Enhancing the Daily Routines of Equine Veterinarians using Mobile Technology: The m-Equine Case

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ABSTRACT

The goal of this paper is to introduce and understand the equine veterinarians’ needs in their daily routines and develop a web-based support system to promote their work. An equine veterinarian works in both clinic and stable environments, which requires resilience and smart functionality from the support system’s interfaces. Especially when horse treatment is in the stable environment, a mobile interface is required. The development of the system must also take into account the needs of the other stakeholders around horses. This paper introduces the requirements to develop a mobile interface for the web-based support system, m-equine. The trial of m-equine will start with an influenza vaccination protocol that is used by veterinarians, horse owners and riders as well as competition organizers. In conclusion the future developments and added values of the system are introduced.

Keywords: Database, Equine Veterinarian, Information Technology (IT) Solutions, Mobile Interface, Mobile Solutions, Mobile Technology, Vaccination Protocol, Web-Based Support System, Web Interface

INTRODUCTION

Currently veterinarians work on unnecessary and often repeated routine paperwork, that is time consuming and not part of the core business, i.e. helping patients. At horse clinics information can naturally be inserted and stored in a computer, but this cannot be done as easily when the veterinarian is on a “house call” i.e. visiting a stable. Paper work can get misplaced or illegible because of the non-sanitary environments. In the worst cases, the information has to be input several times into various programs, such as the veterinarian’s own practice software, database and billing software. Yet after all this work, if the owner decides to use another veterinarian to treat their horse the next time, all the same work has to be done again and the previous veterinarian’s findings can be difficult to acquire. All of this

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extra work takes time and money, not only for veterinarians, but also for other stakeholders within the equestrian world.

The problems have been noted for some time and even Fédération Équestre International (FEI), the international body governing equestrian sport, is trying to find a logical, long term solution how to store and verify a competing horse’s medical information. In Denmark a recent study also discussed the potential of a medical database for horses (Hartig, Houe, & Andersen, 2013). Horse identification is also somewhat lagging behind from e.g. bovine animals. Many countries have a database where all bovine animals are registered and can be traced with the help of their ear tags (Trevarthen, 2007; Trevarthen & Michael, 2008). In the European Union since July 2009 all member states have to identify new equidae (horses amongst other) with a microchip or a branding + dna sample (European Commission, 2008). With a reliable medical history, and proper identification methods, a competition horse’s travel between countries could be made easier. One of the first problems to get tackled in a horse’s medical information is to get a uniform vaccination database for all competing horses. Vaccination regulations for competing horses are not only a problematic area for veterinarians but also for horse owners, riders, competition organizers and state officials.

Within the small animal practice industry the competition is growingly larger, and therefore not only the quality of treatment matters but also good customer service when potential clients choose the clinic they are going to use. Within the equine practice, the same trend is likely to occur in the future. Digitalization of healthcare, whether it is for production animals, pets or humans seem to be today’s trend. With horses the problem is that a horse can have several uses; production animal, companion animal and athlete. Depending on which category a horse falls under, it will have significantly different medical needs and requirements. One of the problems to implement a medical database for horses’ which is connected to an IT and mobile service is the adoption willingness of veterinarians and other stakeholders around the horses. Security and privacy will naturally play an important role in the development of such a system, as in human healthcare (Weitzman, Kaci, & Mandl, 2010). Some of the problems introduced in this paper have been tackled and researched within human healthcare digitalization (Hoffman & Podurski, 2008).

\textit{M-equine} is a system that will be built to support stakeholder’s daily routines around horses. It is to be a web-based support system for veterinarians, with both a mobile and web-interface. In time this will include medical, vaccination, stable and competition information as well as other relevant data of the horse. Depending on the user’s “access level” he/she would only see parts of the information, i.e. a veterinarian with permission from the horse’s owner can read and write treatment information into the system, whereas an outsider would not be allowed to read this information. The specific focus of this paper will be on the \textit{m-equine} system’s solution for equine veterinarians using mobile devices. For this research it was not necessary to make a difference between mobile phones and various tablet solutions, but all are presented as mobile devices. Within the mobile devices the only distinction done is the difference between basic phones and smartphones. Here within the smartphone category all phones with internet availability are included, thus also phones that could be categorized as “feature phones”. The mobile technology and IT requirements have been established with the help of veterinarians and other stakeholders within the equestrian sports.

Since the goal is to build a system that supports veterinarian work with the help of web- and mobile interface, the question is; how to build a web-based system, that has the potential to expand and support the daily routines of veterinarians? A large obstacle to overcome is the veterinarians’ possible reluctance to use new technical innovations. The system however would give benefits to the equestrian sports, the veterinarian profession in general and for other
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