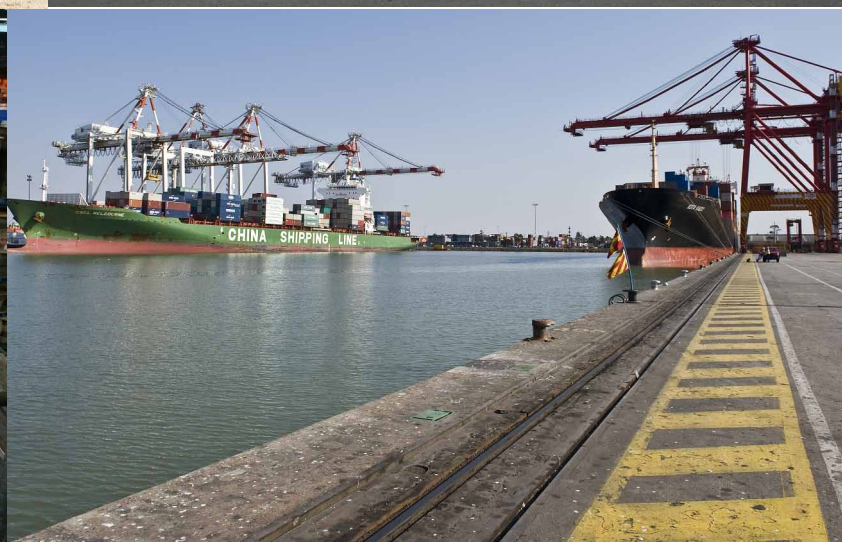
AUSTRALIAN WORK-RELATED INJURY EXPERIENCE BY SEX AND AGE, 2009–10



July 2012

safe work australia

SAFE WORK AUSTRALIA

Australian work-related injury experience by sex and age, 2009–10

July 2012

Creative Commons

ISBN 978-0-642-78561-9 (pdf)
978-0-642-78562-6 (doc)

Disclaimer

Foreword

Safe Work Australia uses workers' compensation claims data as its primary source to measure work health and safety performance in Australia. These data are collated as the National Data Set for Compensation-based Statistics (NDS). While the NDS has many strengths it does not provide information on groups not well-covered by workers' compensation schemes, such as the self-employed. Therefore while the NDS can provide good information on the types and circumstances of work-related injury, it cannot provide a total measure of the number of workers injured each year.

To address this situation, Safe Work Australia partially funded the Australian Bureau of Statistics' (ABS) Work-Related Injuries, Australia, 2009–10 (WRIS) survey, results from which were published in December 2010. This survey is an update of the 2005–06 survey published in December 2006. The WRIS were compiled from data collected in the Multipurpose Household Survey (MPHS) that was conducted throughout Australia in the 2009–10 financial year as a supplement to the ABS monthly Labour Force Survey (LFS).

The WRIS collected information over the 2009–10 period from a sample of people aged 15 years and over who worked at some time in the last 12 months and experienced a work-related injury or illness in that period. A range of details about their most recent work-related injury or illness were collected. As the data are from a sample the results are adjusted or weighted to infer results for the total working population. Care has been taken to only show results that are considered robust enough for analysis. This is in accordance with ABS principles.

The demographics of the worker such as age, sex and employment status (employee, employer or own account worker) are taken from responses to the LFS. However, due to differences in the scope and sample size of the MPHS and that of the LFS, the weighting process may lead to some variations between labour force estimates from the WRIS and those from the LFS.

This report examines the work-related injury experience of male and female workers across the different age groups.

Contents

Summary of findings

In 2009–10, 638 400 workers reported they had incurred a work-related injury in the previous 12 months. This equates to an incidence rate of injury of 57.9 per 1000 workers.

Work-related injuries by sex

Incidence rates of injury were similar for male and female workers, however on a per hour basis, females had a 27% higher frequency rate of injury than their male counterparts. Nearly half (46%) of the injuries incurred by male workers and 43% of the injuries incurred by female workers did not involve any time lost from work.

For both male and female workers the highest frequency rates occurred among those working as Labourers and Community & personal service workers. The industry with the highest rate for both male and female workers was Accommodation & food services.

Working under shift arrangements or as a casual or part-time worker was associated with higher rates of injury. Female workers recorded higher frequency rates in all categories of employment except for full-time non-shift workers where male and female rates were similar.

A sprain or strain of muscles was the most common injury for both male and female workers accounting for around 30% of the injuries.

Work-related injuries by age

The 15–24 years age group displayed a very different pattern of injuries to the other age groups due to a different pattern of employment. One-quarter of workers in this age group were employed as Sales workers while for the other age groups the dominant occupation was Professionals. This partially explains why workers in the 15–24 years age group recorded a high proportion of injuries due to *Hitting or being hit or cut by an object* while for the remaining age groups *Muscular stress* was the most common cause of injury.

The frequency rate of injury of 48.8 injuries per million hours worked recorded by the 15–24 years age group was nearly twice some of the other age groups which ranged from 25.7 for the 65 years & over age group to 37.0 for the 45–54 years age group.

At the occupation level the highest frequency rate of 91.6 injuries per million hours worked was recorded by workers in the 15–24 years age group working as Community & personal service workers. Workers in this age group also had the highest rates of injury while working as Labourers, Technicians & trades workers and Sales workers.

At the industry level, the highest frequency rate of 101.6 injuries per million hours worked was recorded by workers in the 15–24 years age group working in the Accommodation & food services industry.

For every age group, female workers had higher frequency rates compared with male workers. In all age groups, except for those 55 years & over, casuals (employees without paid leave entitlements) recorded higher frequency rates of injury than their paid leave counterparts. At every age, those working under shift arrangements had higher rates of injury than their non-shift working counterparts.

The most common type of injury in every age group was *Sprain/strain*. Workers in the 15–24 years age group experienced proportionally more *Cut/ open wound* and *Burns* than the other age groups, while workers in the 55 years & over age group experienced a higher proportion of *Stress/ other mental condition* and *Fracture*.

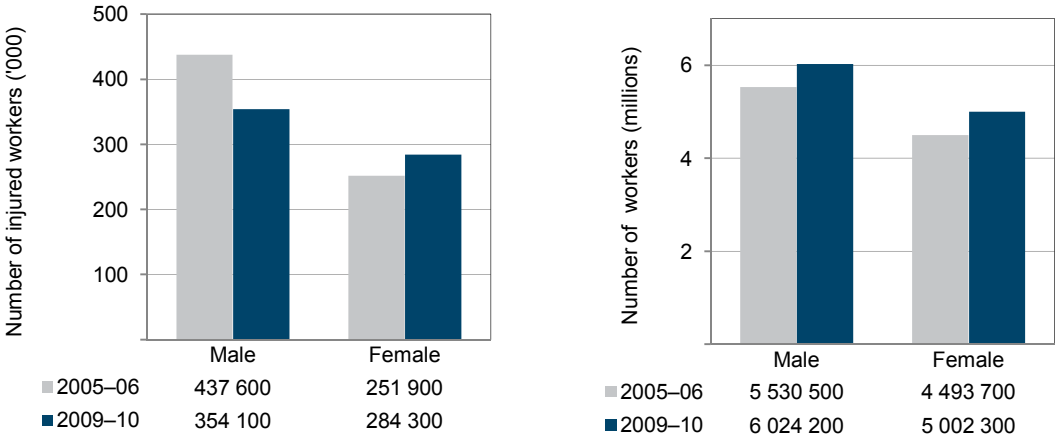
The proportion of injuries that involved no time lost from work increased with increasing age. For workers up to the age of 45 around 40% of injuries involved no time lost from work while for workers over the age of 45 the proportion was around 50%.

Work-related injuries by sex

Of the 11 million people aged 15 years and over who worked in 2009–10, 638 400 experienced a work-related injury or illness. This equates to 57.9 injuries per 1000 workers. Comparison with the results from the 2005–06 survey indicate there has been a 7% decrease in the number of injured workers but a 16% decrease in the rate of injury over the four years due to a 10% rise in employment in this period.

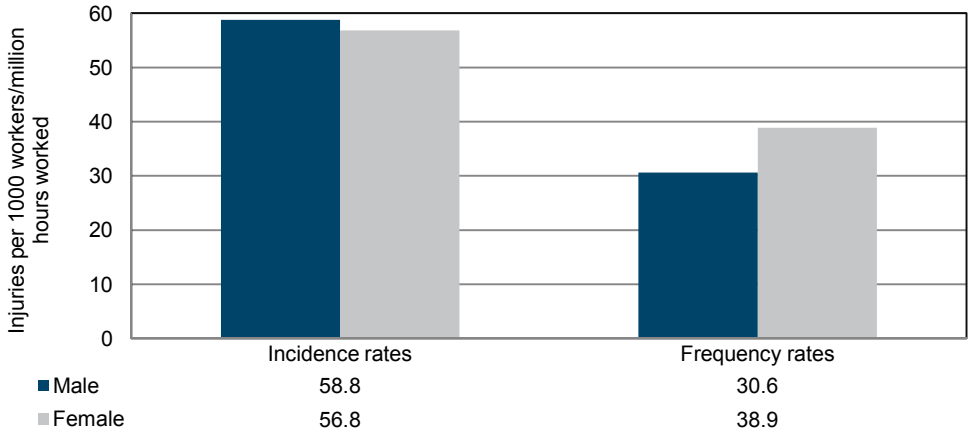
Figure 1 shows the shift between the two surveys differed for male and female workers. Although both sexes recorded an increase in the number employed, males recorded a 19% fall in the number of injuries incurred while females recorded an 11% rise.

Figure 1: Work-related injuries and Workers: Number by sex, 2005–06 and 2009–10



This indicates a considerable improvement in the work-related injury rate for male workers but not for female workers. However due to lower number of hours worked by females a better measure for comparison is the frequency rate. Figure 2 shows that while male and female workers recorded very similar incidence rates (58.8 injuries per 1000 workers and 56.8 respectively), females recorded a frequency rate 27% higher than the rate for males (38.9 injuries per million hours worked by females compared with 30.6 for males).

Figure 2: Work-related injuries: Incidence and frequency rates by sex, 2009–10



Status in employment

While 82% of workers in 2009–10 were employed by someone else (Employees), Table 1 shows that men were more likely to own and manage their own business with 23% of male workers classed as Owner managers compared to only 13% of female workers.

Within the Employee group women were more likely to work as casuals (employees without paid leave entitlements). In 2009–10, 25% of female workers were casuals compared to only 15% of male workers. In terms of hours worked, casuals accounted for 16% of total hours worked by females but only 11% for males.

Table 1: Workforce: Number of workers and proportion by employment type and sex, 2009–10

Status in employment	Males	Females	Total
		Proportion of workers	
Employees	77%	87%	82%
With paid leave entitlements	*62%*	*62%*	*62%*
Without paid leave entitlements	*15%*	*25%*	*20%*
Owner managers	23%	13%	18%
Total workers	**100%**	**100%**	**100%**
		Proportion of hours worked	
Employees	75%	88%	80%
With paid leave entitlements	*64%*	*72%*	*67%*
Without paid leave entitlements	*11%*	*16%*	*13%*
Owner managers	25%	12%	20%
Total workers	**100%**	**100%**	**100%**

Table 2 shows that in 2009–10, Employees had more than twice the incidence rate of injury than Owner managers. While males recorded a similar ratio, the difference was more pronounced for female workers. In 2009–10, female Employees experienced an incidence rate of injury nearly three times greater than the rate for Owner managers.

These differences are likely to be linked to the different industries in which Owner managers work compared with Employees. Just over one-quarter (26%) of male Owner managers were employed in the Construction industry with 12% in the Agriculture, forestry & fishing industry and a further 12% in the Professional, scientific & technical services industry. For female Owner managers, 14% worked in the Professional, scientific & technical services industry, followed by 12% in Agriculture, forestry & fishing and 10% each in Retail services and Other services.

Industry injury rates, which will be discussed later in this report, show lower rates in the Professional, scientific & technical services, Retail services and Other services industries which partially explains the lower overall rates for Owner managers compared with Employees who worked in industries with higher rates.

Within the Employee group, males recorded similar incidence rates for both the casual and non-casual (Employees with leave entitlements) groups, however, female non-casuals had a 20% higher incidence rate compared with female casuals.

When hours worked are considered, a substantially different pattern emerges. On a per hour worked basis, male and female casual workers experienced the highest injury rates. The frequency rate for casual female employees was 47% higher than the rate for non-casuals and three and a half times the rate for female Owner managers. For males, the frequency rate for casual employees was 54% higher than the rate for non-casuals and three times the rate for Owner managers.

Females worked as casuals mainly in the Retail trade, Accommodation & food services and Health care & social assistance industries. Males worked as casuals mainly in the Retail trade, Accommodation & food services and Construction industries.

Table 2: Work-related injuries: number of injured workers and incidence rate by employment type and sex, 2009–10

Status in employment	Males	Females	Total
	Number of injured workers		
Employees	305 700	270 500	576 200
With paid leave entitlements	*244 155*	*202 850*	*447 005*
Without paid leave entitlements	*61 540*	*67 615*	*129 155*
Owner managers	48 400	13 800	62 200
Total workers	**354 100**	**284 300**	**638 400**
	Incidence rate (injuries per 1000 workers)		
Employees	65.9	62.0	64.0
With paid leave entitlements	*65.7*	*65.0*	*65.4*
Without paid leave entitlements	*66.6*	*54.2*	*59.5*
Owner managers	35.0	21.7	30.8
Total workers	**58.8**	**56.8**	**57.9**
	Frequency rate (injuries per million hours worked)		
Employees	35.3	42.0	38.1
With paid leave entitlements	32.8	38.6	35.2
Without paid leave entitlements	50.6	56.7	53.6
Owner managers	16.7	16.0	16.5
Total workers	**30.6**	**38.9**	**33.8**

Type of employment

Men are more likely to work full time than women. In 2009-10, 82% of male workers worked full time in their main job compared with only 49% of female workers. The overall average number of hours worked by males per week was 37 compared to 28 for female workers. When hours worked are examined 92% of the hours worked by men were in full time positions compared with only 68% of the hours worked by women.

Table 3 shows there was little difference in the proportions of men and women who were shiftworkers (17% and 15% respectively), however, men were more likely to be a full time shift worker than women (13% and 6% respectively).

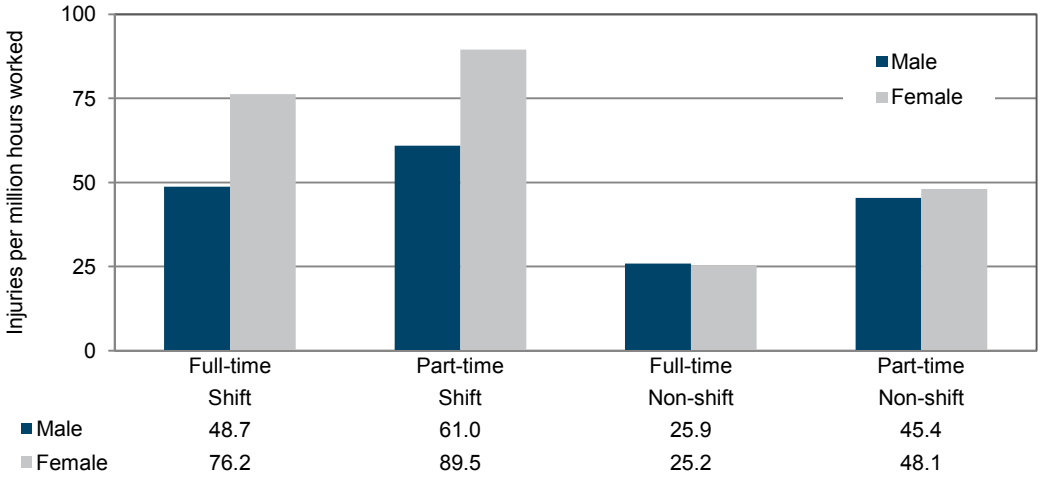
Table 3: Workforce: Percentage of workers and hours worked by full time/ part time and shift work status and sex, 2009–10

Full-time/Part-time status	Shift work status	Male	Female	Total
		Percentage of workers		
Full-time	**Total**	**82%**	**49%**	**67%**
	Shift	13%	6%	10%
	Non-shift	70%	43%	58%
Part-time	**Total**	**18%**	**51%**	**33%**
	Shift	4%	9%	6%
	Non-shift	14%	41%	26%
Total		**100%**	**100%**	**100%**
		Percentage of hours worked		
Full-time	**Total**	**92%**	**68%**	**83%**
	Shift	14%	9%	12%
	Non-shift	78%	59%	71%
Part-time	**Total**	**8%**	**32%**	**17%**
	Shift	2%	6%	4%
	Non-shift	6%	26%	14%
Total		**100%**	**100%**	**100%**

Shift workers had more than twice the frequency rates of non-shift workers, 62.1 injuries per million hours worked and 29.3 respectively. Figure 3 shows female shift workers had higher frequency rates than their male counterparts. Female part-time shift workers had the highest frequency rate of all types of employment groups, 89.5 injuries per million hours worked compared to 61.0 for their male counterparts.

The lowest frequency rates were recorded by full-time non-shift workers with males recording 25.9 injuries per million hours worked while females recorded 25.2. These rates are almost half the frequency rates recorded by their part-time equivalents.

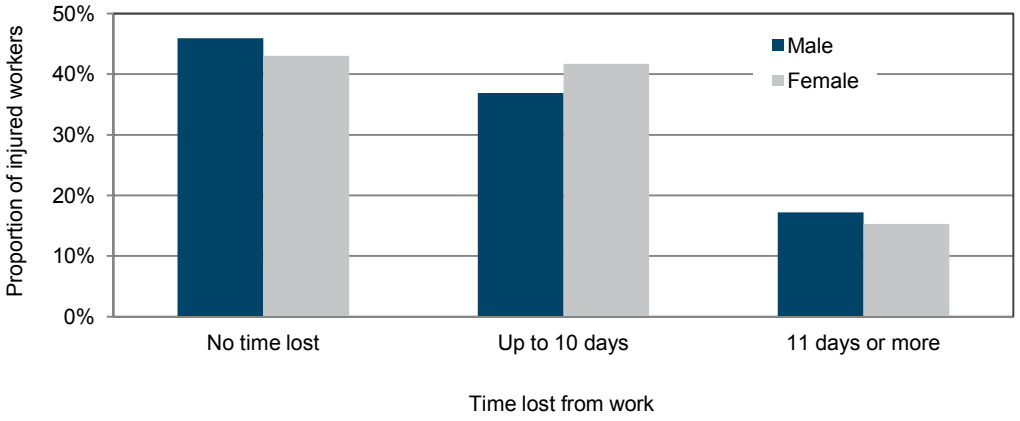
Figure 3: Work-related injuries: Frequency rate by full time/ part time and shift work status by sex, 2009–10



Time lost from work

Figure 4 shows that 46% of injured male workers and 43% of injured female workers took no time off work following their injury. A slightly higher proportion of female workers required up to 10 days off work, 42% compared with 37% for male workers with a slightly higher proportion of male workers taking 11 or more days off work, 17% compared with 15% for female workers.

Figure 4: Work-related injuries: Percentage of injured workers by time lost and sex, 2009–10



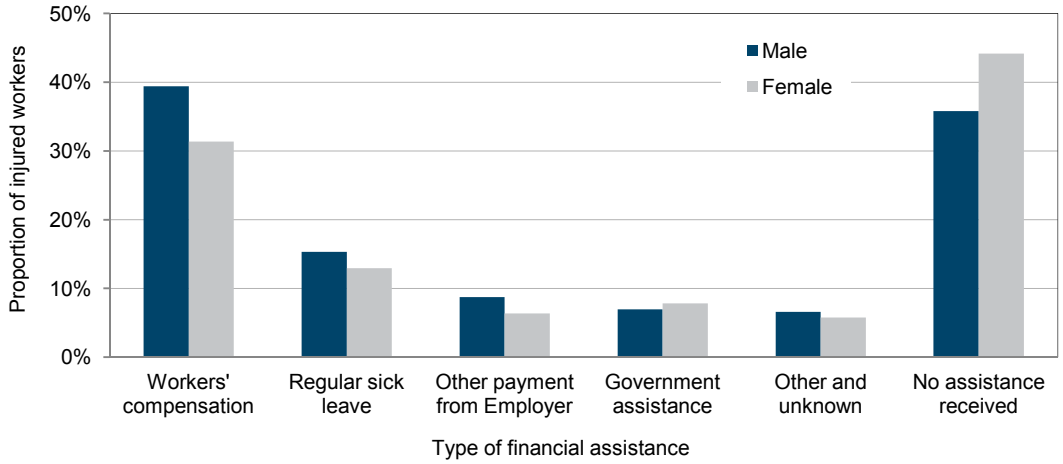
Financial assistance received

If injured at work, workers can seek financial assistance via a number of channels. If the worker is an Employee then that worker can seek workers' compensation. Table 1 showed that 82% of workers were Employees in 2009–10. Workers' compensation is also available to Owner managers of incorporated enterprises because once the business is incorporated, the manager effectively becomes an employee of that business. Around 7% of workers are Owner managers of incorporated enterprises and are eligible for workers' compensation. Figure 5 shows that 39% of injured male workers received workers' compensation for their injury compared with 31% for female workers. Workers did not access workers' compensation for a variety of reasons, the most common of which is that they did not consider the injury serious enough to claim. This topic is explored more in the report *Who did and didn't receive workers' compensation in 2009–10* which can be found on the Safe Work Australia website.

Workers may also use their sick leave or other type of leave provided by their employer such as annual leave or long service leave to provide financial assistance during a period of absence from work. This type of leave is not available to the 20% of the workforce who work as casuals. Regular sick leave was accessed by 15% of male workers and 13% of female workers following their injury. In 2009–10, 9% of male workers and 5% of female workers accessed other types of leave. It should be noted that injured workers may access financial assistance from more than one source and hence the percentages shown in Figure 5 add to more than 100%.

The data show that male and female workers equally accessed Federal Government assistance which includes Medicare payments for medical expenses. They also show that 44% of female workers and 36% of male workers did not receive any financial assistance following their injury. These figures should be viewed in light of the fact that 46% of injured male workers and 43% of injured female workers took no time off work following their injury.

Figure 5: Work-related injuries: Percentage of injured workers by Financial assistance received by sex, 2009–10



When the type of financial assistance received following a work-related injury is broken down by number of days absent from work, 60% of the injured male workers and 72% of injured female workers who took no time off work received no financial assistance. This proportion dropped to 15% for male workers and 32% for female workers once some time off work was required with only 15% of males and females who took 5 or more days off work saying they received no financial assistance.

Work-related injuries incurred by male workers

The following section provides more detail about male workers, where they work and how they are injured.

Injury rates by occupation

Figure 6 shows that in 2009–10 most male workers were employed as Technicians & trades workers, Managers or Professionals with these three occupation groups accounting for both the highest proportions of hours worked and the highest proportions of workers.

The Manager group had a higher proportion of hours worked than the proportion of workers, while the Labourers group recorded the opposite. Another way of looking at this is that Managers worked the most hours per week on average (43) while Labourers worked the least (30). The average for all males was 37 hours per week.

The pattern of injuries is different with 30% of injuries incurred by Technicians & trades workers, 19% by Labourers and 15% by Machinery operators & drivers. These occupation groups are traditionally classed as blue collar occupations.

Within the Technicians & trades workers occupation group, one-quarter of the male workers were Automotive and engineering trades workers and another quarter were Construction trades workers. These two subgroups accounted for around half of the injuries.

The Labourers occupation group is quite diverse with 21% of the male workers employed as Construction & mining labourers, 20% as Factory process workers and 25% in the Other labourers category which includes shelf fillers, fishing hands and handymen. These three subgroups accounted for 70% of injuries with Factory process workers accounting for 32% of injuries.

Within the Machinery operators & drivers occupation group, 43% of the male workers were employed as Road and rail drivers with this subgroup accounting for 36% of injuries.

Figure 6: Male workers: Proportion of workers, hours worked and injuries incurred by occupation, 2009–10

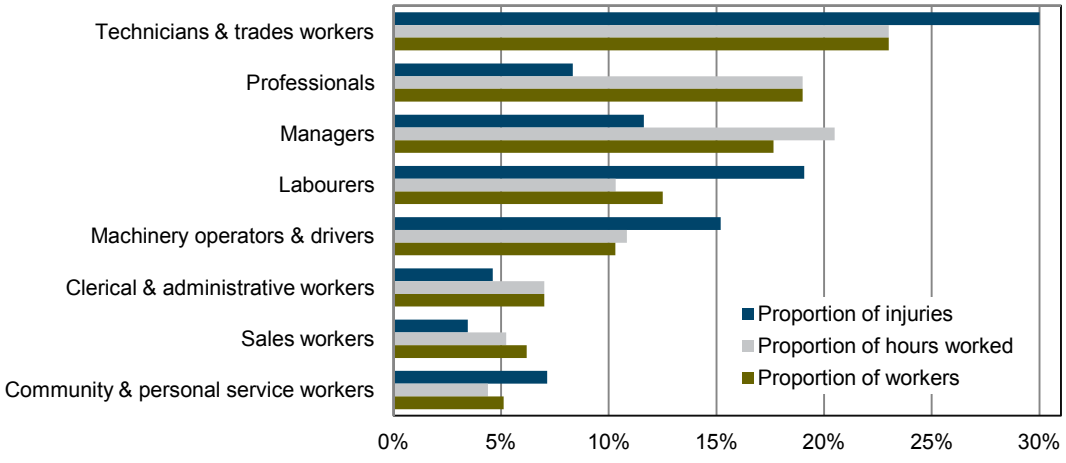


Figure 7 shows that while the same four occupation groups recorded the highest frequency and incidence rates for male workers, the order was slightly different. Labourers recorded both the highest frequency and the highest incidence rate, 56.6 injuries per million hours worked and 89.7 injuries per 1000 male workers respectively. This occupation group employed 13% of male workers and accounted for 10% of total hours worked.

The second highest frequency rate was experienced by Community & personal service workers, 49.9, which also recorded the third highest incidence rate, 82.0. This occupation group accounted for 5% of workers and 4% of hours worked by males, the smallest of the occupation groups. Within this group, one-third of male workers were employed as Protective service workers which include police and prison officers and they accounted for 56% of the injuries in this occupation group.

Professionals accounted for the third highest proportion of hours worked but recorded the lowest frequency rate of injury. One-third of the injuries were incurred by Education professionals.

Figure 7: Male workers: Incidence and Frequency rates by occupation, 2009–10

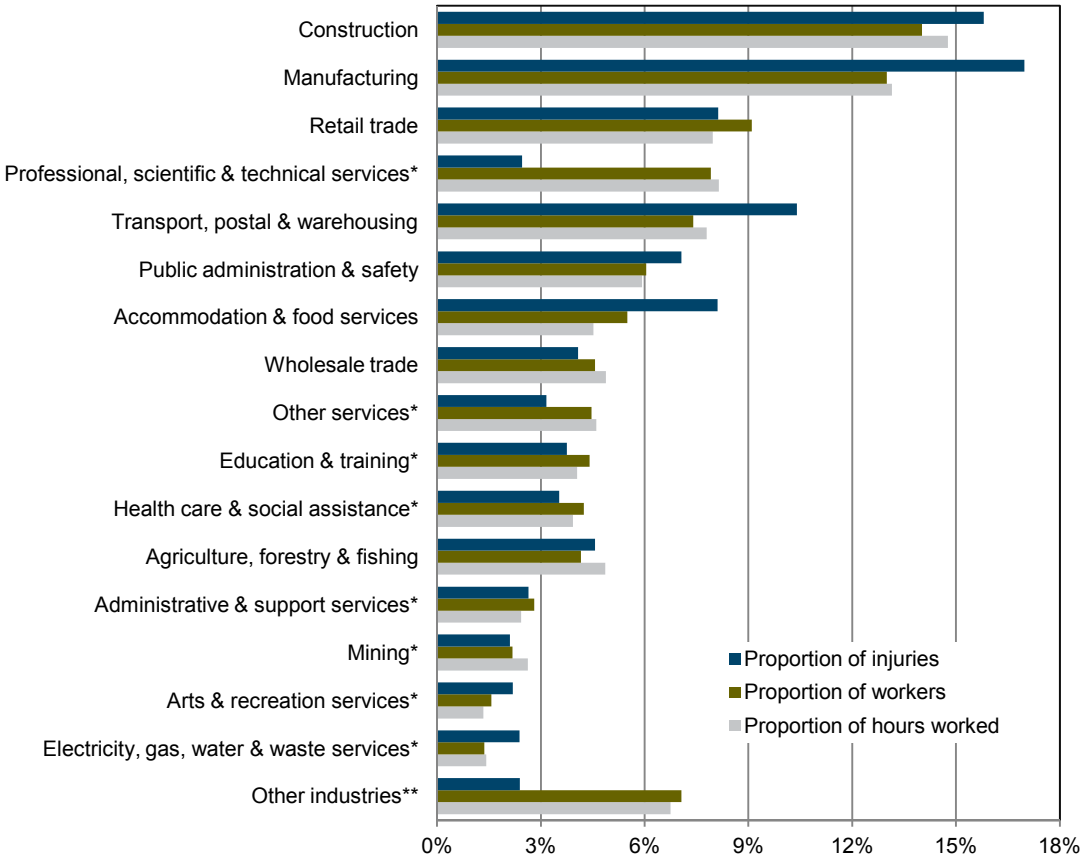
Injury rates by industry

Figure 8 shows that in 2009–10, the proportion by hours worked by male workers were very similar to the proportions of workers for each industry group. Males worked the most hours in the Construction industry (15%) followed by the Manufacturing industry (13%).

For most of the industries the proportion of injuries incurred reflects the proportion of workers in that industry. For the Electricity, gas, water and waste services, Manufacturing, Transport, postal & warehousing, and Accommodation & food services industries the proportion of injuries was much greater than the proportion of workers, while in the Professional, scientific & technical services industry the proportion of injuries was much lower than the proportion of workers. The residual group called Other industries also recorded a much lower proportion of injuries than hours worked.

Within the Manufacturing industry, 24% of male workers were employed in the Machinery & transport equipment manufacturing subgroup with 19% employed in Food, beverage & tobacco product manufacturing and 17% in Metal product manufacturing. The sectors with the highest proportion of injuries included these subgroups plus Non-metallic mineral product manufacturing which accounted for 15% of injuries but only 5% of workers. The subgroup with the highest proportion of injuries, 25%, was Food, beverage & tobacco product manufacturing.

Figure 8: Male workers: proportion of hours worked and injuries incurred by industry, 2009–10



* Proportion of injuries has a relative standard error between 25% and 50% and should be used with caution.
** Includes Rental, hiring & real estate services; Information media & telecommunications; and Financial & insurance services.

Within the Transport, postal & warehousing industry nearly half of the male workers were employed in the Road transport subgroup. This subgroup accounted for 44% of the injuries.

Within the Accommodation & food services industry 88% of male workers were employed in Food & beverage services with this subgroup accounting for 82% of injuries.

The industries with higher proportions of injuries compared with workers recorded the highest incidence rates. Figure 9 shows that the highest incidence rate for males was recorded by the Electricity, gas, water and waste services industry though the rate should be viewed with caution due to the high relative standard errors associated with the injury estimate.

The second highest incidence rate and highest frequency rate was recorded by the Accommodation & food services industry with 86.3 injuries per 1000 male workers and 54.7 injuries per million hours worked by male workers.

The Transport, postal & warehousing industry and the Arts & recreation services industry recorded similar incidence rates though the latter recorded a higher frequency rate due to the lower hours worked in this industry compared with other industries.

While the Manufacturing industry recorded the highest proportion of injuries incurred by male workers, the high number of workers in this sector means it recorded the fifth highest incidence rate at 76.4 injuries per 1000 male workers.

The Construction industry with the highest proportion of workers and hours worked recorded an incidence rate slightly higher than the rate for all industries, 65.9 compared with 58.5.

Figure 9: Male workers: Incidence and Frequency rates by industry, 2009–10

* Estimate of injuries has a relative standard error between 25% and 50% and should be used with caution.
** Includes Rental, hiring & real estate services; Information media & telecommunications; and Financial & insurance services.

How the injury occurred

Figure 10 shows that the most common way male workers were injured at work was *Hitting/being hit/cut by an object* which accounted for 30% of injuries. This was closely followed by *Lifting, pushing or pulling object* accounting for 29% of injuries and *Fall on same level* with 11%.

Figure 10: Male workers: Percentage of injured workers by how the injury occurred, 2009–10

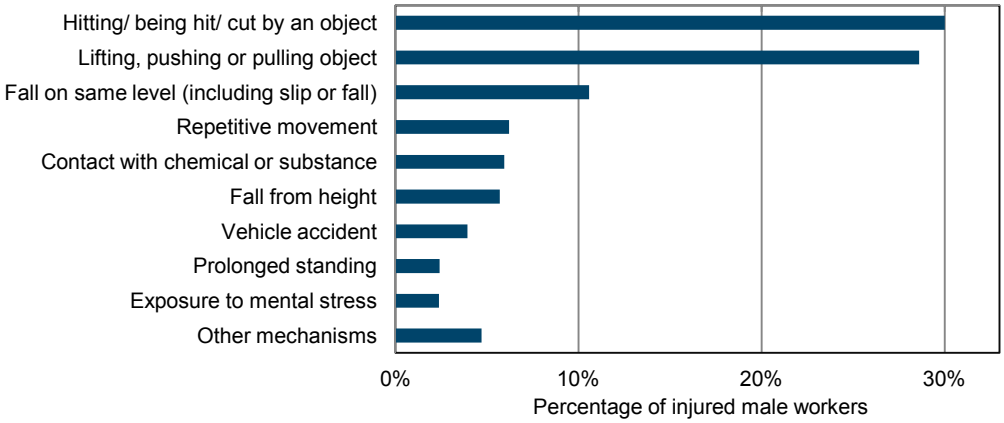


Table 4 shows how the injuries occurred in the four occupations with the highest injury rates for male workers. These data show that *Hitting/being hit/cut by an object* accounted for the highest percentage of injuries incurred by Labourers (34%), Community & personal service workers (34%) and Technicians & trades workers (41%) and the second highest for Machinery operators & drivers (21%).

For Machinery operators & drivers the highest proportion of injuries was due to *Lifting, pushing or pulling object* and accounted for 42% of injuries incurred by these workers.

Community & personal service workers recorded the highest proportion for *Fall on same level* (18%) and *Contact with chemical or substance* (13%). It also had the highest proportion in the *Other mechanisms* category (13%). Other than 3% due to *Vehicle incidents* no further information is available. The occupation group includes health and hospitality workers as well as police and prison officers.

Table 4: Male workers: How injury occurred, proportion by selected occupations, 2009–10

	Labourers	Community & personal service workers	Machinery operators & drivers	Technicians & trades workers
Hitting / being hit / cut by an object	34%	34%	21%	41%
Lifting, pushing or pulling object	31%	14%	42%	21%
Fall on same level (including slip or fall)	14%	18%	11%	7%
Fall from height	6%	0%	10%	4%
Repetitive movement/prolonged standing	7%	8%	7%	12%
Contact with chemical or substance	4%	13%	4%	8%
Other mechanisms	5%	13%	5%	8%
Total	**100%**	**100%**	**100%**	**100%**

Table 5 shows how the injuries occurred in the five industries with the highest injury rates for male workers. These data show different patterns across the industries. *Hitting/being hit/cut by an object* accounted for the highest percentage of injuries in Accommodation & food services (29%), Manufacturing (33%), Construction (31%) and Public administration & safety (24%) and the second highest in Transport, postal & warehousing (19%).

In the Transport, postal & warehousing industry *Lifting, pushing or pulling object* accounted for 40% of injuries, considerably higher than the other selected industries. It also recorded a substantially higher proportion of injuries due to *Fall on same level* (16%).

The Manufacturing industry had the highest percentage of injuries due to *Repetitive movement/prolonged standing*, 20%, and one of the lowest for *Fall on same level*, 5%.

The Construction industry was the only industry in which *Fall from height* were significant with 15% of injuries due to this mechanism.

Table 5: Male workers: How injury occurred, proportion by selected industries, 2009–10

How injury occurred	Accommod-ation & food services	Transport, postal & warehousing	Manufacturing	Construction	Public administration & safety
Hitting / being hit / cut by an object	29%	19%	33%	31%	24%
Lifting, pushing or pulling object	11%	40%	29%	30%	20%
Fall on same level (including slip or fall)	10%	16%	5%	7%	9%
Fall from height	0%	6%	5%	15%	2%
Repetitive movement/prolonged standing	13%	5%	20%	5%	16%
Contact with chemical or substance	14%	4%	8%	5%	9%
Other mechanisms	23%	10%	0%	6%	21%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

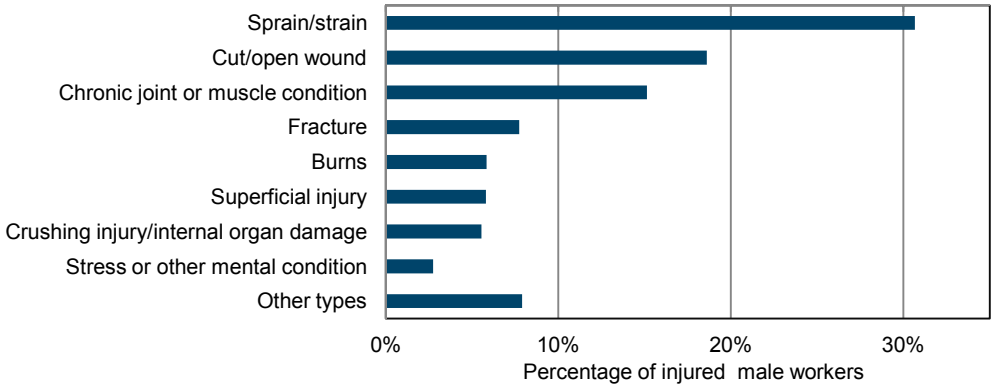
In the Public administration & safety industry, 21% of injuries were coded to the *Other mechanisms* category. This category includes *Vehicle incidents* which was the cause of 10% of the injuries in this industry. Across all industries *Vehicle incidents* accounted for 4% of injuries.

The Accommodation & food services industry had a large proportion in the *Other mechanisms* category (23%). Other than 4% due to *Vehicle incidents* no further information is available.

Type of injury

Injuries that occurred while *Lifting, pushing or pulling object* generally result in either a *Sprain/strain* or *Chronic joint or muscle condition*. Figure 11 shows that together these injuries accounted for 46% of all injuries incurred by male workers. Consistent with male workers recording more injuries from *Hitting/being hit/cut by an object*, 19% of the injuries to male workers involved a *Cut/open wound* compared with 12% for female workers.

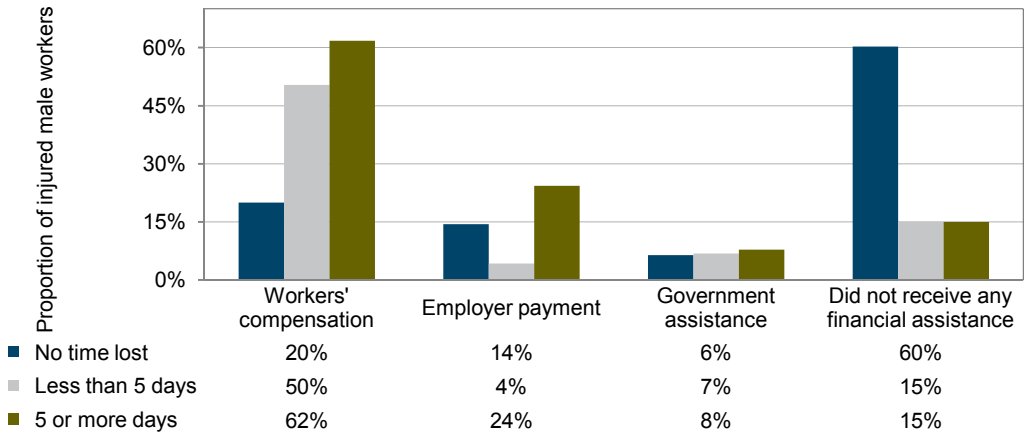
Figure 11: Male workers: Percentage of injuries by type of injury or illness, 2009–10



Financial assistance received

Figure 12 shows that as time lost from work increased so did the proportion who received workers' compensation. When the injury involved 5 or more days off work, 62% of male workers said they received workers' compensation while 24% accessed employer payments such as sick leave or other paid leave. These data also show that the proportion who accessed Federal Government assistance such as Medicare or social security payments increased only marginally with increasing time off work.

Figure 12: Male workers: Percentage of injured workers by financial assistance received by time lost, 2009–10



Work-related injuries incurred by female workers

The following section provides more detail about female workers, where they work and how they are injured.

Injury rates by occupation

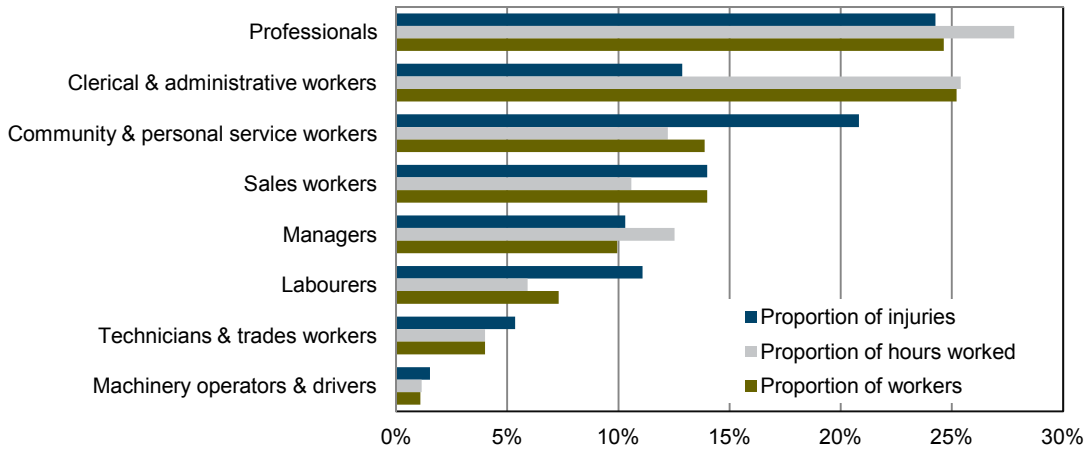
In 2009–10 more than half of the hours worked by females were in jobs where they were classed as Professionals (28% of total hours) or Clerical & administrative workers (25%). There is considerable variation in the hours worked per week by females across the occupation groups. As can be seen in Figure 13, Managers and Professionals had a greater proportion of total hours worked than their proportion of workers. Females in these occupations worked 35 and 32 hours per week on average respectively which is higher than the overall average for female workers of 28. Sales workers worked 22 hours per week on average.

The pattern of injuries was quite different. While Professionals incurred the greatest proportion of injuries (24%), Community & personal service workers accounted for the second highest proportion, 21%, followed by Sales workers with 14% and Clerical & administrative workers with 13%.

Within the Professionals occupation group, females mainly worked as Health, Education or Business, human resource & marketing professionals with each of these subgroups accounting for around one-quarter of female professionals. The Education and Health professionals subgroups accounted for the highest proportion of injuries with around one-third of injuries in each of these subgroups. The Business, human resource & marketing professionals accounted for 12% of injuries.

Within the Community & personal service workers occupation group, half of the females worked as Carers & aides and one-quarter as Hospitality workers. Injuries followed this same pattern. Health & welfare support workers employed 10% of the females in this occupation group but accounted for 20% of the injuries. This subgroup includes ambulance offices and enrolled nurses.

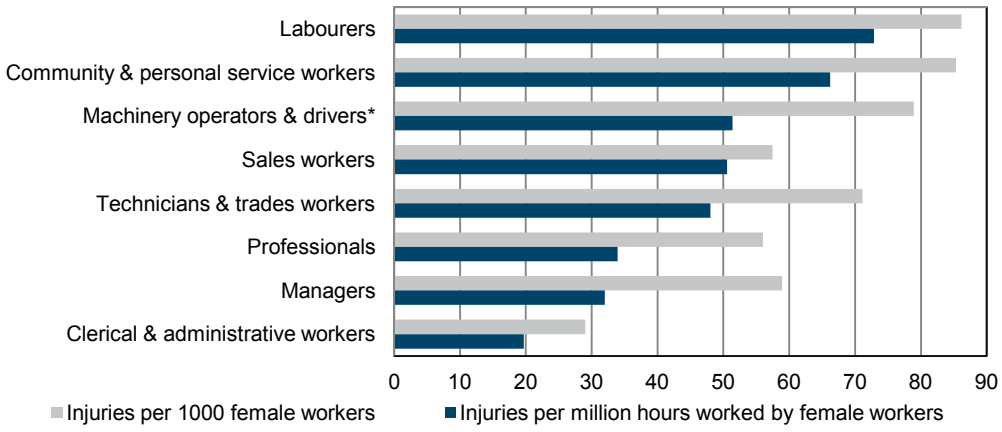
Figure 13: Female workers: proportion of hours worked and proportion of injuries by occupation, 2009–10



The differences in average hours worked result in different patterns between incidence and frequency rates for female workers. Figure 14 shows that Labourers and Community & personal service workers recorded similar incidence rates (86.2 injuries per 1000 female workers and 85.3 respectively) but quite different frequency rates (72.9 injuries per million hours worked and 66.2 respectively). Within the Labourers occupation group, 40% of females worked as Cleaners and laundry workers with 20% working as Food preparation assistants and 18% as Factory process workers. Injuries followed a similar pattern.

While Clerical & administrative workers accounted for the highest proportion of female workers, they recorded the lowest incidence and frequency rates (29.0 injuries per 1000 workers and 19.7 injuries per million hours worked respectively) due to office work being a low risk environment. Similarly Professionals with high numbers of workers recorded low rates.

Figure 14: Female workers: Incidence and Frequency rates by occupation, 2009–10



* Has a relative standard error between 25% and 50% and should be used with caution.

Injury rates by industry

Figure 15 shows that in 2009–10 females in the Health care & social assistance industry accounted for the highest proportion of workers and hours worked followed by the Retail trade and Education & training industries.

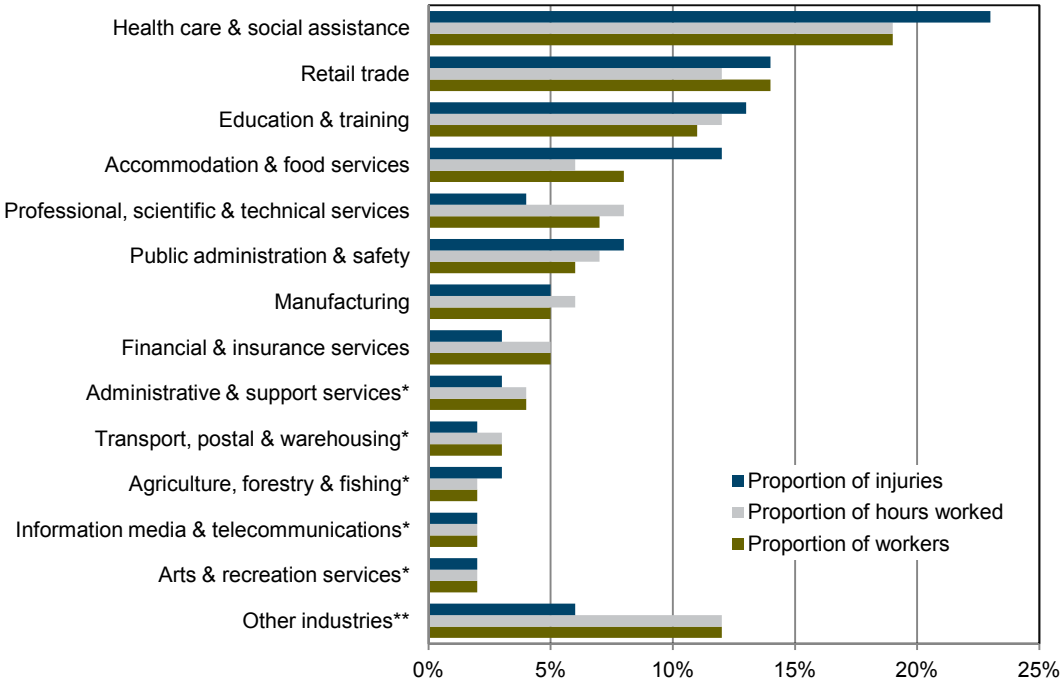
The patterns of injuries broadly reflects the number of hours worked within each industry except for the Accommodation & food services industry which had twice the proportion of injuries than its proportion of hours worked (12% and 6% respectively). Females in the Accommodation & food services industry worked around 22 hours per week compared with 28 hours per week for all female workers. Within this industry, 87% of female workers were employed in Food & beverage services with this subgroup accounting for 86% of injuries.

The highest proportion of injuries was recorded by the Health care & social assistance industry (23% of injured female workers). Within this industry, 42% of females worked within the aged care and child care sectors with these sectors accounting for 49% of the injuries. The next biggest sector was Hospitals which employed 31% of female workers and accounted for 35% of injuries.

The Retail trade industry accounted for 14% of injuries to female workers. One-third of the female workers in this industry worked in the Food retailing sector but this sector accounted for 50% of in the injuries in this industry.

The Education industry accounted for 13% of injuries to female workers. Within this industry 61% worked in the Preschool & school education sector with this sector accounting for 71% of the injuries within the industry.

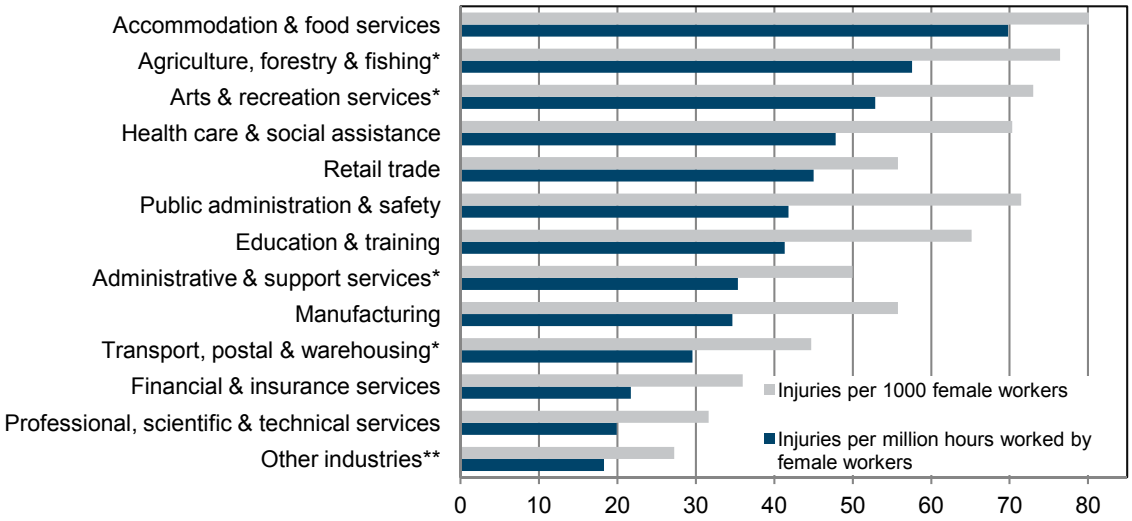
Figure 15: Female workers: proportion of hours worked and proportion of injuries by industry, 2009–10



* The proportion of injuries has a relative standard error between 25% and 50% and should be used with caution.
** Includes Mining, Electricity,gas, water & waste services, Rental, hiring & real estate services, Construction, Wholesale trade and Other services.

Figure 16 shows that the highest incidence and frequency rate was recorded by the Accommodation & food services industry, 80.1 injuries per 1000 female workers and 69.8 injuries per million hours worked respectively. This was followed by the Agriculture, forestry & fishing industry.

Figure 16: Female workers: Incidence and Frequency rates by industry, 2009–10



* Has a relative standard error between 25% and 50% and should be used with caution.
** Includes Mining, Electricity,gas, water & waste services, Rental, hiring & real estate services, Construction, Wholesale trade and Other services.

The industries with the highest proportions of hours worked, Health care & social assistance, Retail trade and Education & training recorded similar frequency rates, 47.8, 45.0 and 41.3 respectively. However, the Retail trade industry recorded a much lower incidence rate than the other two industries: 55.8 injuries per 1000 female workers compared with 65.2 for Education and 70.3 for Health care & social assistance.

How the injury occurred

Figure 17 shows that the main cause of injury to female workers in 2009–10 was *Lifting, pushing or pulling object* accounting for 26% of injuries. This was followed by *Hitting/being hit/cut by an object* with 18% and *Fall on same level* with 17%.

Figure 17: Female workers: Percentage of injuries by how the injury occurred, 2009–10

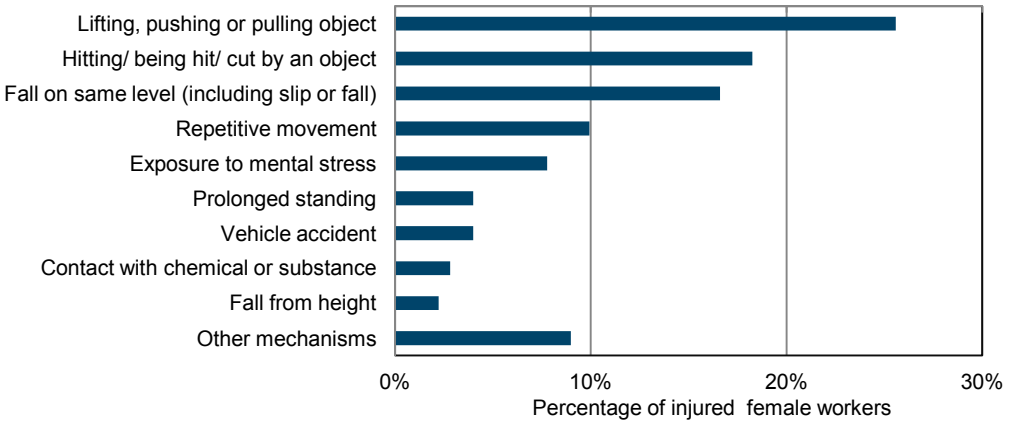


Table 6 shows how the injuries occurred in the four occupations with the highest injury frequency rates for female workers excluding Machinery operatives & drivers due to the high error on the estimate. As the injury estimates are small these data should only be treated as indicative.

For Labourers and Sales workers the highest percentage of injuries was due to *Lifting, pushing or pulling object* while for Community & personal service workers and Technicians & trades workers the highest percentage was due to *Hitting/ being hit/cut by an object*.

These two mechanisms accounted for around half of all injuries. Technicians & trades workers had a slightly higher proportion of injuries due to *Falls* compared to the other occupation groups. For Community & personal service workers the largest proportion was in the *Other mechanisms* category (26%). For more than half of this group there is no information available.

Table 6: Female workers: How injury occurred, proportion by selected occupations, 2009–10

How injury occurred	Labourers	Community & personal service workers	Sales workers	Technicians & trades workers
Lifting, pushing or pulling object	38%	24%	35%	**
Hitting/ being hit/ cut by an object	*15%	24%	*23%	*38%
Repetitive movement/ prolonged standing	*18%	*7%	*21%	**
Falls	*16%	19%	*19%	*23%
Other mechanisms	13%	26%	**	*22%
Total	**100%**	**100%**	**100%**	**100%**

* Estimate has a relative standard error between 25% and 50% and should be used with caution.
** Estimate has a relative standard error greater than 50% and too unreliable for use.

Table 7 shows how the injuries occurred in the five industries with the highest injury rates for female workers. *Lifting, pushing or pulling object* accounted for the highest percentage of injuries in Health care & social assistance and Retail trade while *Hitting/being hit/cut by an object* accounted for the highest percentage in Accommodation & food services. In the Accommodation & food services industry the majority of the injuries in the *Other mechanism* category were due to *Contact with chemical or substance* possibly linked to cleaning and cooking activities.

Injuries in the Public administration & safety industry mainly involved *Exposure to mental stress* or *Repetitive movement/prolonged standing*. The small number of injured workers in this industry means that no further information can be reliably provided.

Injuries in the Education & training industry were spread over a number of mechanisms with the highest being due to *Falls*, of which, most were due to a fall, slip or trip on the same level as opposed to a fall from height. Female workers had very few falls from height compared with male workers.

Table 7: Female workers: How injury occurred, proportion by selected industries, 2009–10

How injury occurred	Accommod-ation & food services	Health care & social assistance	Retail trade	Public administration & safety	Education & training
Lifting, pushing or pulling object	20%	40%	46%	**	20%
Hitting or being hit by an object	35%	17%	14%	**	*12%
Falls	*16%	12%	19%	**	25%
Exposure to mental stress	**	**	**	*25%	*17%
Repetitive movement/ prolonged standing	**	**	*13%	*30%	**
Other mechanisms	*29%	30%	**	**	*25%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

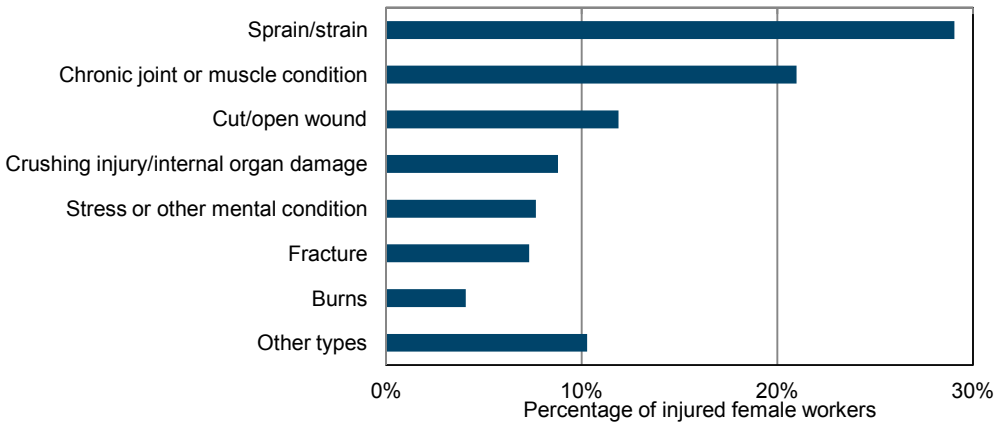
* Estimate has a relative standard error between 25% and 50% and should be used with caution.
** Estimate has a relative standard error greater than 50% and too unreliable for use.

Type of injury

Injuries that occurred while *Lifting, pushing or pulling object* generally resulted in either a *Sprain/strain* or *Chronic joint or muscle condition*. Figure 18 shows that the 29% of injuries incurred by female workers were *Sprain/strains* and 21% were *Chronic joint or muscle condition*.

Stress or other mental condition was reported by 8% of female workers which is considerably higher than the 3% of male workers who reported this condition.

Figure 18: Female workers: Percentage of injured workers by type of injury or illness, 2009–10

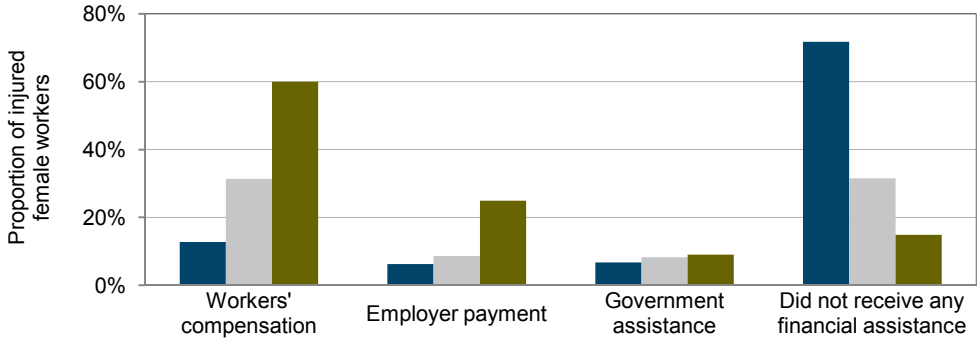


Financial assistance received

Figure 19 shows that as time lost from work increased so did the proportion who received workers' compensation. When the injury involved 5 or more days off work, 60% of female workers said they received workers' compensation while 25% of female workers accessed employer payments such as sick leave or other paid leave.

These data also show that the proportion who accessed Federal Government assistance such as Medicare or social security payments increased only marginally with increasing time off from work.

Figure 19: Female workers: Percentage of injured workers by financial assistance received by time lost, 2009–10



	Workers' compensation	Employer payment	Government assistance	Did not receive any financial assistance
No time lost	13%	6%	7%	72%
Less than 5 days	31%	9%	8%	32%
5 or more days	60%	25%	9%	15%

Work-related injuries by age

In 2009–10, 26% of all work-related injuries were incurred by workers in the 45–54 years age group. Figure 20 shows that almost equal numbers were recorded by the younger age groups with much fewer injured workers in the older age groups. Comparison with the results from the 2005–06 survey shows lower numbers of injured workers in the younger age groups and higher in the older age groups.

Figure 20: Work-related injuries: Number of injured workers by age group, 2005–06 and 2009–10

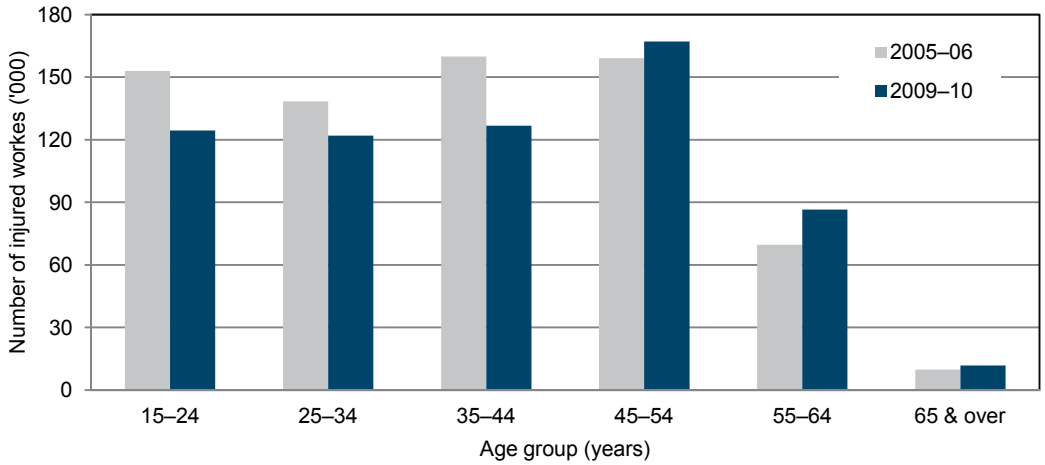


Figure 21 shows how the proportion of injuries in a particular age group compares to the proportion of workers and hours worked by that age group. These data show that in 2009–10, workers in the 15–24 years age group recorded a much higher proportion of work-related injuries than the proportion of workers or hours worked while the next two age groups, 25–34 and 35–44 had a lower proportion of injured workers than the proportion of workers or hours.

Figure 21: Proportion of injured workers, proportion of workers and proportion of hours worked by age group, 2009–10

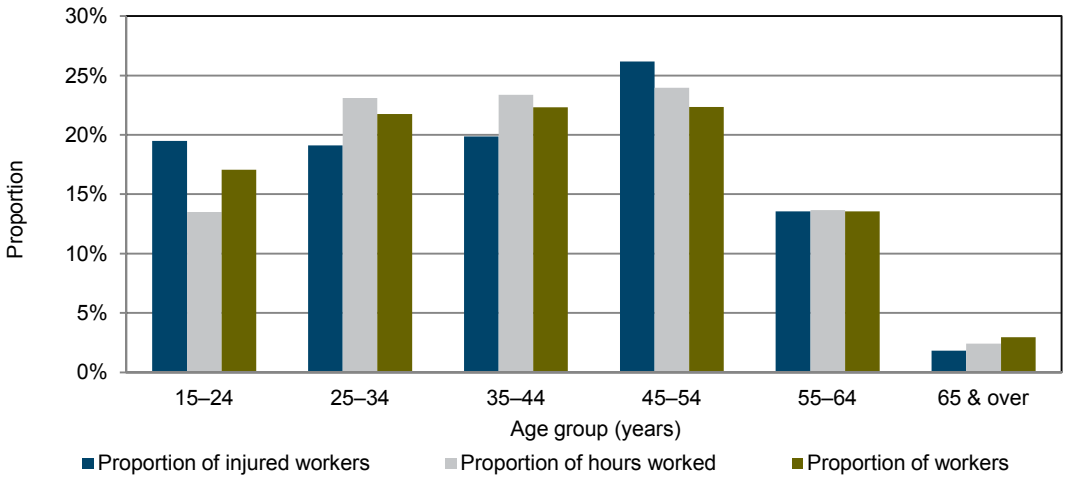
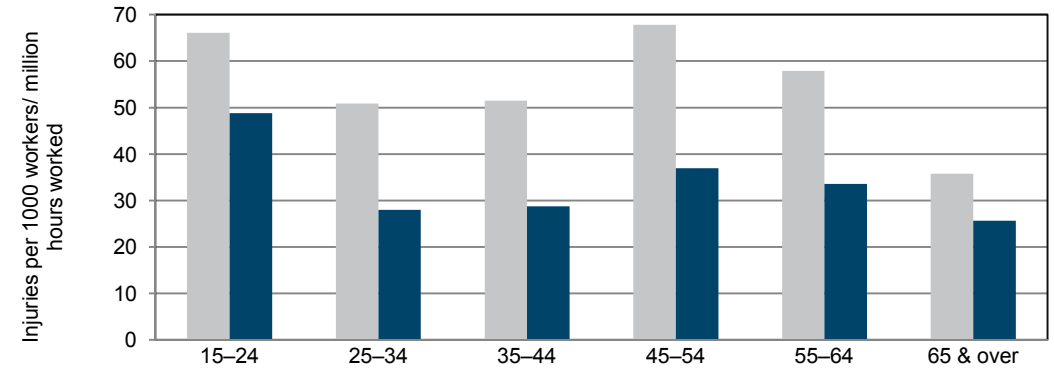


Figure 22 shows the incidence and frequency rates by age group. These data show that the 15–24 years age group recorded the highest frequency rate of all the age groups and the second highest incidence rate, slightly lower than the incidence rate for the 45–54 years age group.

Figure 22: Work-related injuries: Incidence (injuries per 1000 workers) and frequency (injuries per million hours worked) rates by age group, 2009–10



	15–24	25–34	35–44	45–54	55–64	65 & over
Incidence rate	66.1	50.8	51.5	67.8	57.9	35.8
Frequency rate	48.8	28.0	28.7	37.0	33.6	25.7

The frequency rate is a superior measure when comparing rates across age groups as it takes account of the differences in the hours worked particularly as those in the youngest and oldest age groups work fewer hours on average than the other age groups. This explains why incidence rates were similar for the 15–24 years and 45–54 years age groups while the frequency rate for the 15–24 years age group was 32% higher than the rate for the 45–54 years age group.

The 65 years & over age group recorded both the lowest incidence rate and the lowest frequency rate with rates nearly half those of the 15–24 years age group. For the rest of this report, data for workers in the 65 years & over age group have been merged with data for the 55–64 years age group due to the unreliability of the estimates.

Age by sex

Table 8 shows that male and female workers recorded similar proportions of injuries by age. The 45–54 years age group recorded the greatest proportion of injuries for both male and female workers: 25% and 28% respectively while the 55 years & over age group recorded the lowest proportion of injuries: 15% for both males and females.

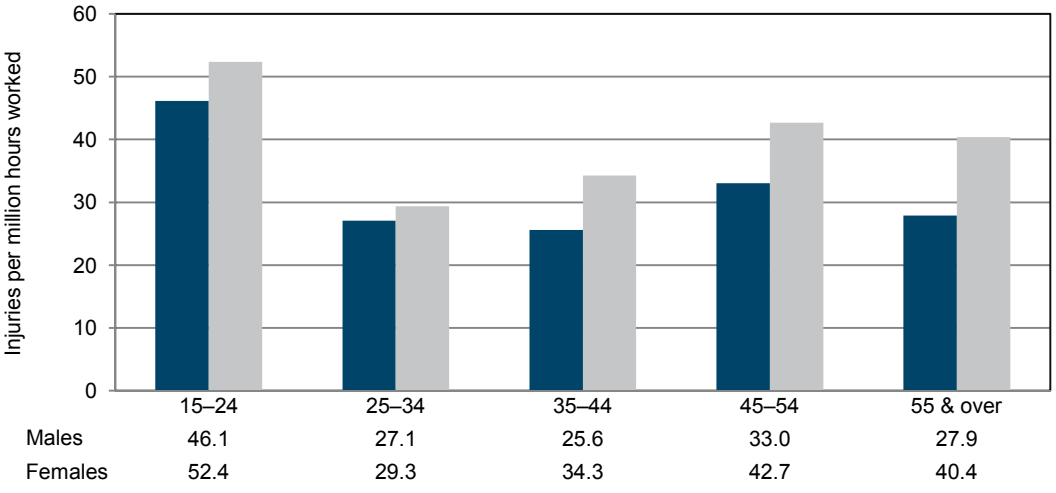
These data also show that the 15–24 years age group worked the fewest hours worked on average: 31.1 for males and 25.1 for females. For all age groups males worked more hours per week than their female counterparts with the greatest difference in the 35–44 years age group where males worked 13 hours more per week than females.

Figure 23 shows that females had higher frequency rates than males for all age groups. For both males and females, the highest frequency rate was recorded by the 15–24 year age group, with females recording a rate 14% higher than the male rate. The largest difference in frequency rates between the sexes was in the 55 years & over age group where the rate for females was 45% higher than the rate for males.

Table 8: Number and proportion of injured workers, total workers and hours worked per week by sex and age group, 2009–10

Age group (years)	Injured workers		Workers		Average Hours worked per week
	Number	Proportion	Number	Proportion	
			Males		
15–24	66 500	19%	966 700	16%	31.1
25–34	72 400	20%	1 345 600	22%	41.1
35–44	72 200	20%	1 363 500	23%	43.1
45–54	88 700	25%	1 295 000	21%	43.2
55 & over	54 300	15%	1 053 400	17%	40.3
Total	**354 100**	**100%**	**6 024 200**	**100%**	**31.5**
			Females		
15–24	57 800	20%	915 100	18%	25.1
25–34	49 600	17%	1 053 000	21%	33.4
35–44	54 500	19%	1 097 900	22%	30.2
45–54	78 400	28%	1 168 500	23%	32.7
55 & over	43 900	15%	767 800	15%	30.4
Total	**284 300**	**100%**	**5 002 300**	**100%**	**24.2**
			Total		
15–24	124 300	19%	1 881 700	17%	28.2
25–34	122 000	19%	2 398 600	22%	37.9
35–44	126 700	20%	2 461 400	22%	37.3
45–54	167 100	26%	2 463 600	22%	38.2
55 & over	98 200	15%	1 821 200	17%	32.0
Total	**638 300**	**100%**	**11 026 500**	**100%**	**35.7**

Figure 23: Work-related injuries: Frequency rates (injuries per million hours worked) by age group and sex



	15–24	25–34	35–44	45–54	55 & over
Males	46.1	27.1	25.6	33.0	27.9
Females	52.4	29.3	34.3	42.7	40.4

Status in employment

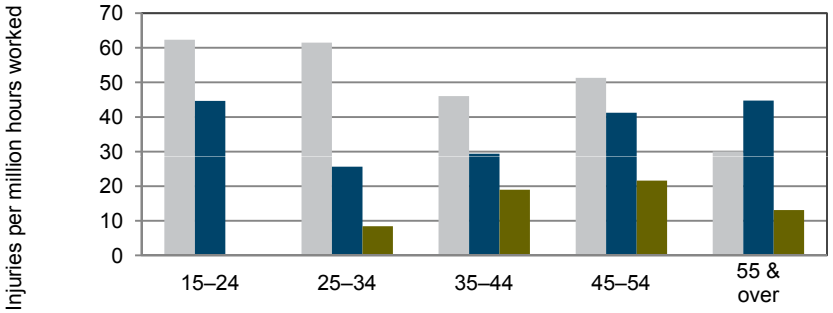
As workers age they appear to move from casual employment to employment with paid leave entitlements and then for some on to self-employment, changing jobs in the process. Table 9 shows that 41% of casual workers were in the 15–24 years age group while 30% of Owner managers were in the 55 years & over age group. It also shows that similar proportions of Employees with paid leave entitlements were employed across the age groups from 25 to 54 years.

Table 9: Workforce: Proportion of workers and hours worked by status in employment and age group, 2009–10

Age group (years)	Employees		Owner managers
	Without paid leave entitlements	With paid leave entitlements	
	Percentage of workers		
15–24	41%	13%	3%
25–34	17%	26%	13%
35–44	16%	24%	25%
45–54	13%	23%	29%
55 & over	12%	14%	30%
Total	**100%**	**100%**	**100%**
	Percentage of hours worked		
15–24	33%	13%	3%
25–34	22%	26%	13%
35–44	18%	24%	25%
45–54	15%	24%	31%
55 & over	12%	13%	28%
Total	**100%**	**100%**	**100%**

Figure 24 shows that casual Employees recorded the highest frequency rates in all age groups except the 55 years & over group. The highest frequency rates across all age and employment status groups were recorded by young people working as casuals. Those in the 15–24 years age group had the highest frequency rate of 62.3 injuries per million hours worked, slightly higher than the 61.5 recorded by casuals in the 25-34 year age group.

Figure 24: Work-related injuries: Frequency rates (injuries per million hours worked) by age group and status in employment



	15–24	25–34	35–44	45–54	55 & over
Employee without paid leave	62.3	61.5	46.0	51.3	30.0
Employee with paid leave	44.7	25.7	29.4	41.2	44.7
Owner managers*		8.4	19.0	21.6	13.1

* The rate for 15-24 years is too unreliable to publish and the rate for 25-34 years should be used with caution.

The 25–34 years age group recorded the greatest difference between the frequency rate for casuals and the other employment categories. For this age group the frequency rate for casuals was more than twice that of their counterparts with paid leave entitlements.

For the 55 years & over age group, Employees with paid leave entitlements experience the highest rate of injury, nearly 50% higher than the rate for casuals.

Type of employment

In 2009–10, shiftworkers had a younger age profile compared with non-shiftworkers. Table 10 shows that 43% of part-time shiftworkers were in the 15–24 years age group. Full-time shiftworkers displayed the same age profile of full-time non-shiftworkers.

Table 10: Workforce: Proportion of workers and hours worked by type of employment and age group, 2009–10

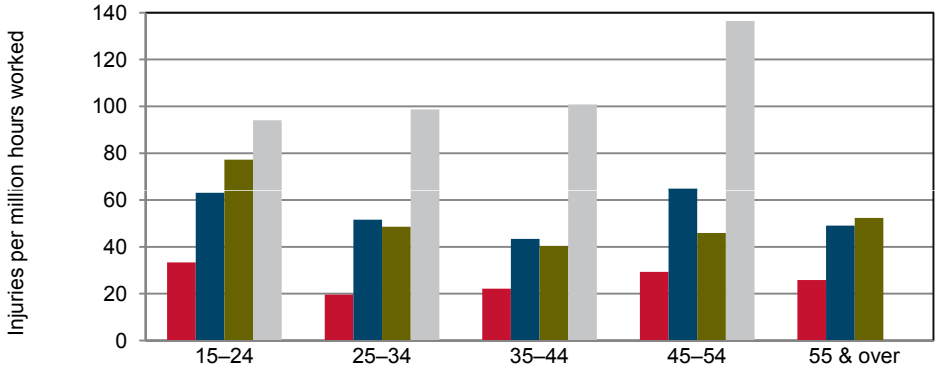
Age group (years)	Non-shift workers			Shift workers		
	Full-time	Part-time	Total	Full-time	Part-time	Total
	Percentage of workers					
15–24	12%	24%	16%	14%	43%	24%
25–34	25%	14%	22%	26%	16%	22%
35–44	23%	21%	22%	24%	17%	21%
45–54	24%	20%	23%	22%	13%	19%
55 & over	15%	22%	17%	14%	11%	13%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Percentage of hours worked					
15–24	12%	19%	13%	14%	34%	18%
25–34	24%	16%	23%	26%	17%	24%
35–44	24%	22%	23%	24%	20%	23%
45–54	25%	23%	25%	22%	16%	21%
55 & over	16%	21%	16%	14%	13%	14%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Figure 25 shows that the highest frequency rate in each age group was recorded by part-time shiftworkers. The highest rate overall was recorded by those in the 45–54 years age group with 136.4 injuries per million hours worked, four times the rate for all workers of 34.3. It should be noted however, that this group comprised a small proportion of the workforce in 2009–10, just 6% of workers and 3% of hours worked.

The lowest rate in each age group was recorded by full-time non-shift workers. The lowest rate overall was recorded by those in the 25–34 years age group with 19.6 injuries per million hours worked.

These differences may be due to the different industries in which shiftworkers work compared with non-shiftworkers. In 2009–10, 21% of shiftworkers were employed in the Health care & social assistance industry and 18% in the Accommodation & food services industry. As seen earlier in this report the Accommodation & food services industry recorded the highest frequency rate and the Health care & social assistance industry the fourth highest. Further analysis of the data shows that shiftworkers in the Health care & social assistance industry incurred an incidence rate more than twice the rate for non-shiftworkers while in the Accommodation & food services industry rates were closer.

Figure 25: Work-related injuries: Frequency rates (injuries per million hours worked) by age group and type of employment



	15–24	25–34	35–44	45–54	55 & over
Non-shift work Full-time	33.3	19.6	22.2	29.3	25.8
Shift work Full-time	63.1	51.6	43.4	64.8	49.1
Non-shift work Part-time	77.2	48.6	40.4	46.0	52.4
Shift work Part-time	94.0	98.7	100.8	136.4	

How the injury occurred

The most common cause of injury in all age groups except the 15–24 years group was *Muscular Stress.* This mechanism of injury includes *Lifting, pushing, pulling, bending*; *Repetitive movement with low muscle loading* and *Prolonged standing, working in cramped or unchanging positions*. Table 11 shows that for those in the 15–24 years age group, *Hitting or being hit or cut by an object* accounted for the largest proportion of injuries (36%) followed by *Muscular Stress* with 27%.

For those in the 25–34 and 35–44 years age groups, incidents involving *Hitting or being hit or cut by an object* accounted for the second largest proportion of injuries, while for workers in the older age groups (45–54 and 55 years and over) incidents involving *Falls* (encompassing *Fall on same level* and *Fall from a height*) accounted for the second largest proportion of injuries.

Injuries from *Contact with chemical or other substance* accounted for 5% of all injuries but for the 15–24 years age group it was responsible for 9%. This youngest age group incurred 40% of the injuries due to this mechanism of injury.

Workers aged 45 years and over accounted for almost 60% of injuries resulting from *Falls,* suggesting that *Falls* are a major risk for older workers. These workers also accounted for 59% of incidents involving *Exposure to mental stress*.

Table 11: Work-related injuries: Percentage of injuries by how the injury or illness occurred by age group, 2009–10

	Age group (years)					
Mechanism of injury	**15–24**	**25–34**	**35–44**	**45–54**	**55 & over**	**Total**
Muscular stress	27%	43%	42%	44%	34%	38%
Hitting or being hit or cut by an object	36%	25%	25%	16%	23%	24%
Falls	14%	11%	12%	23%	28%	17%
Exposure to mental stress	**	**	6%	5%	10%	5%
Contact with chemical or other substance	9%	**	*6%	**	**	5%
Other mechanism	13%	14%	10%	10%	**	10%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

* Estimate has a relative standard error between 25% and 50% and should be used with caution.
** Estimate has a relative standard error greater than 50% and too unreliable for use.

Figures 26 and 27 show the percentage of injuries for male and female workers for the three most common ways injuries were incurred. For male workers 83% of injuries were due to these three mechanism while for female workers they accounted for 77%. Figure 26 shows that the pattern for male workers is similar to the pattern for all injured workers except for lower proportions due to *Falls* in older workers. The pattern for female workers is very different with much lower proportions due to *Hitting or being hit or cut by an object* in all age groups compared with male workers. Female workers aged 55 years & over had a much higher proportion of injuries due to *Falls* than their male counterparts: 32% for female workers compared with 24% for male workers.

Female workers in the 15–24 years age group also had a substantially different pattern to male workers of the same age. Young female workers were more likely to incur a *Fall* or *Muscular stress* and less likely to be injured from *Hitting or being hit or cut by an object* than their male counterparts.

Figure 26: Male workers: Percentage of injuries by three most common ways injuries occurred by age group, 2009–10

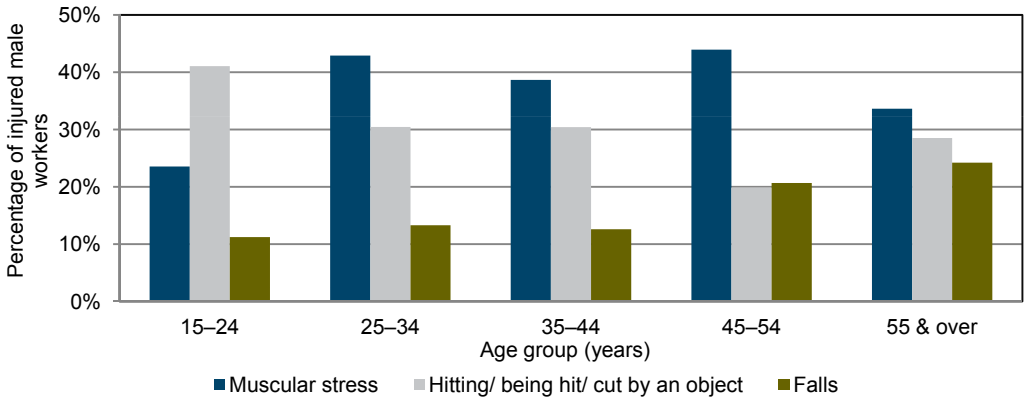
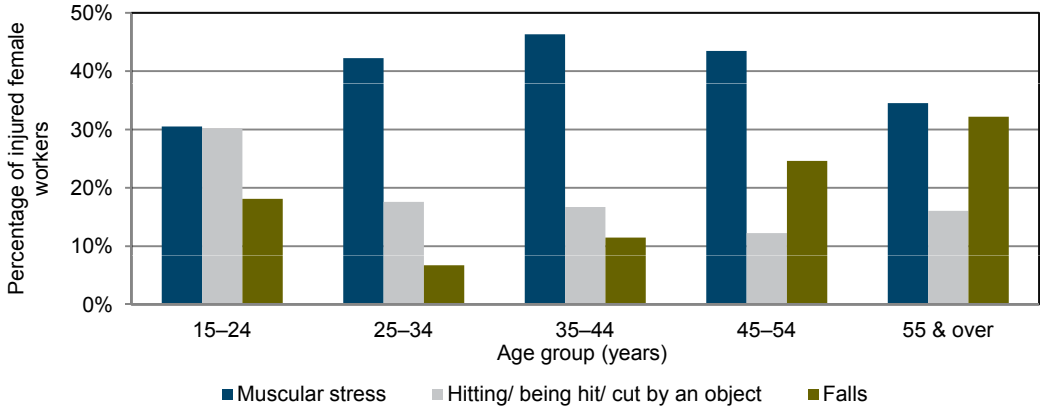


Figure 27: Female workers: Percentage of injuries by three most common ways injuries occurred by age group, 2009–10



Occupation

Table 12 shows that the pattern of workers and hours worked by occupation is similar for all the age groups except for the 15–24 years age group. While the greatest proportion of workers were Professionals (21%), only 9% of those in the 15–24 years age group worked in this occupation. A similar difference existed for Managers with only 4% of those in the 15–24 years age group in this field compared with 12% to 18% for the other age groups. This difference reflects the level of skill and career progression required to work as Professionals and Managers.

Table 12: Percentage of injured workers, percentage of workers and frequency rate by occupation and age group, 2009–10

Occupation	Age group (years)					Total
	15–24	25–34	35–44	45–54	55 & over	
	Percentage of workers					
Managers	4%	12%	17%	18%	18%	14%
Professionals	9%	28%	24%	22%	22%	21%
Technicians & trades workers	18%	16%	14%	12%	11%	14%
Community & personal service workers	13%	9%	8%	9%	8%	9%
Clerical & administrative workers	12%	15%	15%	18%	15%	15%
Sales workers	24%	7%	7%	6%	7%	10%
Machinery operators & drivers	4%	6%	6%	7%	8%	6%
Labourers	16%	8%	8%	10%	10%	10%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Percentage of hours worked					
Managers	6%	14%	21%	21%	22%	17%
Professionals	11%	28%	24%	22%	22%	22%
Technicians & trades workers	24%	17%	16%	13%	12%	16%
Community & personal service workers	11%	8%	6%	7%	7%	7%
Clerical & administrative workers	13%	14%	13%	16%	13%	14%
Sales workers	17%	6%	6%	5%	7%	7%
Machinery operators & drivers	5%	6%	7%	7%	9%	7%
Labourers	12%	7%	7%	9%	9%	9%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

One-quarter of workers in the 15–24 years age group were employed as Sales workers though these workers only accounted for 17% of total hours worked by this age group due to the high proportion of part-time sales work. Sales workers accounted for around 7% of workers and 6% of hours in the other age groups.

The greatest proportion of hours worked by the 15–24 years age group were worked as Technicians & trades workers (24% of hours). Around one-quarter of these workers were in the automotive area with another one quarter in construction working particularly as carpenters and electricians. As age increased the proportion of hours worked as Technicians & trades workers decreased from 17% of hours worked by those in the 25–34 years age group down to 12% of the hours worked by those in the 55 years & over age group.

Labourers is another occupation group where there is a higher proportion of young workers. In 2009–10, 16% of workers in the 15–24 years age group were Labourers compared with 8–10% for the other age groups. Within the Labourers occupation group, one-quarter of young workers were Food preparation assistants working as kitchen hands and fast food cooks. For the other age groups less than 10% of Labourers work in this area. Around 30% of young workers were also working as Other labourers, a group which includes shelf fillers. The other age groups show considerably fewer workers in this category as skills and/or education in a particular area are gained.

Within the Community & personal service workers occupation group more than half (55%) of young workers were working in the hospitality sector particularly as waiters. This proportion halved for the 25–34 years age group and fell to around 10% for the other age groups. While one-quarter of young workers were working as Carers & aides particularly in childcare, this proportion was lower than the other

age groups in which recorded half of those working as Labourers were Carers & aides though they had moved out of childcare into education or aged care.

Clerical & administrative workers was the only occupation group with similar proportions of workers and hours worked in each age group.

Managers and Machinery operators & drivers were the only occupation groups where a distinct increase in the percentage of workers and hours worked was seen with increasing age.

Table 13 shows that while the highest incidence and frequency rates were recorded by Labourers, this occupation group only recorded the highest incidence rate in two of the age groups. It recorded the highest frequency rate in all age groups except the 15–24 years group. One-third of injuries incurred by Labourers were due to *Lifting, pushing or pulling object* however, for the youngest and oldest age groups the greatest proportion of injuries were due to *Hitting/ being hit/ cut by object.*

For the 15–24 years age group, the highest frequency rate was recorded by Community & personal service workers with a rate nearly twice the overall rate for the group. This age group recorded the highest frequency rate for Labourers, Technicians & trades workers and Sales workers. Young workers in these occupation groups were most likely to be injured by *Hitting/ being hit/ cut by object* except for Sales workers who were more likely to be injured *Lifting, pushing or pulling object*.

Table 13: Percentage of injured workers, percentage of workers and frequency rate by occupation and age group, 2009–10

Occupation	Age group (years)					Total
	15–24	25–34	35–44	45–54	55 & over	
	Incidence rate (injuries per 1000 workers)					
Managers	*56.0	31.3	36.2	64.5	41.4	45.1
Professionals	**	33.7	28.8	54.8	65.8	41.9
Technicians & trades workers	113.8	77.7	68.4	77.8	*34.9	77.8
Community & personal service workers	104.6	75.8	64.4	91.9	76.8	84.3
Clerical & administrative workers	**	31.7	37.2	39.7	*24.1	31.6
Sales workers	45.4	57.4	*40.3	*50.6	*57.7	48.7
Machinery operators & drivers	*77.2	62.1	102.6	106.7	72.0	86.0
Labourers	73.2	81.7	101.7	106.0	83.5	88.5
Total	**66.1**	**50.8**	**51.5**	**67.8**	**53.9**	**57.9**
	Frequency rate (injuries per million hours worked)					
Managers	*30.0	15.1	16.8	29.6	20.4	21.5
Professionals	**	18.4	16.3	29.3	40.0	23.5
Technicians & trades workers	62.2	39.7	34.7	40.1	*19.7	40.8
Community & personal service workers	91.6	49.0	43.8	62.5	54.1	60.3
Clerical & administrative workers	**	19.1	24.5	24.5	*16.9	20.0
Sales workers	48.8	34.2	*25.7	*31.1	*38.6	37.2
Machinery operators & drivers	*45.8	30.5	49.8	51.2	38.2	43.4
Labourers	68.8	49.2	65.1	63.2	57.5	61.0
Total	**48.8**	**28.8**	**28.7**	**37.0**	**32.4**	**33.8**

* Estimate has a relative standard error between 25% and 50% and should be used with caution.
** Estimate has a relative standard error greater than 50% and too unreliable for use.

At the other end of the age range, workers in the 55 years & over age group recorded the greatest proportion of injuries while working as Professionals. Over one-third (35%) of these injuries were due to *Falls* and a further 21% were due to *Exposure to mental stress*. Just over one-quarter (28%) of Professionals in this oldest age group were employed in the education sector with 22% working as Business, human resource & marketing professionals and 19% as Health professionals.

While the Professionals occupation group recorded the second lowest incidence rate for all workers, 41.9 injuries per 1000 workers, rates increased substantially with age from 18.6 for those in the 25–34 years age group to 65.8 for those in the 55 years & over age group. This increasing pattern was not evident for any other occupation group.

Industry

Table 14 shows the pattern of workers and hours worked by industry were fairly consistent across the age groups in 2009–10 except for the youngest age group who worked a greater proportion of hours in Retail trade and Accommodation & food services and a lower proportion in Transport, postal & warehousing, Public administration & safety and Education & training than the other age groups.

While the Retail trade industry employed the most workers in Australia (11%), over one-third (37%) were in the 15–24 years age group. Of all workers in this age group, 24% were employed in the Retail trade industry. This shows the dominance of young workers in this industry in which one-third worked in supermarkets and a further 15% worked in clothing shops. The lower proportion of hours worked (18%) is an indication of a high level of part-time work.

Accommodation & food services was the other industry dominated by young workers. Nearly half (47%) of the workers in this industry were in the 15–24 years age group. This industry accounted for the second highest proportion of workers (19%) and the highest frequency rate for the age group. The frequency rate of 101.6 injuries per million hours worked is three times the rate for all workers of 33.8. This is partly due to low number of hours worked, 21 hours per week on average compared with 36 hours per week on average for all workers. Within this industry, two-thirds of the injuries incurred by young workers were while working in the Cafes, Restaurants and Takeaway Food Services sector and half of the injuries incurred were *Burns*.

Table 15 shows that the 15–24 years age group also recorded much higher incidence rates in most of the other industries compared with the other age groups. In the Manufacturing industry this age group recorded 121.2 injuries per 1000 workers compared with rates between 49.8 and 88.9 for the other age groups. Frequency rates showed a similar pattern.

In the Retail trade industry the youngest age group recorded similar incidence rates to the other age groups but their much lower average hours per week resulted in a comparatively high frequency rate.

While workers in the 55 years & over age group had a similar employment profile to the other age groups, they recorded substantially greater proportions of injuries in the Education & training and Health care & social assistance industries which then resulted in substantially higher incidence and frequency rates.

Table 14: Workforce: Percentage of workers and hours worked by industry and age group, 2009–10

Industry	Age group (years)					Total
	15–24	25–34	35–44	45–54	55 & over	
	Percentage of workers					
Retail trade	24%	9%	9%	8%	8%	11%
Health care & social assistance	6%	10%	11%	13%	13%	11%
Manufacturing	8%	9%	10%	11%	9%	9%
Construction	9%	9%	9%	8%	9%	9%
Professional, scientific & technical services	6%	10%	8%	7%	7%	8%
Education & training	3%	7%	8%	10%	10%	8%
Accommodation & food services	19%	6%	4%	4%	3%	7%
Public administration & safety	1%	7%	7%	8%	7%	6%
Transport, postal & warehousing	2%	5%	6%	6%	6%	5%
Other services	5%	4%	5%	4%	4%	4%
Financial & insurance services	3%	6%	5%	3%	3%	4%
Wholesale trade	2%	4%	4%	4%	4%	4%
Administrative & support services	3%	4%	4%	3%	3%	3%
Agriculture, forestry & fishing	2%	2%	3%	4%	6%	3%
Information media & telecommunications	2%	3%	3%	2%	1%	2%
Arts & recreation services	2%	2%	2%	1%	2%	2%
Rental, hiring & real estate services	2%	2%	1%	2%	2%	2%
Mining	1%	2%	2%	1%	1%	1%
Electricity, gas, water & waste services	1%	1%	1%	1%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**
	Percentage of hours worked					
Retail trade	18%	9%	9%	8%	7%	9%
Health care & social assistance	7%	9%	9%	12%	12%	10%
Manufacturing	10%	9%	10%	12%	10%	10%
Construction	11%	10%	10%	9%	9%	10%
Professional, scientific & technical services	7%	10%	8%	7%	7%	8%
Education & training	3%	6%	7%	9%	9%	7%
Accommodation & food services	14%	6%	4%	3%	3%	5%
Public administration & safety	2%	7%	7%	8%	7%	7%
Transport, postal & warehousing	3%	5%	7%	7%	7%	6%
Other services	6%	4%	4%	4%	4%	4%
Financial & insurance services	4%	6%	5%	3%	3%	4%
Wholesale trade	3%	4%	5%	4%	4%	4%
Administrative & support services	3%	4%	3%	3%	3%	3%
Agriculture, forestry & fishing	2%	2%	3%	4%	7%	4%
Information media & telecommunications	2%	3%	3%	2%	1%	2%
Arts & recreation services	2%	2%	1%	1%	1%	1%
Rental, hiring & real estate services	2%	2%	1%	2%	2%	2%
Mining	1%	2%	2%	2%	2%	2%
Electricity, gas, water & waste services	1%	1%	1%	1%	1%	1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

Table 15: Work-related injuries: Percentage of injured workers, incidence rate and frequency rate by selected industries and age group, 2009–10

Industry	Age group (years)					Total
	15–24	25–34	35–44	45–54	55 & over	
	Incidence rate (injuries per 1000 workers)					
Manufacturing	121.2	53.8	49.8	88.9	75.8	75.7
Construction	67.3	58.6	73.5	66.5	*28.0	60.1
Retail trade	50.7	67.0	55.0	76.0	*40.5	57.2
Accommodation & food services	102.5	57.5	**	125.9	**	82.9
Transport, postal & warehousing	*88.8	69.3	73.7	79.7	*63.9	73.5
Public administration & safety	**	75.5	86.4	61.3	*49.9	70.1
Education & training	*60.6	54.6	*35.6	49.0	107.5	60.8
Health care & social assistance	79.1	45.3	56.5	72.9	80.0	65.8
Other industries	32.0	37.3	39.6	54.4	32.3	39.9
Total	**66.1**	**50.8**	**51.5**	**67.8**	**53.9**	**57.9**
	Frequency rate (injuries per million hours worked)					
Manufacturing	75.9	27.9	25.9	47.0	40.6	40.7
Construction	37.2	28.7	37.1	33.2	*16.0	31.1
Retail trade	50.8	39.5	32.7	42.8	*25.7	39.8
Accommodation & food services	101.6	35.7	**	79.7	**	61.9
Transport, postal & warehousing	*50.8	35.2	37.6	40.9	*36.2	38.6
Public administration & safety	**	41.1	48.6	33.3	*28.6	38.9
Education & training	*44.9	32.3	*21.8	27.7	70.5	37.2
Health care & social assistance	56.2	29.0	36.9	45.7	53.5	42.8
Other industries	19.8	19.9	21.6	28.4	19.1	22.1
Total	**48.8**	**28.0**	**28.7**	**37.0**	**32.4**	**33.8**

* Estimate has a relative standard error between 25% and 50% and should be used with caution.
** Estimate has a relative standard error greater than 50% and too unreliable for use.

For workers in the 25–34 years age group the highest frequency rates were recorded in the Public administration & safety industry closely followed by the Retail trade industry. For workers in the 35–44 years age group the highest frequency rate was also in the Public administration & safety industry (48.6). This was the highest rate across all age groups for this industry.

For the 45–54 years age group the Accommodation and food services industry recorded particularly high incidence and frequency rates. In 2009–10, this industry accounted for 4% of workers and just 3% of the total hours worked by those in the 45–54 years age group however, it accounted for 7% of injuries. This resulted in an incidence rate of 125.9 injuries per 1000 workers, the highest incidence rate across all age groups and industries. Similarly, the frequency rate of 79.7 injuries per million hours was the second highest behind the 101.6 recorded by those in the 15–24 years age group working in this industry.

Type of injury

The WRIS item *'Most recent work-related injury or illness'* identifies the most serious injury or illness sustained by the worker. Table 16 shows that 30% of the work-related injuries were *Sprains/strains*, followed by *Chronic joint/muscle condition* (18%) and *Cut/open wound* (16%). These types of injury were the top three for all age groups except for the 15–24 years age group where workers incurred fewer *Chronic joint/muscle condition* injuries (8%) but considerably more *Burns (*17%). Almost two thirds (65%) of *Burns* were experienced by workers in the 15–24 years age group.

Nearly two-thirds (64%) of work-related *Stress/ other mental condition* injuries were experienced by older workers: those in the 45–54 years and 55 years & over age groups.

Table 16: Work-related injuries: Percentage of injuries by type of injury or illness and age group, 2009–10

	Age group (years)					
Type of injury	**15–24**	**25–34**	**35–44**	**45–54**	**55 & over**	**Total**
Sprain/strain	27%	30%	32%	32%	27%	30%
Chronic joint/ muscle condition	8%	22%	19%	20%	18%	18%
Cut/open wound	24%	15%	15%	11%	14%	16%
Fracture	*4%	*6%	*7%	9%	11%	8%
Crushing injury	*5%	*7%	*6%	10%	*7%	7%
Stress/ other mental condition	**	**	5%	5%	12%	5%
Burns	17%	**	**	3%	**	5%
Other injury	15%	13%	13%	9%	12%	12%
Total	**100%**	**100%**	**100%**	**100%**	**100%**	**100%**

* Data for certain age groups have RSEs between 25% and 50%.
** The data for certain age group have been suppressed due to RSEs above 50%.

Figures 28 and 29 show the percentage of injuries by age group for male and female workers for the top three injuries which together accounted for 63% of injuries. For all age groups, female workers had slightly higher proportions of *Chronic joint/muscle condition* injuries compared with their male counterparts but much lower proportions due to *Cut/open wound*.

Figure 28: Male workers: Percentage of injuries by top three injuries incurred by age group, 2009–10

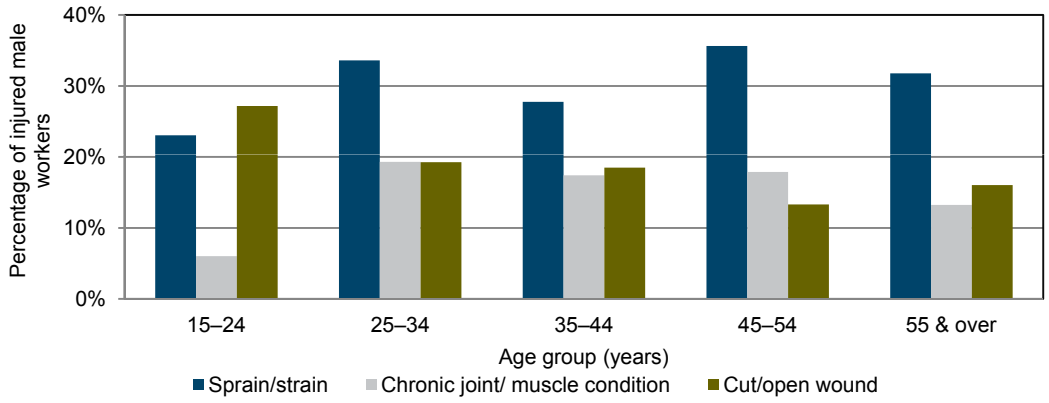
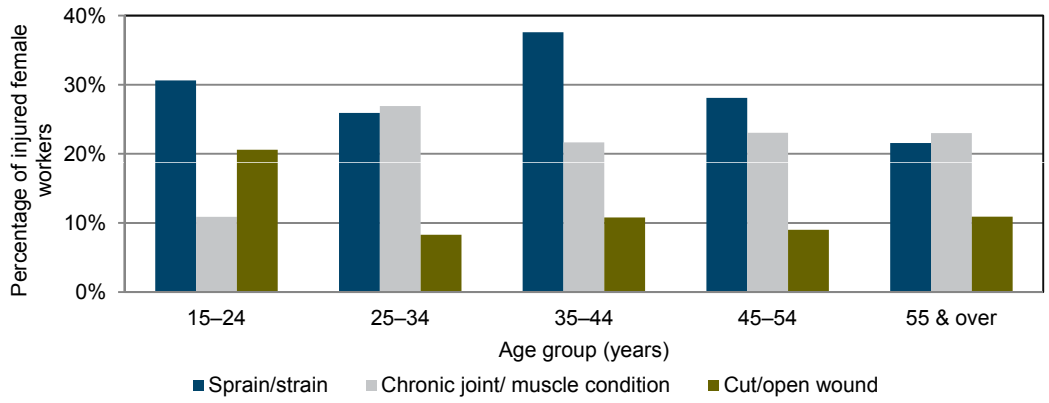


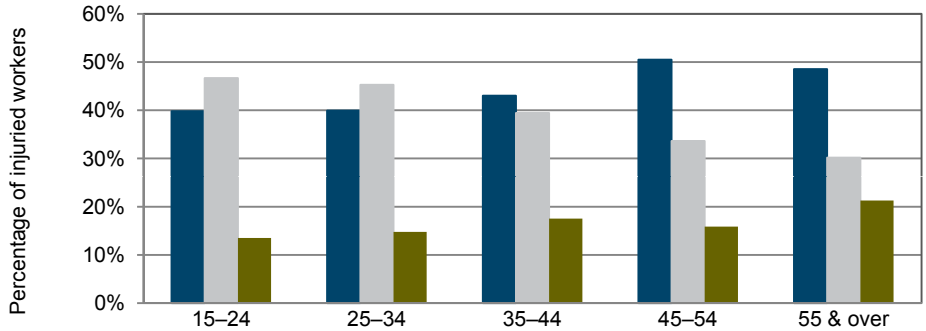
Figure 29: Female workers: Percentage of injuries by top three injuries incurred by age group, 2009–10



Time lost from work

Almost half (45%) of all work-related injuries did not involve an absence from work, while 28% involved up to four days off work and 27% involved five or more days off work. Figure 30 shows that this pattern was not consistent across the age groups with the proportion of injuries involving no time off work increasing with worker age from 40% for the 15–24 years and 25–34 years age groups to 51% and 49% for the 45–54 years and 55 years & over age groups respectively. Younger workers had the greatest proportion of injuries requiring up to 10 days off work with the 55 years & over age group recording the lowest.

Figure 30: Work-related injuries: Percentage of injured workers by days or shifts absent by age group, 2009–10

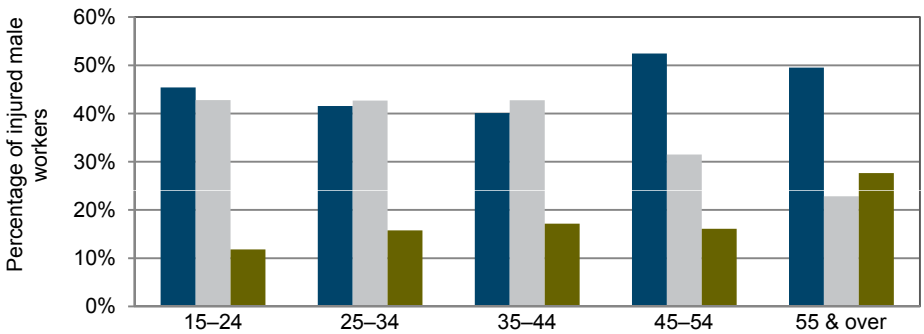


	15–24	25–34	35–44	45–54	55 & over
No time lost	40%	40%	43%	51%	49%
Up to 10 days	47%	45%	39%	34%	30%
11 or more days	14%	15%	18%	16%	21%

A greater proportion of workers in the 55 years & over age group required 11 or more days off work than for the other age groups, 21% compared with 14% to 18% for the other age groups. These findings suggest that while older workers have a higher proportion of injuries requiring no time off work, they also have a higher proportion involving longer periods off work possibly suggesting a greater recovery time from the more serious injuries.

Figures 31 and 32 show that splitting the data by sex highlights some different patterns. Male workers in the 55 years & over age group recorded a substantially higher proportion requiring 11 or more days off work compared with the younger age groups. The pattern for female workers was very different. Younger female workers had a much lower proportion of injuries that required no time off work and a much higher proportion which required up to 10 days off compared with their male counterparts.

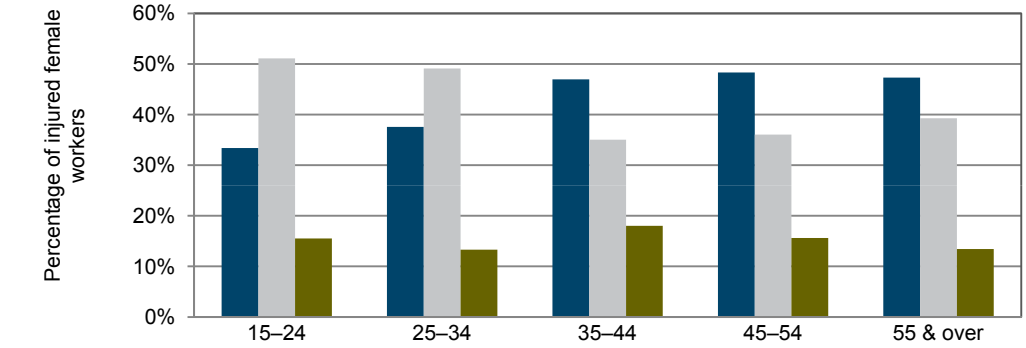
Figure 31: Male workers: Percentage of injured workers by days or shifts absent by age group, 2009–10



	15–24	25–34	35–44	45–54	55 & over
No time lost	45%	42%	40%	52%	50%
Up to 10 days	43%	43%	43%	31%	23%
11 or more days	12%	16%	17%	16%	28%

While female workers in the 55 years & over age group recorded similar proportions to their male counterparts for injuries requiring no time off work, they had substantially higher proportions requiring up to 10 days off work but substantially lower proportions requiring 11 or more days off work. This suggests that either males incurred more serious injuries or took longer to recover from them.

Figure 32: Female workers: Percentage of injured workers by days or shifts absent by age group, 2009–10



	15–24	25–34	35–44	45–54	55 & over
No time lost	33%	38%	47%	48%	47%
Up to 10 days	51%	49%	35%	36%	39%
11 or more days	16%	13%	18%	16%	13%

Financial assistance received

The survey collected information on the types of financial assistance sought by injured workers. Many workers accessed more than one form of assistance. Consistent with the fact that 45% of injured workers did not take any time off work, 40% did not receive any form of financial assistance. The type of assistance most often accessed was workers' compensation with 36% of injured workers saying they had applied for and received workers' compensation.

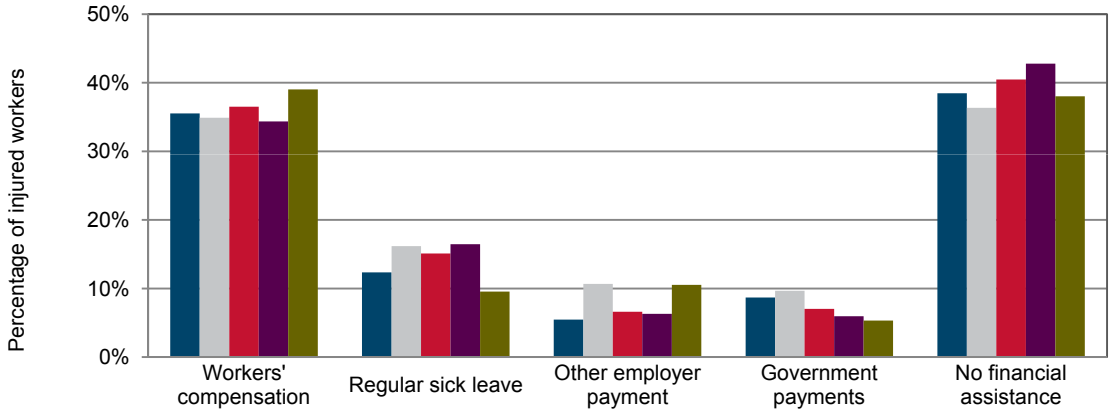
The next most commonly accessed assistance was employer provided benefits with 14% of injured workers using their sick leave and 8% using other types of benefits such as annual and long service leave. Federal Government payments such as Medicare or Centrelink payments were accessed by 7% of injured workers.

Figure 33 shows that age had little impact on the type of financial assistance received. The 55 years & over age group had the highest proportion of injured workers who received workers' compensation (39%), while workers in the 45–54 years age group had the lowest (34%).

There was greater variation in the use of employer benefits. Injured workers in the 25–34, 35–45 and 45–54 years age groups were more likely to use their sick leave (15-16% each) than workers in the 15–24 years (12%) and 55 years & over age groups (10%). As seen earlier in this report 15–24 year old workers are more likely to be casually employed and not have access to paid sick leave while workers in the 55 years & over group are accessing workers' compensation and other types of leave more often than other age groups.

The use of Federal Government payments decreased with age with 9% of injured workers in the 15–24 years age group and 10% of injured workers in the 25–34 years age group accessing this type of financial assistance compared with 5% for those in the 55 years & over age group. This is most probably linked to the fact that older workers are more likely to have access to sick leave, annual leave and long service leave as alternatives.

Figure 33: Work-related injuries: Percentage of injured workers by type of financial assistance received by age group, 2009–10



	Workers' compensation	Regular sick leave	Other employer payment	Government payments	No financial assistance
15–24	36%	12%	5%	9%	38%
25–34	35%	16%	11%	10%	36%
35–44	36%	15%	7%	7%	40%
45–54	34%	16%	6%	6%	43%
55 & over	39%	10%	11%	5%	38%

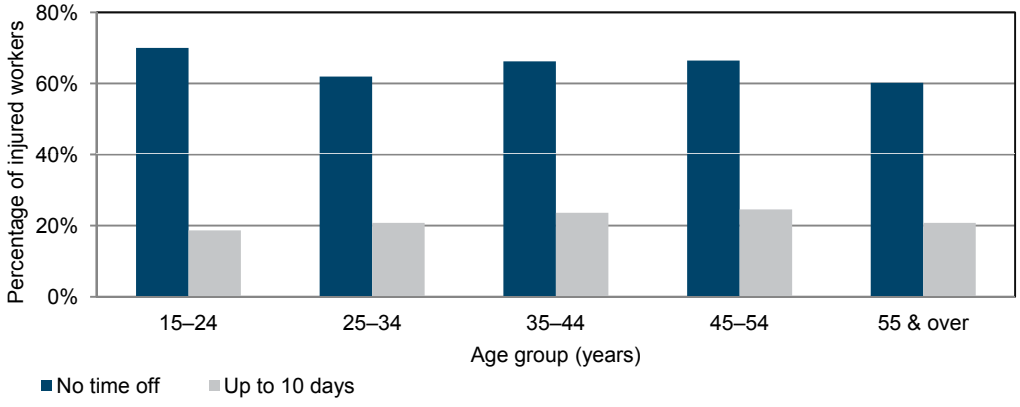
Workers in the 45–54 years age group were the least likely to receive financial assistance with 43% saying they did not access any type of assistance. This age group also recorded the lowest proportion who accessed workers' compensation (34%) but had the highest proportion who accessed sick leave (16%). This may be linked to the fact that 51% of this age group said they took no time off work following their injury.

Other forms of financial assistance not shown include the use of private health insurance or income protection insurance as well as obtaining assistance from family and friends. These types of assistance were accessed by 5% of injured workers.

The proportion of injured workers who received workers' compensation increased with time lost from work and the proportion who received no financial assistance decreased. For the group who took no time from work, 65% said they received no financial assistance. This decreased to 22% for the group who took up to 10 days off work.

Figure 34 shows that the proportion who received no financial assistance was similar across the age groups for both the group who took no time off from work and the group who took up to 10 days off work.

Figure 34: Work-related injuries: Proportion who received no financial assistance by time lost and age group, 2009–10



Glossary

Current main job

The job that a person was working in during the reference week in which most hours were usually worked.

Employees

People who work for a public or private employer and receive remuneration in wages, salary, a retainer fee from their employer while working on a commission basis, tips, piece rates, or payment in kind.

Employment types

Classification of employed people according to the following employment type categories on the basis of their main job (that is, the job in which they usually work the most hours):

- Employees (excluding owner managers of incorporated enterprises):
  - with paid leave entitlements;
  - without paid leave entitlements;
- Owner managers:
  - owner managers of incorporated enterprises;
  - owner managers of unincorporated enterprises.

Financial assistance

Monetary assistance received from any party to cover medical expenses or income loss, incurred due to their work-related injury or illness.

Full time worker

People who usually worked 35 hours or more per week in the job in which the work-related injury or illness occurred.

How injury occurred

The action, exposure or event that was the direct cause of the injury, or how the injury was sustained. See Appendix 1.

Industry

A group of businesses or organisations that perform similar sets of activities in terms of the production of goods or services. The industry of the employee has been classified in accordance with the *Australian and New Zealand Standard Industrial Classification* (ANZSIC), 2006 (ABS Cat. No. 1292.0).

Occupation

A collection of jobs that are sufficiently similar in their main tasks to be grouped together for the purposes of classification. The occupation of the employee has been classified in accordance with the *Australian and New Zealand Standard Classification of Occupations* (ANZSCO), First Edition, 2006 (ABS Cat. No. 1222.0).

Owner managers of incorporated enterprises

People who work in their own incorporated enterprise, that is, a business entity which is registered as a separate legal entity to its members or owners (also known as a limited liability company).

Owner managers of unincorporated enterprises

People who operate their own unincorporated enterprise, that is, a business entity in which the owner and the business are legally inseparable, so that the owner is liable for any business debts that are incurred. Includes those engaged independently in a trade or profession.

Paid leave entitlements

The entitlement of employees to either paid holiday leave and/or paid sick leave in their job.

Part time worker

People who usually worked less than 35 hours or more per week in the job in which the work-related injury or illness occurred.

Relative Standard Errors (RSEs)

All WRIS data presented in this report conform with the ABS guidelines regarding data quality. Unless otherwise marked, all data presented have RSEs below 25%. Data with RSEs above 50% have not been published. Comprehensive information about RSEs can be found in the WRIS publication.

Shift work

A system of working whereby the daily hours of operation at the place of employment are split into at least two set work periods (shifts), for different groups of employees.

Time lost from work

Includes all work hours spent on medical consultation, hospitalisation and rest due to the injury or illness. The days or shifts absent do not have to be consecutive.

Type of injury

Refers to the main injury sustained. See Appendix 1.

Work-related injury or illness

Any injury or illness or disease which first occurred in the last 12 months, where a person suffers either physically or mentally from a condition that has arisen out of, or in the course of, employment. The injury or illness was considered to be in scope of the survey if the respondent first became aware of it in the last 12 months, even though the cause of the injury or illness may have occurred outside the 12 month reference period. Included are injuries or illnesses that occurred while commuting to and from work, outside the place of work but while on work duty, or during work breaks. Information was collected about the respondent's most recent work-related injury or illness if there was more than one work-related injury or illness in the reference period.

Work-related Injuries Survey (WRIS)

The ABS as part of its Multi-purpose Household survey collected data on work-related injuries from July 2009 to June 2010. Statistics from this topic were published in *Work-related Injuries* (Cat No. 6324.0). The publication presented information about persons aged 15 years or over who worked at some time in the last 12 months and experienced their most recent work-related injury or illness in that period.

Appendix 1: Injury Classifications

Work-related injuries data are classified according to the Type of Occurrence Classifications System (TOOCS) which was developed by Safe Work Australia for coding workers' compensation claims. The work-related injury or illness classification used in this survey was based on the TOOCS nature of injury codes. The classification of how work-related injury or illness occurred was based on the TOOCS mechanism of injury codes.

Type of work-related Injury or illness

Burns
Electrical burns, chemical burns, cold burns, hot burns, friction burns, combination burn or burns not elsewhere classified

Chronic joint or muscle condition
Arthritis
Disorders of the joints
Disorders of the spinal vertebrae and intervertebral discs
Disorders of muscle, tendons and other soft tissues (e.g. Occupational Overuse Syndrome and Repetitive Strain Injury if this is the only description given)
Acquired musculoskeletal deformities (e.g. flat feet, mallet finger, hammer toe)

Crushing injury
Internal injury of chest abdomen and pelvis
Injury with intact skin surface and crushing injury (e.g. bruises, haematomas)
Traumatic amputation including loss of eyeball

Cut/open wound
Open wound not involving traumatic amputation (e.g. broken tooth, cuts, punctures, dog bites, tearing away of fingernail, serious wounds containing glass, metal or other foreign body)

Fracture
Breaking of a bone, cartilage, etc.

Sprain/strain
Sprains and strains of joints and adjacent muscles
Acute trauma sprains and strains
Sprains and strains of cartilage
Dislocations

Stress or other mental condition
Stress, anxiety or depression
Nervous breakdown
Effects of witnessing traumatic events
Effects of involvement in a hold-up
Victim of harassment
Hyperventilation (hysterical, psychogenic)
Hysterical symptoms
Phobias
Obsessional and compulsive symptoms
Short term shock

Superficial injury - covers minor injuries such as:
Needle stick puncture
Abrasions, grazes, friction burns or blisters
Scratch injury from a foreign body in eye
Splinter or other foreign body in places other than eye

Other
Responses that could not be included into one of the categories above such as asthma, cancer, concussion or heart attack

How work-related injury or illness occurred

Fall from a height
A fall from ground level to below ground level
Landing awkwardly after a jump from a height
Falling off an animal
A fall down stairs etc.

Fall on same level
All slips, trips, stumbles, steps and jumps, even if a fall does not follow
Falls of short distances such as off a curb or into a gutter
Falls up stairs
Fall with no further description

Hitting, being hit or cut
Hitting stationary objects or moving objects (e.g. cutting oneself while using a knife or other tool)
Rubbing and chafing from wearing footwear or clothes, using tools or handling objects
Being hit by falling objects
Being bitten by an animal
Being bitten by a snake
Being trapped by moving machinery or equipment or between stationary and moving objects
Exposure to mechanical vibration (e.g. from chain saws)
Being assaulted by a person or persons

Lifting, pushing, pulling, bending
Muscular stress while lifting, carrying or putting down objects
Single or multiple events
Lifting or carrying resulting in stress fractures
Repetitive movement, high muscle loading
Muscular stress while handling objects
Single or multiple events
Pushing or pulling objects
Throwing or pressing objects
Stress fractures from handling objects
Continually shovelling
Climbing ladders causing upper and lower limb injuries
Muscular stress with no objects being handled
Bending down, reaching, turning and twisting movements where no objects are being handled
Stress fractures without objects being handled (e.g. from running)
Continually twisting neck with no object being handled

Repetitive movement
Occupational overuse and repetitive movement occurrences
Prolonged standing, working in cramped or unchanging positions
Working in cramped or unchanging positions
Prolonged standing causing varicose veins

Exposure to mental stress
Exposure to a traumatic event
Exposure to workplace or occupational violence (e.g. victim of assault or threatened assault by a person or persons, being a victim of or witnessing hold-ups etc.)
Being a victim of sexual, racial, or other verbal harassment
Work pressure (e.g. mental stress arising from work responsibilities, conflict with peers, performance counselling)
Attempted suicide
Other mental stress factors

Other in this publication includes:
Vehicle accident
Any accident or incident on a private road, farm, mine site or footpath involving a vehicle where the most serious injury is sustained as a result of that accident or injury
A vehicle catching on fire after the accident
Any accident or incident in a factory, mine or car park involving a fall from a moving vehicle

Those responses that could not be included into one of the categories above such as contact with hot food/drink/beverages, exposure to extreme weather, jumping on objects, struck by lightening or sunburn

Long term exposure to sound
Long term exposure to workshop or factory noise, sharp sudden sounds, or low frequency (subsonic pressure) sounds

Contact with a chemical or substance
Single contact with chemical or substance
Immediate allergic reactions to a substance
Splash with acid
Caustic or corrosive substances in the eyes
Contact dermatitis
Swallowing chemical substances
Exposure to smoke from a bush fire, chemical fire etc.

Long term contact with chemicals or substances
Acquired allergic reactions
Slow poisoning, as with lead or other heavy metals
Long term inhalation of dust or fibres, as with asbestos fibres
Exposure to cigarette smoke
Insect and spider bites and stings
Contact with poisonous parts of plant or marine life (e.g. blue ringed octopus, bluebottles, stone fish etc.)
Other and unspecified contact with chemical or substance

Technical Note

The work-related injuries statistics were compiled from data collected in the Multipurpose Household Survey (MPHS) that was conducted throughout Australia in the 2009–10 financial year as a supplement to the ABS monthly Labour Force Survey (LFS).

The publication *Labour Force, Australia* (cat. no. 6202.0) contains information about survey design, scope, coverage and population benchmarks relevant to the monthly LFS, which also applies to the MPHS. It also contains definitions of demographic and labour force characteristics, and information about telephone interviewing relevant to both the monthly LFS and MPHS.

The conceptual framework used in Australia's LFS aligns closely with the standards and guidelines set out in Resolutions of the International Conference of Labour Statisticians. Descriptions of the underlying concepts and structure of Australia's labour force statistics, and the sources and methods used in compiling these estimates, are presented in *Labour Statistics: Concepts, Sources and Methods* (cat. no. 6102.0.55.001).

COLLECTION METHODOLOGY

ABS interviewers conducted personal interviews by either telephone or at selected dwellings during the 2009–10 financial year. Each month a sample of approximately 1300 dwellings were selected for the main MPHS sample, and approximately 1300 to 1400 additional dwellings were selected for the extra MPHS sample. In these dwellings, after the LFS had been fully completed for each person in the household, a usual resident aged 15 years and over was selected at random and asked the additional MPHS questions in a personal interview. Information for this survey was collected using Computer Assisted Interviewing (CAI), whereby responses are recorded directly onto an electronic questionnaire in a notebook computer.

SCOPE

The scope of the LFS is restricted to people aged 15 years and over and excludes the following:

- members of the permanent defence forces
- certain diplomatic personnel of overseas governments, customarily excluded from census and estimated population counts
- overseas residents in Australia, and
- members of non-Australian defence forces (and their dependants).

In addition the 2009–10 MPHS excluded the following:

- people living in very remote parts of Australia, and
- people living in non-private dwellings such as hotels, university residences, students at boarding schools, patients in hospitals, residents of homes (e.g. retirement homes, homes for people with disabilities), and inmates of prisons.

The 2009–10 MPHS was conducted in both urban and rural areas in all states and territories, but excluded people living in very remote parts of Australia. The exclusion of these people will have only a minor impact on any aggregate estimates that are produced for individual states and territories, except the Northern Territory where such people account for around 23% of the population.

SAMPLE SIZE

The initial total sample for the Work-Related Injuries topic included in the MPHS 2009–10 consisted of approximately 38 655 private dwelling households, which is approximately double the standard MPHS sample. Of the 32 760 private dwelling households that remained in the survey after sample loss (e.g. households with LFS non-response, no residents in scope for the LFS or work-related injuries topic, vacant or derelict dwellings and dwellings under construction), approximately 88% were fully responding to the MPHS. The number of completed interviews obtained from these private dwelling households (after taking into account the scope, coverage and sub-sampling exclusions) was 28 554 (14 205 for the main sample and 14 349 for the extra sample).

ESTIMATION METHODS

Weighting is the process of adjusting results from a sample survey to infer results for the total in scope population. To do this a 'weight' is allocated to each sample unit, which, for the MPHS, can either be a person or a household. The weight is a value which indicates how many population units are represented by the sample unit. The first step in calculating weights for each unit is to assign an initial weight, which is the inverse of the probability of being selected in the survey. The initial weights are then calibrated to align with independent estimates of the population of interest, referred to as 'benchmarks'. Weights are calibrated against population benchmarks to ensure that the survey estimates conform to the independently estimated distribution of the population rather than the distribution within the sample itself.

The survey was benchmarked to the estimated civilian population aged 15 years and over living in private dwellings in each state and territory, excluding the scope exclusions listed above. The process of weighting ensures that the survey estimates conform to person benchmarks by state, part of state, age and sex, and to household benchmarks by state, part of state and household composition. These benchmarks are produced from estimates of the resident population derived independently of the survey.

RELIABILITY OF THE ESTIMATES

Estimates in this publication are subject to sampling and non-sampling errors:

- Sampling error is the difference between the published estimate and the value that would have been produced if all dwellings had been included in the survey.
- Non-sampling errors are inaccuracies that occur because of imperfections in reporting by respondents and interviewers, and errors made in coding and processing data. These inaccuracies may occur in any enumeration, whether it be a full count or a sample. Every effort is made to reduce the non-sampling error to a minimum by careful design of questionnaires, intensive training and supervision of interviewers, and effective processing procedures.

COMPARABILITY WITH MONTHLY LFS STATISTICS

Due to differences in the scope and sample size of the MPHS and that of the LFS, the estimation procedure may lead to some variations between labour force estimates from this survey and those from the LFS.

Inquiries

For further information regarding the contents of the publication contact:

The Data & Analysis Section

Safe Work Australia

(02) 6121 9256