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Hospitalised farm injury, Australia

2010–11 to 2014–15

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Abbreviations

ABS	Australian Bureau of Statistics
AIHW	Australian Institute of Health and Welfare
ARIA	Accessibility/Remoteness Index of Australia
ASGC	Australian Standard Geographical Classification
ASGS	Australian Statistical Geography Standard
ICD-10-AM	International Statistical Classification of Diseases and Related Health Problems, 10th revision, Australian Modification
METeOR	Metadata Online Registry
MLOS	mean length of stay
NCCH	National Centre for Classification in Health
NHMD	National Hospital Morbidity Database
NISU	National Injury Surveillance Unit
NMDS	National minimum data set
SLA	Statistical Local Area

Symbols

.. not applicable

Summary

Overview

Almost 22,000 people were hospitalised in the period from 2010–11 to 2014–15 as a result of injury which occurred on a farm; over three-quarters (77%) of them were males. The number of hospitalisations was highest in the 20–24 year age group for both males and females. Just over 9% (2,006) of those hospitalised due to farm-related injury were children aged 0–14.

Just over 71% (15,693) of people hospitalised as a result of farm-related injuries lived in *Inner regional* or *Outer regional* remoteness zones.

Children aged 0–14

Injuries involving motorcycles and quad bikes were prominent in children aged 0–14, accounting for nearly 42% (836) of farm-related hospitalisations in this age group. Boys accounted for over 87% of hospitalisations involving motorcycles and 66% of hospitalisations involving quad bikes. Around four-fifths of injuries involving motorcycles were sustained by the rider, while for quad bikes, 69% of injuries were sustained by the driver.

Injuries involving horses were also common in children aged 0–14, resulting in 16% (321) of hospitalisations in this age group. Girls comprised almost 80% of those injured while riding a horse and 57% of those injured as a result of being bitten or crushed by a horse.

Other mechanisms of injury leading to hospitalisation in this age group involved other forms of transport (8%), contact with other animals and plants (7%), fall-related injury (7%) and contact with machinery (6%).

People aged 15 and over

Injuries involving motorcycles and quad bikes were also prominent among people aged 15 and older, accounting for 21% (4,202) of hospitalisations in this age group. Males accounted for over 90% of hospitalisations involving motorcycles and 80% of hospitalisations involving quad bikes. Around four-fifths of injuries involving motorcycles were sustained by the rider, while for quad bikes, almost 90% of injuries were sustained by the driver.

Other common mechanisms of injury leading to hospitalisation in people aged 15 and over involved horses (12%), contact with other animals and plants (15%), contact with machinery (13%) and fall-related injury (10%).

For males hospitalised as a result of a farm-related injury, almost 51% were working for income and a further 9% were engaged in other types of work at the time the injury was sustained. The equivalent percentages for females were 33% and 10%, respectively. These figures may be an underestimate of the true number of people who were working for income due to the significant proportion of cases (33%) for which activity at the time of injury was not specified.

1 Introduction

Life on a farm can present a range of hazards for farm workers and their families. Hazards include exposure to vehicles such as off-road motorcycles, all-terrain vehicles such as quad bikes, and agricultural vehicles such as tractors and harvesters. Even standard vehicles can pose greater risks to their occupants when used on unsealed and poorly maintained roads.

Those living and working on farms are also at greater risk of contact with large farm animals, such as cattle, as well as falls from or contact with horses. Unfenced dams, ponds and rivers present a risk of drowning for children.

The purpose of this report is to provide an analysis of people hospitalised in the period from 2010–11 to 2014–15 as a result of an injury sustained in a farm setting. A period of this duration was chosen because of the relatively small numbers of cases in some age groups. The report provides several comparisons between children aged 0–14 and those aged 15 and over as a basis for differentiating between those considered too young to be working for an income and those who are of working age.

Two types of cases were prominent in both age groups. They are injuries involving motorcycles and quad bikes, and injuries involving horses. In addition to focusing on these 2 types of cases, information on other causes of injury among the 2 age groups is presented.

This report includes the farm injury cases that ended with death in hospital. It does not provide a general analysis of farm-related fatalities, which would include both in-hospital deaths and deaths that did not occur in hospital.

Reports on farm-related fatalities and injuries are also available from the Australian Centre for Agricultural Health and Safety located within the University of Sydney <<http://sydney.edu.au/medicine/aghealth/publications/reports.php>>. These reports generally provide a brief snapshot of farm-related injury in Australia rather than detailed information as presented in this report.

Methods

Cases were included in this report based on the following selection criteria:

- admitted patient episodes for an Australian hospital that ended in the period 1 July 2010 to 30 June 2015
- principal diagnosis is any code from ICD-10-AM Chapter XIX *Injury, poisoning and certain other consequences of external causes* in the range S00–T75, T79
- any reported place of occurrence code from Chapter XX *External causes of morbidity and mortality* of ICD-10-AM is Y92.7 *Farm*
- mode of admission field has any value except the one indicating that transfer from another acute-care hospital had occurred. (These records are omitted from case counts to reduce multiple counting.)

Of all cases eligible to be assigned a *Place of occurrence* code, 40% were coded to *Unspecified place*. Some of these cases might have occurred on a farm, and so cases here are likely to be an underestimate. The *Place of occurrence* category *Farm* includes farm buildings but excludes farmhouses. Appendix B provides an overview of cases where the *Place of occurrence* does not indicate that the injury occurred on a farm, but where the external cause of injury suggests the likelihood that the injury occurred in a farm setting.

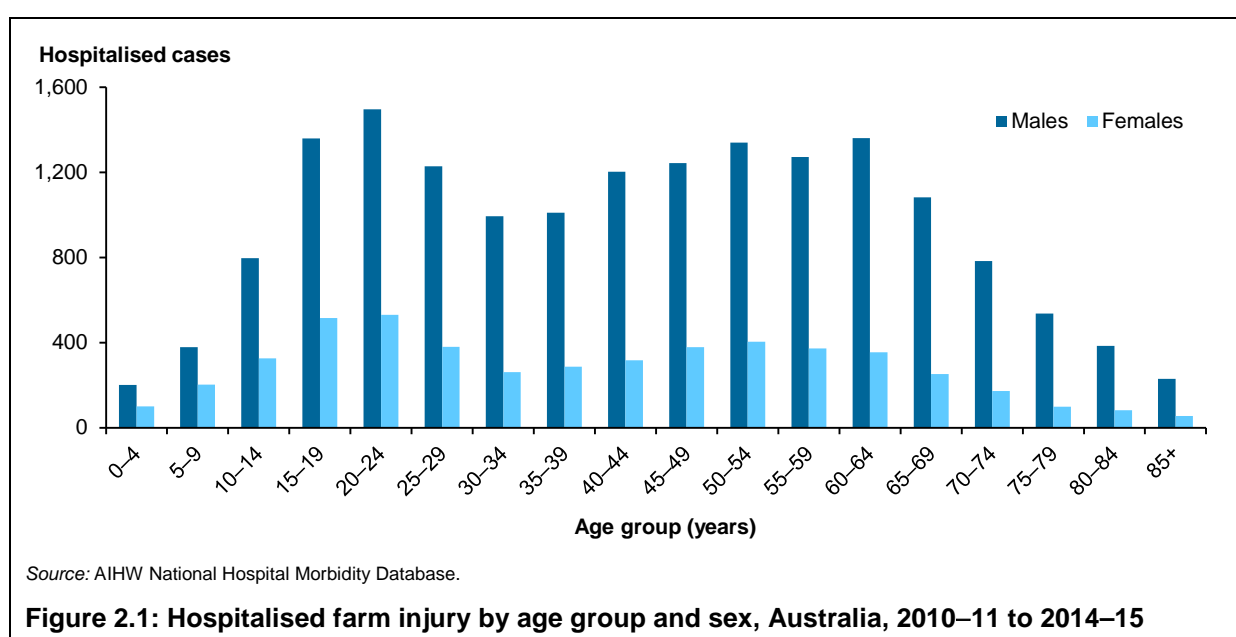
Rates were not calculated in this report as selection of a suitable population denominator was problematic. The Australian Bureau of Statistics (ABS) reported that in 2011, there were 93,300 farming families in Australia (ABS 2012). Almost half (48%) of these comprised a couple living by themselves, while for those families living with children, the average family size was 4 people. However, this information was insufficient to calculate meaningful rates using farming populations as a denominator. In addition to this, an unknown number of people visit farms and thereby experience some level of exposure to risks associated with such an environment.

2 Overview

This chapter provides an overview of the almost 22,000 people who were hospitalised in the period from 2010–11 to 2014–15 as a result of injury which occurred on a farm.

Age and sex

Just over three-quarters (77%) of people hospitalised as a result of farm-related injuries were males (Figure 2.1). Hospitalisations for males were higher than for females across all age groups. The number of hospitalisations was highest in the 20–24 year age group for both males and females. Fifty-six hospitalisations ended in death while in hospital, nearly all in people aged 15 and older.



Year of hospitalisation

The number of males hospitalised as a result of farm-related injuries rose from 3,092 in 2010–11 to 3,451 in 2011–12 and remained relatively steady to 2014–15 (Table 2.1). The number of hospitalisations for females fluctuated to some degree, but showed no apparent trend over time.

Table 2.1: Hospitalised farm injury by year of hospitalisation and sex, Australia, 2010–11 to 2014–15

Year of hospitalisation	Males	Females	Persons
2010–11	3,092	961	4,053
2011–12	3,451	1,020	4,471
2012–13	3,402	953	4,355
2013–14	3,493	1,087	4,580
2014–15	3,465	1,075	4,540
Total	16,903	5,096	21,999

Remoteness of residence

Just over 71% (15,693) of people hospitalised as a result of farm-related injuries resided in *Inner regional* or *Outer regional* remoteness zones (Table 2.2). The distribution of hospitalisations across remoteness zones was similar for both males and females.

Table 2.2: Hospitalised farm injury by remoteness zone of residence and sex, Australia, 2010–11 to 2014–15

Remoteness zone of residence ^(a)	Males	Females	Persons	% Persons
Major cities	2,002	769	2,771	12.6
Inner regional	6,353	1,914	8,267	37.6
Outer regional	5,819	1,607	7,426	33.8
Remote	1,255	350	1,605	7.3
Very remote	1,158	316	1,474	6.7
Not reported	316	140	456	2.1
Total	16,903	5,096	21,999	100

(a) Counts for 2010–11 to 2011–12 are ASGC-based while counts for 2012–13 to 2014–15 are ASGS-based.

Although over 70% of Australians reside in *Major cities*, only 1 in 8 people hospitalised as a result of farm-related injuries were residents of this remoteness zone (Table 2.3). In contrast, residents of *Inner* and *Outer* regional remoteness zones were responsible for 7 out of 10 hospitalisations, despite only around one-quarter (27%) of Australians residing in these 2 remoteness zones.

Table 2.3: Percentage of population and percentage of hospitalised farm injury by remoteness zone of residence and sex, Australia, 2010–11 to 2014–15

Remoteness zone	Percentage of population			Percentage of farm injuries		
	Males	Females	Persons	Males	Females	Persons
Major cities	70.1	70.8	70.5	11.8	15.1	12.6
Inner regional	18.3	18.3	18.3	37.6	37.6	37.6
Outer regional	9.1	8.8	9.0	34.4	31.5	33.8
Remote	1.5	1.3	1.4	7.4	6.9	7.3
Very remote	1.0	0.8	0.9	6.9	6.2	6.7
Not reported	1.9	2.7	2.1
Total	100	100	100	100	100	100

External cause of injury

The following section provides separate analyses on external causes of injury for children aged 0–14, who comprised 9% (2,006) of farm-related hospitalisations, and people aged 15 and over, who comprised the remaining 91% (19,993) of such hospitalisations. As indicated previously, these 2 age groups were selected on the basis of differentiating between those considered too young to be working for an income and those of working age.

Children aged 0–14

Table 2.4 provides a comprehensive list of external causes leading to hospitalisation as a result of injuries sustained in a farm setting for children aged 0–14. Almost 42% of hospitalisations involved motorcycles or quad bikes, while a further 16% involved horses.

The proportions of hospitalisations for a number of external causes differed markedly by gender.

For males, injuries involving motorcycles and quad bikes were a prominent cause of injury, accounting for close to half of all hospitalisations. The remaining hospitalisations were spread relatively evenly among other external cause groups with injuries involving *Other transport* accounting for almost 9% of hospitalisations, while *Other animals and plants*, *Falls* and *Machinery* each accounted for close to 7% of hospitalisations.

For females, injuries involving motorcycles and quad bikes (23%) and horses (37%) were the most prominent causes of injury leading to hospitalisation. The remaining hospitalisations were spread relatively evenly among other external cause groups with injuries involving *Falls* accounting for 8% of hospitalisations, while injuries involving *Other transport* and *Other animals and plants* each accounted for close to 7% of hospitalisations.

More detailed analyses of injury involving motorcycles and quad bikes and injury involving horses are provided in Chapters 3 and 4, respectively.

Table 2.4: Hospitalised farm injury by external cause group for children aged 0–14, Australia, 2010–11 to 2014–15

External cause group	Males		Females		Persons	
	Count	%	Count	%	Count	%
Motorcycles and quad bikes	694	50.4	142	22.5	836	41.7
Other transport crashes	118	8.6	44	7.0	162	8.1
<i>Car occupant</i>	40	2.9	24	3.8	64	3.2
<i>Pedal cyclist</i>	19	1.4	4	0.6	23	1.1
<i>Pedestrian</i>	19	1.4	3	0.5	22	1.1
<i>Occupant of other and unspecified transport vehicle</i>	40	2.9	13	2.1	53	2.6
Horses	87	6.3	234	37.1	321	16.0

(continued)

Table 2.4 (continued): Hospitalised farm injury by external cause group for children aged 0–14, Australia, 2010–11 to 2014–15

External cause group	Males		Females		Persons	
	Count	%	Count	%	Count	%
Other animals and plants	99	7.2	46	7.3	145	7.2
<i>Bitten by dog</i>	18	1.3	8	1.3	26	1.3
<i>Bitten or struck by cattle</i>	20	1.5	5	0.8	25	1.2
<i>Bitten or crushed by snake, unknown whether venomous or non-venomous</i>	21	1.5	19	3.0	40	2.0
<i>Contact with venomous snake</i>	13	0.9	7	1.1	20	1.0
<i>Contact with other and unspecified animals and plants</i>	27	2.0	7	1.1	35	1.7
Falls	96	7.0	51	8.1	147	7.3
<i>From, out of or through building or structure</i>	18	1.3	6	1.0	24	1.2
<i>Other fall from one level to another</i>	37	2.7	62	9.8	99	4.9
<i>Other specified fall on same level</i>	35	2.5	54	8.6	89	4.4
<i>Unspecified fall</i>	6	0.4	7	1.1	13	0.6
Machinery ^(a)	97	7.0	28	4.4	125	6.2
<i>Occupant of special agricultural vehicle</i>	38	2.8	17	2.7	55	2.7
<i>Contact with agricultural machinery</i>	35	2.5	6	1.0	41	2.0
<i>Contact with other and unspecified machinery</i>	24	1.7	5	0.8	29	1.4
Drowning	9	0.7	4	0.6	13	0.6
Thermal	33	2.4	15	2.4	48	2.4
<i>Exposure to smoke, fire and flames</i>	24	1.7	7	1.1	31	1.5
<i>Contact with heat and hot substances</i>	9	0.7	8	1.3	17	0.8
Other external cause	143	10.4	66	10.5	209	10.4
Total	1,376	100	630	100	2,006	100

(a) Cases with ICD-10-AM external cause code of V84 *Occupant of special vehicle used mainly in agriculture injured in transport accident* have been grouped as *Machinery*. Cases involving combine harvesters, self-propelled farm machinery and tractors are included in this category.

People aged 15 and over

Table 2.5 provides a comprehensive list of external causes leading to hospitalisation as a result of injuries sustained in a farm setting for people aged 15 and over. Overall, 21% of hospitalisations involved motorcycles or quad bikes, while a further 16% involved contact with animals (excluding horses) and plants. However, as with children aged 0–14, the proportions of hospitalisations for a number of external causes differed markedly by gender.

For males, injuries involving motorcycles and quad bikes were a prominent cause of injury, accounting for close to one-quarter all hospitalisations. Other external cause groups commonly involved in injury were *Other animals and plants* and *Machinery*, both of which

accounted for close to 15% of hospitalisations, and *Falls*, which accounted for nearly 9% of hospitalisations.

For females, injuries involving motorcycles and quad bikes (12%) and horses (30%) were prominent causes of injury leading to hospitalisation. Other external cause groups commonly involved in injury were *Other animals and plants*, which accounted for close to 16% of hospitalisations, and *Falls*, which accounted for close to 15% of hospitalisations.

More detailed analyses of injury involving motorcycles and quad bikes and injury involving horses are provided in Chapters 3 and 4, respectively. Further analysis of injuries involving animals (other than horses) and plants, falls and machinery is provided in Chapter 5.

Table 2.5: Hospitalised farm injury by external cause group for people aged 15 and over, Australia, 2010–11 to 2014–15

External cause group	Males		Females		Persons	
	Count	%	Count	%	Count	%
Motorcycles and quad bikes	3,687	23.7	515	11.5	4,202	21.0
Other transport crashes	728	4.7	193	4.3	921	4.6
<i>Car occupant</i>	291	1.9	90	2.0	381	1.9
<i>Pedestrian</i>	74	0.5	34	0.8	108	0.5
<i>Occupant of heavy transport vehicle</i>	41	0.3	9	0.2	50	0.3
<i>Occupant of pickup truck or van</i>	63	0.4	12	0.3	75	0.4
<i>Aircraft occupant</i>	44	0.3	3	0.1	47	0.2
<i>Occupant of other and unspecified transport vehicle</i>	215	1.4	45	1.0	260	1.3
Horses	1,005	6.5	1,331	29.8	2,336	11.7
Other animals and plants	2,399	15.5	695	15.6	3,094	15.5
Falls	1,389	8.9	679	15.2	2,068	10.3
Machinery ^(a)	2,345	15.1	255	5.7	2,600	13.0
Drowning	3	0.0	1	0.0	4	0.0
Poisoning	180	1.2	32	0.7	212	1.1
Thermal	312	2.0	42	0.9	354	1.8
<i>Exposure to smoke, fire and flames</i>	234	1.5	33	0.7	267	1.3
<i>Contact with heat and hot substances</i>	78	0.5	9	0.2	87	0.4
Intentional self-harm	38	0.2	13	0.3	51	0.3
Assault	34	0.2	9	0.2	43	0.2
Other external cause	3,407	21.9	701	15.7	4,108	20.5
Total	15,527	100	4,466	100	19,993	100

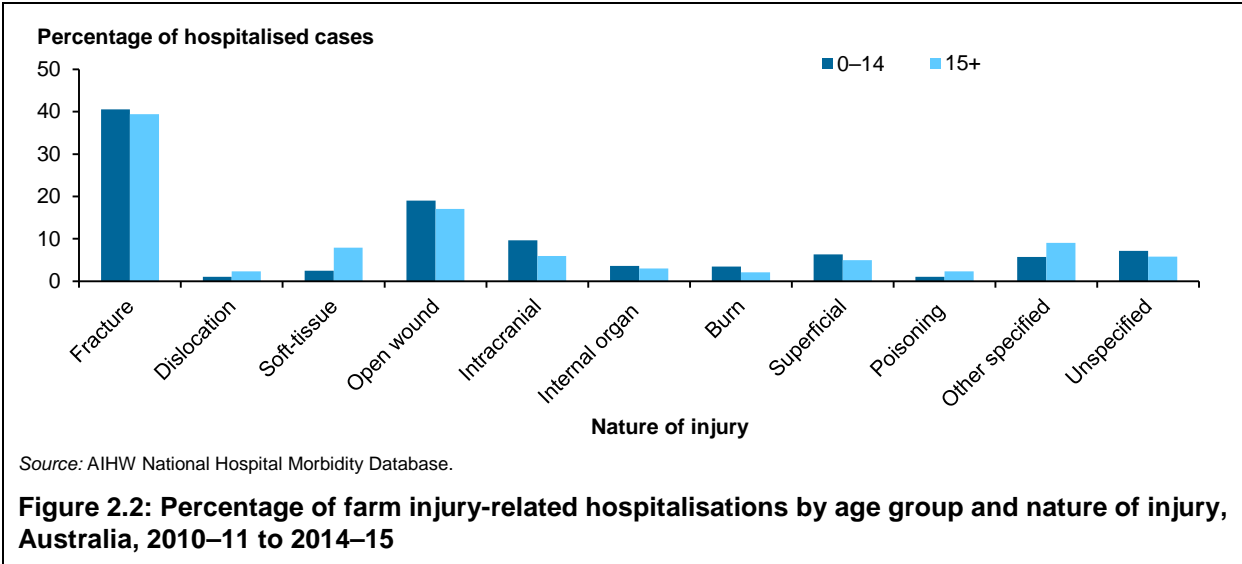
(a) Cases with ICD-10-AM external cause code of V84 *Occupant of special vehicle used mainly in agriculture injured in transport accident* have been grouped as *Machinery*. Cases involving combine harvesters, self-propelled farm machinery and tractors are included in this category.

Activity at time of injury

Fifty-one per cent of males hospitalised as a result of a farm-related injury were working for income and a further 9% were engaged in other types of work at the time the injury was sustained. The equivalent percentages for females were 33% and 10%, respectively. These figures need to be treated with caution as the person's activity at the time the injury was sustained was unspecified for 31% of male and 38% of female cases of hospitalised farm injury.

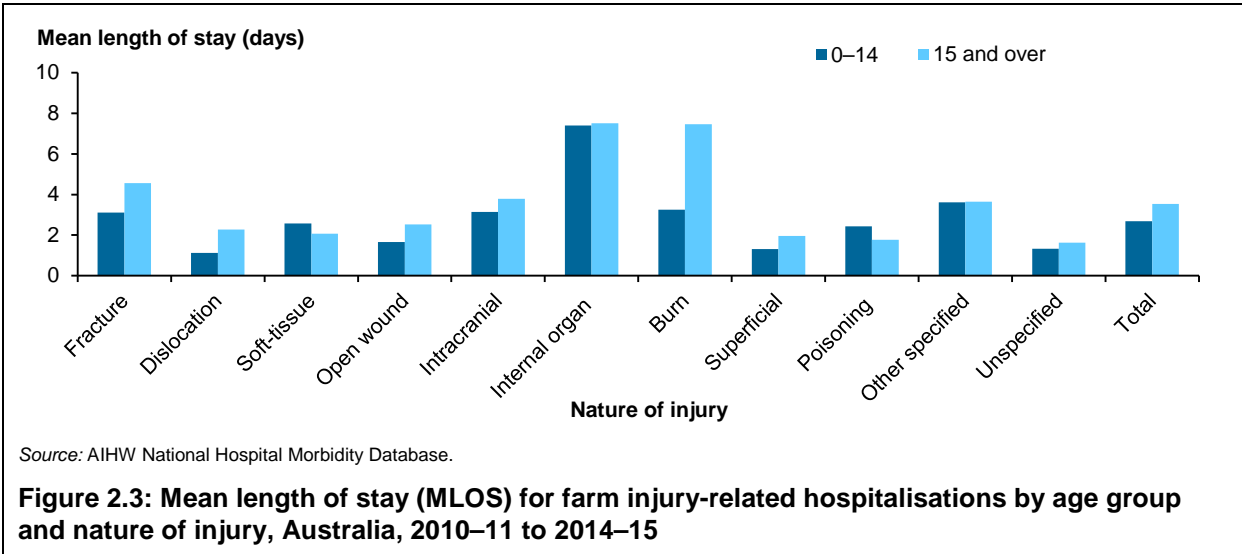
Nature of injury

Fractures were the principal type of farm-related injury in close to 40% of hospitalisations in both children aged 0–14 and people aged 15 and over (Figure 2.2). Injuries involving open wounds were also common, being the principal cause of hospitalisation in 19% of children aged 0–14 and 17% of people aged 15 and over.



Mean length of stay

The overall mean length of stay (MLOS) in hospital for children aged 0–14 was 2.7 days, while for people aged 15 and over the MLOS was 3.5 days (Figure 2.3). Injuries involving internal organs were responsible for the longest MLOS in hospital for children aged 0–14 (7.4 days) and people aged 15 and over (7.5 days). People aged 15 and over who sustained a burn injury had a MLOS of 7.5 days, while children aged 0–14 who sustained a burn injury had a MLOS of 3.2 days.



3 Injury involving motorcycles and quad bikes

This chapter provides an analysis of persons hospitalised as a result of incurring an injury in a farm setting while riding on a motorcycle or being an occupant of a quad bike. Overall, there were 3,894 motorcycle-related hospitalisations and 1,144 quad bike-related hospitalisations over the period from 2010–11 to 2014–15.

Age group and sex

Injury involving motorcycles and quad bikes was a prominent cause of hospitalisation due to farm-related injury for both children aged 0–14 and people aged 15 and over.

For injuries involving motorcycles, males accounted for over 87% of all hospitalisations for children aged 0–14 and 90% of all hospitalisations for people aged 15 and over (Table 3.1).

For injuries involving quad bikes, males accounted for two-thirds (66%) of all hospitalisations for children aged 0–14 and almost 80% of all hospitalisations for people aged 15 and over.

Table 3.1: Hospitalised farm injury involving motorcycles and quad bikes by sex for children aged 0–14 and people aged 15 and older, Australia, 2010–11 to 2014–15

Injured person's vehicle	Age group (years)					
	0–14		15 and over		All ages	
	Count	%	Count	%	Count	%
Motorcycles						
Males	586	87.1	2,907	90.3	3,493	89.7
Females	87	12.9	314	9.7	401	10.3
Persons	673	100	3,221	100	3,894	100
Quad bikes						
Males	108	66.3	780	79.5	888	77.6
Females	55	33.7	201	20.5	256	22.4
Persons	163	100	981	100	1,144	100

Role of transport user

Around four-fifths of farm-related injuries involving motorcycles were sustained by the rider regardless of age group (Table 3.2). Injury to motorcycle passengers was relatively uncommon. In 13% of cases, the occupant type was not specified.

For quad bikes, almost 90% of injuries were sustained by the driver in people aged 15 and over. For children aged 0–14, this percentage dropped to 69%, while in 21% of cases injuries were sustained by a passenger.

Table 3.2: Hospitalised farm injury involving motorcycles and quad bikes by role of transport user for children aged 0–14 and people aged 15 and older, Australia, 2010–11 to 2014–15

Role of transport user	Age group (years)					
	0–14		15 and over		All ages	
	Count	%	Count	%	Count	%
Motorcycles						
Rider	530	78.8	2,622	81.4	3,152	80.9
Passenger	28	4.2	44	1.4	72	1.8
Boarding and alighting	30	4.5	148	4.6	178	4.6
Unspecified occupant	85	12.6	407	12.6	492	12.6
Total	673	100	3,221	100	3,894	100
Quad bikes						
Rider	112	68.7	877	89.4	989	86.5
Passenger	34	20.9	38	3.9	72	6.3
Boarding and alighting	4	2.5	1	0.1	5	0.4
Person on outside of vehicle	6	3.7	11	1.1	17	1.5
Unspecified occupant	7	4.3	54	5.5	61	5.3
Total	163	100	981	100	1,144	100

Counterpart in collision

Over 62% of farm-related injuries involving motorcycles in people aged 15 and over did not involve a collision with another object (Table 3.3). It is possible that in these cases, the person fell from the motorcycle after losing control. A further 17% of people in this age group were injured as a result of colliding with a fixed or stationary object.

A similar pattern was seen for children aged 0–14, with the equivalent figures being 57% for collisions not involving another object and 22% for collisions involving a fixed or stationary object.

Equivalent data are not provided for injuries involving quad bikes as ICD-10-AM does not provide external cause codes for the counterpart in collision where the injured person was an occupant of an all-terrain or off-road vehicle.

Table 3.3: Hospitalised farm injury involving motorcycles^(a) by counterpart in collision for children aged 0–14 and people aged 15 and older, Australia, 2010–11 to 2014–15

Counterpart in collision	Age group (years)					
	0–14		15 and over		All ages	
	Count	%	Count	%	Count	%
Car, pick-up truck or van	7	1.1	16	0.5	23	0.6
Two- or three-wheeled motor vehicle	37	5.7	68	2.2	105	2.8
Pedestrian or animal	11	1.7	156	5.0	167	4.4
Fixed or stationary object	140	21.6	527	16.9	667	17.7
Non-collision transport accident	371	57.2	1,940	62.3	2,311	61.4
Other and unspecified transport accident	83	12.8	405	13.0	488	13.0
Total	649	100	3,112	100	3,761	100

(a) Excludes 133 records coded as two-wheeled special all-terrain or off-road motor vehicles as counterpart in collision is not coded for these cases.

Activity

Injury involving motorcycles

Close to one-quarter of farm-related injuries involving motorcycles in people aged 15 and over were sustained while the person was working for income, predominantly in the agricultural, forestry and fishing industries group (Table 3.4). A further 13% of injuries in this age group were sustained while the person was involved in motorcycle racing.

For children aged 0–14, 22% of injuries were sustained while the person was involved in motorcycle racing and a further 17% were sustained while undertaking some form of leisure activity.

These results must be treated with caution due to the high proportion of cases where the activity at the time the person was injured is unspecified.

Table 3.4: Hospitalised farm injury involving motorcycles by activity for children aged 0–14 and people aged 15 and older, Australia, 2010–11 to 2014–15

Activity	Age group (years)					
	0–14		15 and over		All ages	
	Count	%	Count	%	Count	%
Motorcycle racing	147	21.8	404	12.5	551	14.1
Other specified and unspecified sport and exercise activity	6	0.9	28	0.9	34	0.9
Leisure activity, not elsewhere classified	112	16.6	233	7.2	345	8.9
Working for income—Agricultural, forestry and fishing	10	1.5	746	23.2	756	19.4
Working for income—Other industry	0	0.0	47	1.5	47	1.2
Other types of work	5	0.7	32	1.0	37	1.0
Other specified activity	11	1.6	36	1.1	47	1.2
Unspecified activity	382	56.8	1,695	52.6	2,077	53.3
Total	673	100	3,221	100	3,894	100

Injury involving quad bikes

Close to 40% of farm-related injuries involving quad bikes in people aged 15 and over were sustained while the person was working for income, predominantly in the agricultural, forestry and fishing industries group (Table 3.5). For children aged 0–14, at least 17% of injuries were sustained while undertaking some form of leisure activity.

These results must be treated with caution due to the high proportion of cases where the activity at the time the person was injured is unspecified.

Table 3.5: Hospitalised farm injury involving quad bikes by activity for children aged 0–14 and people aged 15 and older, Australia, 2010–11 to 2014–15

Activity	Age group (years)					
	0–14		15 and over		All ages	
	Count	%	Count	%	Count	%
All-terrain vehicle racing	9	5.5	19	1.9	28	2.4
Other specified and unspecified sport and exercise activity	14	8.6	7	0.7	21	1.8
Leisure activity, not elsewhere classified	28	17.2	44	4.5	72	6.3
Working for income—Agricultural, forestry and fishing	3	1.8	362	36.9	365	31.9
Working for income—Other industry	0	0.0	24	2.4	24	2.1
Other types of work	1	0.6	18	1.8	19	1.7
Other specified activity	0	0.0	11	1.1	11	1.0
Unspecified activity	108	66.3	496	50.6	604	52.8
Total	163	100	981	100	1,144	100

4 Injury involving horses

This chapter provides an analysis of persons hospitalised as a result of incurring an injury in a farm setting while riding a horse or being bitten or crushed by a horse. Overall, there were 1,894 hospitalisations involving horse riders and 763 hospitalisations resulting from being bitten or crushed by a horse over the period from 2010–11 to 2014–15.

Age group and sex

Females were more likely than males to be hospitalised as a result of farm-related injuries involving horses (Table 4.1). For children aged 0–14, girls comprised almost 80% of those injured while riding a horse. This figure was 56% for those aged 15 and over.

For children aged 0–14 injured as a result of being bitten or crushed by a horse, 57% were girls, while for people aged 15 and over 59% were female.

For both age groups, over 90% of injuries sustained while riding a horse did not involve a collision with another object.

Table 4.1: Hospitalised farm injury involving horses by sex for children aged 0–14 and people aged 15 and older, Australia, 2010–11 to 2014–15

Type of contact	Age group (years)				All ages	
	0–14		15 and over		Count	%
	Count	%	Count	%		
Rider of horse						
Males	46	20.4	732	43.9	778	41.1
Females	180	79.6	936	56.1	1,116	58.9
Persons	226	100	1,668	100	1,894	100
Bitten or crushed by horse						
Males	41	43.2	273	40.9	314	41.2
Females	54	56.8	395	59.1	449	58.8
Persons	95	100	668	100	763	100

Activity

Close to one-third of farm-related injuries involving horse riding in people aged 15 and over were sustained while the person was working for income, predominantly in the agricultural, forestry and fishing industries group (Table 4.2). A further 15% of injuries in this age group were sustained while the person was involved in other types of work.

For children aged 0–14, 12% of injuries were sustained while the person was involved in trail of general horseback riding and a further 11% were sustained while undertaking of some form of unspecified leisure activity.

Table 4.2: Hospitalised farm injury involving horse riding by activity for children aged 0–14 and people aged 15 and older, Australia, 2010–11 to 2014–15

Activity	Age group (years)					
	0–14		15 and over		All ages	
	Count	%	Count	%	Count	%
Trail or general horseback riding	11	11.6	19	2.8	30	3.9
Other specified and unspecified sport and exercise activity	0	0.0	6	0.9	6	0.8
Leisure activity, not elsewhere classified	10	10.5	11	1.6	21	2.8
Working for income—Agricultural, forestry and fishing	2	2.1	151	22.6	153	20.1
Working for income—Other industry	0	0.0	63	9.4	63	8.3
Other types of work	7	7.4	103	15.4	110	14.4
Other specified activity	7	7.4	37	5.5	44	5.8
Unspecified activity	58	61.1	278	41.6	336	44.0
Total	95	100	668	100	763	100

5 Injury involving other external causes

This chapter provides a more detailed analysis of other common external causes of injury not covered in chapters 3 and 4. This analysis is provided only for people aged 15 and over, since these external causes of injury were relatively uncommon in children aged 0–14.

Injury involving animals other than horses, and plants

Being bitten or struck by cattle accounted for almost 58% of hospitalisations for males and nearly half of hospitalisations for females for people aged 15 and over for farm-related injury involving contact with animals (excluding horses) and plants (Table 5.1).

For males, being bitten or struck by sheep accounted for a further 8% of hospitalisations, while contact with a snake, whether venomous, non-venomous or unknown (whether venomous or non-venomous) accounted for nearly 16% of hospitalisations. Similarly, for females, being bitten or struck by sheep accounted for over 11% of hospitalisations, while contact with a snake, whether venomous, non-venomous or unknown (whether venomous or non-venomous) accounted for over 17% of hospitalisations of this type.

Table 5.1: Hospitalised farm injury involving contact with animals (excluding horses) and plants by type of contact for people aged 15 and over, Australia, 2010–11 to 2014–15

Type of contact	Males		Females		Persons	
	Count	%	Count	%	Count	%
Bitten or struck by dog	46	1.9	23	3.3	69	2.2
Bitten or struck by cattle	1,383	57.6	345	49.6	1,728	55.9
Bitten or struck by sheep	197	8.2	78	11.2	275	8.9
Bitten or struck by other and unspecified mammals	82	3.4	43	6.2	125	4.0
Bitten or stung by non-venomous insect and other non-venomous arthropods	21	0.9	7	1.0	28	0.9
Bitten or crushed by non-venomous snake	30	1.3	20	2.9	50	1.6
Bitten or crushed by snake, unknown whether venomous or non-venomous	176	7.3	67	9.6	243	7.9
Exposure to other and unspecified animate mechanical forces	128	5.3	39	5.6	167	5.4
Contact with venomous snake	169	7.0	33	4.7	202	6.5
Contact with spiders	37	1.5	15	2.2	52	1.7
Contact with wasps	15	0.6	6	0.9	21	0.7
Contact with bees	62	2.6	9	1.3	71	2.3
Contact with venomous tick	12	0.5	2	0.3	14	0.5
Contact with other and unspecified venomous animals and plants	41	1.7	8	1.2	49	1.6
Total	2,399	100	695	100	3,094	100

Activity at time of injury

For males hospitalised as a result of injury involving contact with animals (other than horses) and plants while on a farm, 58% were working for income and a further 12% were engaged in other types of work at the time the injury was sustained. The equivalent percentages for females were 41% and 16%, respectively. These figures need to be treated with caution as the person's activity at the time injury was sustained was unspecified for 27% of males and 37% of females.

Fall-related injury

Slipping, tripping or stumbling on the same level accounted for over 28% of hospitalisations for males and over 43% of hospitalisations for females for people aged 15 and over for those who sustained a fall-related injury in a farm setting (Table 5.2).

Falls from one level to another, including falls on or from a ladder, falls from, out of or through a building, and falls from a tree or cliff accounted for nearly 46% of hospitalisations for males and over 26% of hospitalisations for females.

Table 5.2: Hospitalised fall-related farm injury by mechanism of fall for people aged 15 and over, Australia, 2010–11 to 2014–15

Mechanism of fall	Males		Females		Persons	
	Count	%	Count	%	Count	%
Same level from slipping, tripping and stumbling	390	28.1	293	43.2	683	33.0
On and from stairs and steps	17	1.2	12	1.8	29	1.4
On or from ladder	112	8.1	43	6.3	155	7.5
From, out of or through building or structure	120	8.6	36	5.3	156	7.5
From tree	23	1.7	3	0.4	26	1.3
From cliff	29	2.1	15	2.2	44	2.1
Other fall from one level to another	354	25.5	80	11.8	434	21.0
Other fall on same level	186	13.4	116	17.1	302	14.6
Unspecified fall	158	11.4	81	11.9	239	11.6
Total	1,389	100	679	100	2,068	100

Activity at time of injury

For males hospitalised as a result of a fall-related injury, 47% were working for income and a further 14% were engaged in other types of activity at the time the injury was sustained. The equivalent percentages for females were 28% and 19%, respectively. These figures need to be treated with caution as the person's activity at the time the injury was sustained was unspecified for 30% of males and 42% of females.

Injury involving machinery

Contact with agricultural machinery accounted for almost 43% of hospitalisations for males and almost 39% of hospitalisations for females for people aged 15 and over who sustained a farm-related injury involving contact with some form of machinery (Table 5.3). Occupants of agricultural vehicles injured in a transport accident accounted for almost 27% and 37% of hospitalisations for males and females, respectively.

Table 5.3: Hospitalised farm injury involving machinery by mechanism of injury for people aged 15 and over, Australia, 2010–11 to 2014–15

Mechanism of injury	Males		Females		Persons	
	Count	%	Count	%	Count	%
Transport crash involving a special vehicle mainly used in agriculture ^(a)	630	26.9	94	36.9	724	27.8
<i>Driver</i>	389	16.6	45	17.6	434	16.7
<i>Person on outside of vehicle</i>	146	6.2	30	11.8	176	6.8
<i>Other or unspecified occupant</i>	95	4.1	19	7.5	114	4.4
Contact with powered lawnmower	78	3.3	5	2.0	83	3.2
Contact with other powered hand tools and household machinery	214	9.1	10	3.9	224	8.6
<i>Contact with powered grinder</i>	75	3.2	2	0.8	77	3.0
<i>Contact with chainsaw</i>	68	2.9	2	0.8	70	2.7
<i>Contact with other and unspecified powered hand tools and household machinery</i>	71	3.0	6	2.4	77	3.0
Contact with agricultural machinery	998	42.6	99	38.8	1,097	42.2
<i>Contact with grain auger, elevator and conveyor</i>	53	2.3	4	1.6	57	2.2
<i>Contact with harvesting machinery</i>	56	2.4	6	2.4	62	2.4
<i>Contact with equipment towed or powered by tractor</i>	83	3.5	2	0.8	85	3.3
<i>Contact with other and unspecified agricultural machinery</i>	806	34.4	87	34.1	893	34.3
Contact with other and unspecified machinery	425	18.1	47	18.4	472	18.2
<i>Contact with metalworking machinery</i>	42	1.8	1	0.4	43	1.7
<i>Contact with earthmoving, scraping and other excavating machinery</i>	43	1.8	1	0.4	44	1.7
<i>Contact with other and unspecified machinery</i>	340	14.5	45	17.6	385	14.8
Total	2,345	100	255	100	2,600	100

(a) Cases involving combine harvesters, self-propelled farm machinery and tractors are included in this category.

Activity at time of injury

Sixty-eight per cent of males hospitalised as a result of injury involving machinery, were working for income and a further 12% were engaged in other types of activity at the time the injury was sustained. The equivalent percentages for females were 60% and 8%, respectively. These figures need to be treated with caution as the person's activity at the time injury was sustained was unspecified for 18% of males and 29% of females.

Appendix A: Data issues

Data sources

The data on hospital separations are from the Australian Institute of Health and Welfare's National Hospital Morbidity Database (NHMD). Comprehensive information on the quality of the data for 2014–15 is available in *Admitted patient care 2014–15: Australian hospital statistics* (AIHW 2016) and the data quality statement below. Nearly all injury cases admitted to hospitals in Australia are included in the NHMD data used in this report.

Diagnosis, procedure and external cause data for 2010–11 to 2014–15 were reported to the NHMD by all states and territories using the 7th and 8th editions of the International statistical classification of diseases and related health problems, 10th revision, Australian modification (ICD-10-AM) (NCCH 2010, 2013).

Selection criteria

This report is intended to describe the population incidence of injuries newly occurring that resulted in admission to a hospital. This section describes the criteria that were used to select cases to achieve this purpose.

Period

This report is restricted to admitted patient episodes that ended in the period from 1 July 2010 to 30 June 2015.

Injury

Injury separations were defined as records that contained a principal diagnosis in the ICD-10-AM range S00–T75 or T79 using '*Chapter XIX Injury, poisoning and certain other consequences of external causes*' codes. Nearly all injury separations were thought to be included in the data reported, representing minimal risk of sampling error.

Place of occurrence

Records were included in this report if any of the place of occurrence codes from '*Chapter XX External causes of morbidity and mortality*' of ICD-10-AM was Y92.7 *Farm*. (The Y92.7 code includes farm buildings, but excludes farmhouses which are coded to Y92.0 *Home*.)

Estimating incident cases

Each record in the NHMD refers to a single episode of care in a hospital. Some injuries result in more than one episode in hospital and, hence, more than one NHMD record.

This can occur in two main ways:

- a person is admitted to one hospital, then transferred to another or has a change in care type (for example, acute to rehabilitation) within the one hospital

- a person has an episode of care in hospital, is discharged home (or to another place of residence) and is then admitted for further treatment for the same injury, to the same hospital or another one.

The NHMD does not include information designed to enable the set of records belonging to an injury case to be recognised as such. Hence, there is potential for some incident injury cases to be counted more than once, which exists when a single incident injury case results in two or more NHMD records being generated, all of which satisfy the selection criteria being used.

Information in the NHMD enables this problem to be reduced, though not eliminated. The approach used for this report makes use of the 'Mode of admission' variable, which indicates whether the current episode began with inward transfer from another acute care hospital. Episodes of this type (inward transfers) are likely to have been preceded by another episode that also met the case selection criteria for injury cases, so are omitted from our estimated case counts.

This procedure should largely correct for over-estimation of cases due to transfers, but will not correct for over-estimation due to readmissions.

External cause groups

External cause groups used in this report were based on the first-occurring ICD-10-AM external cause code in the hospital record and were categorised based on the following code ranges:

Motorcycles/quad bikes: V20–V29 or V86 with fifth character = 0 or 2

Other transport: V00–V99 and excluding codes for *Motorcycles/quad bikes* as above and excluding (V80 and fifth character = 0) and excluding V84

Horses: (V80 and fifth character = 0) and W55.0

Other animals and plants: W53–W64, X20–X29 and excluding W55.0

Falls: W00–W19

Machinery: W28–W31 and V84

Drowning: W65–W74

Thermal: X00–X19

Other external causes: W20–W27, W32–W52, W75–W99, X30–Y89.

Identifying quad bikes

ICD-10-AM category V86 is entitled *Occupant of special all-terrain or other motor vehicle designed primarily for off-road use, injured in transport accident*. The fifth character of the category distinguishes vehicles according to the number of wheels, where 0 indicates 2 wheels and 2 indicates 4 wheels. A recent report on quad bike injuries concluded that hospital admission cases with an ICD-10-AM code V86 and fifth character = 2 are likely to refer to quad bikes, especially when they occurred on a farm, and this is the best available basis for identifying quad bike cases in NHMD data (Wundersitz 2016). That approach has been applied in this report.

Classification of remoteness area

Remoteness area in this report refers to the place of usual residence of the person who was injured and may differ from the remoteness area in which the injury was sustained. The remoteness areas for years 2010–11 to 2011–12 were specified according to the Australian Bureau of Statistics' (ABS) Australian Standard Geographical Classification (ASGC) while remoteness areas for years 2012–13 to 2014–15 were specified according to the ABS Australian Statistical Geography Standard (ASGS).

Australian Standard Geographical Classification

Australia can be divided into several regions based on their distance from urban centres. This is considered to determine the range and types of services available. In this report, remoteness area refers to the place of usual residence of the person who was admitted to hospital, assigned on the basis of the reported Statistical Local Area (SLA) of residence.

Remoteness categories were defined in a manner based on the Accessibility/Remoteness Index of Australia (ARIA). According to this method, remoteness is an index applicable to any point in Australia, based on road distance from urban centres of 5 sizes. The reported areas are defined as the following ranges of the index:

- *Major cities* (for example, Sydney, Geelong, Gold Coast), ARIA index 0 to 0.2
- *Inner regional* (for example, Hobart, Ballarat, Coffs Harbour), ARIA index >0.2 and ≤ 2.4
- *Outer regional* (for example, Darwin, Cairns, Coonabarabran), ARIA index >2.4 and ≤ 5.92
- *Remote* (for example, Alice Springs, Broome, Strahan), ARIA index of >5.92 and ≤ 10.53
- *Very remote* (for example, Coober Pedy, Longreach, Exmouth), ARIA index >10.53 .

Most SLAs lie entirely within 1 of the 5 areas. If this was so for all SLAs, then each record could simply be assigned to the area in which its SLA lies. However, some SLAs overlap 2 or more of the areas. Records with these SLAs were assigned to remoteness areas in proportion to the area-specific distribution of the resident population of the SLA according to the 2006 census. Each record in the set having a particular SLA code was randomly assigned to one or other of the remoteness areas present in it, in proportion to the resident population of that SLA.

Australian Statistical Geography Standard

The ASGS is a hierarchical classification system of geographical regions and consists of a number of interrelated structures. The ASGS brings all the regions for which the Australian Bureau of Statistics publishes statistics within the one framework and has been used by the ABS for the collection and dissemination of geographically classified statistics from 1 July 2011. It provides a common framework of statistical geography and enables the production of statistics which are comparable and can be spatially integrated.

Australian Statistical Geography Standard (ASGS) Volume 1—Main Structure and Greater Capital City Statistical Areas (ABS cat. no. 1270.0.55.001) is the first in a series of volumes that details the structures and regions of the ASGS. Its purpose is to outline the conceptual basis of the regions of the main structure and the Greater Capital City Statistical Areas and their relationship to each other. This product contains several elements including the ASGS manual, maps, codes and names and the digital boundaries current for the ASGS Edition 2011 (date of effect 1 July 2011). The digital boundaries for Volume 1 of the ASGS are the

spatial units for the main structure and the Greater Capital City Statistical Areas. These spatial units are:

- Mesh Blocks (MB)
- Statistical Area Level 1 (SA1)
- Statistical Area Level 2 (SA2)
- Statistical Area Level 3 (SA3)
- Statistical Area Level 4 (SA4)
- Greater Capital City Statistical Areas (GCCSA)
- State and Territory (S/T).

Each case is allocated to one of 5 remoteness areas on the basis of the admitted patient's place of usual residence according to Statistical Area Level 2 (SA2). Most SA2s lie entirely within 1 of the 5 areas. If this was so for all SA2s, then each record could simply be assigned to the area in which its SA2 lies. However, some SA2s overlap 2 or more of the areas. Records with these SA2s were assigned to remoteness areas in proportion to the area-specific distribution of the resident population of the SA2 according to the 2011 census. For hospitalisations, each record in the set having a particular SA2 code was assigned to one or other of the areas probabilistically, in proportion to the resident population of that SA2. The resulting values are integers. An SA2 to remoteness area map can be found in ABS cat. no. 1270.0.55.006.

Data quality statement: National Hospital Morbidity Database

The National Hospital Morbidity Database is a compilation of episode-level records from admitted patient morbidity data collection systems in Australian hospitals. The data supplied are based on the National minimum data set (NMDS) for Admitted patient care and include demographic, administrative and length of stay data, as well as data on the diagnoses of the patients, the procedures they underwent in hospital and external causes of injury and poisoning.

The purpose of the NMDS for Admitted patient care is to collect information about care provided to admitted patients in Australian hospitals. The scope of the NMDS is episodes of care for admitted patients in all public and private acute and psychiatric hospitals, free-standing day hospital facilities, and alcohol and drug treatment centres in Australia. Hospitals operated by the Australian Defence Force, corrections authorities and in Australia's off-shore territories are not in scope but some are included.

The reference period for this data set is 2014–15. The data set includes records for admitted patient separations between 1 July 2014 and 30 June 2015.

A complete data quality statement for the NHMD is available online at <meteor.aihw.gov.au>.

Summary of key issues

- The NHMD is a comprehensive data set that has records for all separations of admitted patients from essentially all public and private hospitals in Australia.
- A record is included for each separation, not for each patient, so patients who separated more than once in the year have more than 1 record in the NHMD.

- For 2014–15, almost all public hospitals provided data for the NHMD. The exception was an early parenting centre in the Australian Capital Territory. The great majority of private hospitals also provided data, the exception being the private free-standing day hospital facilities in the Australian Capital Territory.
- Although there are national standards for data on hospital services, there are some variations in how hospital services are defined and counted, between public and private hospitals, among the states and territories and over time. For example, there is variation in admission practices for some services, such as chemotherapy and endoscopy. As a result, people receiving the same type of service may be counted as same-day admitted patients in some hospitals and as non-admitted patients in other hospitals. In addition, some services are provided by hospitals in some jurisdictions and by non-hospital health services in other jurisdictions. The national data on hospital care does not include care provided by non-hospital providers, such as community health centres.
- Caution should be used in comparing diagnosis, procedure and external cause data over time, as the classifications and coding standards for those data can change over time.
- Between 2010–11 and 2014–15, there were changes in coverage or data supply for New South Wales, Victoria, Queensland and Western Australia that may affect the interpretation of the data:
 - For New South Wales, increases in the numbers of separations reported for private hospitals are, in part, accounted for by improvement in the coverage of reporting.
 - For Victoria, between 2011–12 and 2012–13, a relatively large decrease in public hospital separations reflects a change in Victoria’s emergency department admission policy.
 - For Queensland, between 2013–14 and 2014–15, a relatively large increase in same-day separations in public hospitals partly reflects a change in admission practices for chemotherapy in some hospitals.
 - For Western Australia, between 2012–13 and 2013–14, the relatively large decrease in public hospital separations may reflect a change in Western Australia’s emergency department admission policy which resulted in fewer admissions.
- The Indigenous status data in the NHMD for all states and territories are considered of sufficient quality for statistical reporting for 2010–11 and subsequent reference years. In 2011–12, an estimated 88% of Indigenous patients were correctly identified in public hospitals (AIHW 2013). The overall quality of the data provided for Indigenous status is considered to be in need of some improvement and varied between states and territories. It is unknown to what extent Indigenous Australians might be under-identified in private hospital admission data.

Errors, inconsistencies and uncertainties

Due to rounding, the sum of the percentages in tables may not equal 100 per cent.

NHMD data are generally abstracted from records, entered and coded in hospitals, passed to state and territory health departments, then to the AIHW before being provided to the National Injury Surveillance Unit. Processing occurs at each of these steps. Errors and inconsistencies can arise due to the large number of people and processes involved in providing the data. Some variations occur in reporting and coding, although coding standards, national minimum data sets and other causes have reduced this.

Appendix B: Other hospitalised injury cases that might be farm-related

Cases included in the main body of this report were selected on the basis of having been assigned an ICD-10-AM place of occurrence code of Y92.7 *Farm*. However, using this selection criteria may exclude farm-related injury cases where place of occurrence is unspecified. Two ICD-10-AM external codes which may suggest that an injury was sustained on a farm are V84 *Occupant of special vehicle used mainly in agriculture injured in transport accident* and W30 *Contact with agricultural machinery*. Place of occurrence for these two codes is shown in Table B.1.

For males assigned a V84 code, 61% (673) were assigned a place of occurrence code indicating that the injury was sustained in a farm setting. For one-quarter (277) of these cases place of occurrence of injury was not specified. The equivalent figures for females were 56% (113) and 32% (64), respectively. Similar outcomes were observed for cases assigned a W30 code. For males, 64% (1,044) sustained injuries in a farm setting, while for 27% (446), place of occurrence of injury was not specified. For females, the equivalent percentages were 63% (106) and 27% (46), respectively.

It is possible that a significant proportion of the combined total for both codes of 833 cases where place of occurrence is unspecified may have sustained an injury in a farm setting. However, since there is no viable method of verifying the setting in which the injury occurred, these cases have been excluded from the main body of this report.

Other external cause codes which suggest that injury may have occurred on a farm are W55.2 *Bitten or struck by cattle* and W55.3 *Bitten or struck by sheep*. For people assigned either of these 2 codes, over 92% (2,064) were assigned a place of occurrence code indicating that the injury was sustained in a farm setting, while for 4% (82) of these cases, place of occurrence of injury was not specified.

Table B1: Place of occurrence by sex for records assigned external cause codes V84 Occupant of special vehicle used mainly in agriculture injured in transport accident or W30 Contact with agricultural machinery, Australia, 2010–11 to 2014–15

Place of occurrence	Males	%	Females	%	Persons	%
V84 Occupant of special vehicle used mainly in agriculture injured in transport accident						
Home	53	4.8	10	5.0	63	4.8
Sports and athletics area	8	0.7	0	0.0	8	0.6
Street and highway	43	3.9	5	2.5	48	3.7
Farm	673	61.3	113	55.9	786	60.5
Other specified place of occurrence	44	4.0	10	5.0	54	4.2
Unspecified place of occurrence	277	25.2	64	31.7	341	26.2
Total	1,098	100	202	100	1,300	100
W30 Contact with agricultural machinery						
Home	64	3.9	8	4.8	72	4.0
Industrial and construction area	42	2.6	3	1.8	45	2.5
Farm	1,044	63.9	106	63.1	1,150	63.9
Other specified place of occurrence	37	2.3	5	3.0	42	2.3
Unspecified place of occurrence	446	27.3	46	27.4	492	27.3
Total	1,633	100	168	100	1,801	100

Glossary

admitted patient: A patient who undergoes a hospital's admission process to receive treatment and/or care. This treatment and/or care is provided over a period of time and can occur in hospital and/or in the person's home (for hospital-in-the-home patients). METeOR identifier: 268957.

care type: The care type defines the overall nature of a clinical service provided to an admitted patient during an episode of care (admitted care), or the type of service provided by the hospital for boarders or posthumous organ procurement (care other than admitted care). METeOR identifier: 270174

episode of care: The period of admitted patient care between a formal or statistical admission and a formal or statistical separation, characterised by only 1 care type (see **care type** and **separation**).

external cause: The environmental event, circumstance or condition as the cause of injury, poisoning and other adverse effect. METeOR identifier: 514295.

hospital: A health-care facility established under Commonwealth, state or territory legislation as a hospital or a free-standing day procedure unit and authorised to provide treatment and/or care to patients. METeOR identifier: 268971.

inpatient: See **admitted patient**. METeOR identifier: 268957.

International Statistical Classification of Diseases and Related Health Conditions (ICD): The World Health Organization's internationally accepted classification of diseases and related health conditions. The 10th revision, Australian modification (ICD-10-AM) is currently in use in Australian hospitals for admitted patients.

length of stay: The length of stay of an overnight patient is calculated by subtracting the date the patient is admitted from the date of separation and deducting days the patient was on leave. A same-day patient is allocated a length of stay of 1 day. METeOR identifier 269982.

mode of admission: The mechanism by which a person begins an episode of admitted patient care. METeOR identifier: 269976.

mode of separation: Status at separation of person (discharge/transfer/death) and place to which person is released (where applicable). METeOR identifier: 270094.

principal diagnosis: The diagnosis established after study to be chiefly responsible for occasioning an episode of admitted patient care. METeOR identifier: 514273.

separation: An episode of care for an admitted patient, which can be a total hospital stay (from admission to discharge, transfer or death) or a portion of a stay beginning or ending in a change of type of care (for example, from acute to rehabilitation). Separation also means the process by which an admitted patient completes an episode of care either by being discharged, dying, transferring to another hospital or changing type of care.

separations: The total number of episodes of care for admitted patients, which can be total hospital stays (from admission to discharge, transfer or death) or portions of hospital stays beginning or ending in a change of type of care (for example, from acute to rehabilitation) that cease during a reference period. METeOR identifier: 270407.

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Related publications

Kreisfield R 2008. Hospitalised farm injury among children and young people, Australia 2000–01 to 2004–05. NISU briefing no. 12. Cat. no. INJCAT 106. Canberra: AIHW.



Almost 22,000 people were hospitalised in the period from 2010–11 to 2014–15 as a result of injury which occurred on a farm; over three-quarters of them (77%) were males. Just over 71% of people hospitalised as a result of farm-related injury resided in Inner Regional and Outer regional remoteness zones. Injuries involving motorcycles and quad bikes accounted for 42% of hospitalisations in children aged 0–14 and 21% of hospitalisations in people aged 15 and over.

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