

# Current Horse Owner Petition for Telemedical Assessment of Equine Lameness

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The familiarity and extensive use associated with smart devices among today's equestrians has generated a demand for telecommunication services relating to the veterinary evaluation of lame horses. Appropriately, the modern equine sports practitioner needs to establish a professional, ethical, and effective way of administering to this demand. Author's address: The Atlanta Equine Clinic, 1665 Ward Road, Hoschton, GA 30548; e-mail: bobgrisel@atlantaequine.com. © 2017 AAEP.

## 1. Introduction

Performing a search for the key words "lame horse" on a popular video Web site<sup>a</sup> currently yields approximately 140,000 results. A minority of the footage comprises instructional videos intended to demonstrate general signs of lameness or highlight specific gait deficits. These are posted by professionals and non-professionals alike and are intended for anyone who might be curious. The vast majority of clips, however, are posted by horse owners who are summoning advice with regard to a possible reason for their horse's current performance issue(s). These posts are directed at anyone who is willing to provide feedback, irrespective of training or experience with equine lameness.

Veterinary medicine (not unlike other forms of medicine) has historically lagged behind the technology curve, particularly with regard to client communication. This is due to a number of factors not excluding ongoing professional and ethical concerns. Notwithstanding, a significant number of horse owners are seeking professional guidance in a different form than that currently available; one that does not require the time and expense associated

with a typical veterinary visit and hands-on performance evaluation.

The purpose of this prospective investigation was to identify the demographic profiles and current level of interest with respect to veterinary telemedical video correspondence within the performance horse industry.

## 2. Materials and Methods

An online survey request was sent to approximately 3200 horse owners and trainers via email. The study population was procured from the practice database and comprised regular clients, former clients, and non-client horse owners, the majority of whom resided in the southeastern United States. Survey forms were provided and submitted through an online survey service<sup>b</sup>. Questions were intended to establish the following with regard to each participant (Fig. 1):

- Basic demographic profile with respect to equine lameness
- Current extent of video acquisition of lame horses

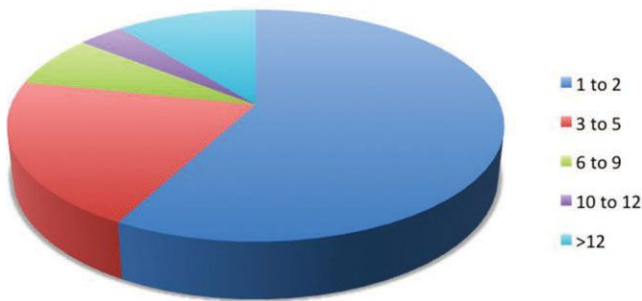
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## NOTES

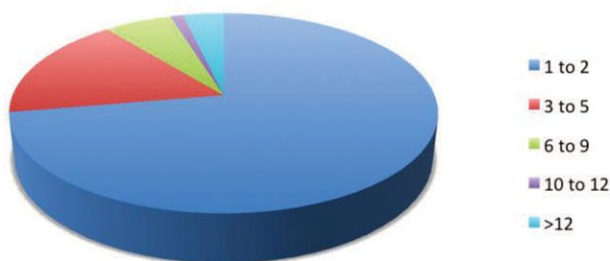
Type of Inquiry	Survey Question	Possible Responses						
Participant Demographic Profile	How many horses are under your care? <i>Mean ≤4.0; SD~4.6</i>	0 to 2 horses (48)	3 to 5 horses (17)	6-9 horses (6)	10 to 12 horses (3)	> 12 horses (9)		
	Approximately how many horses under your care have been evaluated for lameness? <i>Mean ≤2.5; SD~3.0</i>	0 to 2 horses (60)	3 to 5 horses (14)	6-9 horses (5)	10 to 12 horses (1)	> 12 horses (3)		
	Approximately how much money do you spend on treating or managing lameness each year? <i>Mean ≤2775; SD~3173</i>	\$0 to \$1,000 (30)	\$1,000 to \$2,500 (25)	\$2,500 to \$5,000 (15)	\$5,000 to \$7,500 (7)	\$7,500 to \$10,000 (3)	> \$10,000 (3)	
Participant Video Acquisition	Have you ever acquired a video of a lame horse moving?	YES (63)	NO (20)					
	Approximately how many videos have you acquired? <i>Mean ≤6.4; SD~5.4</i>	0 to 2 videos (15)	3 to 5 videos (24)	6-9 videos (6)	10 to 12 videos (6)	> 12 videos (12)		
	Why did you acquire the video(s)?*	To determine if I could see the lameness (15)	I wanted to get a non-professional opinion of the lameness (6)	I wanted to get a professional opinion of the lameness (59)	Other (5)			
Participant Internet Utilization	Have you ever uploaded footage of a lame horse to the internet?	YES (21)	NO (62)					
	Approximately how many videos have you uploaded to the internet? <i>Mean ≤4.1; SD~4.1</i>	0 to 2 videos (9)	3 to 5 videos (8)	6-9 videos (2)	10 to 12 videos (0)	> 12 videos (2)		
	Why did you upload video footage to the internet?*	I wanted to get a non-professional opinion of the lameness (3)	I wanted to get a professional opinion of the lameness (16)	Other (5)				
Participant Request for Professional Review	Have you ever submitted video footage to your veterinarian for review?	YES (59)	NO (24)					
	Approximately how many videos have you submitted for professional review? <i>Mean ≤4.6; SD~4.1</i>	0 to 2 videos (19)	3 to 5 videos (27)	6-9 videos (6)	10 to 12 videos (1)	> 12 videos (6)		
	How did you submit the footage?*	Via hard mail (0)	Via email (38)	Via text messaging (29)	Uploaded to YouTube® (8)	Uploaded to Web-based storage (Dropbox®, Google Drive®, WhatsApp®, etc.) (12)		
	From what device(s) was the video footage submitted?*	From Smartphone (44)	From iPad or Tablet (13)	From computer (22)	From other source (1)			
	Were you ever charged for this service?	YES (18)	NO (41)					
	Were you satisfied with this service?	YES (51)	NO (1)	Neither satisfied nor dissatisfied (7)				
	Why did you submit footage instead of requesting on-site examination?*	To save time (19)	To save money (11)	Distance: professional was too far away (34)	It was easier than having the professional come to the barn (17)	The professional requested the footage (34)		
Equestrian Petition for Telemedical Service	Would you like your veterinarian to offer telemedical video review as a service?	YES (65)	NO (1)	Depends on Cost (17)				
	What would be your primary incentive(s) for using this service?*	To determine if my horse is lame (39)	To determine if my horse needs to be seen by a veterinarian (53)	For pre-appointment (preliminary) assessment (66)	For post-appointment (recheck) assessment (54)	To screen the soundness of a horse that I'm considering for purchase (48)	For evaluation of a non-lameness issue (skin reaction, eye trauma, wound, etc.) (42)	
	Would you be willing to pay for this service?	YES (81)	NO (2)					

Fig. 1. Telemedical survey questions.

**A. Number of Horses per Participant**



**B. Number of Horses per Participant Evaluated for Lameness**



**C. Annual Lameness Expense per Participant**

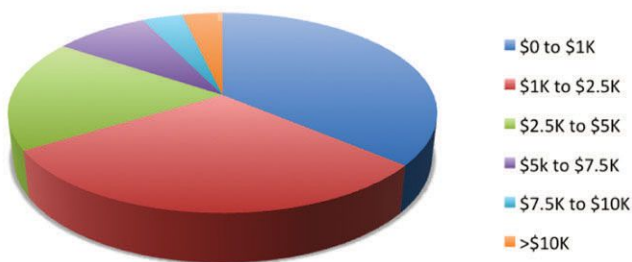


Fig. 2. Participant demographic profiles.

- Current utilization of the Internet to post video footage of lame horses
- Number of requests for professional review of video footage

- Petition for future veterinary telemedical services

Completed forms were evaluated and responses were reported as percentages of the whole within each of the aforementioned categories. Mean values and standard deviation were calculated when possible.

**3. Results**

**Participant Demographics**

A total of 83 responses were received. Of the equestrians participating in the survey, just over half (48 individuals, 57.8%) owned only one or two horses (Fig. 2A; mean  $\leq 4.0$ ; SD,  $\sim 4.6$ ) and seventy (nearly 85%) spent less than \$5000 per year treating and/or managing lameness issues (Fig. 2C; mean  $\leq 2775.0$ ; SD,  $\sim 3173.3$ ).

**Participant Use of Video**

Three quarters (63 or 75.9%) of the participants had previously acquired video footage of their horse(s) for lameness review (Fig. 3A). Of these, 59 (94%) acquired the footage with the intention of seeking veterinary counsel (Fig. 3B).

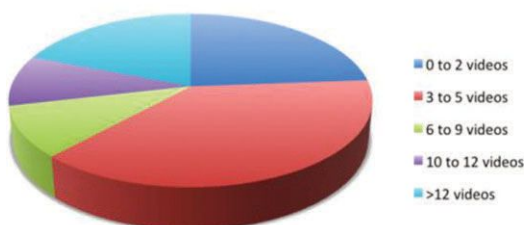
**Participant Use of the Internet**

One third (21 of the 63 equestrians) acquiring footage of their lame horses uploaded it to the Internet (Fig. 4A). Just over three quarters (76.2%) of these utilized Web-based services<sup>c</sup> through which to submit footage for professional review. Fourteen percent of the participants were seeking non-professional advice (Fig. 4B).

**Participant Request for Professional Counsel**

By the time this survey was closed in 2017, more than 70% (71.1%) of all participants had already summoned professional evaluation via telemedical means. The majority of footage was sent via email (utilized by 64.4% of participants) and text messaging (utilized by 49.2% of participants). The smartphone, employed by three quarters (74.6%) of the participants, was the submission device of choice (Fig. 5C). Only one third (37.3%) of the contributors utilized their desktop or laptop computer(s).

**A. Videos Acquired per Participant**



**B. Participant Impetus for Acquiring Footage**

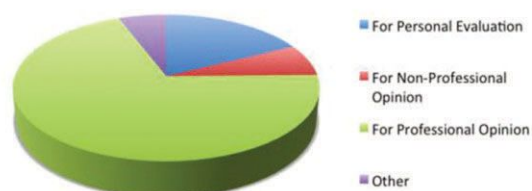


Fig. 3. Number of participants acquiring video footage.

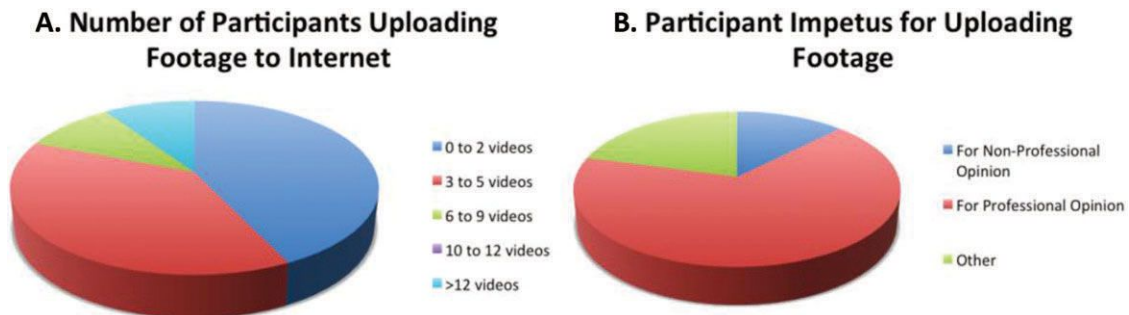


Fig. 4. Number of participants uploading video footage.

Excessive distance, considered by more than half (57.6%) of the participants, was a major catalyst in the decision to summon telemedical evaluation as opposed to scheduling an on-site appointment with the veterinarian (Fig. 5D). Almost one third (30.5%) of the horse owners procuring telemedical consultation were charged for the service. Overall, 86.4% of those contributing to this survey were satisfied with the review that they received.

Participant Petition for Telemedical Evaluation of Lameness

More than three quarters (78.3%) of equestrians contributing to this survey reported that they would prefer veterinarians to offer telemedical review of video footage as a service, citing a variety of reasons (Fig. 6). An additional 20.5% indicated that they would use such a service if it proved to be cost effective. Only two of the horse owners that completed the questionnaire (accounting for 2.4% of the

whole) reported that they would be unwilling to pay for veterinary medical consultation via telemedical means.

4. Discussion

The results of this survey support a demand for telemedical evaluation of video footage by equine veterinarians. Equestrians will likely continue to summon remote professional review, presumably at an increasing rate. Accordingly, many equine sports practitioners will be compelled to devise a long-term solution that will favor both the reputability and profitability of their practice. Several strategies relating to this form of evaluation have already been described<sup>1,2</sup> although further qualification is needed.

Telemedical assessment services undoubtedly benefit the average horse owner by saving the time and money typically associated with regular on-site soundness evaluation(s). Given that most horse

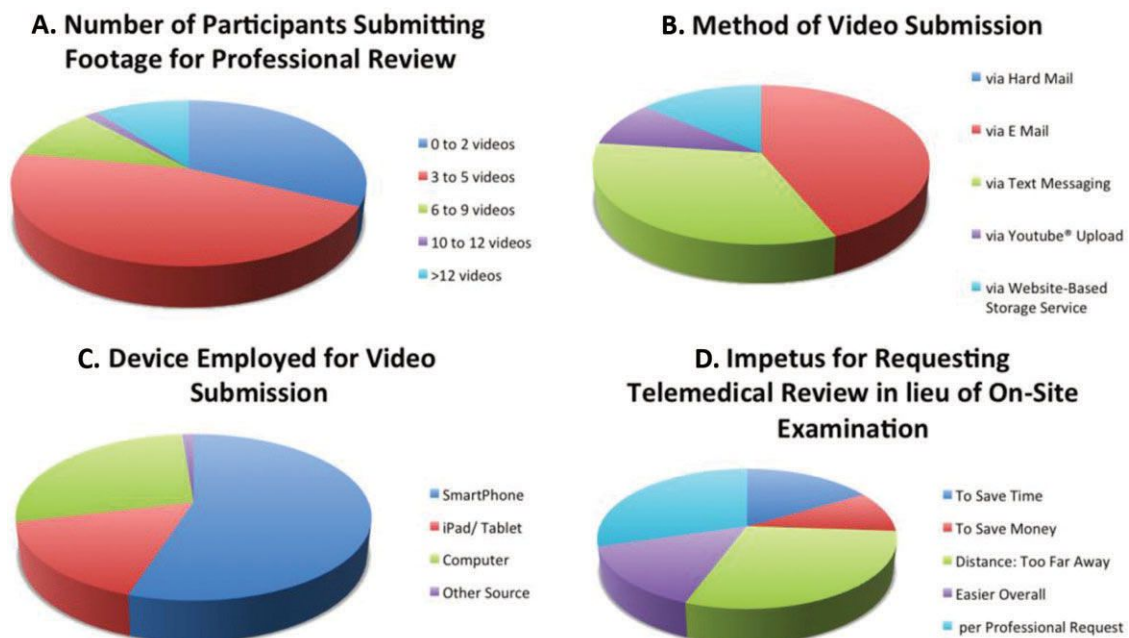


Fig. 5. Number of participants soliciting professional review.

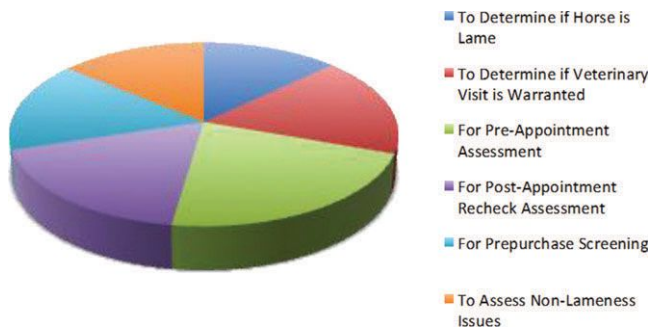


Fig. 6. Participant impetus for future telemedical review by veterinarians.

owners and trainers are not proficient at visually assessing equine lameness,<sup>3</sup> timely advice from a veterinarian also accelerates the recognition of a problem, thereby hastening its diagnosis and treatment. This, in turn, improves the animal's prognosis for future performance.

Providing video review options also favors the veterinary professional by increasing the regularity and efficiency with which he/she can evaluate lame horses and communicate with clients. This in turn enhances the practitioner's overall accessibility and value from the client's perspective. Notwithstanding, this form of remote medical practice raises a number of issues that are worth considering:

- **Service validity.** To affix credibility and value to this service, veterinarians have to maintain ample proficiency with respect to their ability to visually assess movement of the lame horse.
- **Service profitability.** Almost 98% of equestrians that completed the survey would be willing to pay for telemedical review of video footage. Standardizing fee schedules for telemedical services is advantageous to the equine veterinary community.
- **Ethical considerations.** Many horse owners choose to solicit telemedical lameness assessment with the intention of replacing the more expensive and time-consuming on-site examination. In the author's opinion, it is important that the professional community regard telemedical review as a means of replacing a lack of (any) assessment as opposed to replacing direct hands-on evaluation, with the sole intention of inciting and/or supplementing the latter. Providing a diagnosis pursuant to video review alone is considered to be inappropriate and unethical practice.
- **Professional conduct.** Undoubtedly, veteri-

narians are already receiving video clips from horse owners outside of their practice's clientele pool and/or geographical boundaries. This poses concern with respect to unfair or non-licensed competition between veterinary practices. It should be emphasized that the primary goal of telemedical review is to precipitate an on-site meeting between the client and primary veterinarian at the appropriate time and under the proper circumstances.

- **Future installation of the modality.** Nowadays there are many ethical considerations affecting the practice of equine sports medicine. The appropriate use of telemedicine is quickly becoming one of them. Although this practice is relatively common and currently accepted in the fields of human and veterinary radiology, it has not yet established itself as an official method of visual lameness assessment. Nevertheless, the advent of smart devices make solicitation of telemedical lameness evaluation a natural alternative for the modern horse owner. Further investigation into the development of a professional, ethical, and effective way of administering to this demand is warranted.

#### Acknowledgments

The Author thanks the horse owners and trainers who took the time to complete the survey for the purpose of this investigation.

#### Declaration of Ethics

The Author has adhered to the Principles of Veterinary Medical Ethics of the AVMA.

#### Conflict of Interest

Dr. Bob Grisel is the owner of dasWächter, LLC, which developed and is currently marketing Get-Sound™, a web-based app used to facilitate remote veterinary assessment of horses via smartphone dialogue.

#### References and Footnotes

1. Grisel GR. The use of remote digital motion analysis to assess equine lameness, in *Proceedings. Eur Vet Conf Voorjaarsdagen 2013*;3–4.
2. Grisel GR. Recognition and designation of specific gait signatures to aid in the digital assessment of equine lameness, in *Proceedings. Eur Vet Conf Voorjaarsdagen 2013*;5.
3. Greve L, Dyson S. The interrelationship of lameness, saddle slip and back shape in the general sports horse population. *Equine Vet J* 2014;46:687–694.

<sup>a</sup>YouTube, LLC, San Bruno, CA 94066.

<sup>b</sup>EmailMeForm, LLC, Redwood City, CA 94064.

<sup>c</sup>Dropbox, San Francisco, CA 94107, WhatsApp, Inc. Mountain View, CA 94041, Google, Mountain View, CA 94041.