CAN INFORMATION SYSTEMS EXPAND THE LIMITS OF EQUINE MEDICATION?

Sonja Leskinen

Turku Centre for Computer Science (TUCS), and Institute of Advanced Management System Research Department of Information Technologies (IAMSR), Åbo Akademi University, Sonja.leskinen@abo.fi

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Leskinen, Sonja, Turku Centre for Computer Science (TUCS) and Institute of Advanced Management System Research, Department of Information Technologies (IAMSR), Åbo Akademi University, Joukahaisenkatu 3-5 A, FI-20520 Turku, Finland
sonja.leskinen@abo.fi

Abstract

A horse is the only animal in the world that can be used as food, leisure activities, Olympic sports, and professional sports. This opposes many challenges to a medical database, even though the central figure, the horse, is basically the same, despite its career in the human world. Equine sports have long traditions, and is part of the Olympic disciplines. Horses are athletes among other athletes, and also medicated accordingly, within doping regulations. In this research the aim is to find out what medical information horse owners would be willing to divulge, and to whom. The research addresses the question how IS and mobile technology could help the various bodies involved in the equine sports to execute their tasks with more ease and precision. In human medicine the aim is to get the medical information digitalized. An important aspect is that patients have the right to privacy and therefore medical information has to be secure. A horse’s medical information is private, and the property of the horse’s owner; however, a horse can have several owners during a lifetime, and mostly paper based medical history might get lost during the years. On the other hand, horses are sold as merchandize, like e.g. cars. Very few would buy a car that does not have it’s papers in order.

Keywords: Innovative ICT, information system, mobile technology, equine sports, medical database, future solutions.
1 INTRODUCTION

Sport horses are like any athletes, they have to be trained, fed and treated correctly so that they can reach their full potential, but with horses they cannot say when something hurts or does not feel right, this is why horse medication is a very important but difficult task within the horse industry. A sport horse can be everything from a polo pony, to a trotter, racing horse or a horse doing equestrian sports. “The FEI, founded in 1921, is the international body governing equestrian sport recognized by the International Olympic Committee.” (Fédération Equestre Internationale. 2007). Equestrians sports involve eight disciplines; Jumping, Dressage, Eventing, Endurance, Driving, Reining, Vaulting and Para-Olympics. Of these disciplines, jumping, eventing and dressage are Olympic disciplines. In 2009 there were worldwide 526 international jumping, 126 international dressage and 213 international eventing competitions. At the moment of writing this article FEI’s international horse registration database held 161 423 horses. This database only includes horses that have an international passport (Fédération Equestre Internationale. 2007).

In Finland Suomen Hippos (the Finnish Trotting and Breeding Association) informed that there are approx. 73 000 horses during the time of writing this article (Soini. 2010). This amount includes all horses that are registered in Finland, trotters, hobbyhorses and competition horses. The figure might though be a bit misleading, since if a horse has been imported from another EU country and it has this country’s passport, it does not necessarily have to be registered into Hippos. Today primarily their national and/or international passport identifies horses. From 1.7.2009 forward all foals born in Finland and all horses imported to Finland have to have a microchip for identification and a national passport (Skarra 2009). It is estimated that in Finland there are 9 100 actively competing trotters and 6 900 competing equine sports horses in 2009 (Suomen Hippos ry. 2010).

According to EU regulations and Finnish food legislation all animals slaughtered in EU and the meat used for human consumption; need to have proof of identity and what medication and feed they have received during their lifetime (23/2006). Horses need to be registered into a EU country and the registration must have been done at least 6 months prior to the slaughtering. Slaughterhouses also have very strict sanitation rules, and essentially the whole animal and meat procession area have to be disinfected before a new type of animal can be slaughtered. This is one of the reasons that many larger slaughterhouses in Finland will not receive horses, because with the small amount of horses being slaughtered, the poor price on horsemeat and loss of time & money it is not a good business. Some medications that are used on horses are considered dangerous for humans, and if the horse has been treated with this medicine during its lifetime, the meat cannot be used for human food consumption. In other animals such as cows, this would not usually be a problem, since a cow is very seldom treated to such an extent as horses. This is since a cow’s value is more likely to be attached to the value of the meat, milk production or breeding value, opposite to a horse, which value might lie in how fast they run etc. Furthermore the cow’s value does not drop if it has been medicated during its life, and cows more seldom change owners during their life. With horses here is the pickle; horses have “two prices”. One price is basically what the horse is worth as meat; this is the horse’s minimum price. Depending on the horse’s age, breed, pedigree, stage of education, competition level and price-money won so far, the actual price of the horse might be immensely different from the value the horse has as meat. A horse’s worth totally depends on its situation at that moment. Since horses can be sold many times during their lifespan, the medical history does not necessarily move along with the horse. Although the seller is obliged to tell the potential buyer the horse’s medical history, he might opt not to, in hopes of getting a better price for the horse. Naturally if you are buying a horse, you hope that the seller has been honest, but it is difficult to find out for sure. Veterinaries today keep usually their own patients’ records on file, and are even obliged to do so in Finland for at least three years (6/EEO/2000). The problem is that there were 2009 25 registered veterinarians, who inform that their specialty is horse medication. Furthermore, also community veterinarians might treat horses, as well as other animals, and naturally if the horse has been imported from another country, it is virtually impossible to be 100
I’m sure that you have received all the medical data of the horse (Evira (Elintarviketurvallisuusvirasto). 2009). So there are both pros and cons into getting a horse’s medical information into one place. Internationally competing horses must have a paper based medical logbook that includes the horse’s medical history according to FEI veterinary regulation, article 1026, 3 § (Fédération Equestre Internationale 2010). This logbook has become mandatory after FEI started the “clean sport” program, against doping. The logbook informs FEI doping inspection veterinarians what medication and when the horse has received and when. E.g. some horses have to be mildly tranquilized for shoeing, and trace elements of this tranquilizer might still be in the horse’s blood, after the safe date the pharmaceutical company informs.

Once a horse’s status changes from being a “companion animal” or an “athlete”, to “unwanted” it becomes livestock, and is in most laws treated as such. The term Unwanted horse was introduced by American Association of Equine Practitioners (AAEP) and basically means that these horses are not any more wanted by their current owners (Lenz, Tom R., DVM, MS, DACT. 2009). In Finland, there are slaughterhouses that receive horses, but it has become increasingly problematic to find suitable final solutions to injured, sick, unmanageable and old horses. Most options cost the owner money, and this leads to the situation that horses that should be put down are not, or they are even shipped on long transportations to countries where horsemeat has a better value (MTV 3 45 min, 2007). E.g. in Finland the approximate cost for a veterinarian to euthanize a horse and then the horse to be incinerated is 900-1200 € (www.ratsastus.net and www.lemikkilehto.fi). Horse meat is used around Europe, but the way the system works often now, is that horses are transported to southern Europe for slaughter, and then it is transported back as meat products to e.g. north Europe. Transporting a live horse or even meat in a refrigerated transport is costly, so there must be a better and cost effective way to solve this problem.

This paper is structured in the following way. Chapter 2 handles the research background done for this paper, and chapter 3 concentrates on methodology and research design. In chapter 4 the results of the study are presented and further analyzed in chapter 5. The conclusions of the study and other material are discussed in chapter 6. Some further research points are presented in chapter 7.

2 RESEARCH BACKGROUND

2.1 Related research

Much research of IS support in the horse industry has not been done. The previous researches done, tangent to this paper are more focused on livestock animals and animal identification. In Australia, Trevarthen and Michael (Trevarthen and Michael 2008) did an extensive research on how dairy farms use RFID technology to help farm management. At farms, it was difficult to manage a large herd, and vital information about every cow was traditionally on a paper-based system. Now at some dairy farms, RFID technology is used to get cow monitoring and herd monitoring systems in IS. In this study the cows RFID tags information was received either with an ID code from the database or by scanning. E.g. the milking station has a RFID reader that automatically identifies the cow and inputs the cow’s milking information and other valuable information into the system. The farmer can also add information into the system with his PDA or directly input data into the computer. This type of ICT is in full-scale use in e.g. Australia.

Some similar kind of approach could also be usable with equine sports. In both cases mobility and IS technology can support various users’ work. The system has to be easy to use, and reduce the need for duplication work and duplication data.

Many researchers have tackled the issue with animal identification. Proper identification is important to be able to trace back where an animal is from in order to prevent and control diseases amongst animals, and to prevent harmful diseases to enter consumer consumption (Disney, Green, et al. 2001, Petersen, Knura-Deszczka, et al. 2002, Wang, Zhang, et al. 2006). One research has been studying the
need for a clinical database at equine clinics. This research was done in Sweden and it evaluated the need for computerized medical records (Penell, Bonnett, et al. 2009).

In (Pettitt 2001) the increasing problem of meat traceability from farm all the way to your refrigerator has been discussed. In UK there is an increasing need to better monitor and trace livestock animals, especially after the mad-cow disease and swine & hoof disease episodes. Because of this a database security system has been developed, to trace potentially sick animals before they infect larger populations. Apart from making sure that livestock is safe for human consumption, there is also increasing demand for information on that the animal has been treated well, i.e. that more stringent animal welfare requirements have been met, than just what is governed by law. (Pettitt 2001)

Much research has been done in human healthcare, and how it could be digitalized, without the patient privacy being endangered. There is a need for a larger common database in the whole EU. CEN/TC 251 is amongst the standards development organizations that are working towards EU extensive standards within healthcare (European Committee of Standardizations 2011). Health Level Seven (HL7) has same motives as CEN but it is striving toward international standardizations (Health Level Seven International 2011). Naturally with horses there are also security and standardization issues, but they are not as severe as the need is for human healthcare. Depending on the country’s law, the animal’s health information is either transferred to the new owner, or is always the property of the owner at the time being.

2.2 Research rationale

The main questions of this research are:

• What are riders and owners willing to divulge of their horses medical history and to whom?
• Where a horse’s medical history could be stored?

This study is part of a larger research that aims to find what the daily routines and bottlenecks are for veterinarians, owners and competition organizers. Then with new technological innovations better their time use, ease up routines and make monetary savings. This study is conducted with a bottom-up approach, to ensure that all stakeholders’ needs are met. In this paper the horse owner and rider’s opinions on various storage and information exchange of their horse’s medical data is studied.

As mentioned before horses are used in various sports, but this research concentrates on medication information on equine sports. In Figure 1 some of the various activities horses are used in are presented, and the governing of equine sports is mapped out. National and district competitions are organized by riding clubs, or organizations that the national federation has given a competition organizing permit. The competitions are governed by the national federation and must abide by their regulations. International competitions are governed by international regulations (FEI).
In order to find answers to the research objectives a study was done during the summer of 2009. For this study people were interviewed at Finnish and international riding competitions. Three disciplines were chosen, since they are the most popular equine sport disciplines in Europe, mainly jumping, dressage and eventing. These three disciplines are also the disciplines in competition at the Olympic Games. For this study, only equine sports disciplines were chosen, to better support the author’s extensive knowledge in the field.

In the three disciplines, the athletes can be divided into six categories. These are: senior riders, Young riders, Juniors, Pony riders, Children and Veterans. Young athletes have their own categories according to age and horse. Pony riders are children who are competing with a pony (small horse which’s height is max. 148 cm at the withers). For nation level (in Finland) the pony rider must be at least 10 years old to take part in pony rider category’s competitions, and 12 for eventing. For international level, in any of the three disciplines the age requirement for pony riders is 12 years. A person may compete as a junior rider beginning from the year he/she turns 12 years for national level (in Finland) and 14 years for international level. The junior is allowed to take part in junior classes until the year he/she reaches 18. A person may compete as a Young rider from the year they turn 16 and they can move to the category, senior riders, the year they turn 18, or in the latest the year they turn 22 (Rules for Dressage Events 23rd ed. 2009 (including modifications for 01.01.2010), Rules for Eventing 23rd ed. 2009 (including updates for 01.01.2010))(Rules for Jumping Events 23rd ed. 2010).

Since the categories Children and Veterans are very rarely used in Finnish competitions and the categories were not present at any of the competitions where research was done, the categories are omitted from the study. Furthermore the author makes the following assumption that all riders between 18 and 21 are Young riders and people under 18 are Juniors. This simplified categorizing has been
made, since for athletes under 18, the person responsible for the horse’s wellbeing and medical status is often a parent of the rider, whether he/she is a Pony rider or a Junior rider.

3.1 Questionnaire design

The interviews were done by means of a questionnaire. The questionnaire was developed according to the “Flowerpot-designed questionnaire” (Shiu, et al. 2009). The aim in the flowerpot-designed questionnaire is to have a hierarchy-based questionnaire, where sets of questions ensure a general to specific data collection approach. The author wanted to know what respondents are willing to divulge of their horse’s medical information and if electronic data storage could be a possibility. This way the author would get a better understanding on how IT and could be used, to ease the problematic areas. The respondent’s background information that was of interest was: Age, are you a horse owner, are you a competition rider, competition level and discipline. At the international competitions the nationality was also asked.

In this study a structured questionnaire was used. The questionnaire about views on medication was done, by having various statements where the respondent would choose his/her answer from one of the following answers: Definitely would, probably would, probably would not and definitely would not. The author used a forced scale in order to find out if the respondents were for or against the statement (Shiu, et al. 2009).

3.2 Sampling

In order to increase the response rate respondents of the questionnaire in Finland got a ticket for Helsinki International Horse Show’s 16.10.2009 “Welcome to Helsinki Performance” show. According to FEI regulations the rider or driver is responsible of the horse, which includes responsibility under the general and veterinary regulations (Article 118) (General Regulations 23rd edition. 1 January 2010). This is why the questionnaire was only intended for people who either own a horse or compete with a horse. Even that the rider or driver of the horse is responsible that the horse has been treated and medicated according to FEI’s veterinary regulations, at home this responsibility might fall in the hands of the horse’s owner. It all comes down to various possibilities such as; the horses owner and rider are the same person or in the same family, the owner cares for the horse, and the rider only rides and competes the horse once and awhile or the horse is totally cared for by the rider.

The data collection was conducted at the following riding competitions:

- Niinisalo, Finland. National three-day-event competition (CCN*), 10-12 July 2009.
- Falsterbo, Sweden. International jumping and dressage competition (CSIO 5*-TL NC, CDI 3* CDIO 4*) 16-19 July 2009

At the competitions in Finland questionnaires were handed out to riders with their competition information and timetable pamphlet. Questionnaires were also handed out in various places of the competition site. Respondents could return the filled questionnaires to either the author or to a box by the competition secretary’s office. At Falsterbo competition the author attached the questionnaire to horseboxes, where the rider could see it. The answer box was by the international stable-area secretary office. From Falsterbo competition there were 3 responses, which lead to experiment another strategy, where horses would not be likely to try to eat up the questionnaire or the questionnaire tossed away by grooms. At Verden the author asked personally people to answer the questionnaire. This was proven to be a much better approach since in Verden 64 non-Finnish people filled in the questionnaire.
319 people answered the questionnaire. Of the respondents, 248 people listed themselves as horse owners and 224 were competition riders. In Table 1 the responders’ frequency at the above mentioned competition sites is stated. Maintaining the Integrity of the Specifications.

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Falsterbo SWE</td>
<td>3</td>
<td>0,9</td>
</tr>
<tr>
<td>Kangasala FIN</td>
<td>71</td>
<td>22,3</td>
</tr>
<tr>
<td>Lempäälä FIN</td>
<td>40</td>
<td>12,5</td>
</tr>
<tr>
<td>Niinisalo FIN</td>
<td>45</td>
<td>14,1</td>
</tr>
<tr>
<td>Not defined competition site</td>
<td>10</td>
<td>3,1</td>
</tr>
<tr>
<td>Salo FIN</td>
<td>73</td>
<td>22,9</td>
</tr>
<tr>
<td>Verden GER</td>
<td>77</td>
<td>24,1</td>
</tr>
<tr>
<td>Total</td>
<td>319</td>
<td>100,0</td>
</tr>
</tbody>
</table>

*Table 1* Responders frequency for study

Of the respondents, 21, 6 % were Juniors, 9, 1 % Young riders and 69, 3 % Senior raiders. Some responders sent their survey later by mail, and thus it was undetermined from which competition the survey had been from. Therefore Table 1 contains a ”Not defined competition site” row for these responders.

People were urged to choose only one of the three disciplines, while the forth option was other disciplines. This fourth option was mainly a choice for the people who might compete in one of the other FEI disciplines, or in harness racing etc. Despite the request to only choose one discipline, ten respondents chose more than one discipline. In these situations the author chose to invalidate the answer from statistics involving disciplines (see Table 2).

<table>
<thead>
<tr>
<th>Categories</th>
<th>Does not compete</th>
<th>Dressage</th>
<th>Eventing</th>
<th>Jumping</th>
<th>Other disciplines</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>junior</td>
<td>4</td>
<td>18</td>
<td>10</td>
<td>35</td>
<td>0</td>
<td>67</td>
</tr>
<tr>
<td>senior</td>
<td>86</td>
<td>40</td>
<td>18</td>
<td>67</td>
<td>2</td>
<td>213</td>
</tr>
<tr>
<td>young rider</td>
<td>5</td>
<td>6</td>
<td>3</td>
<td>15</td>
<td>0</td>
<td>29</td>
</tr>
<tr>
<td>Total</td>
<td>95</td>
<td>64</td>
<td>31</td>
<td>117</td>
<td>2</td>
<td>309</td>
</tr>
</tbody>
</table>

*Table 2* Riding category and discipline ratio amongst respondents

People, who are competition riders, were also asked their competition level. The levels were district, national and international level (see Table 3). If the person had chosen more than one level, the author in compiling the statistics used the highest level, and other levels were omitted. The highest level in the questionnaire was competing at an international level, then national level, and the lowest level was competing in district level. These levels are the same as Suomen Ratsastajain Liitto (SRL) (Equestrian federation of Finland) and many other country’s national federations use.
<table>
<thead>
<tr>
<th>Categories</th>
<th>does not compete</th>
<th>district</th>
<th>national</th>
<th>international</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>junior</td>
<td>4</td>
<td>15</td>
<td>40</td>
<td>10</td>
<td>69</td>
</tr>
<tr>
<td>young rider</td>
<td>5</td>
<td>4</td>
<td>11</td>
<td>9</td>
<td>29</td>
</tr>
<tr>
<td>senior</td>
<td>86</td>
<td>37</td>
<td>53</td>
<td>45</td>
<td>221</td>
</tr>
<tr>
<td>total</td>
<td>95</td>
<td>56</td>
<td>104</td>
<td>64</td>
<td>319</td>
</tr>
</tbody>
</table>

Table 3 Categories and level ratio in questionnaire answers

4 RESULTS OF THE STUDY

In this chapter the results of the various questions from the survey are analyzed further. In the survey the aim was to find out what medical information, if any, the owners and riders would be willing to divulge and to whom. To achieve this, the following statements were presented:

- My horses’ medical information could be accessible by anyone e.g. via Internet.
- I would show a potential buyer my horse’s full medical history.
- My horses’ medical information could be accessible by any veterinarian.
- My horses' medical information could be accessible by my current and future veterinarians (e.g. the horses' new owner's veterinarian).
- My horses’ medical information can be accessible by veterinarians with my permission, and all information has to be disposed of if I am not anymore in possession of the horse.
- My horses’ medical information can be archived but should only be used by authorities, e.g. in case that the horse is going to be slaughtered.
- My horses’ medical information may not be published under any circumstances.

As a core postulation for these statements only veterinarians would be allowed to enter medical information about one’s horse. The respondents were then to give their corresponding agreement or disagreement to the statements. The responder could either choose “definitely would”, “probably would” or “definitely would not” for each statement.

These seven questions were asked to get as comprehensive a picture as possible. The variations on the questions are small, but very relevant when looking at the horse industry in general. When you buy a horse, unlike with a car, where you can get the car’s entire maintenance history, you are totally at the mercy of the seller to tell the truth. In chapter V more of today’s legal aspects regarding veterinarian work, buyers rights etc are discussed further.

Today a seller is obliged to share with the buyer the horse’s medical history, and any other aspects about the horse that might influence the buyer’s decision. The problem is how can you as a buyer check that the seller really has told everything? If all horses’ medical information would be archived in a way, that any veterinarian could read it we would have a more secure system for buyers, but are the sellers willing to go to that length? Horse sellers and buyers are mostly private people. Some horses are also sold in Finland from Finnish or foreign horse dealers.

In Figure 2 the survey results are divided in accordance to the various age groups, discussed earlier. The tendency is that people would not want anybody to be able to read their horses’ medical information, which is understandable. The interesting fact is that most seem to be positively inclined, i.e. they answered either “definitely would” or “probably would”, to let veterinarians see their horses past medical information, even after the horse has changed owners.
In Figure 3 the results from the survey are shown in accordance to if the responder owns a horse and/or competes. This is interesting since the owners are the ones buying and selling horses, whereas the competitors seem to have a more “negative” view on what and to whom medical information could be divulged. Competition riders, especially when competing in higher levels are more likely to be so called professionals in the horse industry.
Figure 3  Survey results in the view of owners and riders

Figure 4  Survey results in aspect of the responders’ competition level
Horse business gets more expensive and “tough” the higher the stakes are. In other words, horses that have competed in international or have the potential to compete in international level have a much higher price than other horses. It is interesting to see in Figure 4 that all levels are extremely positively inclined (i.e. answered “definitely would” or “probably would”) towards giving a horses medical information to certain veterinarians, but also very many would only give the medical history to proper authorities. Today if you want to slaughter your horse, you have to be able to prove that it has not been treated with medications that might be harmful in the human food chain (23/2006). This legal aspect does explain why this statement got very much “positive” feedback.

5 DISCUSSION

Even though this survey was done as an exploratory research it still gives some indication into how riders and horse owners would like their horse's medical information be archived and used. Since a horse’s value is rather directly correspondent to the horse’s age, gender, achievements and health status, it is understandable, that the horse’s value might change radically if the potential buyer knows some serious health problem. On the other hand, according to Finnish commercial laws, chapter 4, §17 - 21 the seller of the merchandise must inform the buyer of all the vital information that affects the merchandise (27.3.1987/355). So basically the seller is e.g. obliged to inform the buyer of the horse's medical history. The new owner of a horse is entitled to get all the horses medical history from the veterinarian who has treated the horse 6 §. The veterinarian is obliged to archive the horse’s medical information for at least three years 7 § (6/EEO/2000). The conundrum is that if the previous owner has not informed the new owner of all the horse’s medical history, how will he know? There are hundreds of veterinarians in Finland alone who treat horses, and what if the horse is imported from some other EU country, not to mention outside of EU where similar legislations may not be used?

Both horse owners and riders were rather willing to divulge medical information about their horses, but it is questionable if in reality the results would be the same. There is also most likely a significant difference in how much information is transferred between seller and buyer, depending on from whose viewpoint the situation is observed. Naturally the seller would like to downplay the horse's possible medical problems, whereas the buyer would want to know the truth.

When we think about the results from the veterinarians and horse's point of view, it would seem obvious that the more previous information available, the better the veterinarian can help and treat the horse. If all medical data from a horse were in one place, from where the treating veterinarian could get it, he would then be able to compare past treatments, findings, x-rays etc. with what he is seeing now, and make a more accurate diagnosis. Since not all veterinarians treat horses at clinics with computers, but also in stable environments, for some sort of medical database to work, there would need to be mobile applications and services around the system to also facilitate the veterinarian on the road.

6 CONCLUSIONS AND IMPLICATIONS

This survey gave much to think about within the horse industry. There is a desire to have all the medical information available. According to FEI rules, the horse’s medical history should be available, e.g. in suspicion of substance abuse and according to Finnish commercial laws, the seller should inform the buyer of all aspects that might relate to the horse (Fédération Equestre Internationale 2010, 27.3.1987/355).

The question is, how would the whole horse industry change and what would be the implications if a medical database were available? Naturally a medical information database would bring transparency into the industry. Even if the database would only be available for official use, it could raise the amount of horses that could be safely slaughtered in Finland and put into the human food chain, thus eliminating unnecessarily long travels to foreign slaughterhouses. New business opportunities and models could emerge, as buyers would have a better opportunity to view the horse’s medical history,
and be sure that the information is valid. New roles such as consultants would be needed to decrease the gap between the “professionals” and the “hobby” people. Insurance companies would also benefit from extensive medical records, but they could partially shift this benefit to horse owners, by lowering the insurance premiums.

As discussed in chapter 2.1 a medical database would have several relations to the digitalization of human healthcare. Security of the data is of upmost importance, and also who is allowed to enter information about a horse. Heavy sanctions would have to be implemented to discourage potential misuse of the database or falsifying data. At the same time to get people to use a medical database they should feel that they benefit from using it. The surrounding service to the database must therefore be well designed and aimed for the various users specific needs.

In the title one of the most important questions are asked. Finally we can answer the question, can IS expand the limitations of Equine medicine? The answer seems to be a hesitant yes. Already at this point, the benefits of a medical database for various stakeholders can be seen. Veterinarians can save time and money, when all horse information would be in one place. They could read how the pervious veterinarians have treated the horse, and what problems the horse has previously had. Even if the same veterinarian treats a horse that has had the same owner for all its life, neither veterinarian nor owner can remember everything the horse has been treated for. Owners would have real time information on their horse’s health status, and can control when some regularly occurring treatments, such as vaccination should be given to the horse. The competition organizers can easily check the horses’ identifications and vaccinations and a horse’s medical information can be checked by FEI testing veterinaries if necessary. Thus the competition organizer gets fast reliable and necessary information, as well as the possible FEI veterinary, without risking the horse owner’s right to the horse’s private medical records.

The general public can be ensured that the horsemeat they eat, is safe and without traces of harmful medicines. If a medical database could expand to other countries, horses welfare, when traveling could be more efficient. Border control can also effectively and reliably control that dangerous horse diseases, or diseases harmful to humans that could be transported by horses are not allowed to enter the country. Slaughterhouses would get reliable information about the animal, and thus it could increase the amount of horses slaughtered in their own native country, e.g. Finland. This way we, as consumers can also be sure that the horse has been ethically put down, and that it has not had to suffer during the trip to the slaughterhouse. Monetary savings are also large, since live horses from northern Europe do not have to be transported to southern Europe for slaughter, only to be transported back as meat in refrigerated transports.

Last but not least, with a functioning mobile- and internet-service connected with an electronic database, the horse can get more accurate and reliable medical service. The horse would not have to go through unnecessary medical treatments, and in some cases a more reliable diagnosis can be given, since new information could always be compared with old ones. This all saves time and money (and some gray hairs) for both the veterinarian and the owner.

7 FURTHER RESEARCH

Naturally within the equine sport industry it is not only about the horse owners, riders/drivers and competition organizers, for a medical database to even be a fusible idea, the veterinarian community must accept the idea. They have to get benefits from the database e.g. with services built around it such as IT and mobile technology services. These aspects will need further research. The technical aspects and requirements are also a point of research, not to mention a comprehensive research on the possible effects a medical database could have in the whole horse industry. The next question naturally is how could such a service be used with companion animals, and within the livestock industry. The electronic database connected with mobile- and Internet services (m-equine) can also function as a model to resolve problems within the digitalization of human healthcare information.
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