

Hospitalisations of Farm Injury Cases in Tasmania, 2004-08

Introduction

Agriculture is a major industry in Tasmania. However, farming is often considered to be a dangerous occupation with heightened risk of injury. This study examines the burden of agricultural related injuries admitting to Tasmania's public and private hospitals for the period 2004 to 2008. This report excludes forestry and fishing occupations.

Data and statistical methods

Hospitalisations of farm-related injuries used in this report are cases where the principal diagnosis is injury and the place of occurrence is on a farm. This includes farm buildings, cultivated land, and grasslands devoted to the raising of livestock. Farm houses are excluded, as are home garages, gardens or yards, and private swimming pools or tennis courts. This data covers injuries which occurred on a farm during leisure activities or when performing farm work.

The Australian Bureau of Statistics' (ABS) Population and Housing Census for 2006 asked questions on occupation, age and sex. Age distributions by sex for agricultural population in Tasmania were generated from ABS TableBuilder for persons who described their main occupation as agriculture. These age profiles were structured into five year age cohorts between 15 years and ≥ 85 years as shown in Appendix 1.

Due to difficulties in determining the number of children living on farms, this report mainly examines injuries experienced by agricultural population aged 15 years and over

Hospitalisation data were obtained in de-identified form from DHHS Information Unit, which includes both private and public hospital separations in Tasmania.

The hospitalisation rates presented in this report are expressed as annual average rates per 1,000 agricultural population over the five-year period 2004 to 2008. This reporting duration was selected due to yearly fluctuations of a small numbers of cases in the agricultural population.

A confidence interval has been used in this report to determine statistical significance for the difference among the rates. If two confidence intervals do not overlap, this indicates a statistically significant difference between two rates.

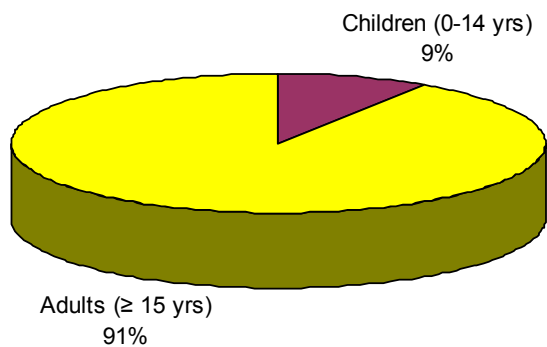
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Results

There were a total of 432 hospitalisations (337 for males and 95 for females) for farm-related injuries in Tasmania for the period. This equates to an average of 86 hospitalisations per year over the period.

As shown in Figure 1, 91% of all hospitalisations for farm-related injuries occurred in persons aged 15 years and over in Tasmania.

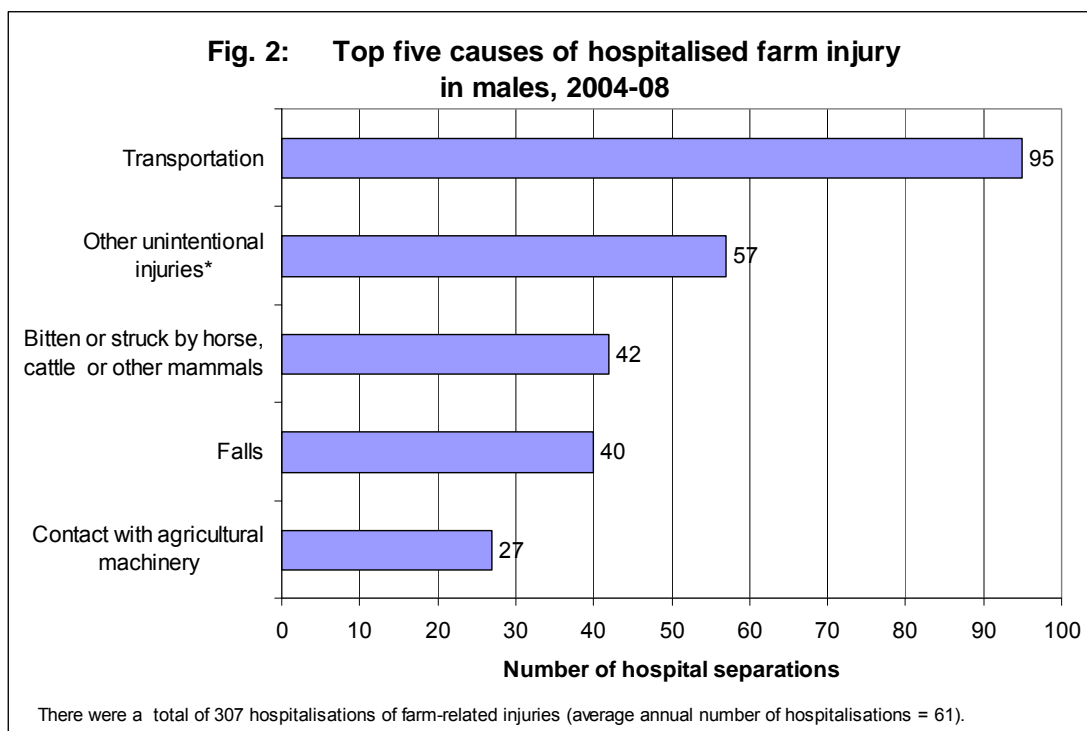
Fig. 1: Hospitalisations of farm-related injuries (all-cause) by age group Tasmania, 2004-08



Note: 1. Include public and private hospitals. 2. Exclude deaths at scene of injury. 3. % of all hospitalisations of farm injury. 4. There were a total of 432 hospitalisations of farm-related injuries during 2004-08 (average annual number of hospitalisations = 86).

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As shown in Figure 2, the most common cause of hospitalised farm injuries among males aged 15 years and over was transportation. This is followed by other unintentional injuries, being bitten or struck by horse, cattle or other mammals, falls, and contact with agricultural machinery.

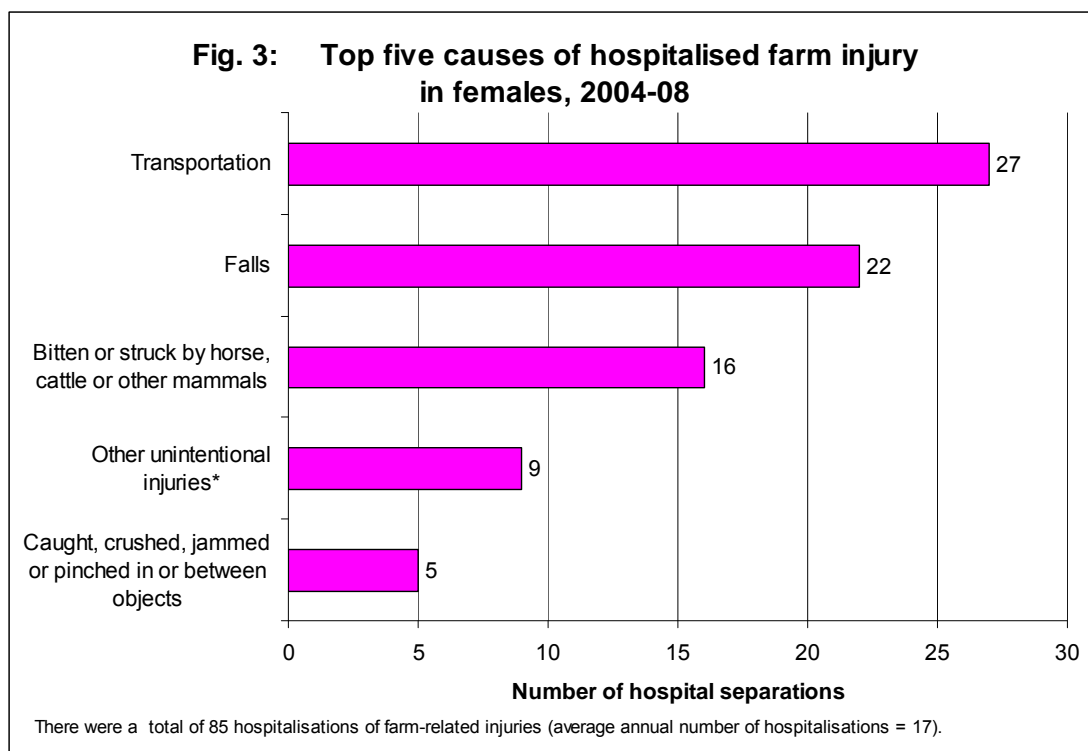


*Includes the following conditions:

- Striking against or struck by other objects.
- Contact with lifting and transmission devices, not elsewhere classified.
- Contact with other powered hand tools and household machinery.
- Discharge from other and unspecified firearms.
- Foreign body or object entering through skin.
- Bitten or crushed by other reptiles.
- Exposure to high and low air pressure and changes in air pressure.
- Contact with venomous snake.
- Overexertion and strenuous or repetitive movements.
- Exposure to unspecified factor.
- Sequelae of other and unspecified transport accidents.

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As shown in Figure 3, the most common cause of hospitalised farm injuries among females aged 15 years and over was transportation. This was followed by falls, being bitten or struck by horse, cattle or other mammals, other unintentional injuries, and being caught, crushed, jammed or pinched in or between objects.

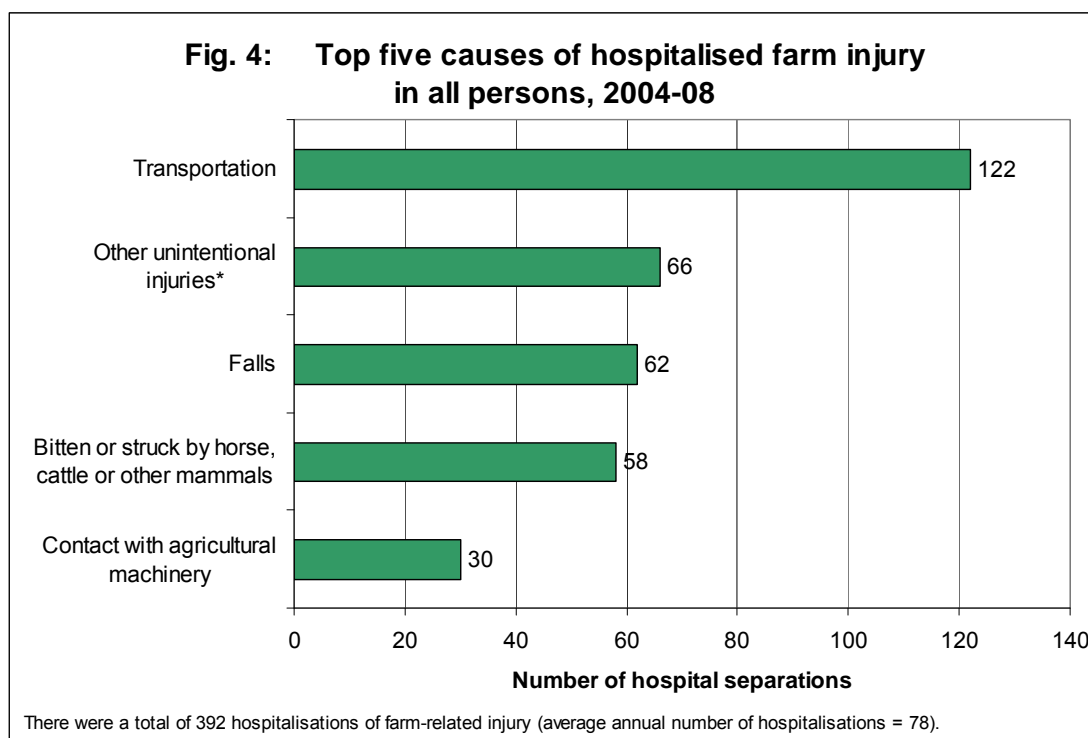


*Includes the following conditions:

- Striking against or struck by other objects.
- Foreign body or object entering through skin.
- Contact with unspecified venomous snake.
- Overexertion and strenuous or repetitive movements.

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As shown in Figure 4, the most common cause of hospitalised farm injury in all persons (males and females combined) aged 15 years and over was transportation, then followed by other unintentional injuries, falls, being bitten or struck by horse, cattle or other mammals, and agricultural machinery.

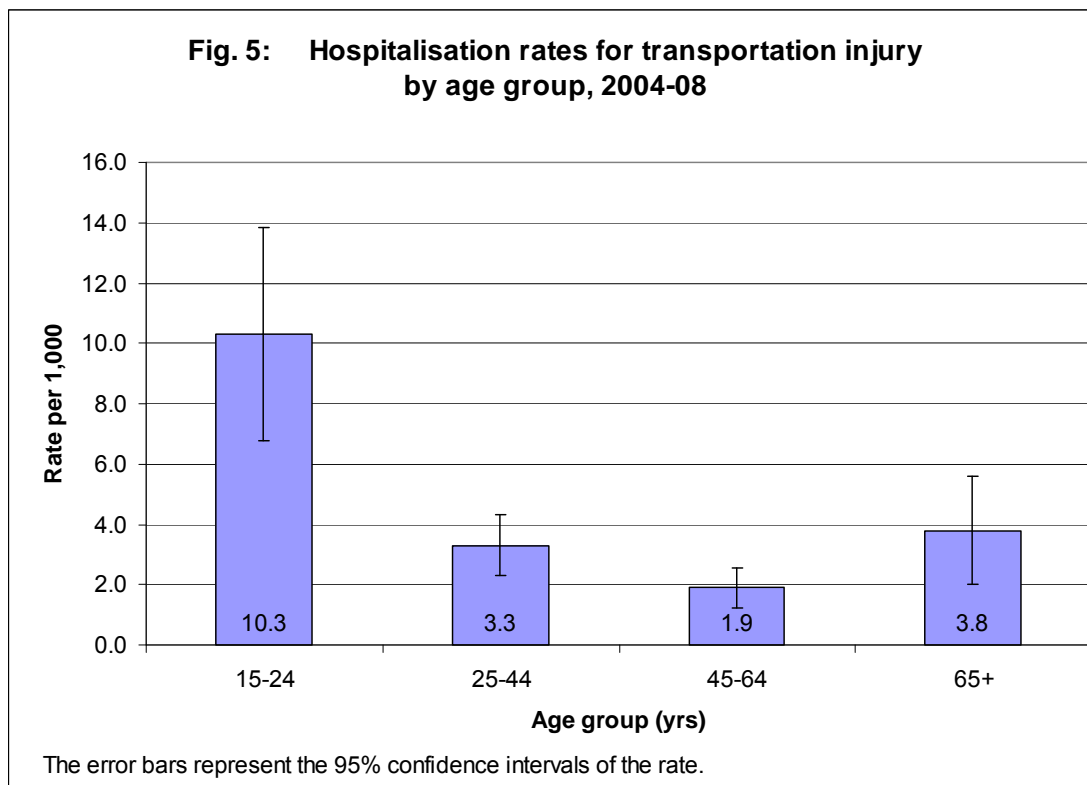


*Includes the following conditions:

- Striking against or struck by other objects.
- Contact with lifting and transmission devices, not elsewhere classified.
- Contact with knife, sword or dagger.
- Contact with nonpowered hand tool.
- Contact with other powered hand tools and household machinery.
- Discharge from other and unspecified firearms.
- Foreign body entering into or through eye or natural orifice.
- Foreign body or object entering through skin.
- Bitten or crushed by other reptiles.
- Exposure to other and unspecified animate mechanical forces.
- Exposure to high and low air pressure and changes in air pressure.
- Contact with unspecified venomous snake.
- Exposure to excessive natural heat.
- Overexertion and strenuous or repetitive movements.
- Exposure to unspecified factor.
- Sequelae of other and unspecified transport accidents.

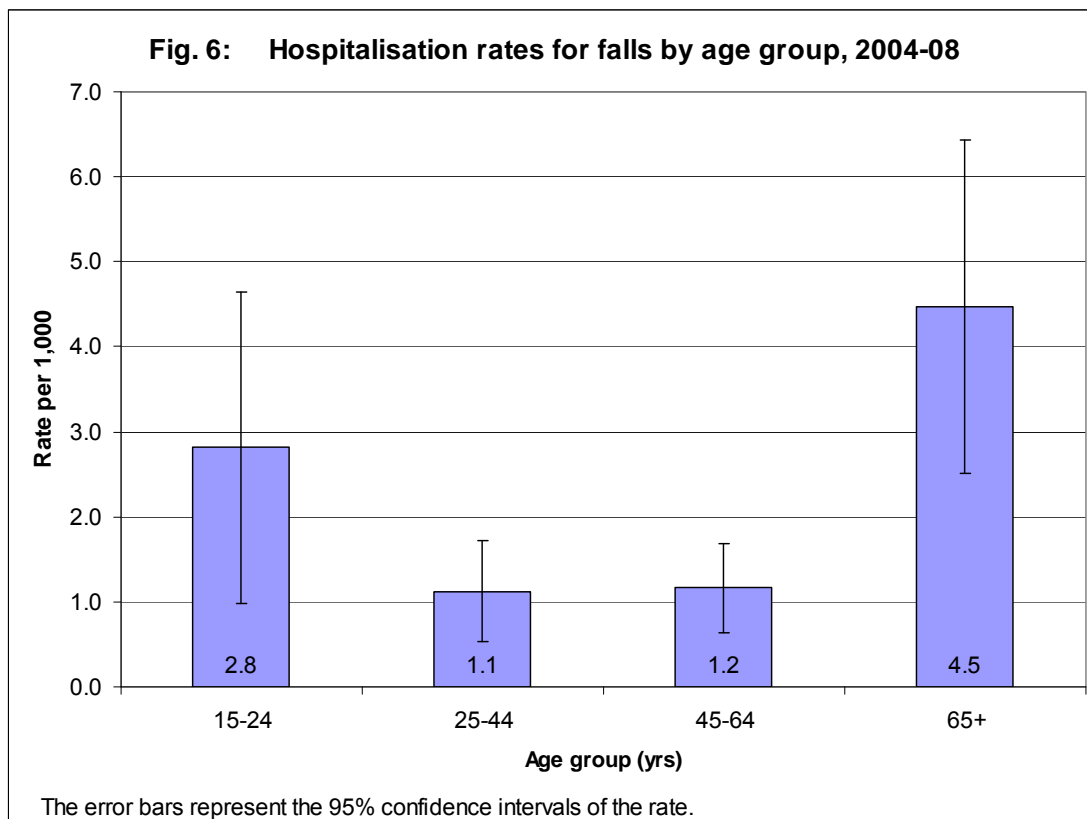
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As shown in Figure 5, young people in the 15-24 age group experienced the highest hospitalisation rate (10.3 per 1,000 agricultural population) for transportation injuries for the period. This rate was significantly higher than all other age groups.



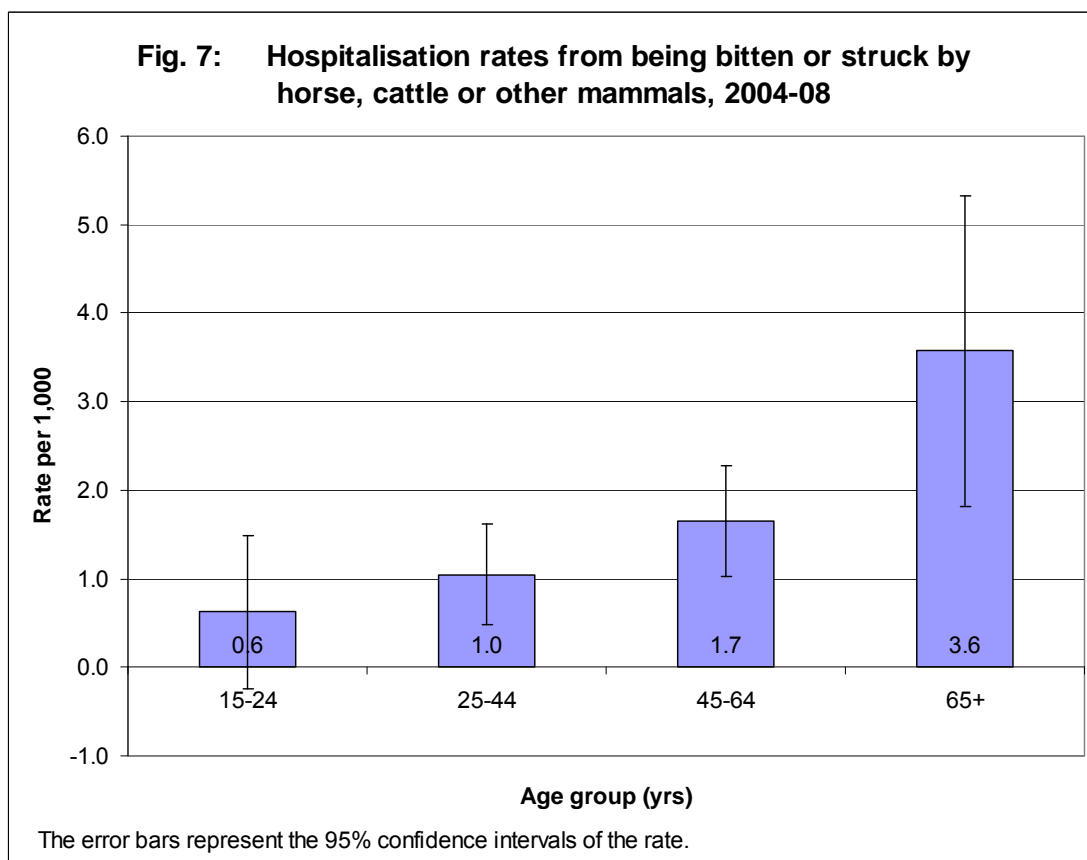
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As shown in Figure 6, persons aged 65 year and over recorded the highest hospitalisation rate for falls (4.5 per 1,000 agricultural population). This rate was significantly higher than the 25-44 and 45-64 age groups.



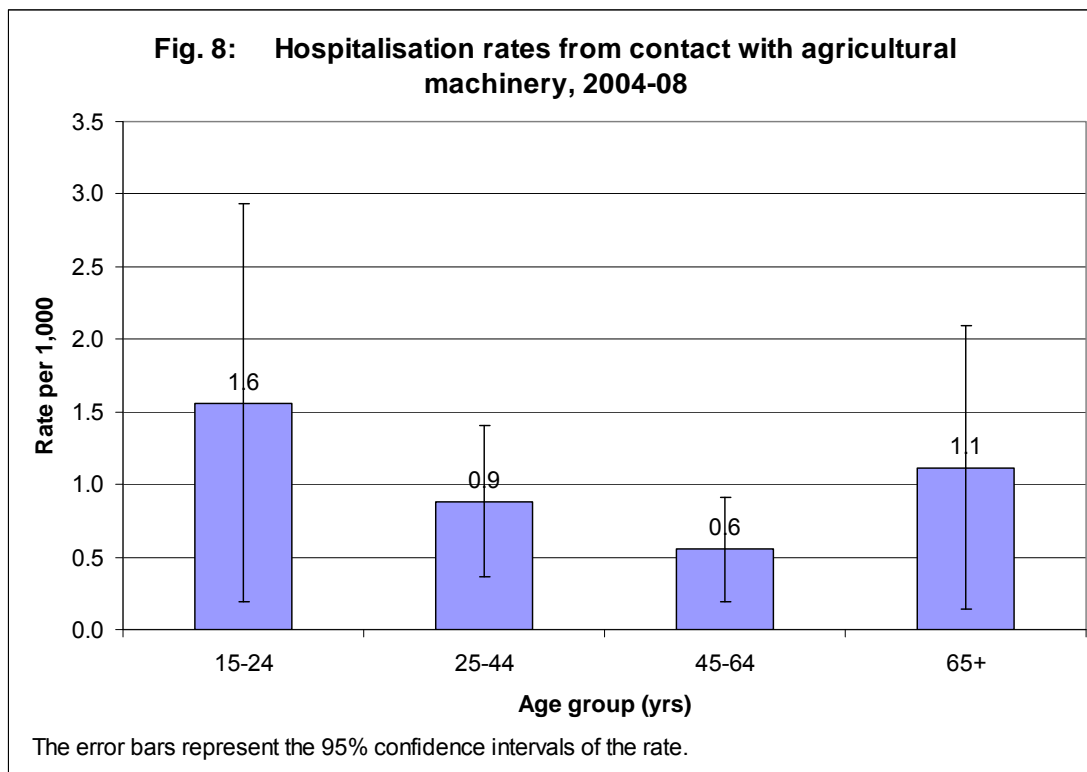
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As shown in Figure 7, the hospitalisation rates for being bitten or struck by horse, cattle or other mammals steadily increased with age. People aged 65 years and over had the highest hospitalisation rate (3.6 per 1,000 agricultural population). This rate was significantly higher than the 15-24 and 25-44 age groups. Appendix 2 provides a further breakdown of this type of injury by animal type.



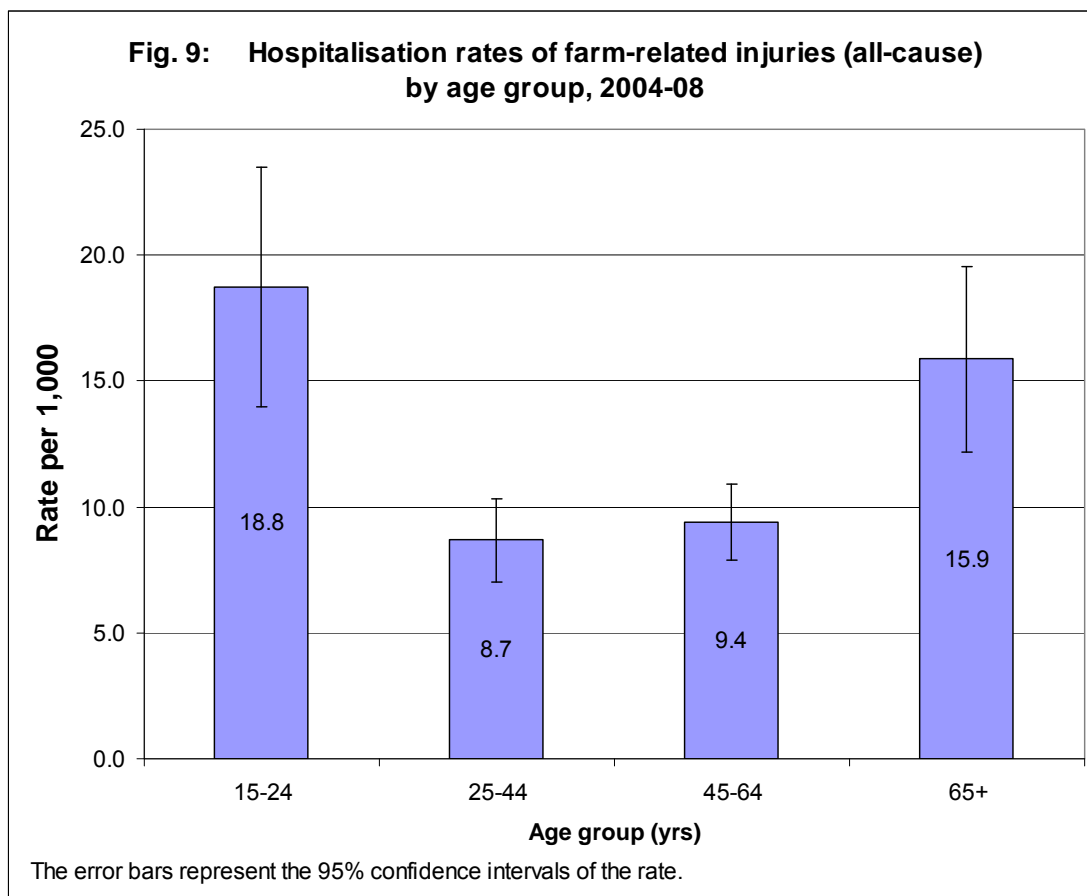
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As shown in Figure 8, young people aged 15-24 years had the highest hospitalisation rate for contact with agricultural machinery. However, there was no statistically significant difference found when compared with other age groups.



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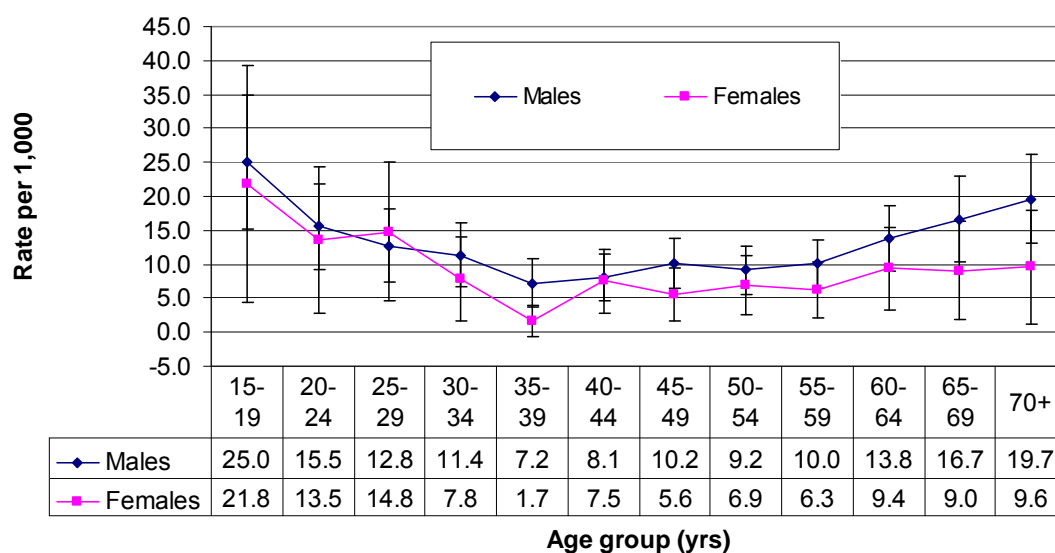
As shown in Figure 9, the highest hospitalisation rates of farm-related injuries for all causes were recorded in the 15-24 (18.8 per 1,000 agricultural population) and ≥65 (15.9 per 1,000 agricultural population) age groups. Both rates were significantly higher than the 25-44 and 45-64 age groups.



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As shown in Figure 10, hospitalised farm injuries were more common among males than females across all age groups with the exception of the 25-29 age group (12.8 per 1,000 males and 14.8 per 1,000 females). However, there were no statistically significant differences found in the rates for all age groups between males and females.

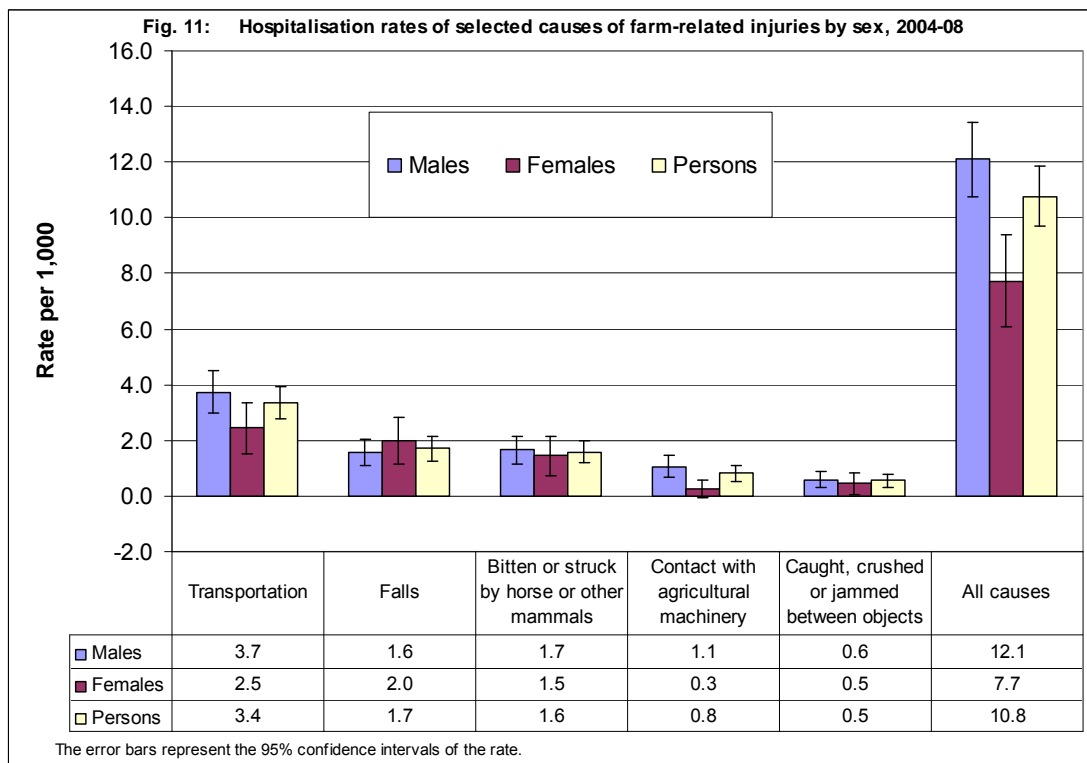
Fig. 10: Hospitalisation rates of farm-related injuries (all-cause) by age group and sex, 2004-08



The error bars represent the 95% confidence intervals of the rate.

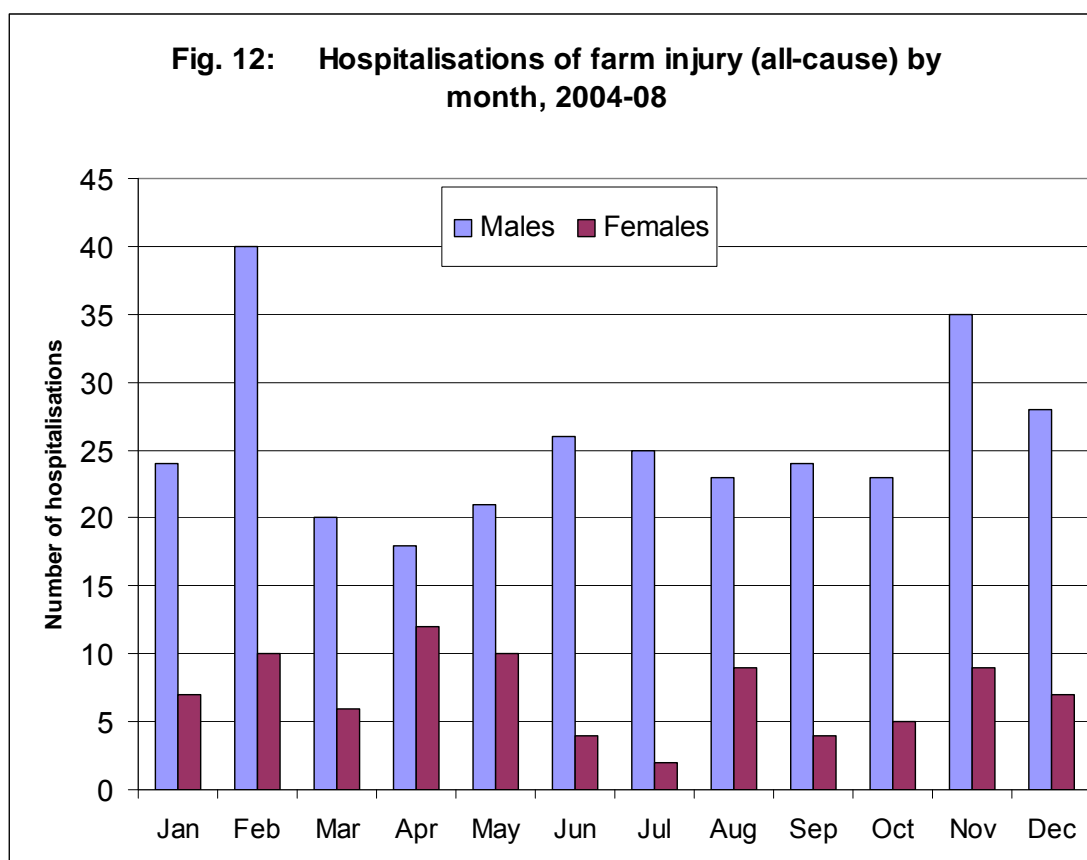
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As shown in Figure 11, the hospitalisation rates for males in both contact with agricultural machinery and all causes were significantly higher than the rates for females. Significant differences were not found for other selected causes between males and females.



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Figure 12 presents the monthly numbers of hospitalisations of farm-related injuries for all causes. February and November for males were the two peak months; March and April were the two lowest months. The numbers of injuries for females were relatively consistent throughout the year with a broad peak in February, April and May; the lowest numbers were recorded in June and July.



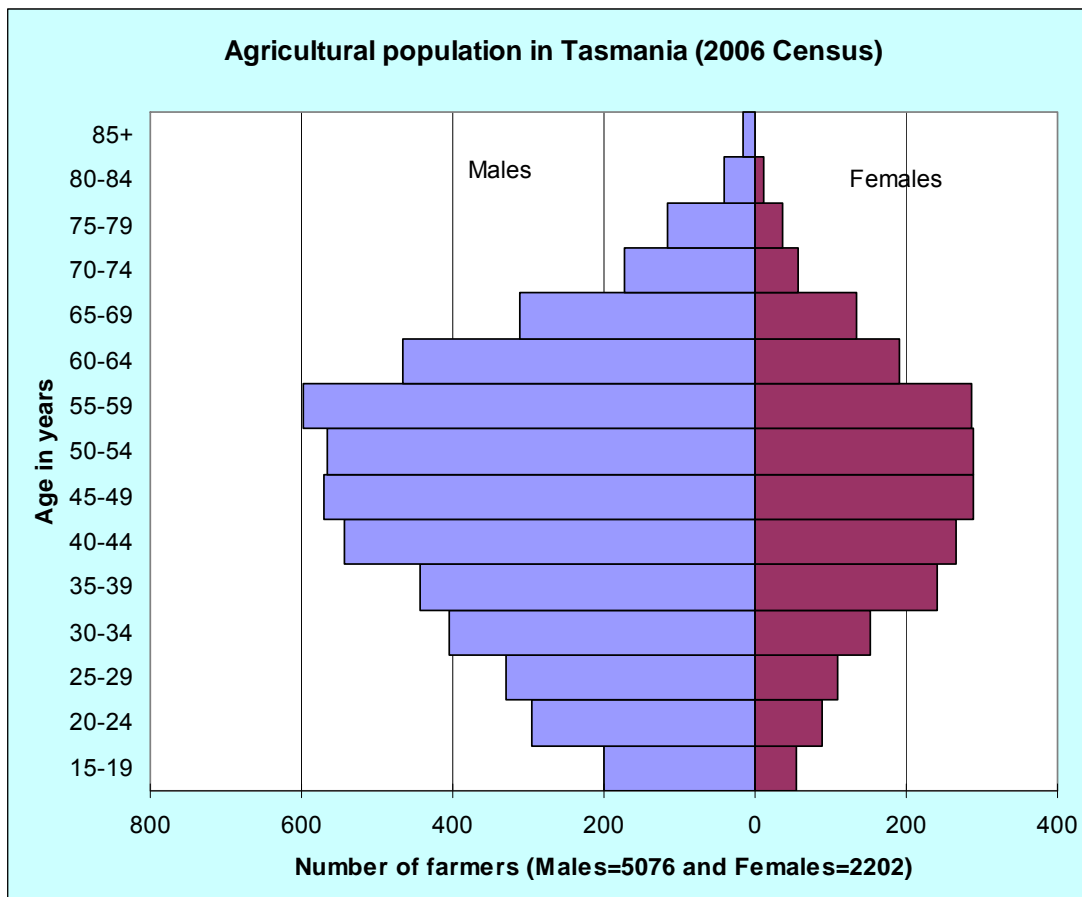
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Summary

- There were a total of 392 cases of injuries for people aged 15 years and over admitted to Tasmanian hospitals (public & private) in the period 2004-08, where the location of where the injury occurred was classified as a farm.
- Of the 392 cases, 307 (78.3%) were males.
- During the five-year reporting period, the annual average rate of hospitalisation due to farm-related injuries (all causes) was 12.1 per 1,000 agricultural population for males and 7.7 per 1,000 for females.
- Transportation, being bitten or struck by horse, cattle or other mammals, and falls are the leading causes of hospitalisation for farm injuries in Tasmania.
- Injury rates on farms increased with age. Male rates were higher than female rates in all age groups except for the 25-29 age group.
- More injuries occurred in February and November, higher than any other month in the year.
- The findings from this report suggest that injury prevention programs for agricultural population could focus on activities that cause the highest number of injuries requiring hospitalisation (specifically, transportation, horse riding and cattle handling as well as falls).

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Appendix I: Agricultural population in Tasmania (2006 Census)



Appendix 2: Hospitalisations from contact with farm animals

Hospitalisations from being bitten or struck by horse, cattle or other mammals
Tasmania, 2004-08

	Males	%	Females	%	All persons	%
Horse	5	11.9%	6	37.5%	11	19.0%
Cattle	21	50.0%	<5	25.0%	25	43.1%
Sheep	<5	9.5%	<5	12.5%	6	10.3%
Other specified mammal	12	28.6%	<5	25.0%	16	27.6%
Total	42	100.0%	16	100.0%	58	100.0%