

Description of injuries and health conditions in British flat racing Thoroughbreds (2000 to 2013)



Sarah Rosanowski¹, Yu-Mei Chang¹, Anthony Stirk², Kristien Verheyen¹

1. Royal Veterinary College, London, UK 2. British Horseracing Authority, UK



Background

Injuries are inevitable in any high risk sport. The continued effort by the racing industry worldwide to reduce the incidence of such injuries in racehorses is essential for the improvement of equine welfare. While catastrophic injuries may be career ending, some injuries and health conditions may not end a horse's racing career, but have a long term impact on the ability of the horse to race, on subsequent performance, or the likelihood of injury or re-injury.

In order to determine the risk factors for injuries and health conditions, a thorough description of the injuries, fatalities and health conditions racehorses experience must be conducted in order to evaluate the effectiveness of subsequent interventions.

M&M

A 14-year retrospective cohort study (2000 to 2013) was conducted regarding adverse health events occurring in flat racing horses in the United Kingdom. The British Horseracing Authority maintains records of race day events, which are attended by on-course veterinarians. All horses with a recorded event were included in the study population.

Injuries were defined as events where there was trauma, harm or damage to musculoskeletal structures (bones, joints, tendons, ligaments or muscles) or the skin. Injuries included fractures, ruptures, strains, lacerations, wounds, punctures, bruises, concussion. Horses with non-specific lameness were included in this group.

Health conditions were events where abnormal physiology in the respiratory, cardiac, metabolic and locomotor systems were reported and where these were not related to an injury.

One event could include more than one health condition and/or injury. Events were described as counts and percentages.

The objective of the current study was to describe the injuries and health conditions experienced by flat racing Thoroughbreds on race day

Objectives

Results

Demographics

- 7,993 recorded veterinary events that included:
 - 7,316 races
 - 2,682 held on all-weather tracks
 - 4,634 held on turf tracks
 - 6,727 horses
 - Median age 4 years; range 2 to 15
 - 67.0% male (colts, rigs or geldings)

Veterinary Events

- 4,653 (58.2%) injury events
- 3,394 (42.5%) health condition events
- 54 events included both a health condition and an injury
- 628 (7.9%) fatalities due to sudden death or euthanasia

Injuries

- 492 (12.0%) were tendon or ligament injuries (Figure 1)
 - 340 (69.1%) were of the superficial digital flexor tendon
 - 54 (11.0%) of tendon injuries resulted in fatality
- 1,926 (47.0%) were skin or muscle injuries
 - 1,346 (69.9%) were wounds or lacerations
- 1,223 (29.9%) bone or joint injuries
 - 1,066 (87.2%) were fractures (Figure 2)
 - 738 (69.2%) in the distal limb
 - 649 third metacarpal (MC3) or third metatarsal (MT3) fractures
 - 499 (46.8%) fractures resulted in fatality
- 1,530 of other injuries were due to non-specific lameness

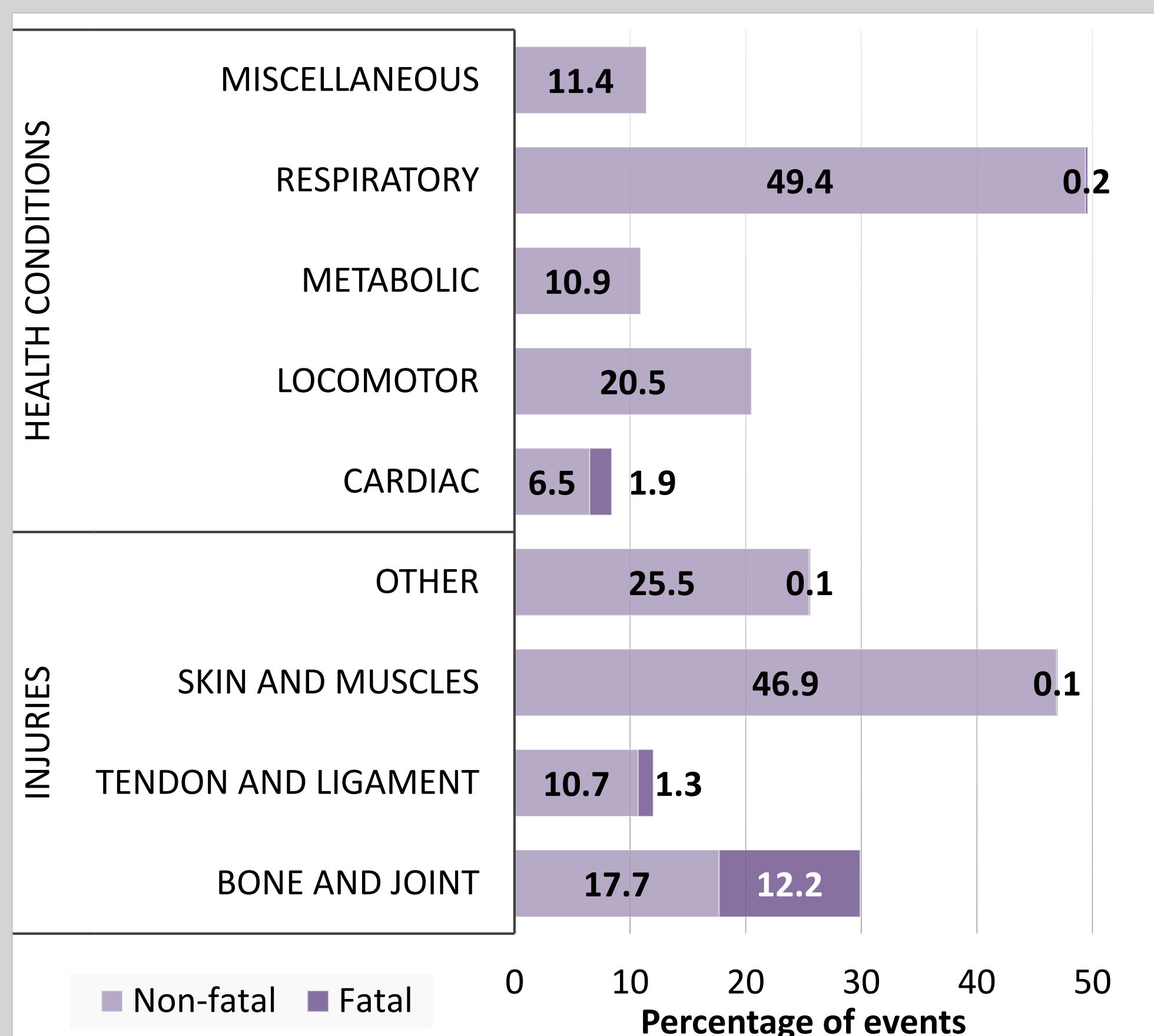


Figure 1: Proportion of injuries and health conditions (n=7,993)

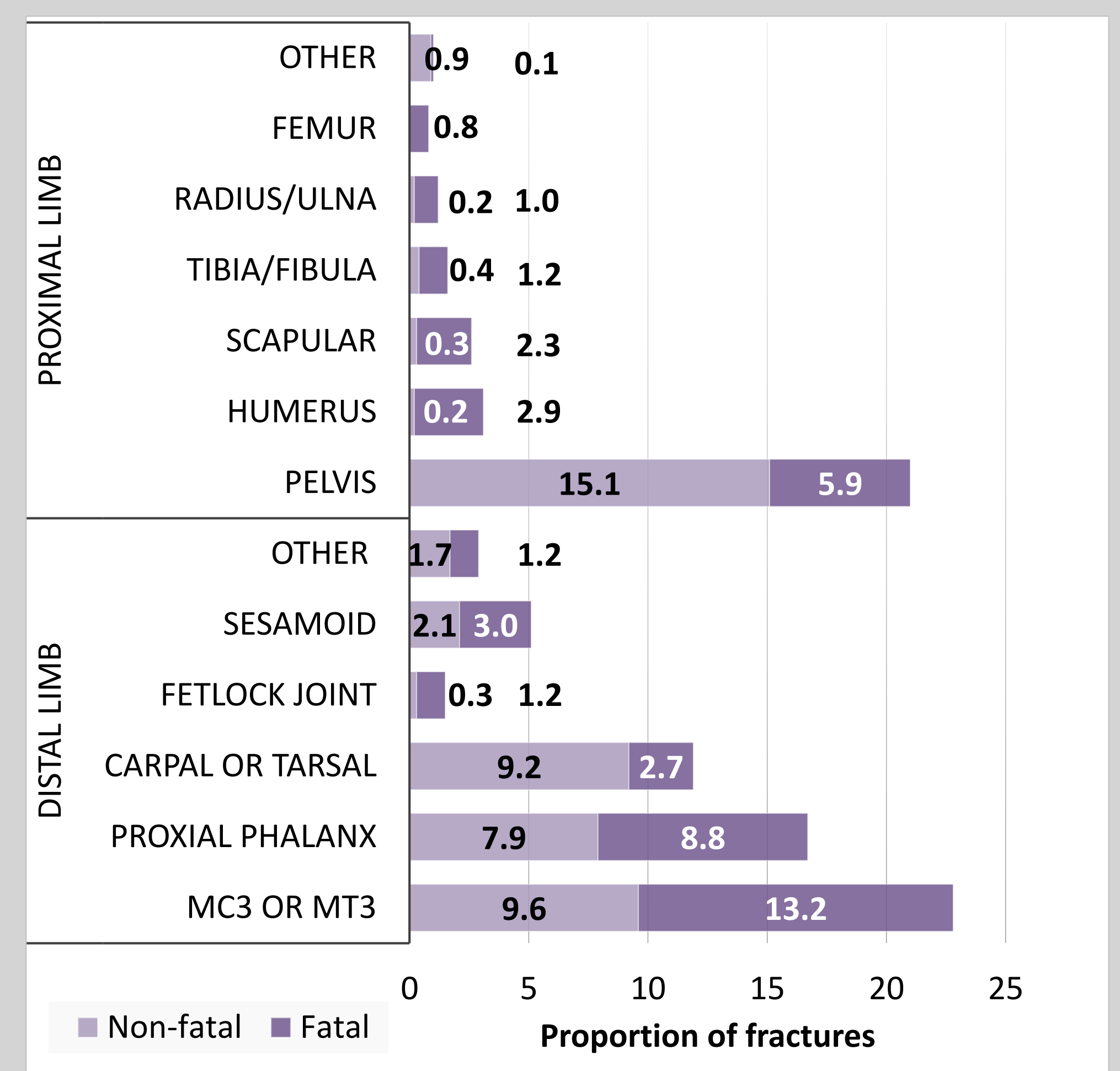


Figure 2: Location of fractures

Health conditions

- 1,678 (49.6%) affected the respiratory system (Figure 1)
 - 1,018 (60.7%) due to epistaxis
- 75 (1.7%) health conditions were fatal
 - 64 fatalities were due to vascular collapse
 - 8 due to epistaxis

Conclusions

This study describes the epidemiology of the various injury and health challenges faced by the racehorse. The information provided can then inform changes that may lead to welfare improvements.

Over the 14-year study period, 8% of veterinary events had a fatal outcome. Fracture was the most common fatal injury, followed by tendon and ligament injuries. Vascular collapse was the most common fatal health condition, followed by epistaxis.

Injuries of the skin and/or muscles were the most common type of race day injury, followed by bone and joint injuries, most of which were fractures.

The highest number of fractures occurred in the distal limb; with fractures of the third metacarpal or third metatarsal the most common, followed by the proximal phalanx and carpal or tarsal fractures.

In this population of racehorses, health conditions comprised 42.5% of veterinary events on race days. Epistaxis was the most common health condition.

The findings of this study will inform investigations into modifiable risk factors for race day injuries and fatalities. Additionally, this work will provide the basis for monitoring the effectiveness of future interventions.



This work is funded by the Horserace Betting Levy Board (HBLB)



Contact
Sarah Rosanowski, Royal Veterinary College, UK
Email: srosanowski@rvc.ac.uk