

# Cattle-related trauma in Central Queensland

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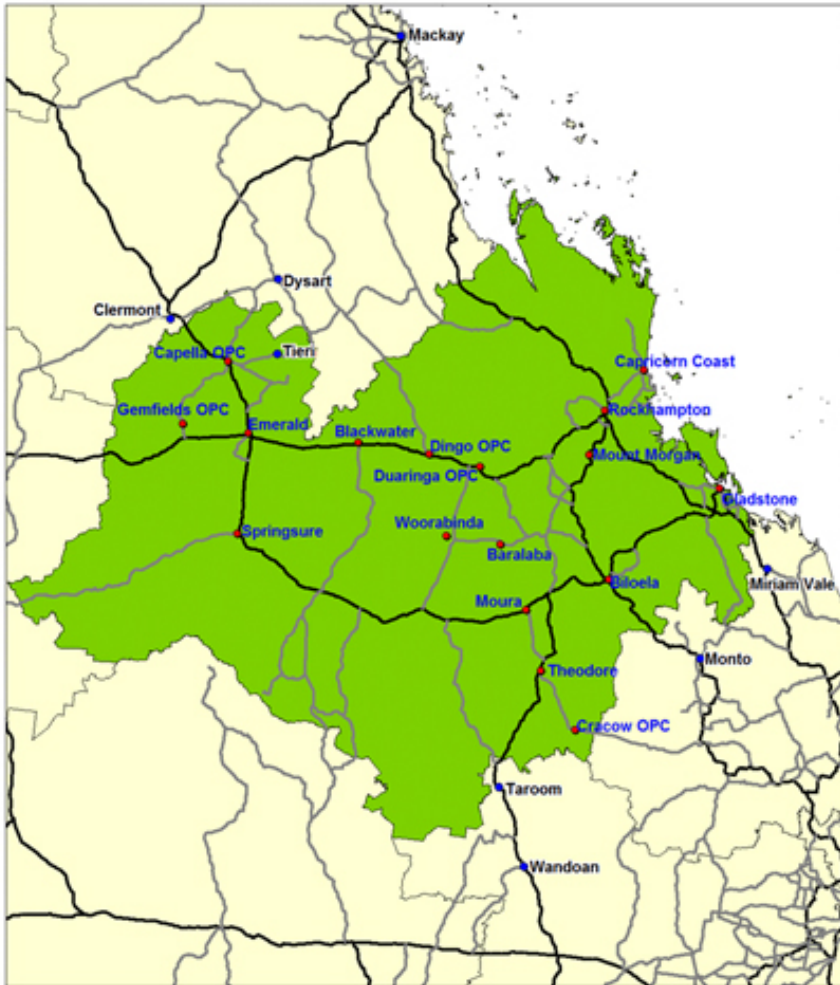
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# Rockhampton



# Central Queensland Hospital and Health Service



Over 117 000 square kilometres

# Beef Capital



# Beef Production



# Great Western Hotel





# Questions

- How many patients admitted to hospital?
- Who are they?
- How are they injured?
- What are the injuries?

# Methods

5 year retrospective study (2011-2015)

Patients admitted to Rockhampton Hospital

Trauma from direct contact with Cattle

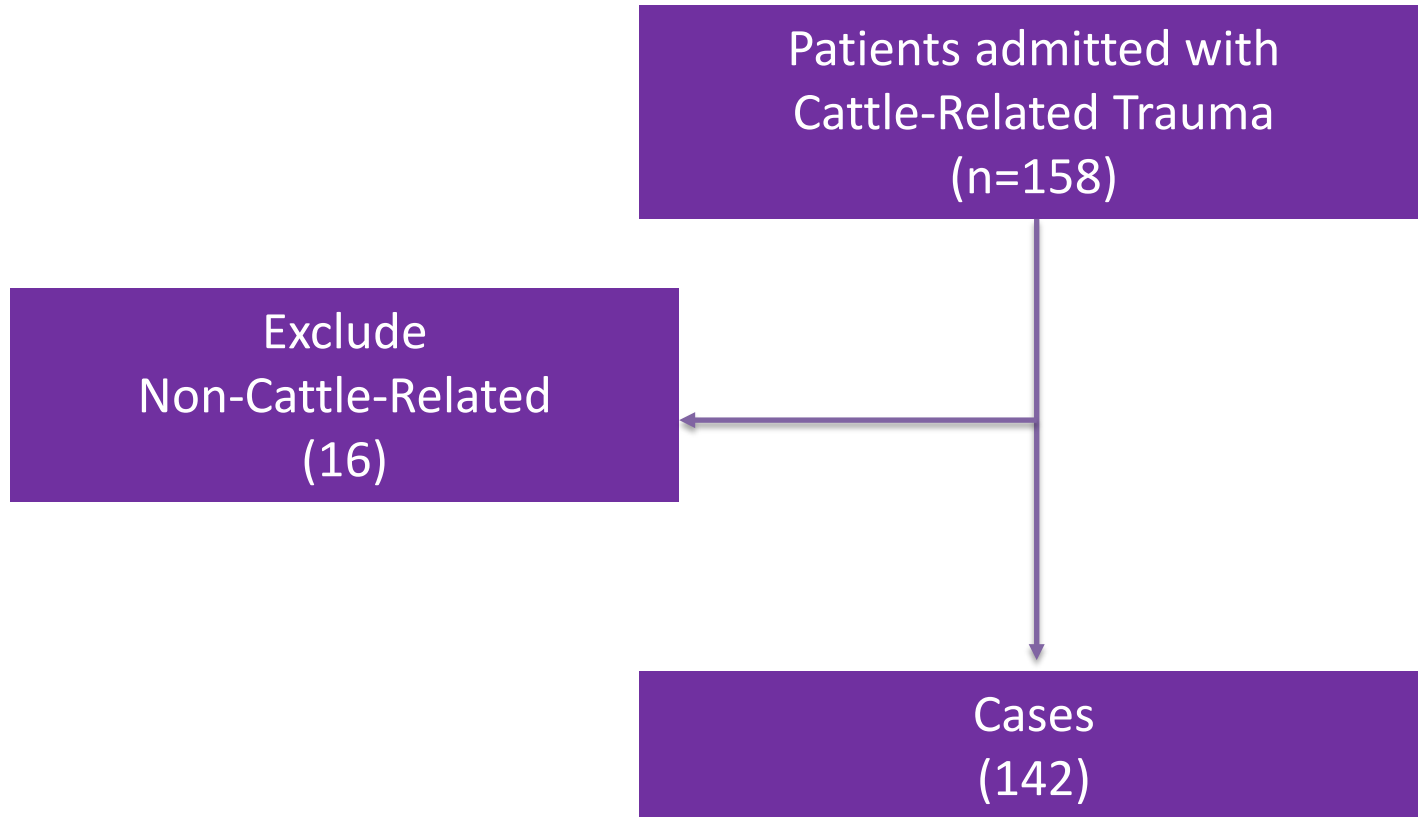


# Inclusion Criteria

## ICD-10-AM classifications:

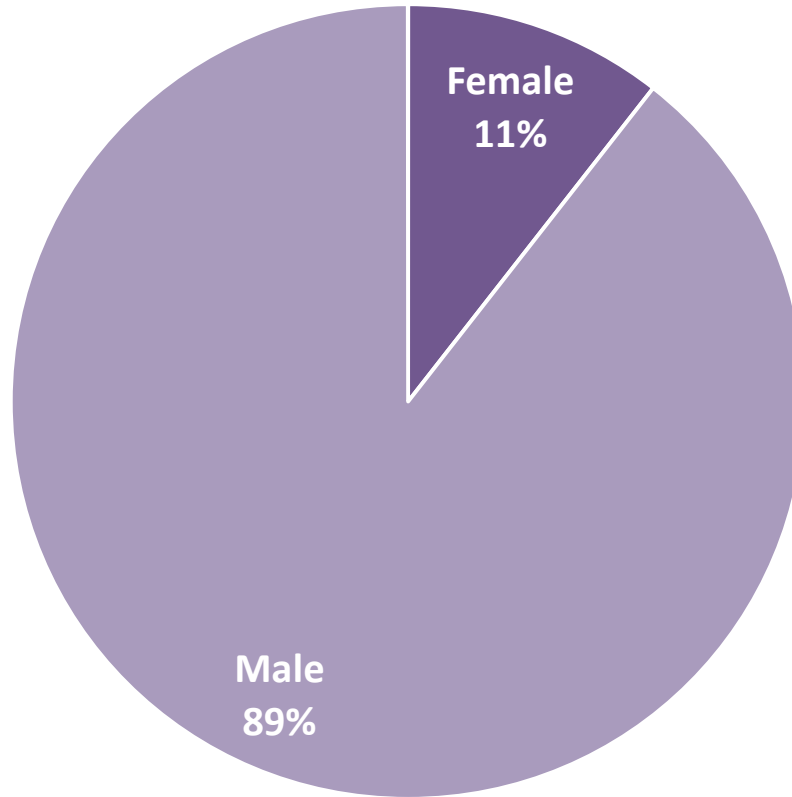
- U63.4 – Rodeo
- V80 - Animal-rider or occupant of animal-drawn vehicle injured in transport accident
- W55.2 – Bitten or Struck By Cattle

# Methods

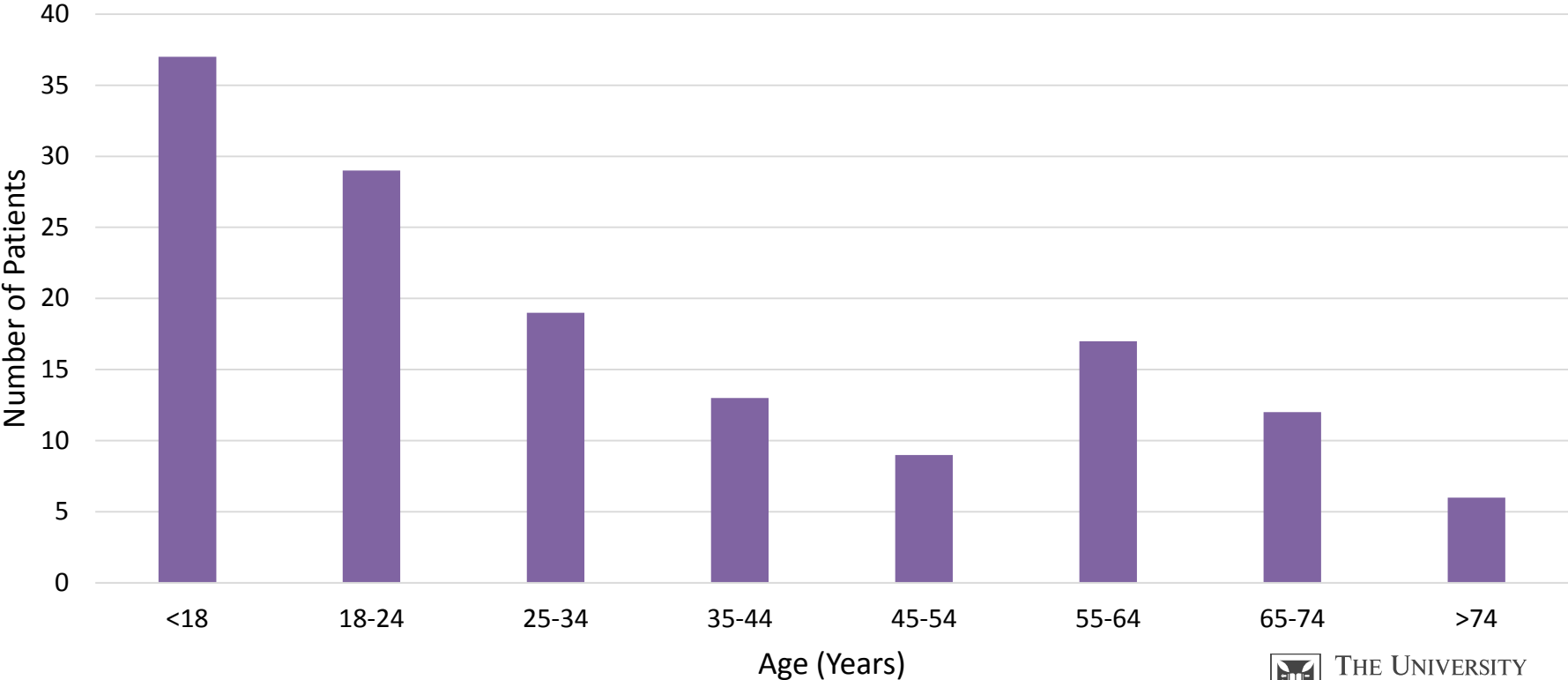


# Results

# Gender



# Age Distribution



Median (IQR) 27 (17-55) years

# Activity when injury occurred

Bull-riding (69)

Mustering (13)

Working with Cattle (11)

Steer Roping (4)

Unknown (44)



# Bull-Riding

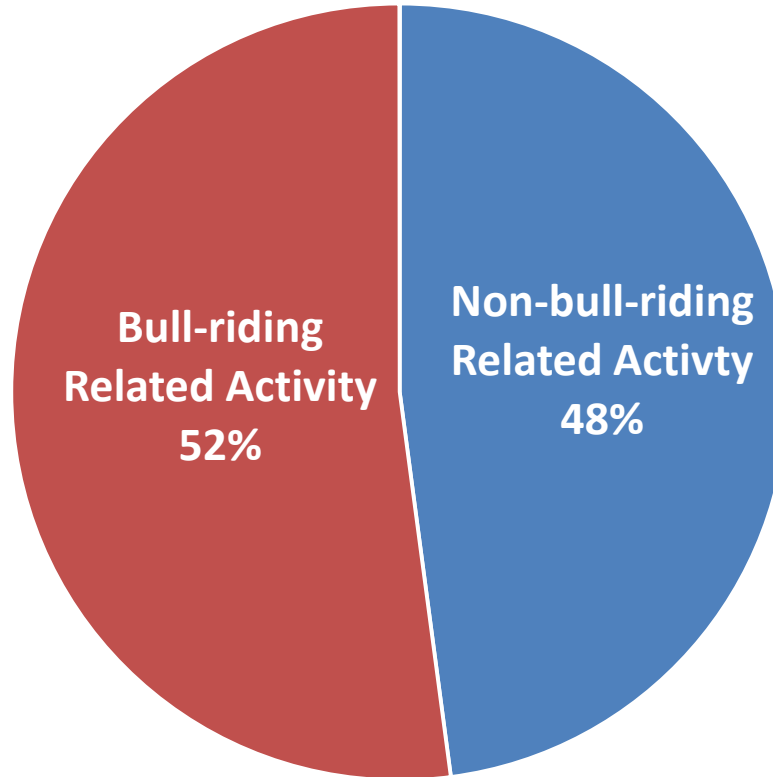




# Non-Bull-Riding

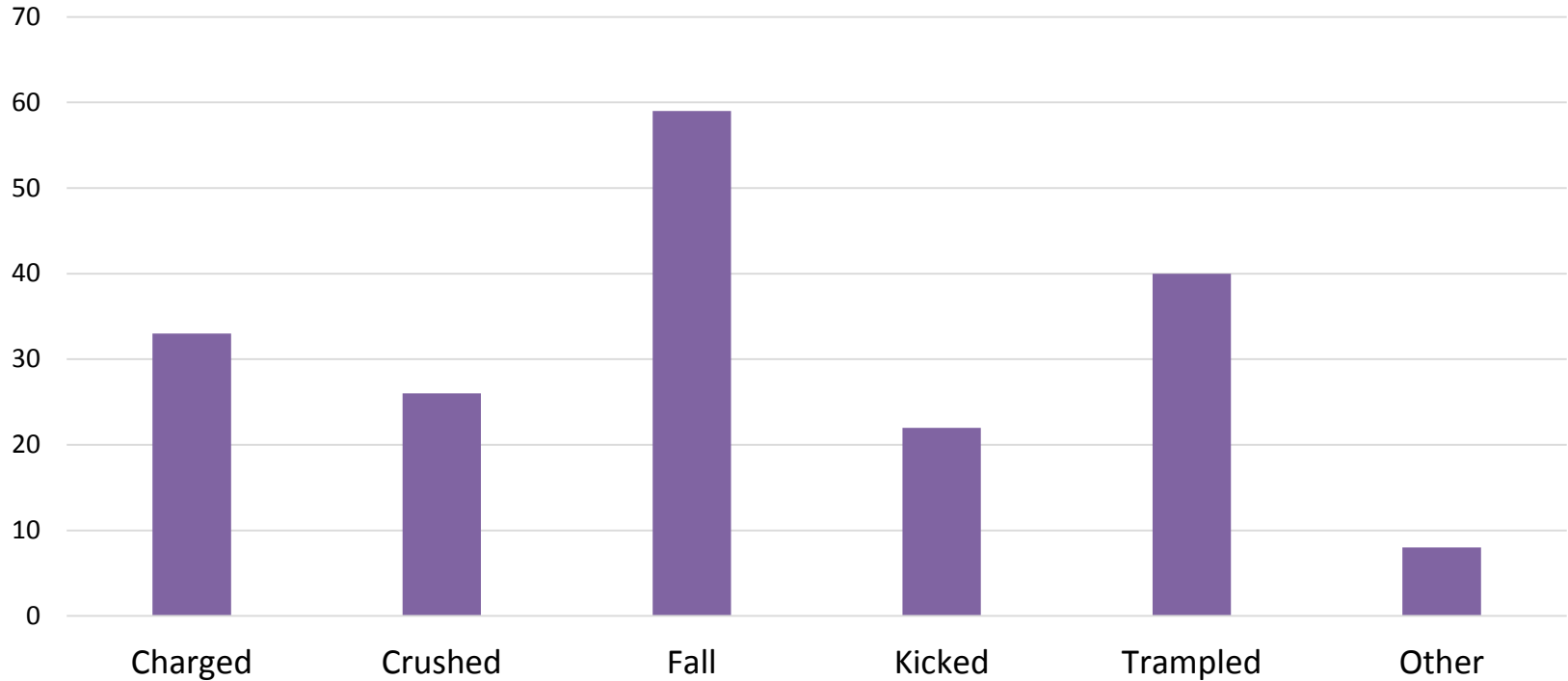


# Activity When Injury Occurred

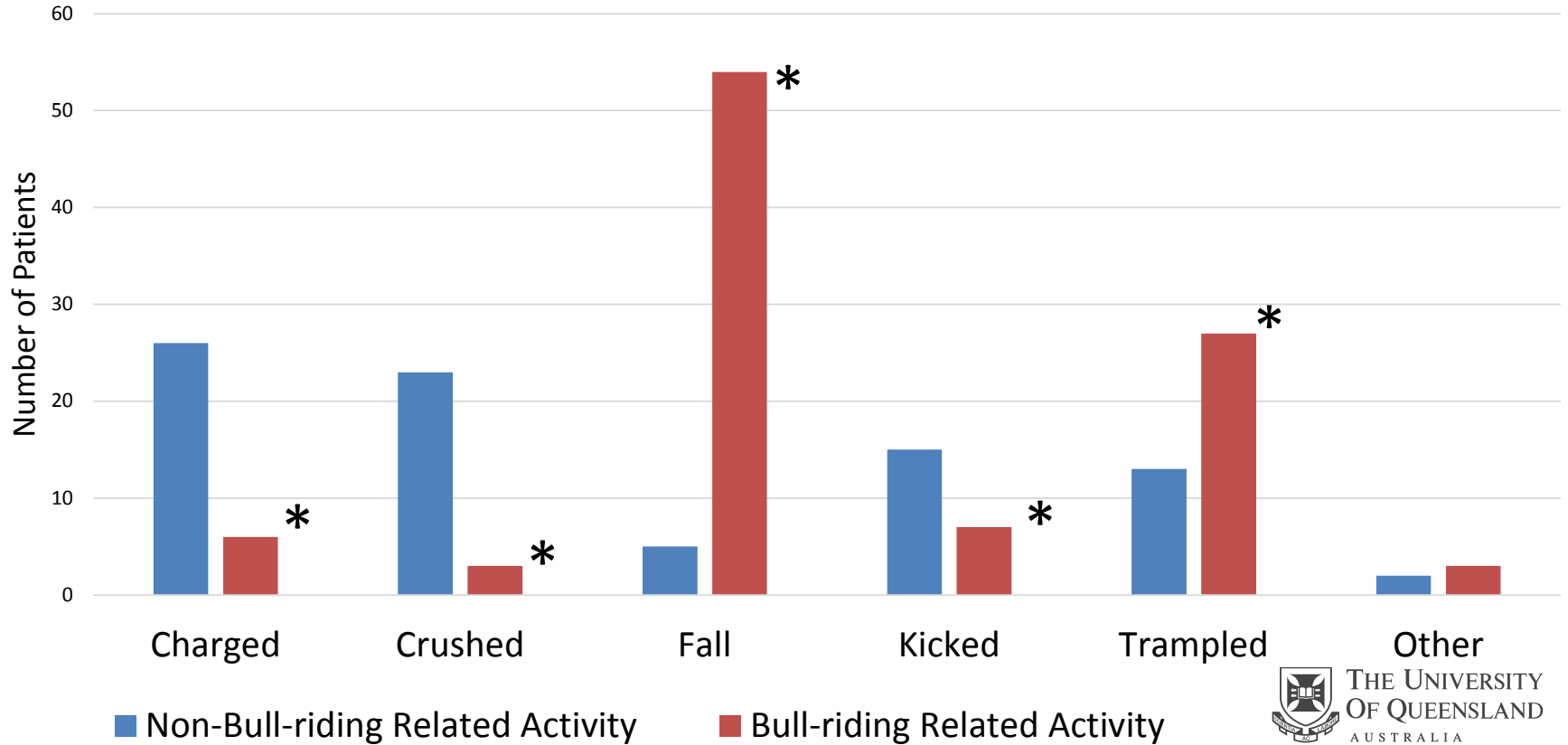


	Bull-riding (%)	Non-bull-riding (%)	
n (%)	n=74	n=68	
Gender			
Male	74(100)	53 (77.94)	p <0.001
Age mean ± SD	19.9± 0.81	51.14 ± 2.21	p <0.001
Occupation			
Cattle-related Occupation	6 (8.11)	35 (52.47)	p <0.001

# Mechanism of Injury - Cohort



# Mechanism of Injury



\* p<0.05

# Crushed



## AIS

1 Minor

2 Moderate

3 Serious

4 Severe

5 Critical

6 Maximal

9 Unknown

# Injury Severity

Abbreviated Injury Scale (AIS)

Association for the Advancement  
of Automotive Medicine (2016)

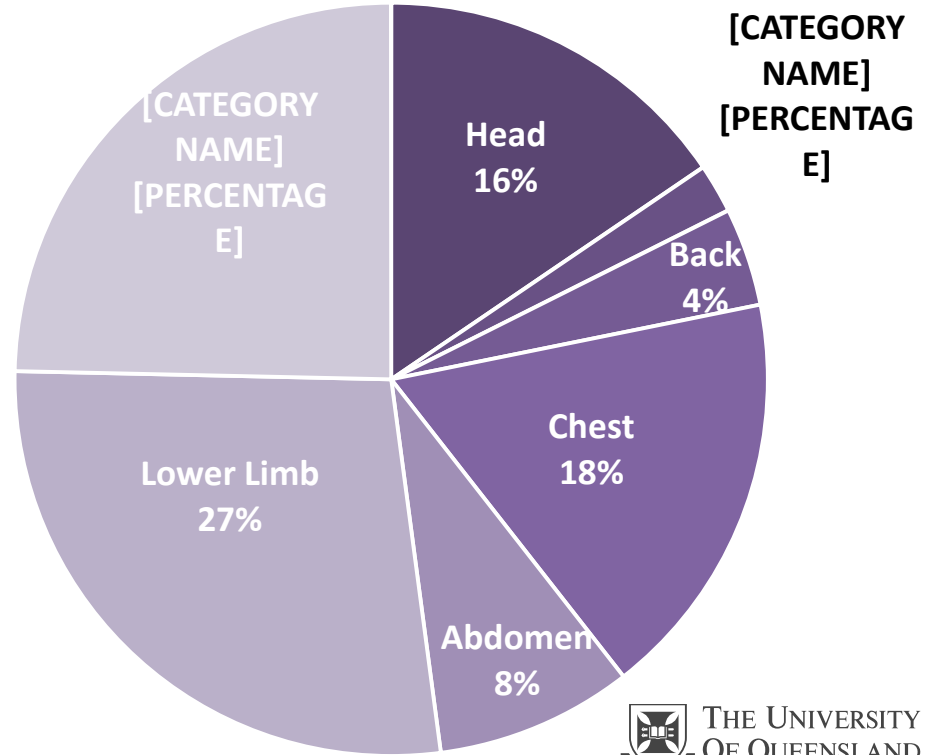
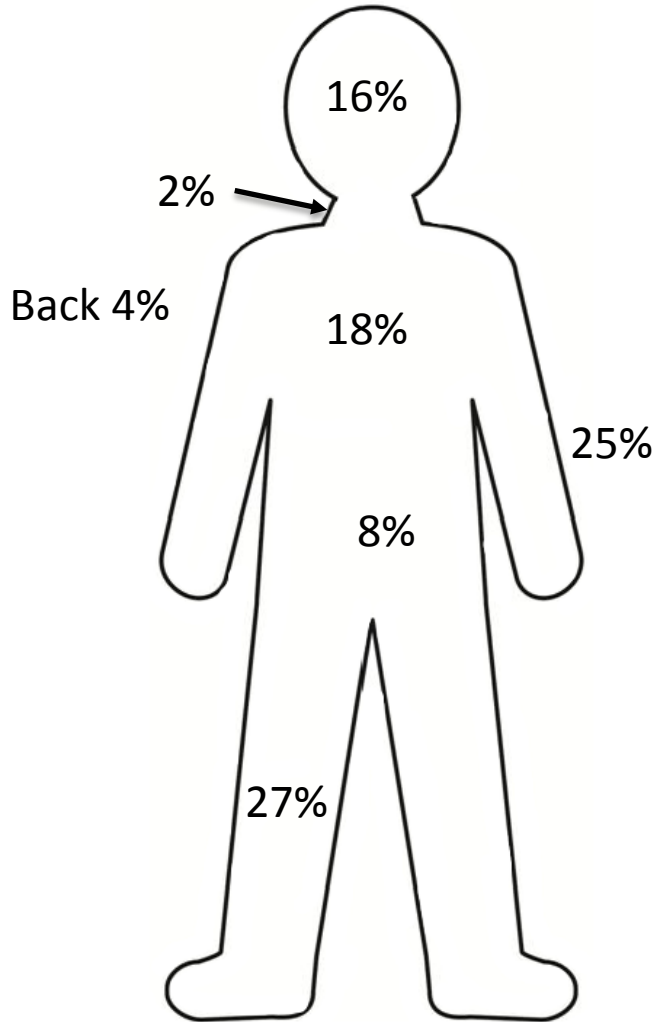


# Dominant Injury

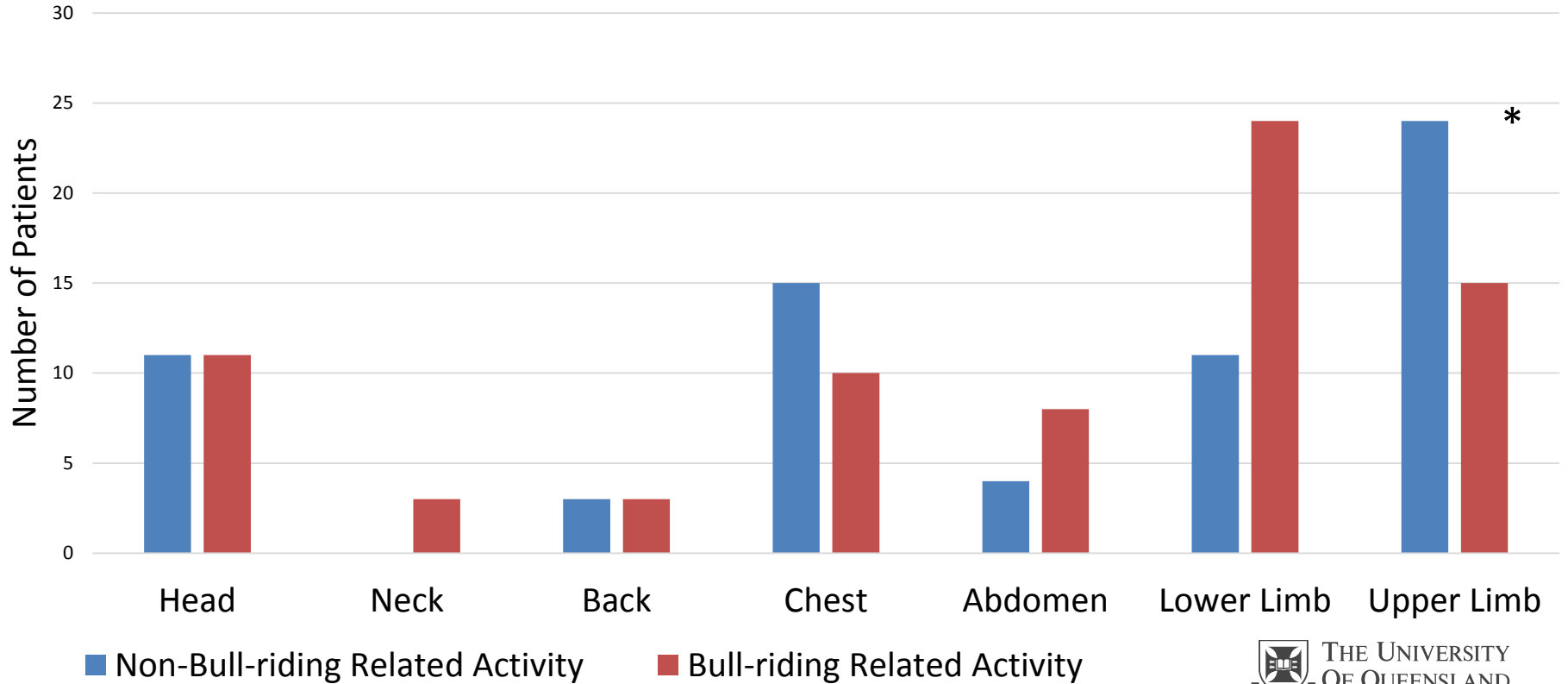
Determined by:

1. Injury with Highest Severity
2. If multiple injuries with the same severity – Expert opinion  
Head > Chest > Abdomen > Limbs

# Site of Dominant Injury

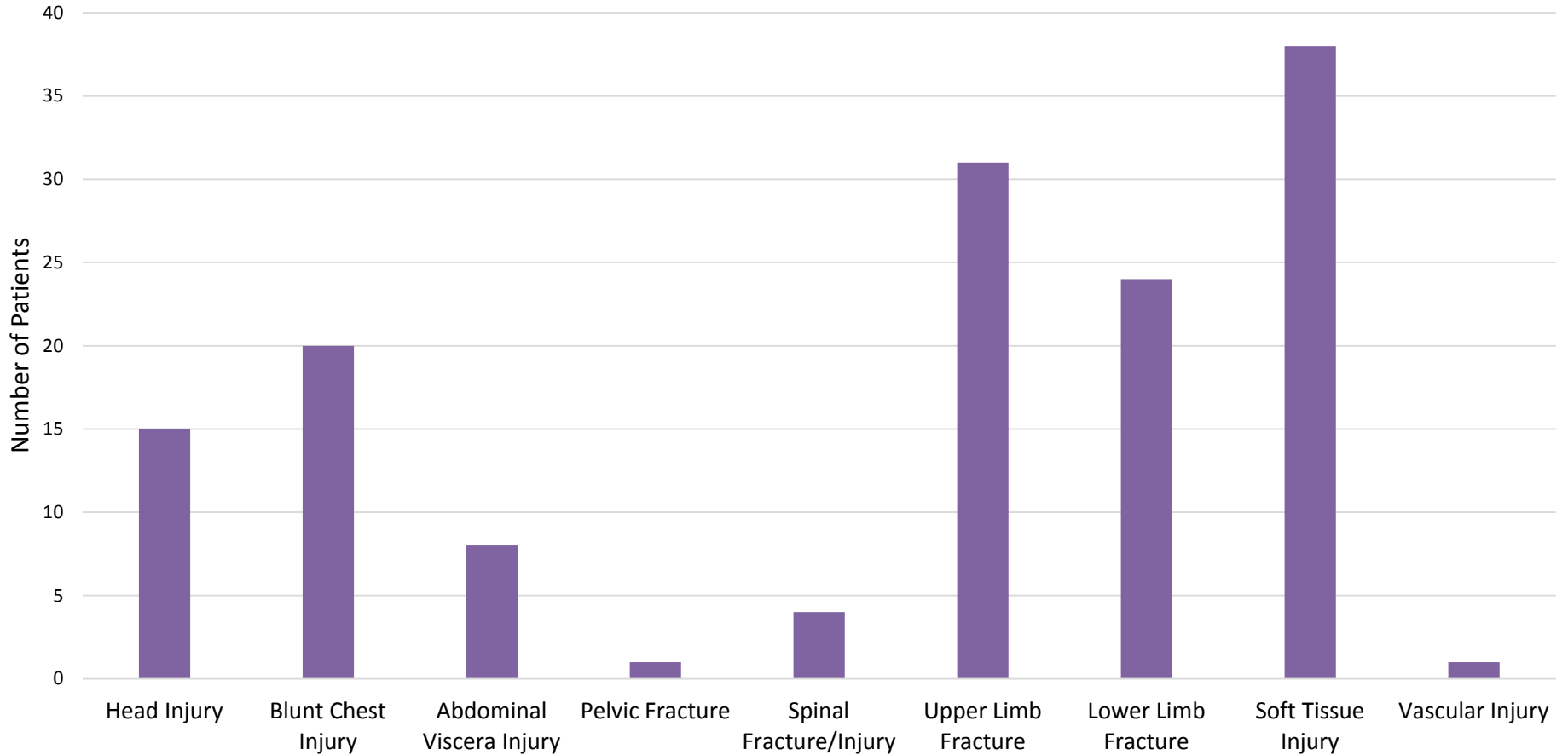


# Comparison of Dominant Injury Site Distribution

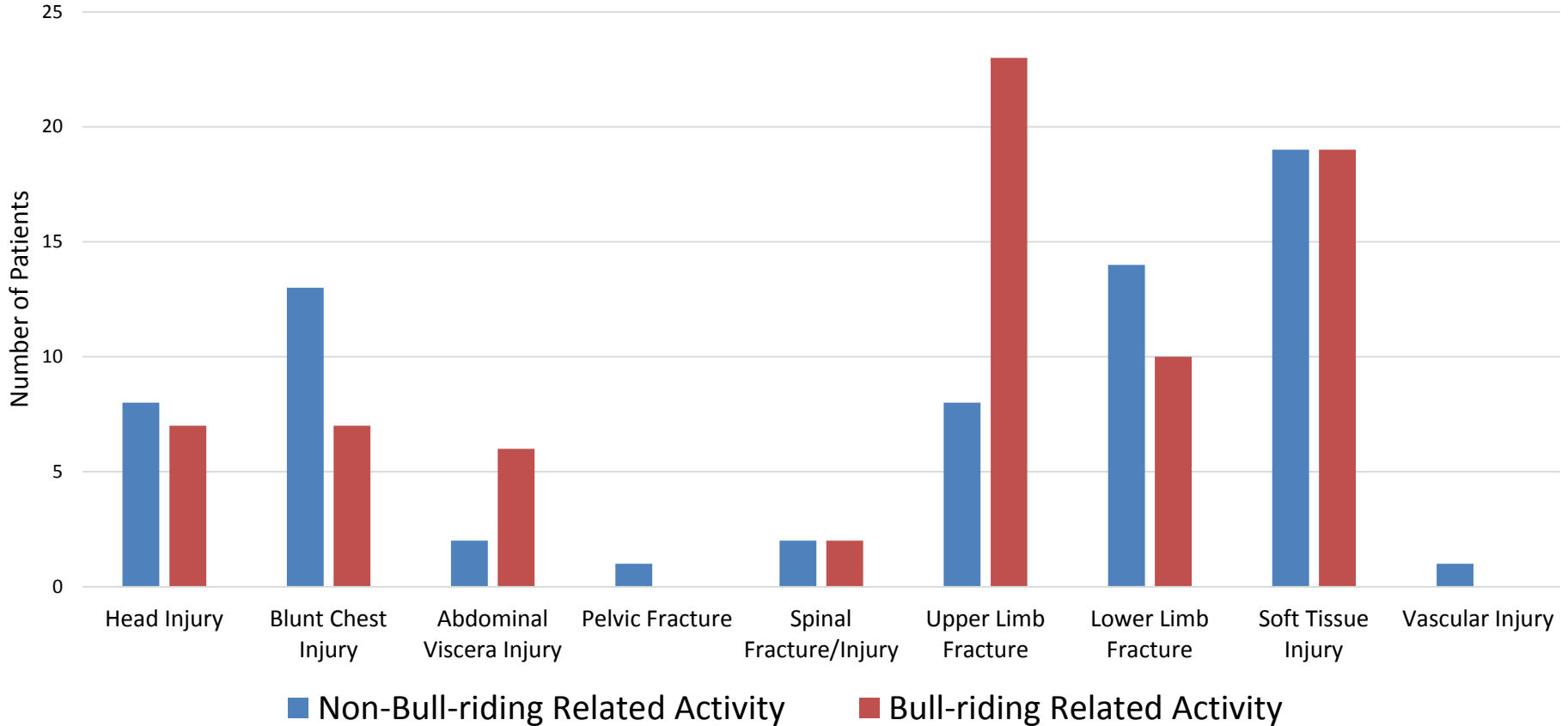


\*  $p < 0.05$  Distribution between groups

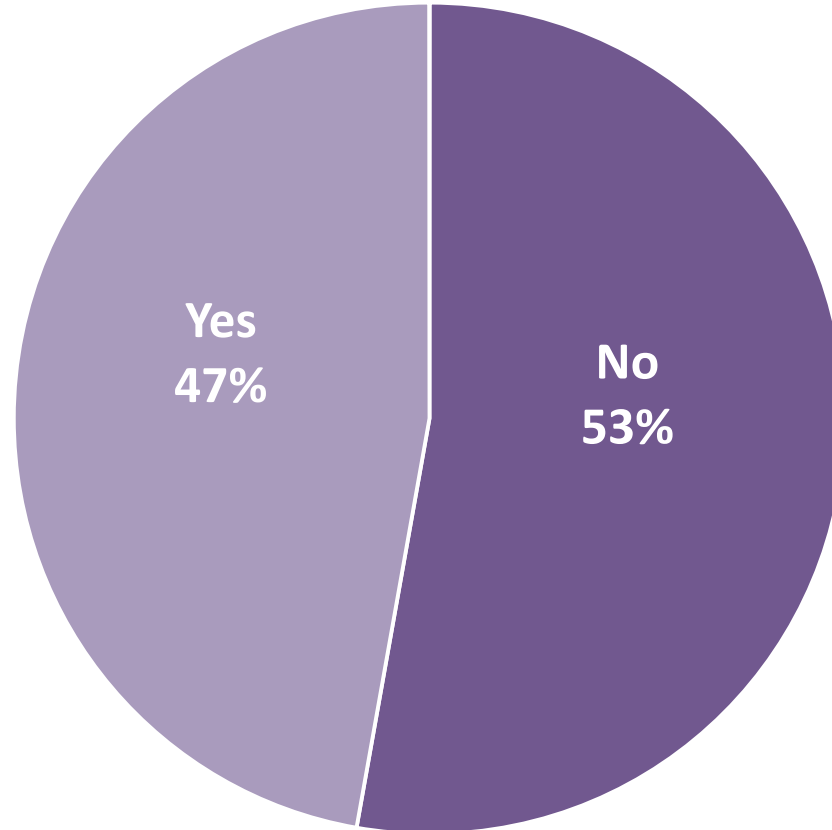
# Dominant Injury



# Dominant Injury



# Multiple Injuries



# Injury Severity Score

Mortality, morbidity and hospitalisation time after trauma

Scores range from 1 to 75

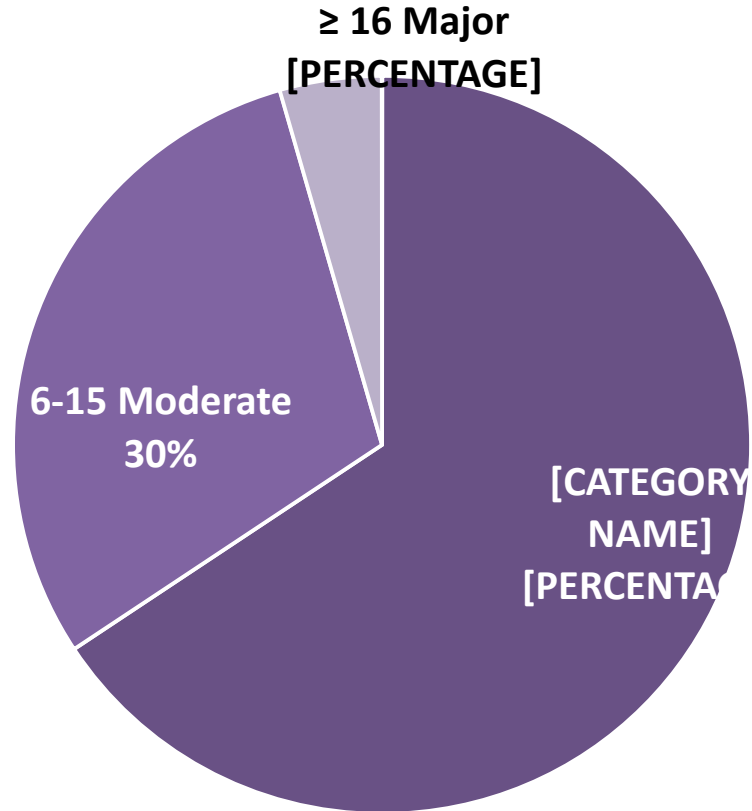
6 Body Regions

Square three highest AIS

Major Trauma, ISS  $\geq$  16



# Injury Severity Score



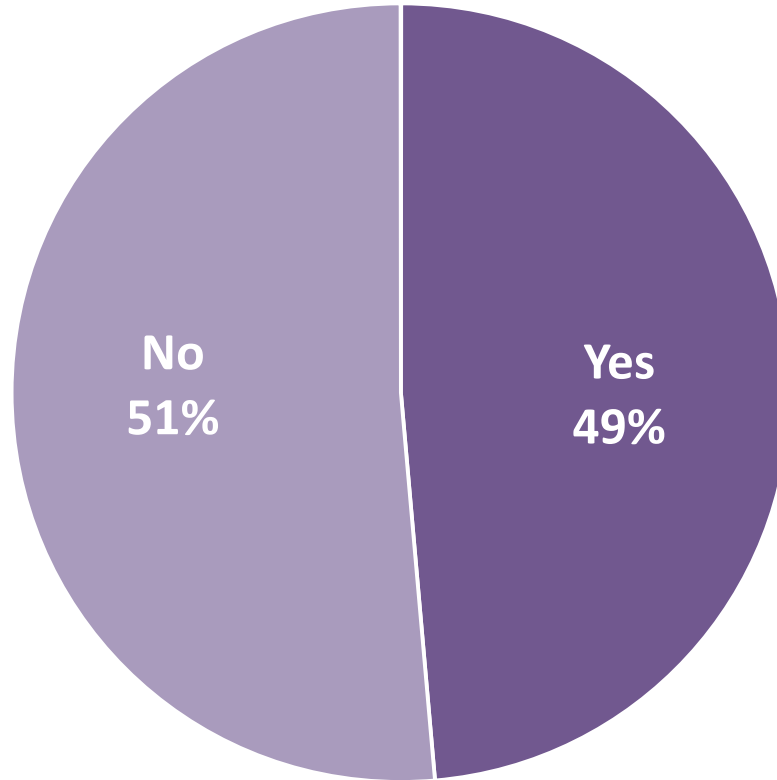
Patients with multiple injuries n=67

# Major Trauma $\geq 16$

## 3 Patients

1. Cervical Spine and Skull Fractures
2. Grade 3-4 Kidney Laceration
3. Diffuse axonal Injury, Multiple Rib and Clavicle Fractures

# Operative Interventions



# Surgery Performed

Total 69 patients required Operative Intervention

Orthopaedic Surgery n=66

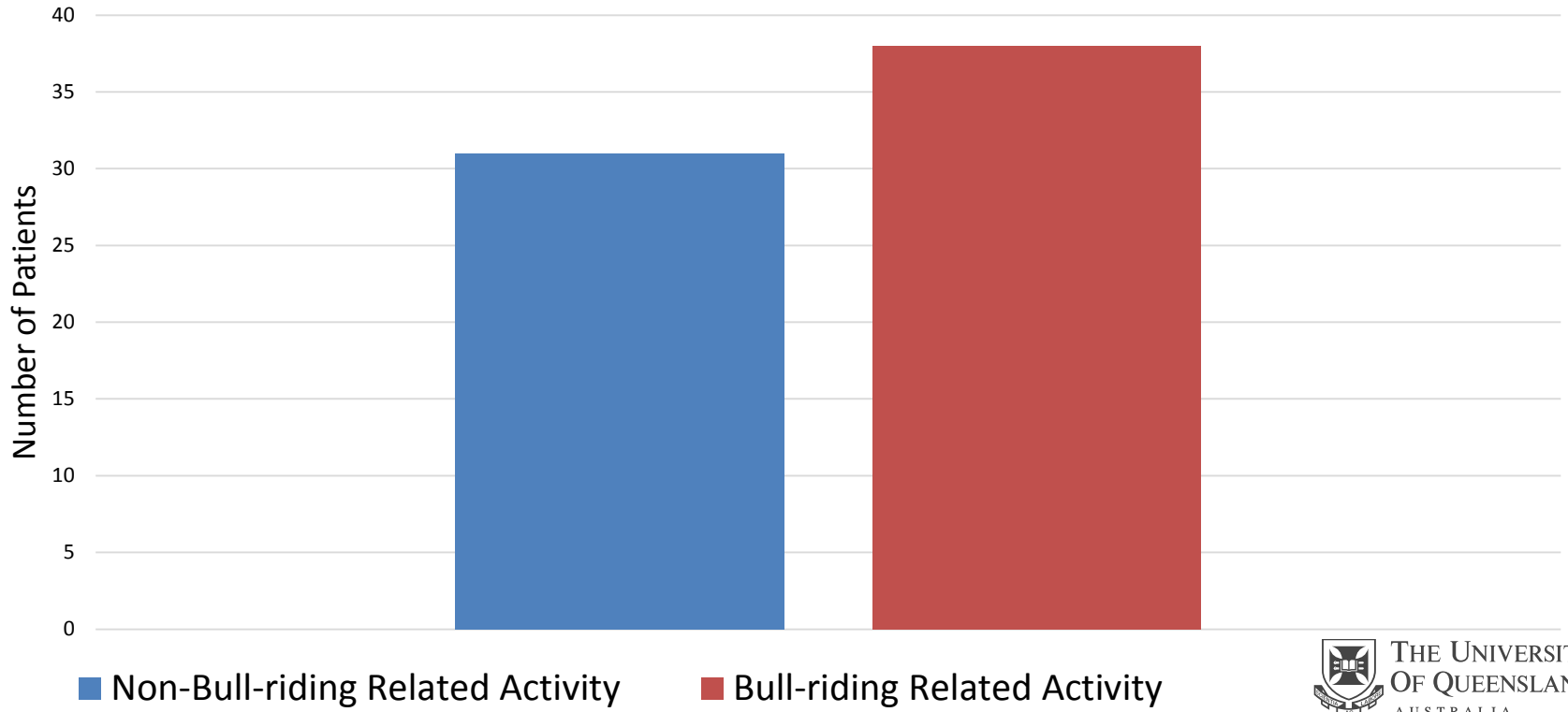
Other Surgery n=3

Suprapubic Catheterization

Reduction of Nasal Fracture

Pleural Drain

# Distribution of Patients Requiring Surgery



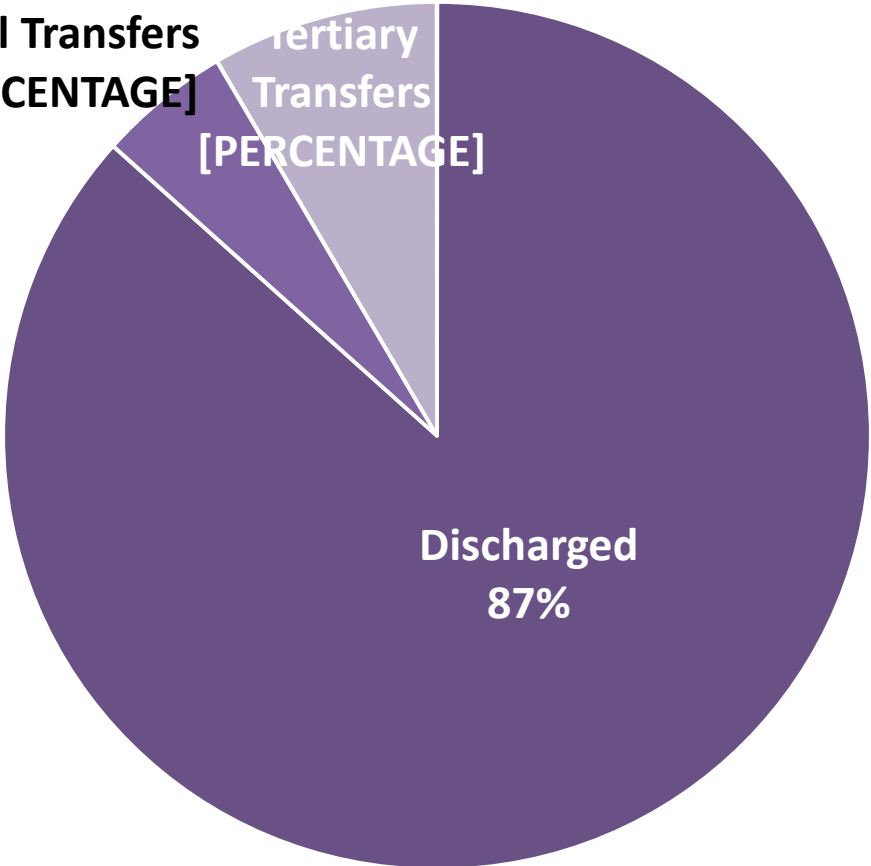
# Length of Stay

	Days Median (IQR)
Cohort	1(1-3)
Bull-Riding Related Activity	1(1-3)
Non-Bull-Riding Related Activity	1.5(1-4.5)

# Outcomes

Local Transfers  
[PERCENTAGE]

Tertiary  
Transfers  
[PERCENTAGE]



# Discussion

Most injury minor to moderate

Mostly orthopaedic injuries

Managed in Rockhampton

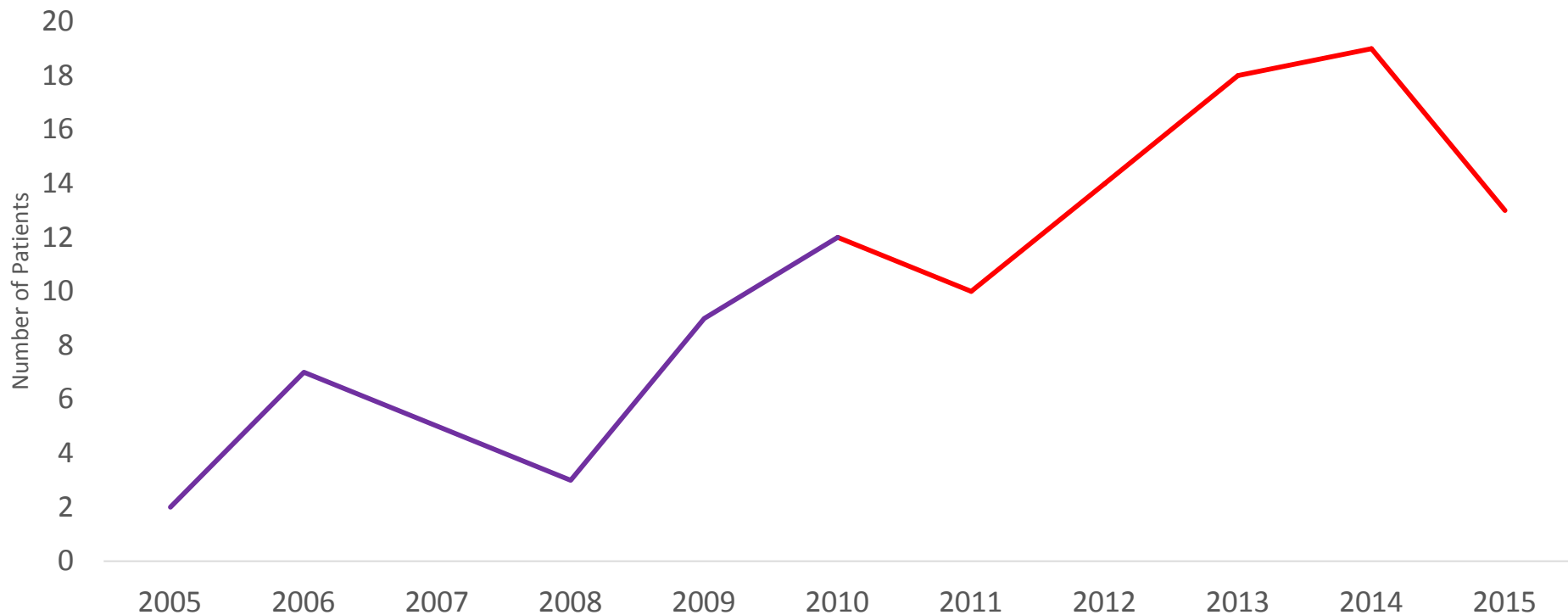


# Annual number of bull-riding injuries admitted to Rockhampton Hospital



Livingstone et al 2012 Six-year retrospective study of bull-riding injuries in Central Queensland

# 2005-2015 Bull-riding Injuries admitted to Rockhampton Hospital



# Limitation

Retrospective

ICD-10 Coding

Limited number of Cases

PPE

Admitted patients

# Strength

First study collecting data of all cattle-related injury admitted to Hospital in Australia

Contrast Injuries between Bull-riding related activity and Non-Bull-riding related activities

Provide baseline data to consider the next phase research

Relevant to the Community

# Conclusion

Prospective study of patient presenting to ED

Rural Hospital and GPs



**Beef Week 2018**

**BEEFAUSTRALIA2018**

**ROCKHAMPTON  
6-12 MAY 2018**

# Thank You



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RURAL  
CLINICAL  
SCHOOL

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# Health

