Occupational risks of working with horses: A Questionnaire Survey of Equine Veterinary Surgeons

*Tim DH Parkin, PhD[1], Judith Brown, PhD[2], Ewan B Macdonald, MD[2]

[1.] Weipers Centre Equine Hospital, School of Veterinary Medicine, College of Medical, Veterinary and Life Sciences, University of Glasgow, 464 Bearsden Road, Glasgow G61 1QH

[2.] Healthy Working Lives Group, Institute of Health and Wellbeing, College of Medical, Veterinary and Life Sciences, University of Glasgow, Glasgow, G12 9TW

***Corresponding author email address**: tim.parkin@glasgow.ac.uk

Key words: equine veterinary surgeons, work related injuries

Ethical approval

Ethical approval was granted from the University of Glasgow, College of Medical, Veterinary & Life Sciences Ethics Committee (Application number 200120061; 4th June 2013). All data was anonymised prior to analysis.

Acknowledgments

The authors would like to acknowledge Mairi Gaffney and Robert Fisher for their support in this project.

Sources of funding: British Equine Veterinary Association and the Veterinary Defence Society

Competing interests

The authors declare they have no competing interests.

Author's contributions

TP, JB & EM designed the study. JB & TP undertook the statistical analyses. All authors contributed and commented to the manuscript and read and approved the final version.

Word count: ~3739 words

Abstract

Background: Limited scientific evidence from other countries and plenty of anecdotal evidence suggests that the risk of personal injury in equine veterinary practice is high. However, a comprehensive description of the types of risks to which equine veterinary surgeons expose themselves has not previously been available.

Objectives: The aim of this study was to quantify the number, types and causes of personal injury sustained by equine veterinary practitioners in the UK.

Study Design: An interview (and online) based survey was conducted with a large number of equine veterinary practitioners. Questions were designed to identify the number of injuries sustained during the respondent's career to date and to acquire details of the worst injury sustained including cause, treatment and short and long-term outcomes.

Methods: Questionnaire-based survey.

Results: A total of 2,292 injuries were reported by 620 respondents, equating to one injury every 3-years 9-months in those respondents. Most 'worst' injuries occurred while the veterinary surgeon was conducting most common reasons for equine examination. The most frequent sites of this 'worst' injury were the leg and the head with the main cause of injury being a kick with hind limb. Of all reports, 33% of injuries resulted in a hospital admission of which 43% required hospital admission for longer than 24 hours and 7% of reports resulted in a loss of consciousness.

Main Limitations: The main limitation of this work is the descriptive nature of the survey. It would be unwise to assume that the procedures identified as being most commonly associated with injury in the study are more risky than other less commonly conducted procedures.

Conclusions: Equine veterinary practice is a risky profession. Greater emphasis on and awareness of methods to avoid or mitigate risk should be a priority for anyone working with horses and their employers.

Introduction

Recent work indicates that veterinary practitioners involved in equine work sustain significant numbers of injuries as part of their work with horses [1-4]. There is a perception that equine practice is inherently risky and that some risk is taken for granted by current equine practitioners [2]. This is of concern and indicates that greater efforts to raise awareness of the level of risk and consequences of some equine-related injury should be a focus of this sector to the veterinary community. A study from the USA described occupational injuries in Thoroughbred horse farms [5]. The study was particularly interested in the description of Latino and non-Latino workers' experiences and showed that general injuries and musculoskeletal strains, sprains and tears account for the majority of injuries among workers on Thoroughbred farms. Further work from Germany investigated the prevalence of musculoskeletal disorders and work related accidents in all veterinarians, concluding that targeted advice to specific groups of veterinarians about risk prevention measures was required [6].

Further studies have investigated the risk of injury or trauma associated with general veterinary practice [7-10] or more generally those working with [11] or coming into contact with horses [12]. Some of these studies have identified that injuries associated with large animals are more likely to be of serious consequence and others have gone on to identify risk factors for either severe or specifically large animal related injury.

To the authors' knowledge the prevalence and type of injuries incurred by veterinarians working in equine practice in the UK has not previously been described or quantified.

Knowledge of the risks involved will better inform equine veterinary surgeons of the risks to which they are exposed, enabling them to take preventive measures which will include full and thorough risk assessments and potentially the use of personal protective equipment in certain situations. Potential recruits, who are considering a career in equine practice, will also be able to make more informed decisions on their chosen profession. Importantly this work should also form the basis of client-vet communication ensuring that horse owners understand the potential risk, providing greater justification for the use of appropriate sedation or other risk mitigation measures as a routine part of equine veterinary practice in specific circumstances.

The aim of the study was to describe and quantify the frequency of equine work-related injury or illness in practicing equine veterinary surgeons in the UK.

Materials and Methods

The Survey

A Work Related Injuries in Equine Practitioners' Questionnaire was developed and piloted on approximately 20 equine veterinary surgeons in July 2013. The questionnaire was finalised and developed into an online format using SmartSurvey[1] online survey software in September 2013.

Survey sample

The sampling frame for this study was all veterinary surgeons working with horses in the UK. Two approaches were used to target this population. Firstly, delegates at the BEVA annual conference held in September 2013 were interviewed in person. Secondly, following the conference an email was sent to all BEVA members with a link to the questionnaire.

A total of 751 veterinary surgeons attended the British Equine Veterinary Association annual conference in September 2013. Five veterinary students asked BEVA delegates to complete the questionnaire on a handheld device. Following the conference the questionnaire was featured in the BEVA E-news and members who had not completed the questionnaire at the conference were invited to complete the questionnaire online. Emails were sent to approximately 1700 BEVA members on three separate occasions in the six weeks after the conference with information on the study and a link to complete the questionnaire. A copy of the questionnaire is included as supplementary information.

Definition of injury

The following definition of an injury was used: "An injury or event that required (self) treatment and/or resulted in time off work". Participants were asked to list all anatomical sites ever injured and then asked to focus on further description of what they considered to be their worst injury.

Data analysis

Simple descriptive analyses were conducted for categorical and continuous variables, as appropriate. Text mining techniques were employed to categorise methods that could be employed to make equine practice safer, using Wordstat/Simstat software (Provalis research[2]). This involved reviewing answers to this question and creating groups of words that effectively categorised responses into separate themes based on the specific text used by each respondent.

Results

Survey Respondents

In total 623 questionnaires were completed. Three questionnaires were removed from the analyses as they were completed by veterinary nurses, resulting in 620 questionnaires, completed by current practicing equine vets, included in the study. Of these, 302 (49%) were completed at the BEVA conference (12th - 14th September 2013) and 318 (51%) online between 16th September 2013 and 20th November 2013.

Of all respondents, 55% were female, the median age was 37 years, the median length of time employed as an equine practitioner was 11 years and 85% of respondents were working full-time (Table 1).

All injuries sustained

Across all 620 valid respondents a total of 2,292 injuries were reported in a total 8,204 years working as a veterinary surgeon with horses (representing the total number of years worked in equine practice by those 620 respondents - i.e. the sum of the 620 responses to the question about the number of years working as an equine practitioner). This equates to one injury every 3-years 7-months working with horses in those respondents. Over a working life-time of 30 years a veterinary surgeon working with horses may therefore expect to sustain between eight and nine injuries that require (self) treatment and/or result in time off work.

Of 620 respondents, 495 stated that they had sustained at least one injury while working with horses during their veterinary career. As one might expect the mean total number of injuries sustained increased as the number of years in equine practice increased (Table 1). The mean number of injuries sustained by all 620 respondents was 3.7 injuries. A total of 617 respondents reported the number of years they had spent in equine practice (a total of 2,284 injuries). For those with up to 5-years in equine practice the average number of injuries sustained was 0.83 per year, for those with five to 10-years in equine practice the average

number of injuries sustained was 0.47 per year but for those with at least 15-years in equine practice the number of injuries sustained was between 0.18 and 0.22 per year (Fig 1.).

Details of the 'worst' injury sustained by respondents

When injury occurred and purpose of examination being conducted

The majority of worst injuries (77%) were sustained by veterinary surgeons who were employed (i.e. not self-employed) at the time of injury and 88% of these injuries occurred during normal working hours (i.e. not while on call).

Table 2 shows a summary of the 'environment' when the injury occurred and the purpose of examination. In summary: 38% of injuries occurred while the veterinary surgeon was doing "pleasure horse work"; 37% of injuries occurred while the horse was sedated; 30% of respondents said that another form of restraint was being used (59% of which was a twitch, 23% of which were using stocks). Most frequently (48% of all responses) the owner or client was the horse handler at the time of the injury, followed by groom (19%) and veterinary nurse (15%).

The most common reasons for examination at the time of the worst injury were foot lameness (11%) and dental examination (7%), followed by other very common procedures that the normal equine veterinary practitioner would be doing on a regular basis (Table 2).

Anatomical site, cause and treatment of injury

The most frequent sites of this 'worst' injury were the leg (29% of all responses), head (23%) or hand (10%). Most injuries were described as bruising (44% of all injuries), fracture (22%) or laceration (17%).The main cause of injury was a kick with hind limb (49%), followed by strike with fore limb (12%) and crush (5%). Of 384 responses relating to treatment, 23%

involved dressing of wound(s), 22% required treatment for fracture and 21% involved physiotherapy (Table 3). In addition to the more frequent outcomes listed in Table 3, no treatment was required in 13 cases, rest alone was reported as being required in eight cases, self-treatment was reported as the sole outcome in nine cases dental work was required in five cases and three respondents reported 'other' treatment. The remaining 108 respondents gave details of an immediate outcome (see below) without making reference to specific treatments.

Immediate outcome of injury

Of all reports, 33% of injuries resulted in a hospital admission of which 43% (71 cases) required hospital admission for longer than 24 hours. GP attendance was required in 16% of cases and 7% of injuries resulted in a loss of consciousness (Table 3).

Post injury and return to work

A total of 44% of respondents were unable to return to work immediately after their 'worst' injury. The median length of time off work was seven days. The median length of time to return to a full range of duties was 18 days and the median length of time to become fully recovered was 21 days. An accident form was completed by 37% of respondents but only 14% of injuries were reported to the Health and Safety Executive. Alternative work, at least for some period of time, had to be taken by 8% of respondents. Only 7% of injured vets received occupational health advice and the same percentage received advice about return to work, whereas 22% of respondents stated that the injury had an impact on their psychological wellbeing.

General/current health of participants and other chronic injuries/illnesses attributable to equine veterinary work

In general the vast majority of respondents (91%) rated their health as very good or good. Almost one-third (32%) of respondents knew of an equine veterinary practitioner colleague who had given up equine work, veterinary work altogether, retired or had been killed as a result of an injury sustained while working with a horse and 31% of respondents said they had chronic injuries or illnesses attributable to equine veterinary work.

Equine veterinary surgeons' opinion on how injuries could be reduced

Of all respondents, 87% gave details on how they thought equine veterinary related injuries could be reduced. Text mining identified the following top five responses: Better handlers (including the ability to take trained staff on calls) in 149 (28%) respondents who answered this question; more frequent use of sedation in 129 (24%) respondents; owner education about risks and use of sedatives in 121 (22%) respondents; better restraint and facilities to enable good restraint (including more frequent use of practice facilities rather than 'in the field') in 74 (14%) respondents; veterinary surgeon training/CPD about risks in 66 (12%) respondents.

Discussion

The current work suggests that over a 30 year working life an equine veterinary surgeon can expect to sustain between seven and eight injuries. The severity of these injuries will clearly be very variable and indeed many equine veterinary surgeons may never sustain an injury that results in hospitalisation or a loss of consciousness. However, it is undoubtedly the case that a significant proportion of equine veterinary surgeons will at some point in their career end up unconscious or hospitalised following an injury directly related to their work. Most injuries

were described as bruising, fracture and laceration. The main cause of injury was a kick with hind limb followed by strike with fore limb and crush. These results concur with previous studies [3, 8, 9] which also indicated that the more severe injuries were most likely to affect large animal (or specifically equine) practitioners.

When examining the number of injuries per year stratified by years in equine practice, it is apparent that those in their first five years were at greatest risk, certainly compared with those who had more than 15 years of experience. It is important to acknowledge the wide standard deviation around the risk estimate for the least experienced veterinary surgeons, indicating a lot of variation in the number of injuries per year per respondent in that group. Nevertheless it is useful to speculate why the injury risk apparently decreases over time. This may be due to greater experience and understanding of risky procedures as one works for longer with horses. It may also be related to work patterns with junior veterinary surgeons perhaps taking on more routine, but potentially more risky procedures, such as standing castrations or indeed seeing a greater case-load compared with very experienced veterinary surgeons. Whatever the reason, it is clear that greater awareness of injury risk, particularly early in one's career, is important.

Although this current study identified a list of procedures most commonly associated with injury, it is important to recognise that this should not be taken to mean that other procedures are not risky. This list, at least to some extent, simply represents the common procedures undertaken by equine veterinary surgeons. A control population of uninjured veterinary surgeons was not available to enable an analysis of different procedures as risk factors for injury, so it would be unwise to only focus on the procedures listed as risky in this work. It is much more important that the message is reiterated that simply working as an equine

252 veterinary surgeon, in close proximity to horses is risky. It might be an obvious statement to
253 make but given the severity of some injuries it is important to reiterate this fact.
254
255 A common method of reporting accident risks by occupational group is that of accident rates
256 where the number of individuals injured per 100,000 employees per year is estimated. In this
257 study we have estimated that each veterinary surgeon in equine practice would sustain an
258 injury every 3-years 9-months (0.27 injuries per year). This equates to approximately 27,000
259 injuries per 100,000 employees per annum. Even if we assume all non-respondents to the
260 survey had experienced no injuries, which is highly improbable, and that there are currently
261 approximately 3000 veterinary surgeons engaged in equine practice in the UK, the accident
262 rate is still approximately 5,400 per 100,000 per annum. Even at the lower estimate,
263 comparison with the actively acquired annual Labour Force Survey data
264 (http://www.hse.gov.uk/statistics/lfs/index.htm#allinjuries) indicates that equine veterinary
265 practice is one of the most hazardous civilian occupations: Equivalent figures for Prison
266 Service personnel (below principal officer) – 10,760 per 100,000 pa; Police (Sergeant and
267 below) – 8,700; Welding and metal formers – 6,980; Skilled construction workers – 4,760
268 and Farm workers – 4,620.
269
270 The significant lack of reporting to the Health and Safety Executive is of concern. However,
271 it is now critical that a spotlight is shone on the risks associated with equine practice as the
272 consequences for some are extremely serious.
273
274 It is obvious that risk cannot be completely eliminated. The work requires close handling of
275 large, heavy animals, often behaving unpredictably, who may be distressed and in pain.
276 Direct observation of the working environment, by the authors at the Weipers Centre Equine

Hospital, confirms that animal handlers adopt a manner of easy confidence and intimacy with the horse, as a means of reassurance to the animal, but clearly more safeguards are required.

Of concern is the incidence of serious injuries such as fractures, head injury, unconsciousness, loss of vision, and the anecdotal accounts of veterinary surgeons who have had to give up practice, or move to less physically demanding work. This study confirms that equine veterinary work is inherently dangerous, is associated with an unacceptable risk of injury and that preventive measures are urgently required to improve the safety of the workforce. Equine practice requires adoption of the principles of health and safety management and risk minimisation to a much greater degree than is currently the case. While some procedures are less risky than others, in general most of the equine-related activities routinely undertaken by equine veterinary surgeons are associated with risk and generic health and safety measures are required.

Health and safety legislation requires employers to take whatever steps are necessary to ensure the safety and health of workers and to have a health and safety management system that incorporates risk assessment, risk management and monitoring procedures.

All practitioners and employers should consider the following guiding principles throughout the risk assessment process:

Step 1. Identifying hazards and those at risk

This study has identified high levels of risk of injury and some activities that may be associated with greater risk, and that equine veterinary surgeons, and most probably other equine handlers, are at risk.

Step 2. Evaluating and prioritising risks

Estimating the existing risks (their severity and their probability) and prioritising them in order of importance. It is essential that the work required to eliminate or prevent risks is prioritised.

Step 3. Deciding on preventive action

Identifying the appropriate measures to eliminate or control the risks. The issue of whether to sedate or not sedate horses undergoing procedures was one of the reasons for this study and the evidence would support the selective use of sedation. Workplace layout and organisation is important but may be a factor out of the veterinary surgeons control when attending a distressed animal in a field or stables.

A detailed analysis of high risk activities and the development of guidelines and standard operating procedures, based on best available knowledge and evidence, aimed at minimising risk are required.

Personal protective equipment (PPE) may need to be worn in some circumstances and could include safety footwear, gloves, protective helmets, eye protection, and personal protective clothing. However, it is much more appropriate to avoid risky situations or modify a risky environment such that PPE is used as a last resort where risk cannot be minimised.

Step 4. Taking action

All equine workers require training in safe handling of horses and injury prevention, risk assessment and the use of PPE. The implementation of preventive and protective measures

through a prioritisation plan and specifying who does what and when, when a task is to be completed and the means allocated to implement the measures is a critical step in work aimed at minimising workplace injury.

Step 5. Monitoring and reviewing

The impact of the preventive measures must be monitored to ensure compliance with safe working procedures, accurately recording and reporting of injuries and minor incidents and also importantly 'near miss' events. Training of students and all staff should occur regularly. Performance with regard to health and safety should be regularly reviewed and the philosophy should be that of continuous improvement.

Limitations of this work

The study was not designed to identify risk factors for injury and this might be the next logical research direction for this work, but this would ideally require a reasonably large cohort of veterinary surgeons willing to complete daily record sheets of all procedures undertaken and all injuries (however minor) sustained for a significant amount of time and this might be difficult to establish and maintain.

It was not possible to conduct any non-responder bias analysis during this study as all responses were anonymous such that we had no method of identifying and following up individuals who had not yet responded to the survey.

Conclusion

Being an equine veterinary surgeon is clearly not without risk. This study has confirmed that there are high injury rates and that serious and potentially fatal injuries are not uncommon.

The current work suggests that over a 30 year working life an equine vet can expect to sustain between seven and eight injuries. The severity of these injuries will clearly be very variable and indeed most equine veterinary surgeons may never sustain an injury that results in hospitalisation or a loss of consciousness. However, there were sufficient reports of very serious injury providing food for thought for the profession as a whole and in particular employers of those at risk. There is a need to establish safer systems of work, and intensive education of the profession and other animal handlers. This survey was completed by practising equine veterinary surgeons who can be regarded as a "survivor" population in that others (not available for survey) will have left equine practice as a result of previous injuries. As such the estimates of risk in this study may well be underestimates of the true level of risk. Particular emphasis is required in the training of veterinary students and newly qualified equine veterinary surgeons to ensure they are aware of the risks associated with equine practice and methods they should employ to avoid injury and remain safe while working with horses.

[1] SmartSurvey Ltd., Tewkesbury, United Kingdom

[2] Provalis Software, Montreal, Canada.

References

[1] Jaeggin, S., Fuerst, A., Haessig, M. and Auer, J. (2005) Kick injuries of veterinarians during examination and treatment of horses: A retrospective study in Switzerland. *Schweizer Archiv fuer Tierheilkunde* **147**, 289-295.

[2] Loomans, J.B.A., van Weeren-Bitterling, M.S., van Weeren, P.R. and Barneveld, A. (2008) Occupational disability and job satisfaction in the equine veterinary profession: How sustainable is this 'tough job' in a changing world? *Equine Veterinary Education* **20**, 597-607.

[3] Lucas, M., Day, L. and Fritsch, L. (2009) Injuries to Australian veterinarians working with horses. *Veterinary Record* **164**, 207-209.

[4] Mohammed, S., Rose, K., Georges, K. and Holder, R.B. (2002) A survey of veterinary occupational hazards in Trinidad, West Indies. *Journal of the Caribbean Veterinary Medical Association* **2**, 27-31.

[5] Swanberg, J.E., Clouser, J.M., Westneat, S.C., Marsh, M.W. and Reed, D.B. (2013) Occupational Injuries on Thoroughbred Horse Farms: A Description of Latino and Non-Latino Workers' Experience. *International Journal of Environmental Research and Public Health* **10**, 6500-6516.

[6] Kozak, A., Schedlbauer, G., Peters, C. and Nienhaus, A. (2014) Self-Reported Musculoskeletal Disorders of the Distal Upper Extremities and the Neck in German Veterinarians: A Cross-Sectional Study. *Plos One* **9**.

[7] Fritschi L., Day L., Shirangi A., Robertson I., Lucas M., Vizard A. (2006) Injury in Australian Veterinarians. *Occup Med. 56: 199-203.*

[8] Lucas, M., Day, L., Shirangi, A., Fritschi, L. (2009) Significant injuries in Australian veterinarians and use of safety precautions. *Occup Med. 59: 327-33.*

[9] Landercasper, J., Cogbill, T.H., Strutt, P.J. Landercasper, B.O. (1988) Trauma and the veterinarian. *J. Trauma. 28:;1255-9.*

[10] Nienhaus, A., Skudlik, C., Seidler, A. (2005) Work-related accidents and occupational diseases in veterinarians and their staff. *Int Arch Occup Environ Health. 78:230-8.*

[11] Swanberg, J.E., Clousser, J.M., Bush, A., Westneat, S. (2016) From the Horse Worker's Mouth: A detailed account of injuries experienced by Latino horse workers. *J. Immigr Minor Health. 18:513-21.*

[12] Griffen, M., Boulanger, B.R., Kearney, P.A., Tsuei, B., Ochoa, J. (2002) Injury during contact with horses: recent experience with 75 patients at a level I trauma center. *South Med J. 95:441-5.*

Table 1 Sex, age, length of time employed as equine practitioner, work status and mean number of injuries in veterinary surgeons with a range of years of experience.

		Number	***% of total***
Sex	Male	278	44.9
	Female	341	55.1
Work status	Full-time	525	85.0
	Part-time	93	15.0
		Median	**Mean**
Age		37	39.0
Length of time employed as an equine veterinary practitioner (years)		11	13.3
---	---	---	---
Length of time employed as an equine veterinary practitioner:		**Number of vets**	**Mean number of injuries sustained**
<5 years		144	1.7
5<10 years		122	3.1
10<15 years		115	4.3
15<20 years		78	3.1
20<25 years		58	4.7
25<30 years		40	4.9
≥30 years		60	7.7

Table 2 Environment when injury occurred and purpose of examination (495 respondents who had sustained at least one injury; for all questions (apart from the question about sedation) it was possible to tick more than one box, hence total responses for some of those questions is more than 495).

	Number (%)
Type of practice/type of equine work being carried out at time of injury (528 responses)	
Pleasure horse work	203 (38.4)
Sports horse work	109 (20.6)
Mixed practice	65 (12.3)
Racing work	59 (11.2)
Stud work	57 (10.8)
Referral hospital	13 (2.5)
Welfare and working equids	11 (2.1)
Other	11 (2.1)
Horse sedated at time of injury (491 responses)	
No	312 (63.5)
Yes	179 (36.5)
Other form of restraint being used (495 responses)	**149 (30.1)**
Twitch	96 (58.9)
Stocks	37 (22.7)
Other restraint used	16 (9.8)
Rope, bridle, head collar	7 (4.3)
Leg up	6 (3.7)
Purpose of equine examination (487 responses)	
Foot lameness	55 (11.3)
Dental examination	33 (6.8)
Female reproductive examination	29 (6.0)
Distal limb nerve block	26 (5.3)
Minor surgical procedure	26 (5.3)
Bandage, wound, dressing	24 (4.9)
IV injection or sampling	20 (4.1)
Standing castration	20 (4.1)
Other (30 other purposes of examination)	254 (52.2)
Other handlers present at time of injury (576 responses)	
Horse owner or client	274 (47.6)
Groom	107 (18.6)
Veterinary nurse	88 (15.3)
Another vet	58 (10.1)
Veterinary student	35 (6.1)
Other	12 (2.1)
Resident	2 (0.3)

436 **Table 3 Site, cause and treatment of injury (495 respondents who had sustained at least**
437 **one injury; for most questions it was possible to tick more than one box, hence total**
438 **responses for some is more than 495).**

	Number (%)
Site of injury (549 responses)	
Leg	160 (29.1)
Head	124 (22.6)
Hand	57 (10.4)
Foot	42 (7.7)
Arm	38 (6.9)
Back	36 (6.6)
Chest	33 (6.0)
Shoulder	21 (3.8)
Abdomen	15 (2.7)
Neck	10 (1.8)
Eye	7 (1.3)
Pelvis	6 (1.1)
Type of Injury (604 responses)	
Bruising	263 (43.5)
Fracture	134 (22.2)
Laceration	102 (16.9)
Ligament Injury	40 (6.6)
Concussion	31 (5.1)
Dislocation	15 (2.5)
Back injury	8 (1.3)
Loss of sight (temporary)	6 (1.0)
Cause of Injury (493 responses)	
Kick with hind limb	242 (49.1)
Strike with fore limb	58 (11.8)
Crush	25 (5.1)
Bite	23 (4.7)
Horses stood on vet foot	23 (4.7)
Horse rears up and fell on vet	22 (4.5)
Other (14 other causes)	100 (20.3)
Treatment required (387 responses)	
Dressing of wound(s)	88 (22.9)
Treatment of fracture(s)	85 (22.1)
Physiotherapy	79 (20.6)
Analgesia	57 (14.8)
Stitches	50 (13.0)
Immediate outcome (495 responses)	
GP attendance	80 (16.2)
Hospital admission	165 (33.3)

Hospital admission for >24 hours	71 (14.3)
Loss of consciousness	36 (7.3)

Figure 1. The mean number of injuries sustained per year by veterinary surgeons working in equine practice stratified by number of years spent in equine practice (showing standard deviation for each group).