Labourers & related workers with 1.7 and Tradespersons & related workers with 1.5 in 2010–11. In contrast, the other occupations recorded 0.5 or less.

Table 20: Serious claims due to falls from a height: number and incidence rate (claims per 1000 employees) by occupation, 2008–09 to 2010–11

Occupation	Serious claims			Incidence rate		
	2008–09	2009–10	2010–11	2008–09	2009–10	2010–11
Intermediate production & transport workers	2 130	1 840	1 765	2.5	2.2	2.1
Labourers & related workers	1 790	1 430	1 410	2.2	1.7	1.7
Tradespersons & related workers	2 090	1 775	1 725	2.0	1.7	1.5
Associate professionals	645	620	665	0.5	0.5	0.5
Elementary clerical, sales & service workers	510	550	510	0.5	0.5	0.5
Intermediate clerical, sales & service workers	760	715	700	0.4	0.4	0.4
Managers & administrators	270	280	225	0.4	0.4	0.3
Professionals	780	715	645	0.4	0.3	0.3
Advanced clerical & service workers	65	55	65	0.2	0.2	0.2
Total	9 040	8 210	7 730	0.9	0.8	0.7

As male employees accounted for three-quarters of the falls-related claims their occupation profile is similar to the total claims profile. Intermediate production & transport workers recorded the highest falls-related incidence rate of 2.3 serious claims per 1000 employees in 2010–11 followed by Tradespersons & related workers (2.1) and Labourers & related workers (1.6).

Table 21 shows that the profile for female employees was quite different. One-quarter of falls-related claims from female employees involved Intermediate clerical, sales & service workers and a further 19% involved Professionals.

Despite the different pattern of claims for females, the occupations with the highest incidence rates for males were also the highest for females though the order was different. The highest incidence rate for female employees was recorded by Labourers & related workers with 1.0 serious claims per 1000 employees in 2010–11. This is more than twice the overall falls-related rate for female employees (0.4) though only half the rate for male employees (2.1) in this occupation group. This was followed by Intermediate production & transport workers (0.8) and Tradespersons & related workers (0.7). While Intermediate clerical, sales & service workers accounted for the highest number of female claims, it recorded an incidence rate of 0.3 due to the high female employment in this occupation.

Table 21: Serious claims due to falls from a height: percentage and incidence rate (claims per 1000 employees) by occupation and sex, 2010–11

Occupation	Male			Female		
	% of claims	% of employees	Incidence rate	% of claims	% of employees	Incidence rate
Intermediate production & transport workers	29%	13%	2.3	4%	2%	0.8
Labourers & related workers	19%	10%	2.1	15%	6%	1.0
Tradespersons & related workers	28%	18%	1.6	4%	2%	0.7
Elementary clerical, sales & service workers	4%	7%	0.7	13%	14%	0.4
Associate professionals	7%	13%	0.6	13%	12%	0.5
Advanced clerical & service workers	0%	1%	0.5	2%	5%	0.2
Intermediate clerical, sales & service workers	4%	10%	0.4	25%	29%	0.3
Managers & administrators	3%	9%	0.3	3%	5%	0.3
Professionals	5%	19%	0.3	19%	25%	0.3
Total	100%	100%	1.1	100%	100%	0.4

Occupation by jurisdiction

Table 22 shows falls-related incidence rates by selected jurisdictions for the three occupations with high numbers of claims and high incidence rates. While the Northern Territory and the Australian Capital Territory recorded the highest falls-related incidence rates, further analysis by occupation has not been shown due to the small numbers of claims involved. Of the states shown in Table 22, Queensland recorded the highest falls-related incidence rates for all three occupations followed by Western Australia and New South Wales.

Table 22: Serious claims due to falls from a height: Incidence rates (claims per 1000 employees) for selected occupations and selected jurisdictions, 2009–11

Industry	New South Wales	Victoria	Queensland	Western Australia	South Australia
Tradespersons & related workers	1.7	1.4	2.3	2.1	0.8
Intermediate production & transport workers	2.2	1.5	3.5	2.8	1.3
Labourers & related workers	1.9	1.1	2.8	2.3	0.8

Detailed occupation

Road and rail transport drivers had five times the overall rate of claims due to a fall from height

Table 23 shows incidence rates of falls-related claims at a more detailed level of the occupation classification. This is the lowest level of the occupation classification that has reliable employee estimates. These data show that the highest incidence rate of falls-related claims (3.9 serious claims per 1000 employees) was recorded by Road & rail transport drivers. This is five times the national rate. This occupation sector accounted for 12.9% of falls-related claims in the three years 2009–11 and accounted for 2.7% of all employees. Within this occupation group Truck drivers accounted for most of the claims.

Structural construction tradespersons recorded the second highest claim rate due to a fall from height with 3.7 serious claims per 1000 employees. This occupation group accounted for 5.8% of falls-related claims over the three years 2009–11. The greatest number of claims within this group was lodged by Carpentry & joinery tradespersons.

Final finishes construction tradespersons with 3.6 serious claims per 1000 employees and Agricultural & horticultural labourers with 3.5 also recorded incidence rates well above the national rate. Within Final finishes construction tradespersons most of the claims were from painters and decorators while within Agricultural & horticultural labourers most of the claims were from farm hands.

Table 23: Serious claims due to falls from a height: Percentage of claims and employees and incidence rates (claims per 1000 employees) for selected occupations*, 2009–11

Occupation group	% claims	% employees	Incidence rate
Road & rail transport drivers	12.9%	2.7%	3.9
Structural construction tradespersons	5.8%	1.3%	3.7
Final finishes construction tradespersons	1.4%	0.3%	3.6
Agricultural & horticultural labourers	3.7%	0.9%	3.5
Plumbers	2.1%	0.6%	3.0
Mining, construction & related labourers	3.3%	1.0%	2.8
Intermediate mining & construction workers	2.1%	0.7%	2.6
Mobile plant operators	2.7%	1.3%	1.7
Fabrication engineering tradespersons	1.5%	0.8%	1.5
Electrical & electronics tradespersons	3.6%	1.9%	1.5

* Occupation groups with the highest incidence rates and more than 300 claims in the three year period.

Nature of injury

Half of the falls-related claims involved a sprain or strain injury

The Nature of injury classification identifies the most serious injury or disease sustained or suffered by the employee. Table 24 shows that nearly half (46%) of the falls-related claims involved *Sprains & strains*. This was followed by *Fractures* (25%) and *Contusion & crushing injury* which includes bruising (9%).

Table 24: Serious claims due to falls from a height: Proportion of claims and median time lost by nature of injury, 2009–11

Nature of injury	Percentage of claims			Median time lost		
	Male	Female	Total	Male	Female	Total
Sprains & strains	45%	48%	46%	4.6	3.6	4.2
Fractures	26%	23%	25%	10.0	8.0	9.5
Contusion & crushing injury	9%	12%	9%	3.4	3.2	3.4
Diseases of the musculoskeletal system	6%	6%	6%	10.8	7.0	9.6
Open wound	4%	2%	4%	2.8	2.6	2.8
Dislocation	3%	2%	3%	10.2	6.4	9.4
Fracture of vertebral column	2%	2%	2%	19.2	17.7	18.8
Intracranial injury	1%	1%	1%	10.0	3.0	6.2
Other injuries & diseases	4%	4%	4%			
Total	100%	100%	100%	6.4	4.9	6.0

There was very little difference between the sexes in the distribution of claims by nature of injury. Females recorded slightly higher proportions of falls-related claims involving *Sprains & strains* (48% for females, 45% for males) and involving *Contusion & crushing injury* (12% for females, 9% for males). Males recorded a slightly higher proportion for *Fractures* (26% for males, 23% for females).

Spinal fractures involved the longest periods of time off work

Male employees had longer periods off work than females for all types of injuries that resulted from a fall from height. *Fracture of vertebral column* required the longest period off work and accounted for 2% of falls-related claims. The median duration of absence from work for this group was 18.8 working weeks compared with 6.0 working weeks for all falls-related claims in the 2008–11 period. *Fracture of vertebral column* includes paraplegia due to fracture of the spine. Male employees with a claim for this type of injury had a slightly longer period off work than females (19.2 working weeks for males, 17.7 for females).

Diseases of the musculoskeletal system recorded the second highest median duration of absence from work (9.6 working weeks) with males requiring 10.8 weeks off and females 7.0. This nature of injury accounted for 6% of falls-related claims.

While *Sprains & strains* accounted for nearly half of the falls-related claims, a typical claim involved 4.2 working weeks of time lost from work, which is below the falls-related median of 6.0.

Fractures accounted for one quarter of claims and had a median time off work of 9.5 working weeks.

Bodily location of injury

Most falls-related claims involved injuries to the knee, ankle or back

Table 25 shows the proportion of claims for the bodily locations with the highest number of claims. Injuries to the *Knee* accounted for 16% of serious falls-related claims. This was closely followed by injuries to the *Ankle* and the *Back*, each accounting for 15%. These three bodily locations accounted for nearly half (46%) of all serious claims due to a fall from height over the three years 2009–11.

While head injuries accounted for 75% of the falls-related fatalities, injuries to the *Head* accounted for just 3% of serious claims. This indicates a strong relationship between receiving a head injury and not surviving the fall.

These data show that males and females generally do not differ in the body part that is injured following a fall from height. However, female employees had a higher proportion of falls-related claims involving the *Ankle* (20% for females, 14% for males) and male employees had higher proportions affecting the *Shoulder* (6% for females, 9% for males) and *Chest* (2% for females, 5% for males).

Table 25: Serious claims due to falls from a height: proportion of claims and median time lost by selected bodily locations and sex, 2009–11

Bodily location of injury	Percentage of claims			Median time lost		
	Male	Female	Total	Male	Female	Total
Knee	16%	14%	16%	6.6	5.7	6.4
Ankle	14%	20%	15%	4.4	3.8	4.2
Back	14%	16%	15%	6.4	5.0	6.0
Shoulder	9%	6%	8%	11.4	7.6	10.8
Wrist	6%	6%	6%	8.2	6.4	7.8
Foot & toes	5%	6%	5%	6.8	5.2	6.4
Chest	5%	2%	4%	3.8	3.2	3.7
Lower leg	4%	3%	4%	6.2	4.8	6.0
Hand, fingers & thumb	3%	2%	3%	5.1	4.9	5.0
Head	3%	3%	3%	5.6	2.8	4.4
Elbow	3%	2%	3%	7.4	4.0	6.4
Other locations	18%	21%	18%			
Total	100%	100%	100%	4.9	6.4	6.0

Injuries to the shoulder required the greatest amount of time off work

Injuries to the *Shoulder* recorded the longest median time off work (10.8 working weeks) with males requiring 11.4 working weeks and females 7.6. This was followed by injuries to the *Wrist* (7.8), *Knee* (6.4), *Foot & toes* (6.4) and *Elbow* (6.4).

While injuries to the *Ankle* accounted for the second highest proportion of serious falls-related claims, they involved a much shorter median period of time off work (4.2 working weeks) than most of the other bodily locations with large numbers of serious claims.

Male employees had longer periods off work than females for all bodily locations of injuries that resulted from a fall from height.

Breakdown agency

Most falls-related claims involved ladders or stairs

The Breakdown agency identifies the object, substance or circumstance principally involved at the point at which things started to go wrong. Table 26 shows that over one-third (38%) of falls-related claims involved aspects of the environment in which the employee worked. The main contributors within *Environmental agencies* were *Steps & stairways*, which accounted for 15% of all falls-related claims and *Buildings & other structures*, which contributed 10%. The coding classification used with the claims does not allow for the identification of falls from roofs separate to other parts of a building so a comparison with fatalities is not possible.

Table 26: Serious claims due to falls from a height: proportion of claims and median time lost by breakdown agency and sex, 2009–11

Breakdown agency	Percentage of claims			Median time lost (weeks)		
	Male	Female	Total	Male	Female	Total
Environmental agencies	32%	56%	38%	5.6	4.2	5.0
Steps & stairways	10%	31%	15%	4.7	4.2	4.5
Buildings & other structures	9%	13%	10%	6.0	4.0	5.2
Holes in the ground	4%	2%	3%	5.4	3.4	5.2
Wet, oily or icy traffic & ground surfaces	1%	1%	1%	5.4	4.5	5.0
Non-powered handtools, appliances & equipment	27%	24%	26%	7.4	5.3	6.8
Ladders	17%	10%	15%	7.2	5.3	7.0
Seating furniture	1%	9%	3%	4.8	5.4	5.2
Scaffolding	3%	0%	3%	11.4	np	11.3
Mobile ramps & stairways	1%	1%	1%	6.0	6.0	6.0
Mobile plant & transport	25%	6%	20%	6.0	5.4	6.0
Trucks, semi-trailers, lorries	16%	2%	12%	6.4	6.8	6.4
Cars, station wagons, vans, utilities	2%	1%	2%	5.2	4.0	5.2
Animal, human & biological agencies	4%	8%	5%	7.0	7.0	7.0
Horses, donkeys, mules	4%	7%	4%	7.2	6.9	7.2
Machinery & mainly fixed plant	4%	1%	3%	6.0	6.5	6.0
Forklift trucks	2%	0%	2%	5.4	np	5.4
Other agencies	7%	5%	7%			
Total	100%	100%	100%	6.4	4.9	6.0

The second most important aspect of falls-related claims is the equipment used while at work. Just over one-quarter (26%) of falls-related claims were coded to *Non-powered handtools, appliances & equipment*. Within this agency, ladders were the major contributor and accounted for 15% of all falls-related claims.

Movable plant and vehicles are also associated with falls-related claims. *Mobile plant & transport* accounted for 20% of falls-related claims of which *Trucks, semi-trailers, lorries* was the major contributor and accounted for 12% of falls-related claims.

As male employees accounted for three-quarters of falls-related claims, the distribution of male claims is similar to the overall pattern for falls-related claims. However, the distribution of female claims is different. More than half (56%) of the falls-related claims from females were related to *Environmental agencies* compared with 32% for

males. Of particular note is the difference due to falls from *Steps & stairways*. This agency accounted for 31% of falls-related claims from female employees compared with 10% for male employees. *Seating furniture* also accounted for a larger proportion of claims from females (9% compared with 1% for males). Females were less likely than males to fall from *Ladders* or *Trucks, semi-trailers, lorries*.

Falls from scaffolding involved the most time off work

These data also show that a typical claim arising from a fall from *Scaffolding* resulted in a much longer period of time lost from work compared with other breakdown agencies. Falls from *Scaffolding* had a median time lost of 11.3 working weeks in the three years 2009–11, which is substantially higher than falls from *Horses, donkeys, mules* (7.2), *Ladders* (7.0) and *Trucks, semi-trailers, lorries* (6.4).

Male employees had longer periods of time lost from work than female employees in most of the breakdown agency categories. For females, the longest periods of time off work were associated with falls from *Horses, donkeys, mules* (6.9 working weeks).

Breakdown agency by bodily location

Falls on stairs most commonly resulted in ankle injuries

There are only minor differences in the body part most affected by falls from different agencies with the *Knee, Ankle* and *Back* accounting for the highest proportions of serious falls-related claims for the major breakdown agencies.

Table 27 shows that while injuries to the *Ankle* accounted for 15% of all serious falls-related claims, 23% of claims following a fall on *Steps & stairways* and 19% of claims following a fall from *Buildings & other structures* involved an injury to the *Ankle*.

Falls from *Scaffolding* resulted in fewer injuries to the *Knee* than the average (10% compared with 16%) and higher proportions due to injuries to the *Chest* and *Head*.

Falls from *Ladders* were associated with slightly lower proportions of claims for injuries to the three main bodily locations than the average but recorded a higher proportion of injuries to the *Wrist* and *Head*.

Table 27: Serious claims due to falls from a height: percentage by selected breakdown agencies and selected bodily locations, 2009–11

Bodily location of injury	Breakdown agency					All agencies
	Buildings & other structures	Ladders	Scaffolding	Steps & stairways	Trucks, semi-trailers, lorries	
Knee	16%	13%	10%	18%	17%	16%
Ankle	19%	12%	14%	23%	13%	15%
Back	16%	13%	14%	13%	15%	15%
Shoulder	6%	8%	9%	6%	10%	8%
Wrist	6%	10%	6%	3%	6%	6%
Foot & toes	6%	6%	5%	6%	4%	5%
Chest	4%	4%	7%	2%	6%	4%
Lower leg	4%	4%	4%	3%	3%	4%
Hand, fingers & thumb	4%	5%	3%	2%	2%	3%
Head	6%	6%	7%	5%	5%	3%
Elbow	2%	4%	2%	2%	4%	3%
Other locations	11%	16%	18%	17%	15%	18%
Total	100%	100%	100%	100%	100%	100%

Falls-related claims in the Construction industry commonly involved ladders while in the Transport industry they involved falls from trucks

Breakdown agency by industry

Table 28 shows the number of serious claims in the 2009–11 period for the most prevalent industries and breakdown agencies involved. These data show that falls from ladders were the most common type of fall in the Construction and Retail trade industries while falls from trucks were the most common in the Transport & storage industry and falls from horses the most common in the Agriculture, forestry & fishing industry. The Manufacturing industry did not have a dominant type of fall.

Table 28: Serious claims due to falls from a height: number and percentage by industry and breakdown agency, 2009–11

Industry & Breakdown Agency	No. of claims	% of claims in industry	% of all falls claims
Construction	5,120		21%
Ladders	1,470	29%	6%
Buildings & other structures	710	14%	3%
Scaffolding	480	9%	2%
Trucks, semi-trailers, lorries	360	7%	1%
Steps & stairways	305	6%	1%
Holes in the ground	265	5%	1%
Manufacturing	2,860		11%
Ladders	505	18%	2%
Steps & stairways	455	16%	2%
Trucks, semi-trailers, lorries	345	12%	1%
Buildings & other structures	200	7%	1%
Forklift trucks	110	4%	0%
Transport & storage	2,725		11%
Trucks, semi-trailers, lorries	1,110	41%	4%
Steps & stairways	245	9%	1%
Ladders	125	5%	1%
Buildings & other structures	120	4%	0%
Retail trade	1,895		8%
Ladders	510	27%	2%
Steps & stairways	355	19%	1%
Trucks, semi-trailers, lorries	180	9%	1%
Buildings & other structures	165	9%	1%
Property & business services	2,010		8%
Steps & stairways	460	23%	2%
Ladders	275	14%	1%
Buildings & other structures	240	12%	1%
Trucks, semi-trailers, lorries	180	9%	1%
Agriculture, forestry & fishing	1,295		5%
Horses, donkeys, mules	325	25%	1%
Ladders	180	14%	1%
Trucks, semi-trailers, lorries	115	9%	0%
Tractors, agricultural or otherwise	85	7%	0%

Falls from horses mainly involved young workers

Breakdown agency by age

The profiles of falls-related claims by age were generally similar for most of the major breakdown agencies. Exceptions included falls from *Horses, donkeys, mules* and to a lesser extent falls from *Scaffolding*, both of which showed much younger age profiles. Two-thirds of serious claims arising from falls from *Horses, donkeys, mules* and 48% of claims arising from falls from *Scaffolding* involved workers aged less than 35 years compared with 34% for all breakdown agencies.

Table 29 shows that falls from *Seating furniture* had the oldest age profile with 62% of claims involving workers aged 45 years and over compared with 44% for all breakdown agencies.

Table 29: Serious claims due to falls from a height: Proportion of claims by the selected breakdown agencies and age, 2009–2011

Breakdown agency	Age group (years)					Total
	15–24	25–34	35–44	45–54	55 & over	
Trucks, semi-trailers, lorries	7%	17%	26%	29%	20%	100%
Steps & stairways	11%	17%	22%	29%	21%	100%
Ladders	19%	18%	21%	24%	18%	100%
Buildings & other structures	19%	20%	22%	23%	16%	100%
Horses, donkeys, mules	40%	28%	19%	8%	5%	100%
Holes in the ground	13%	19%	25%	26%	17%	100%
Seating furniture	6%	10%	21%	33%	29%	100%
Scaffolding	24%	24%	21%	19%	12%	100%
Total all agencies	15%	19%	23%	26%	18%	100%

Breakdown agency by age

Table 30 shows that *Sprains & strains* account for the highest proportions of falls-related claims for all of the selected breakdown agencies. Falls from ladders is the only breakdown agency to show a notably different distribution of falls-related claims with a smaller proportion of *Sprains & strains* (38% compared with 46% for all agencies) but a higher proportion of *Fractures* (32% compared with 25% for all agencies).

Table 30: Serious claims due to falls from a height: percentage by selected breakdown agencies and selected natures of injury, 2009–11

Bodily location of injury	Breakdown agency				All agencies
	Buildings & other structures	Ladders	Steps & stairways	Trucks, semi-trailers, lorries	
Sprains & strains	49%	38%	50%	50%	46%
Fractures	23%	32%	19%	24%	25%
Contusion & crushing injury	8%	10%	12%	9%	9%
Diseases of the musculoskeletal system	3%	6%	8%	6%	6%
Open wound	5%	5%	3%	3%	4%
Fracture of vertebral column	3%	2%	1%	2%	2%
Dislocation	3%	3%	2%	3%	3%
Other injuries & diseases	5%	4%	5%	4%	5%
Total	100%	100%	100%	100%	100%

Falls from Ladders

In the three years 2009–11 there were 3830 serious claims due to a fall from a *Ladder*. This is equivalent to 3 injuries each day requiring the worker to be away from work for one or more weeks.

Table 31 shows the key characteristics of the employees who most commonly lodged claims due to a fall from a *Ladder*. These data indicate that falls from ladders most often involved Electrical & electronics or Structural construction tradespersons working in the Installation trade services or Building completion industries. Their falls most often resulted in a sprain or strain of the knee, ankle or lower back, or a fracture of the wrist or knee.

Table 31: Serious claims due to falls from ladders: number and percentage by selected characteristics, 2009–11

Characteristic	No. of claims	% of claims involving ladders
Occupation group		
Electrical & electronics tradespersons	440	12%
Structural construction tradespersons	430	11%
Sales assistants	215	6%
Plumbers	185	5%
Final finishes construction tradespersons	175	5%
Mining, construction & related labourers	145	4%
Agricultural & horticultural labourers	130	3%
Cleaners	125	3%
Industry group		
Installation trade services	575	15%
Building completion services	340	9%
Building construction	300	8%
Cleaning & other business services	180	5%
Clothing & soft good retailing	125	3%
Horticulture & fruit growing	110	3%
Nature of injury		
Sprains & strains of joints & adjacent muscles	1 455	38%
Fractures	1 230	32%
Contusion & crushing injury	365	10%
Diseases of the musculoskeletal system	215	6%
Open wound	190	5%
Bodily location		
Back	510	13%
Knee	480	13%
Ankle	465	12%
Wrist	380	10%
Shoulder	310	8%
Number of serious claims due to falls from ladders	3 830	

Falls from Steps and stairways

In the three years 2009–11 there were 3815 serious claims due to a fall from *Steps & stairways*. This is equivalent to 3 injuries each day requiring the worker to be away from work for one or more weeks.

Table 32 shows the key characteristics of the employees who most commonly lodged claims due to a fall from *Steps & stairways*. These data indicate that falls from *Steps & stairways* involved employees from many varied occupation groups. The most common were cleaners, school teachers, sales assistants and carers. Similarly the employees who had a fall from *Steps & stairways* worked in a wide variety of industries. The most common were schools, hospitals, cleaning services companies and government agencies. Their falls most often resulted in a sprain or strain of the knee, ankle or back, or a fracture of the ankle or foot.

Table 32: Serious claims due to falls from steps and stairways: number and percentage by selected characteristics, 2009–11

Characteristic	No. of claims	% of claims from Steps & stairways
Occupation group		
Cleaners	225	6%
School teachers	195	5%
Sales assistants	165	4%
Carers & aides	165	4%
Road & rail transport drivers	155	4%
General clerks	120	3%
Industry group		
School education	315	8%
Cleaning & other business services	245	6%
Hospitals and nursing homes	195	5%
Public order & safety services	180	5%
Government administration	175	5%
Community care services	140	4%
Nature of injury		
Sprains and strains of joints and adjacent muscles	1 905	50%
Fractures	730	19%
Contusion & crushing injury	460	12%
Diseases of the musculoskeletal system	300	8%
Open wound	110	3%
Bodily location of injury		
	1 220	23%
Ankle	865	23%
Knee	690	18%
Back	490	13%
Shoulder	225	6%
Foot & toes	215	6%
Wrist	130	3%
Number of serious claims due to falls from ladders		3 815

Falls from Trucks, semi-trailers, lorries

In the three years 2009–11 there were 3100 serious claims due to a fall from *Trucks, semi-trailers, lorries*. This is equivalent to nearly 3 injuries each day requiring the worker to be away from work for one or more weeks.

Table 33 shows the key characteristics of the employees who most commonly lodged claims due to these types of falls. Not unexpectedly, these data indicate that falls from *Trucks, semi-trailers, lorries* most often involved employees working as truck or delivery drivers in the Road freight transport industry. Their falls most often resulted in a sprain or strain of the knee, ankle, lower back or shoulder, or a fracture of the wrist or ribs.

Table 33: Serious claims due to falls from trucks, semi-trailers, lorries: number and percentage by selected characteristics, 2009–11

Characteristic	No. of claims	% of claims from Trucks, semi-trailers, lorries
Occupation group		
Truck drivers	1 540	50%
Delivery drivers	265	8%
Storepersons	85	3%
Freight & furniture handlers	85	3%
Industry group		
Road freight transport	975	31%
Public order & safety services	145	5%
Food drink & tobacco services wholesaling	120	4%
Government administration	110	4%
Nature of injury		
Sprains & strains of joints & adjacent muscles	1560	50%
Fractures	730	24%
Contusion & crushing injury	270	9%
Diseases of the musculoskeletal system	175	6%
Bodily location of injury		
Knee	535	17%
Back	470	15%
Ankle	420	13%
Shoulder	295	10%
Wrist	200	6%
Chest	170	6%
Foot	120	4%
Elbow	110	4%
Number of serious claims due to falls from trucks	3 100	

Falls from Buildings and other structures

In the three years 2009–11 there were 2455 serious claims due to a fall from *Buildings & other structures*. This is equivalent to 2 injuries each day requiring the worker to be away from work for one or more weeks.

Table 34 shows the key characteristics of the employees who most commonly lodged claims due to these types of falls. These data indicate that falls from *Buildings & other structures* involved employees from many varied occupation groups, the most common were carpenters, cleaners or plumbers.

Similarly the employees who had a fall from *Buildings & other structures* worked in a wide variety of industries. The most common were schools or construction sites. These falls most often resulted in a sprain or strain of the ankle or knee or a fracture of the ankle or wrist.

Table 34: Serious claims due to falls from buildings and other structures: number and percentage by selected characteristics, 2009–11

Characteristic	No. of claims	% of claims from Buildings & other structures
Occupation group		
Carpentry & joinery tradespersons	170	7%
Cleaners	115	5%
Plumbers	95	4%
General clerks	70	3%
Roof slaters & tilers	65	3%
Construction & plumbers assistants	60	2%
Industry group		
School education	195	8%
Building construction	175	7%
Cleaning & other business services	160	7%
Installation trade services	150	6%
Building structure services	125	5%
Building completion services	125	5%
Nature of injury		
Sprains & strains of joints & adjacent muscles	1215	49%
Fractures	570	23%
Contusion & crushing injury	185	8%
Open wound	125	5%
Bodily location of injury		
Ankle	465	19%
Knee	400	16%
Back	400	16%
Shoulder	150	6%
Foot & toes	145	6%
Wrist	135	5%
Chest	105	4%
Number of serious claims due to falls from buildings and other structures	2455	

Hospitalisations due to falls from height

The Australian Institute of Health and Welfare (AIHW) maintains a database of hospitalisations from which cases that involved work-related activity can be extracted. This database shows that over the three-year period from July 2006 to June 2009 approximately 73 400 hospitalisations occurred across Australia where the patient was aged 15 years or over and their activity when injured was reported as 'working for income'. However, because of the large number of hospitalisations for injury where activity when injured was recorded as 'Unspecified activity', the true number of work-related hospitalisations is likely to be higher than this figure.

Falls from heights accounted for nearly one in 10 workers hospitalised

Of the 73 400 hospitalisations, 6900 (9%) had an external cause of injury specified as a fall from height. This does not include falls on the same level but does include falls from horses and while entering or exiting vehicles. Information on all falls and other hospitalisations can be found in the report *Work-related injuries resulting in hospitalisation – July 2006 to June 2009* published on the Safe Work Australia website.

Hospitalisations by sex

Males accounted for 86% of hospitalisations due to a fall from height. This is substantially above the proportion males represent of serious falls-related workers' compensation claims (75%) but substantially below the proportion of male fatalities (98%) due to a fall from height.

The hospitalisations data provides some information on the object or structure from which the worker fell. These data display a broadly similar pattern to the workers' compensation claims data.

Over a quarter of workers hospitalised for a fall from height had fallen from a ladder

Table 35 shows that of the falls from height hospitalisations where the object or structure was known, 28% involved a *Fall on & from ladder*. This was followed by *Other fall from one level to another* (23%) and *Fall on & from stairs & steps* (14%).

Table 35: Work-related hospitalisations due to falls from height: type of fall by sex, 2006–09

Type of fall	Female	Male	Total
Fall on & from ladder	14%	30%	28%
Other fall from one level to another	14%	25%	23%
Fall on & from stairs & steps	47%	8%	14%
Fall from or through roof	1%	11%	10%
Rider injured by fall from or being thrown from horse	20%	7%	9%
Fall on & from scaffolding	0%	9%	8%
Fall from other building or structure	2%	8%	7%
Other falls	1%	2%	2%
Total falls from height	100%	100%	100%
Total falls from height hospitalisations	1 000	5 900	6 900

As with the workers' compensation claims data, *Fall on & from ladder* caused the greatest percentage of hospitalisations for males with a work-related fall (30%). As falls from ladders accounted for 17% of

serious falls-related workers' compensation claims from males, this relatively higher proportion of hospitalisations could be an indication of the severity of this type of fall.

The second highest cause of hospitalisations due to a fall from height for males was *Other fall from one level to another* (25%) followed by *Fall from or through roof* (11%).

For females who were hospitalised following a fall from height, nearly half (47%) involved *Fall on & from stairs & steps*. This type of fall also accounted for the highest proportion of serious falls-related workers' compensation claims for females. *Rider injured by fall from or being thrown from horse* accounted for 20% of hospitalisations of female workers. This is substantially higher than the 7% of workers' compensation claims due to this type of fall for females and could be an indication of the severity of injuries that result from falls from horses.

Hospitalisations by age

The age profile of workers hospitalised following a fall was similar to the age profile of serious workers' compensation claims with the number of incidents increasing with age up to the 45–54 years age group.

Hospitalisations following a fall from a horse were more likely to involve young workers

Table 36 shows that the type of fall category with the youngest age profile was *Rider injured by fall from or being thrown from horse* with 39% of the hospitalisations involving workers aged 15–24 years. This age group accounted for 16% of all falls from height hospitalisations. *Fall from or through roof* also had a high proportion of hospitalisations involving 15–24 year olds (24%).

The other falls types had the same age profile as the overall profile.

Table 36: Work-related hospitalisations due to falls from height: type of fall by age group, 2006–09

Type of fall	Age group					Total
	15–24 years	25–34 years	35–44 years	45–54 years	55 years & over	
Fall on & from ladder	12%	17%	22%	27%	22%	100%
Other fall from one level to another	11%	16%	23%	28%	21%	100%
Fall on & from stairs & steps	10%	16%	23%	26%	24%	100%
Fall from or through roof	24%	23%	20%	19%	14%	100%
Rider injured by fall from or being thrown from horse	39%	22%	19%	11%	9%	100%
Fall on & from scaffolding	16%	19%	22%	22%	21%	100%
Fall from other building or structure	19%	22%	22%	20%	17%	100%
Total falls from height	16%	18%	22%	24%	20%	100%
Number of hospitalisations	1100	1300	1500	1600	1400	6900

Hospitalisations by industry

The industry of the worker was only recorded for 70% of the hospitalisations (4800 hospitalisations) arising from a fall from height. However, Table 37 shows that the industry of the worker does have some impact on the type of fall likely to result in hospitalisation.

None of the six industries shown display the same pattern as the overall falls data. The industry patterns are similar to the workers' compensation data.

Construction workers who were hospitalised following a fall from height mostly fell from a ladder or off a roof

The Construction industry accounted for the highest number of hospitalisations due to a fall from height (35% – 1700 of the 4800 hospitalisations due to fall from height where the industry of the worker was known). Of the Construction workers who were hospitalised, 27% fell from a ladder, 22% fell from a roof and 19% fell from scaffolding.

Of the Agriculture, forestry & fishing workers who were hospitalised due to a fall from height, nearly half (46%) fell from a horse.

Hospitalisation of Transport & storage workers is dominated by *Other fall from one level to another* (71%), which includes falling off the back of a truck while undertaking loading or unloading activities. This is consistent with the fatalities data.

The greatest proportions of hospitalisations from falls on stairs occurred in the Wholesale & retail trade and Manufacturing industries.

Table 37: Work-related hospitalisations due to falls from height: type of fall by selected industries, 2006–09

Type of fall	Industry					Total (incl unknown industry)
	Construction	Agriculture, forestry & fishing	Transport & storage	Wholesale & retail trade	Manufacturing	
Fall on & from ladder	27%	12%	11%	32%	31%	28%
Other fall from one level to another	13%	25%	71%	28%	34%	23%
Fall on & from stairs & steps	3%	1%	9%	28%	23%	14%
Fall from or through roof	22%	1%	1%	5%	3%	10%
Rider injured by fall from or being thrown from horse	0%	46%	0%	0%	0%	9%
Fall on & from scaffolding	19%	0%	1%	0%	3%	8%
Fall from other building or structure	15%	6%	5%	4%	6%	7%
Total falls from height	100%	100%	100%	100%	100%	100%
Number of hospitalisations	1700	600	300	200	100	6900

Hospitalisations by bodily location

Hospitalisations following a fall from height mostly involved injuries to the trunk, knee or lower leg

Hospitalisations due to a fall from height were most commonly the result of an injury to the Trunk followed by injuries to the Knee & lower leg with 22% and 19% of hospitalisations respectively. However these two bodily locations did not account for the highest proportions of hospitalisations across all types of fall.

Table 38 shows that *Fall on & from ladder* most commonly resulted in hospitalisation for injuries to the Elbow & forearm while *Fall on & from stairs & steps* and *Other fall from one level to another* most often resulted in hospitalisations for injuries to the Knee & lower leg.

Similarly higher proportions of hospitalisations due to injuries to the Trunk and Head & neck were more common following falls from horses, scaffolding and roofs than the other fall types.

Table 38: Work-related hospitalisations due to falls from height: type of fall by selected bodily locations, 2006–09

Type of fall	Bodily location							Total (incl other)
	Trunk	Knee & lower leg	Elbow & forearm	Head & neck	Shoulder & arms	Ankle & foot	Wrist & hand	
Fall on & from ladder	19%	17%	23%	14%	8%	9%	7%	100%
Other fall from one level to another	20%	23%	16%	14%	8%	9%	5%	100%
Fall on & from stairs & steps	13%	31%	14%	14%	9%	7%	4%	100%
Fall from or through roof	26%	13%	12%	19%	8%	9%	9%	100%
Rider injured by fall from or being thrown from horse	29%	12%	7%	26%	11%	3%	4%	100%
Fall on & from scaffolding	26%	12%	16%	20%	6%	10%	5%	100%
Fall from other building or structure	30%	15%	12%	19%	8%	7%	4%	100%
Total falls from height	22%	19%	16%	16%	8%	8%	5%	100%
Number of hospitalisations	1500	1300	1100	1100	600	600	400	6900

Explanatory Notes

Workers' compensation claims

Scope and coverage

The workers' compensation claims statistics presented in this publication are compiled annually from accepted claims made under the state, territory and Australian Government workers' compensation Acts. These data are combined into the National Data Set for Compensation-based Statistics (NDS). The data shown for a particular financial year refer to all accepted claims for which payments were made (apart from payments for goods and services like medical treatment) lodged from 1 July to 30 June.

The claims statistics in this report do not cover all cases of work injuries and diseases for the following reasons:

- Claims arising from a journey to or from work are excluded.
- While general state, territory and Australian Government workers' compensation legislation provides coverage for the majority of employees, some specific groups of workers are covered under separate legislation. Claims lodged by police in Western Australia and military personnel of the Australian Defence Forces (ADF) are not included in the claims data.
- Workers' compensation schemes do not generally provide coverage to self-employed workers, resulting in an understatement of the number of work-related injuries and diseases of workers employed in industries where self-employed workers are common. These industries include Agriculture, forestry & fishing, Construction and Road transport. Large proportions of Managers & administrators and Tradespersons & related workers are also self-employed. Estimates of jobs and hours used as denominators in calculating incidence and frequency rates include only those worked by employees eligible for workers' compensation.

Type of occurrence data

Details of the 'description of the occurrence' reported on the workers' compensation claim have been coded using the Type of Occurrence Classification System, Second Edition, (May 2002) (TOOCS2.1). Throughout the text in this publication TOOCS categories generally appear in italics. The exception is *Falls from a height* which has been simplified to falls-related in many instances due to its frequent use.

The five variables used to describe the type of occurrence are:

- Nature of Injury or Disease
- Bodily Location of Injury or Disease
- Mechanism of Injury or Disease
- Breakdown Agency of Injury or Disease, and
- Agency of Injury and Disease.

See the Glossary for the definitions of these variables.

Denominator data used to calculate incidence and frequency rates

Estimates of the number of employees and hours worked for each Australian workers' compensation jurisdiction are supplied annually by the Australian Bureau of Statistics (ABS). The ABS provides two sets of estimates for each jurisdiction: one split by sex, age and industry and the second by occupation. This restricts presentation of incidence and frequency rates to the categories that ABS data support i.e. it is not possible to calculate rates by occupation within an industry.

The denominator data are derived principally from the Labour Force Survey (LFS), adjusted to account for differences in scope between the LFS and workers' compensation coverage. The largest adjustment is for workers who have more than one job. Because a person holding two or more jobs (a multiple jobholder) may lodge a workers' compensation claim with respect to an illness or injury incurred in any of those jobs, a count of jobs is a more appropriate denominator than a count of persons in calculating incidence rates. The multiple jobholder adjustment adds around 5% to the number of employees in the LFS. Other adjustments aim to ensure correct industry of employer coding for employees working under labour hire arrangements.

While the ABS is able to adjust the employee estimates to account for the industries where the second job was worked it is unable to adjust the hours worked in a similar manner. All hours worked have been allocated to the industry of the main job.

Differences in movements between incidence and frequency rates occur because of differences in the two measures. The employee estimate is a head count of all employees who were employed during the reference period. This measure does not take into account the proportion who were not at work and therefore not at risk on any given day. The frequency rate however is a measure of exposure per actual hour of work. This measure also reflects that many workers work on a part-time basis.

More information on workers' compensation claims and classifications can be found at on the Safe Work Australia website.

Traumatic injury fatalities

The traumatic injury fatalities statistics in this report are compiled from workers' compensation claims, information on fatalities that are notified to work health and safety authorities in each jurisdiction under their work health and safety legislation and data from the National Coronial Information System (NCIS). In addition the media and accident investigation reports from the Australian Transport Safety Bureau relating to plane crashes, train crashes and maritime incidents are used to supplement information found in each of the datasets. Data on fatalities are published annually in the Work-related Traumatic Injury Fatalities, Australia reports that can be found on the Safe Work Australia website.

Inclusions

The data on traumatic injury fatalities covers fatalities due to work-related injuries and explicitly excludes deaths attributable to disease and other natural causes. Among conditions specifically included as injuries are those arising from poisonous plants and animals, environmental conditions (e.g. frostbite), allergic reactions and embolisms. Heart attacks and strokes are regarded as natural causes but where available information shows that a work-related injury directly triggers a fatal heart attack or stroke the fatality is included.

Exclusions

Deaths due to natural causes are excluded. These include deaths from heart attacks, strokes and diseases. Deaths due to complications of surgical and medical care are also excluded except when the injuries were life threatening and the lack of medical attention would most definitely have resulted in a fatality.

Suicide

The scope of this project excludes deaths resulting from self-harm because it is difficult to assess the extent of the connection between work and a decision to take one's own life, even when detailed information is available.

Deaths of persons undertaking criminal activity

Work-related injury fatalities exclude deaths of persons fatally injured while undertaking criminal activities, such as gaining illegal entry into a building or work site.

Calculation of fatality rates

The denominators used in calculating fatality rates in this report are based on ABS estimates of employed persons, as defined in Labour force, Australia (ABS cat no 6202.0). This population includes employees (who work for an employer), self-employed persons (whether they employ others or not), and those who work without pay for a family business or farm. It excludes persons whose only work is voluntary.

Fatality rates are calculated as the number of deaths divided by the number of workers in the reference period from the LFS. Because work-related injury fatalities of the ADF within Australia are in scope of this report, worker estimates are supplemented with the average of levels of ADF permanent members' reported in the Department of Defence Annual Report.

Type of occurrence data

Details of the 'description of the occurrence' for fatalities have been recorded using the Type of Occurrence Classification System, Third Edition, May 2008 (TOOCS3.1).

The variables used to describe the type of occurrence for a fatality are:

- Mechanism of Injury or Disease
- Breakdown Agency of Injury or Disease, and
- Agency of Injury and Disease.

See the Glossary for the definitions of these variables.

Hospitalisations

The data on hospital separations used in this report were provided by the Australian Institute of Health and Welfare (AIHW), from the National Hospital Morbidity Database (NHMD).

The formal term for a hospitalisation is a 'Separation', defined by the AIHW as a "formal, or statistical process, by which an episode of care for an admitted patient ceases". This is usually a discharge home, but is sometimes a transfer to another health care facility or death. This report studied separations that occurred during the three year period 1 July 2006 to 30 June 2009.

Since some patients may have had more than one episode of hospitalisation over the period, the count of hospitalisations is not a count of individuals. Hospitalisation data in this report is based on the "Principal diagnosis" which is the diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care.

The hospital separations information in this report includes data from all hospitals that contributed to the NHMD during the period 1 July 2006 to 30 June 2009. This includes nearly all public and private hospitals in Australia that provide acute care services.

This report examines the circumstances of workers who sustained an injury that required a stay in hospital. As such they can be considered a "serious injury" subset of workers who were injured since the injury required a stay in hospital. However, it is important to bear in mind that there may be a larger group of injured workers who received medical attention from a general practice clinic or a hospital casualty ward whose injuries are not recorded in these statistics.

The prime selection criterion for the inclusion of a hospital separation in this report was the designation of the activity at the time of injury as *While working for income* (ICD-10-AM code U73.0): defined as including paid work (manual or professional), transportation time to and from such activities, and work for salary, bonus and other types of income. Records were then further restricted to those for *Injury, poisoning and certain other consequences of external causes* (S00-T98).

The separations data were then further refined by excluding:

- patients aged under 15 years
- separations where the patient was discharged to another acute hospital, and
- separations where the injury was due to complications of surgical or medical care.

Diagnoses and external causes of injury for hospitalisations were recorded using the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM). This system comprises classifications of diseases and external causes of injuries and poisoning, based on the World Health Organization's version of ICD-10. The ICD-10-AM classification is hierarchical, with 20 summary disease chapters that are divided into a large number of more specific disease groupings (represented by 3-character codes).

The main data items used in this report are *External causes of morbidity and mortality* (U50-Y98). These codes allow identification of:

- work-related injuries and in some cases the specific industry in which the patient was working when injured
- the cause of the injury the patient sustained, such as a fall from a ladder, and
- the place of occurrence of the injury (where specified).

The Type of injury and Bodily location categories used in this report are based on aggregation of various *Injury, poisoning and certain other consequences of external causes* (S00-T98) codes into simplified groups. These recodes are listed in detail in a previous hospital separations report (ASCC, 2007) available on the Safe Work Australia website.

Glossary

Workers' compensation claims definitions

The workers' compensation data presented in this report include all workers' compensation claims lodged for a work-related injury or disease that were accepted for and received compensation, with the exception of claims for injuries while occurred while traveling to or from work (journey claims).

Age

The age of the employee at the time of injury or the date when the disease was first reported to their employer.

Breakdown agency of injury or disease

The object, substance or circumstance principally involved in or most closely associated with the events that culminated in the most serious injury or disease.

Disease

A condition resulting from repeated or long term exposure to an agent or event.

Employee

A person who works for a public or private employer and receives remuneration in wages, salary, a retainer fee from their employer while working on a commission basis, tips, piece-rates, or payment in kind; or a person who operates his or her own incorporated enterprise with or without hiring employees.

Incidence rate

The number of serious claims per thousand employees. Incidence rates are calculated using the following formula:

$$\frac{\text{number of serious occupational injury and disease claims} \times 1000}{\text{number of employees}}$$

Industry

The industry shown in the serious workers' compensation claims section is the industry of the establishment that formally employs the claimant, classified to the Australian and New Zealand Standard Industrial Classification (ANZSIC), 1993 edition (ABS Cat. No. 1292.0).

As we are measuring industry of employer, a claim made by a person employed under labour hire arrangements is coded to the Contract staff services industry class (ANZSIC code 7862) which is part of the Property & business services industry division. Industry of employer will be different to Industry of workplace for a range of workers.

Injury

A condition resulting from a single traumatic event where the harm or hurt is immediately apparent for example a cut resulting from an accident with a knife or burns resulting from an acid splash.

Location of injury or disease

The bodily location of injury/disease is intended to identify the part of the body affected by the most serious injury or disease.

Mechanism of injury or disease

The action, exposure or event that best describes the circumstances that resulted in the most serious injury or disease.

Nature of injury or disease

The type of injury or disease for the most serious injury or disease sustained or suffered by the worker.

Occupation

The occupation of the employee making the claim as coded to the Australian Standard Classification of Occupations (ASCO) 2nd Edition (ABS cat. no. 1220.0).

Time lost

Time lost figures shown in this publication are measured in working weeks lost from work and exclude estimates of future absences. Time lost from work comprises the total period of time for which compensation was paid — the time lost is not necessarily continuous and may occur over a number of separate periods. Where an employee returns to work on a part-time basis they may continue to receive pro-rata payments and the total number of hours for which compensation has been paid is included in calculating time lost.

Working week

The number of working weeks lost is calculated by dividing the amount of time lost by the hours usually worked per week by the employee. Claims requiring one working week or more of time off work are classed as serious claims.

Traumatic injury fatalities definitions

Breakdown agency of injury or disease

The object, substance or circumstance principally involved in or most closely associated with the events that culminated in the most serious injury or disease.

Industry

A grouping of businesses that carry out similar economic activities. Fatalities data in this publication have been coded to the Australian and New Zealand Standard Industrial Classification (ANZSIC) 2006 (ABS cat. no. 1292.0) and unless specified are shown at the industry division level.

Injury

A condition coded to 'External Causes of morbidity and mortality' and 'Injury, poisoning and certain other consequences of external causes' in the International Statistical Classification of Diseases and Related Health Problems, Tenth Revision, Australian Modification (ICD-10-AM).

Mechanism of incident

The action, exposure or event that best describes the circumstances that resulted in the most serious injury.

Occupation

A set of jobs with similar sets of tasks. Fatalities data in this publication have been coded to the Australian and New Zealand Standard Classification of Occupations (ANZSCO) (ABS cat. no. 1220.0) First edition and unless specified are shown at the major group level.

Worker fatality

The death of a person who dies as a result of injuries sustained while at work.

Inquires

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