

Australian Wool Innovation

Project EC837

Wool Harvesting OH&S Injury and Cost Evaluation (Executive Summary)

FIRST ANNUAL REPORT
CONFIDENTIAL

Data provided by workers compensation authorities is contained in this report.
This data is provided by these authorities for this project and report on the condition that
the information is not released without the relevant authority consenting.

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1. Executive Summary

1.1 Introduction

Analysis of injuries and costs is based on available evidence provided by workers compensation authorities throughout Australia. This data has been used to examine causes of injury and associated cost – particularly Animal Handling and Handpiece injuries. Evidence of under-reporting and the causes of these under-reported injuries are also presented.

This body of work provides the first comprehensive national analysis of sheep shearer injuries and costs in Australia since 1995. In 1995 Worksafe Australia reported on all states' shearing industry workers compensation data.

Due to limitations of the workers compensation claims data a new method of analysing and reporting injury information was developed for this project, based on careful examination of injury reports and the industry activity or technology type causing the injury. We believe this method is leading OH&S practice and that it will provide the best, most useful information for the industry.

1.2 Sheep Shearer Injuries & Cost

- Over a 5-year period ^a, a total of 3,393 sheep shearer injuries were reported to workers compensation authorities in the 6 wool-growing states of Australia. This equates to an average incidence (the number of injuries in a given period) of 679 new injuries per year.
- The associated incidence and frequency rates ^b over these 6 states over the 5 year period is compared to all agricultural industries and all Australian industries in the table below.

^a 1999/00 through 2003/04 for WA, Vic, SA, Qld and Tas and 1998/99 through 2002/03 for NSW.

^b **Incidence Rate** is the number of occurrences expressed as a rate per 1,000 wage and salary earners employed, calculated as: (number of occupational injuries and diseases x 1000) / number of wage and salary earners. **Frequency Rate** is the number of occurrences expressed as a rate per 1,000,000 hours worked by wage and salary earners, calculated as: (number of occupational injuries and diseases x 1,000,000) / number of hours worked by shearers:

Occupation / Industry	Incidence Rate (injuries per thousand workers per year)	Ratio shearer rate to other industry	Frequency Rate (injuries per million hours worked per year)	Ratio shearer rate to other industry
Occupation Shearer Annual Average 2000- 2004	102.9		124.6	
All Agriculture Industries 1992-93 (Worksafe Australia 1995)	49.1	2.1 : 1	28.6	4.4 : 1
All Australian Industries 1992-92 (Worksafe Australia 1995)	25.5	4.0 : 1	17.3	7.2 : 1

- These 3,393 injuries bear an estimated total cost to the workers compensation authorities (including income compensation, medical and related expenses) of \$110.1 million or \$22.0 million per year.
- These 3,393 injuries have resulted in at least 173,624 days lost from work over the 5-year period averaging 34,725 days lost from work per year. This figure is conservative and does not include employer-paid days, permanent disabilities in NSW, or unreported (no workers compensation claim made) injuries.
- A conservative calculation of total injury costs to the industry, which is based on the workers compensation claim injury numbers and costs only, uses a multiplier factor of 2:1 and results in a \$44 million injury cost per annum for shearer injuries.

1.3 Improvements to Data Analysis from Previous OH&S Reports

- Injury numbers and costs are categorised by industry injury causes (Animal Handling; Animal Handling & Handpiece Combined; and Handpiece). This method has been developed to enable better targeting and evaluation of OH&S improvement measures and return on injury prevention investment by the industry.
- Analysing by workers compensation categories alone was found to be prone to errors and inaccuracy in attributing cause of injury; therefore, the text accompanying each claim in Vic and SA was examined to attribute cause and extrapolated nationally. This method will be used for ongoing data capture and analysis.
- The reduction in total injury numbers and cost from that previously reported (from ~\$70 million in 1993 to ~\$44million in the current

study) is believed to be due to the same proportional drop in national sheep flock numbers (from ~160 million to ~100 million).

- The reduction in incidence rates (i.e. from ~151 injuries per thousand per year in 1995 to ~103 injuries per thousand per year in the current study) is likely to be due to a more conservative approach taken in calculating shearer numbers by including ABS figures for part time shearers. A more useful measure is the frequency rate which is based on total shearer hours worked, frequency rate is also used in this report to form a basis for future evaluation of shearing injury change.

1.4 Animal Handling Injuries & Cost

- The Animal Handling injury category includes both sudden and traumatic onset injuries as well as gradual onset injuries sustained during catching, tipping and dragging or wool removal, as well as injuries caused by a sheep running into or hitting a shearer. This category also includes injuries caused by wool fibres, thistles, burrs and other plant material entering the shearer's skin.
- Based on a case study of shearer injuries in Vic and SA, animal handling activities may account for at least 38% of all shearing injuries and around 45% of total estimated costs (*Figure 2, p. 20; Figure 3, p. 21*).
- Extrapolating these proportions to all injuries in the 5 states excluding Qld^c provides an estimate that animal handling activities account for approximately 1,252 injuries or 250 injuries per year (*Table 5, p. 39*). These injuries bear an estimated total cost to the workers compensation authorities (including income compensation, medical and related expenses) of \$52.2 million or \$10.4 million per year (*Table 6, p. 40*).
- It is estimated that animal handling injuries have resulted in at least 92,520 days lost from work over the 5-year period in the 5 states, averaging 18,504 days per year.
- The associated incidence rate of animal handling injuries (without the handpiece) over these 5 states over the 5 year period is 40.6 new injuries per thousand shearers per year and the associated frequency rate is 49.0 shearer injuries per million shearer hours worked.

1.5 Animal Handling / Handpiece Combination Injuries & Cost

- The Animal Handling / Handpiece Combination injury category includes both sudden and traumatic onset injuries and gradual onset injuries where both the handpiece and animal handling are implicated. Traumatic injuries in this category include handpiece lock-ups and

^c Qld has been excluded from analysis as the sheep population in that state has fluctuated significantly over the past 5 years and is therefore unrepresentative of national trends.

“free and running” events caused by the movement or kicking of a sheep. It was not possible in many cases to identify instances where the handpiece was kicked free and running based on the available data in many cases where this may have been the cause of injury. An example of a gradual onset injury in this Animal Handling / Handpiece Combination injury category would be tendonitis to both upper limbs.

- Based on a case study of shearer injuries in Vic and SA, a combination of animal handling and the shearing handpiece may account for at least 11.0% of all shearing injuries and around 2.5% of total estimated costs (*Figure 2, p. 20; Figure 3, p. 21*).
- Extrapolating these proportions to all injuries in the 5 states excluding Qld^d provides an estimate that the combination of animal handling and the shearing handpiece accounts for approximately 377 injuries or 75 injuries per year (*Table 7, p. 41*). These injuries bear an estimated total cost to the workers compensation authorities (including income compensation, medical and related expenses) of \$2.8 million or \$0.6 million per year (*Table 8, p. 42*).
- It is estimated that animal handling and handpiece combined have resulted in at least 3,284 days lost from work over the 5-year period in the 5 states, averaging 657 days per year.
- The associated incidence rate of animal handling / handpiece combination injuries over these 5 states over the 5 year period is 12.2 new injuries per thousand shearers per year and the associated frequency rate is 14.7 shearer injuries per million shearer hours worked.

1.6. Handpiece Injuries & Cost

- The Handpiece injury category includes both sudden/traumatic onset injuries and gradual onset injuries where only the handpiece is implicated (and not animal handling). Traumatic injuries in this category include handpiece lock-ups and “free and running” events as well as gradual onset injuries such as tendonitis in only the right arm.
- Based on a case study of shearer injuries in Vic and SA, the shearing handpiece alone may account for at least 25.2% of all shearing injuries and around 11.0% of total estimated costs (*Figure 2, p. 20; Figure 3, p. 21*).
- Extrapolating these proportions to all injuries in the 5 states excluding Qld^e provides an estimate that the shearing handpiece alone accounts for approximately 823 injuries or 165 injuries per year (*Table 9, p. 43*). These injuries bear an estimated total cost to the workers compensation authorities (including income compensation, medical

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and related expenses) of \$11.6 million or \$2.3 million per year (*Table 10, p. 44*).

- It is estimated that handpiece injuries have resulted in at least 18,535 days lost from work over the 5-year period in the 5 states, averaging 3,707 days per year.
- The associated incidence rate of handpiece injuries over these 5 states over the 5 year period is 26.8 new injuries per thousand shearers per year and the associated frequency rate is 32.4 shearer injuries per million shearer hours worked.

1.7 Other (non-categorised) Injury Types

- Many injuries which could not be categorised into one of the three major industry cause categories with a high degree of certainty could be attributed to a major industry cause with a lower degree of certainty. These are shown in Table 1 (*p. 7*).
- An additional estimated average of 53 back injuries per annum across the 5 major wool-growing states have been attributed to Animal Handling (with a lower degree of certainty).
- All remaining upper limb injuries have been divided into the three major cause categories using the representative proportions
- Other injuries with causes outside the three major industry cause categories

1.8 Unreported Injuries

- This report addresses the total shearer injury numbers and costs including unreported claims.
- Victorian emergency department data indicates that 36 of the 44 shearer injuries which are treated in emergency departments each year are not workers compensation claims at the time of treatment. It is reasonable to assume that some of these 36 injured shearers may later make a claim.
- It is important to note that while there are 79 shearer injuries reported to the workers compensation authority in Victoria each year (*Table 2, p. 15*), there are 36 other, emergency department presentations for shearer injuries in Victoria each year which are not reported to the workers compensation authority. It is also known that many injured shearers present to the clinics of doctors and other treating health professionals and not to emergency departments.
- It is therefore a reasonable conclusion that at least 50% of all shearer injuries are not reported to workers compensation authorities.

- While these injuries may not incur a workers compensation cost, they do present a real cost to the industry in terms of time, quality, productivity and training losses.

1.9 Cost Benefit Analysis

Injuries that can be directly impacted by technology or training initiatives that address OH&S can be categorised as the following.

- A significant proportion of animal handling injuries in the case study of Victoria and South Australia fall into the subcategories of “Catch, Tip and Drag” and “Wool Removal”. Injuries in these two sub-categories make up a total of 25% of all shearer injuries. These injuries bear an estimated 30% of the total cost of all shearer injuries (based on Victorian injury data only). Therefore, attempts to address these two major activities of shearing could have significant impacts on shearing occupational health and safety and the costs associated with shearer injuries. For further information refer to Figures 4 and 5 (p. 22).
- Traumatic handpiece injuries (*i.e.* open wounds and fractures), both from the handpiece alone and from incidents involving both animal handling and the handpiece, make up a total of 30.8% of all reported shearer injuries and 6.6% of the total estimated cost of all shearer injuries. The remainder of the handpiece injuries (alone and combined with animal handling) are gradual onset injuries (*i.e.* tendonitis, carpal tunnel syndrome) or injuries with unspecified onsets, representing 5.5% of all shearer injuries (based on data from Vic and SA) and 6.9% of the total estimated cost (based on data from Vic only). It is likely that the development of ergonomic improvements and additional safety measures to cut power to any handpiece freed from the shearers hand could see significant reductions in both numbers and costs of handpiece injuries.
- Applying a 20% animal-handling injury cost improvement and 50% handpiece-related injury cost improvement provides a benefit per annum of \$3,355,136 in workers compensation claims cost savings. These 20% and 50% estimations are on based on the injury cause, planned improvements and clinical recovery pathways typical for these type of injuries. Based on the calculation that total injury costs to the industry are at least double the workers compensation claims costs (*see discussion on p. 32*), a more realistic benefit estimate is \$6,710,272 per annum.

Table 1. Annual estimated average figures for sheep shearer injuries in the 5 major wool-growing states of Australia; NSW, WA, Vic, SA, and Tas. Figures are based on 5 years of data from 1999/00 through 2003/04 with total numbers and costs extrapolated to other states based on a case study of Vic and SA. Figures in the first section are those where clear evidence is available to attribute the injuries to a specific cause. Figures in subsequent sections are based on reasonable and conservative assumptions of injury cause. Percentage figures indicate the proportion of total shearer injuries or proportion of total estimated cost for all shearer injuries reported to workers compensation authorities in the 5 major wool-growing states.

		Animal Handling Injuries	Animal Handling / Handpiece Combination Injuries	Handpiece Injuries	Other Injuries	Total
Results from Investigation of Workers Compensation Claims Data, All Bodily Locations	Number of Injuries	250 38.2%	75 11.5%	165 25.2%	48 7.3%	538 82.3%
	Total Estimated Cost	\$10,435,528 49.6%	\$550,526 2.6%	\$2,315,850 11.0%	\$2,990,641 14.2%	\$16,292,545 77.5%
Workers Compensation Back Injury Claims With Lower Certainty of Cause	Number of Injuries	53 8.1%	0 0%	0 0%	0 0%	53 8.1%
	Total Estimated Cost	\$3,400,739 16.2%	\$0 0%	\$0 0%	\$0 0%	\$3,400,739 16.2%
Workers Compensation Upper Limb Injury Claims with Lower Certainty of Cause	Number of Injuries	17 2.6%	13 2.0%	33 5.0%	0 0%	63 9.6%
	Total Estimated Cost	\$462,432 2.2%	\$142,594 0.7%	\$727,630 3.5%	\$0 0%	\$1,332,656 6.3%
Total: Workers Compensation Claims	Number of Injuries	320 48.9%	88 13.5%	198 30.3%	48 7.3%	654 100%
	Total Estimated Cost	\$14,298,699 68.0%	\$693,120 3.3%	\$3,043,480 14.5%	\$2,990,641 14.2%	\$21,025,940 100%