

BEVA Trust Travel Scholarship Report  
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I attended the International Symposium on Veterinary Epidemiology and Economics (ISVEE XII) in Durban, South Africa, from the 10<sup>th</sup> – 14<sup>th</sup> August 2009, where I gave a presentation entitled “Demographic characteristics, health and management in geriatric horses in the UK – a cross-sectional study”. The conference was held in Durban’s International Conference Centre. In addition, I attended a Pre-ISVEE workshop entitled “Introduction to Survival Analysis”.

**6<sup>th</sup> – 8<sup>th</sup> August 2009 Pre-ISVEE Workshop “Introduction to Survival Analysis”**

I attended a Pre ISVEE training course on Survival Analysis taught by experts Dr Ian Dohoo and Dr Henrik Stryhn from the Centre for Veterinary Epidemiological Research, University of Prince Edward Island, Canada. This workshop provided a thorough introduction to the main epidemiological approaches to analysis of survival data, with an emphasis on using Cox Proportional Hazard Models. Topics covered included descriptive methods for survival data; Kaplan-Meier methods; the use of Cox semi-parametric models including allowing for time varying covariates, assessing model fit and diagnostics; parametric models and survival time distributions such as Exponential and Weibull distributions; frailty models for clustered data at the group level; and discrete-time survival models. In addition we did numerous computer-based practical sessions, predominantly using the software package “STATA”, although information and programs were also provided for an additional software package (“R”). Attendees were able to work through the well-designed practical exercises at their own pace, with assistance available from the course tutors if required. As both of the software packages used throughout the course are currently in use at the University of Liverpool, I will be able to apply these methods of analysis to datasets from my study relating to survival or event-time data. One aim of my current PhD study is to examine long term survival, causes of mortality and identify risk factors associated with mortality in geriatric horses. With respect to this aim, the techniques and skills which I learnt during this workshop will be invaluable during my analysis of mortality data collected.

Following the workshop, there was an opportunity to explore Durban for the day before attending the pre-conference welcome cocktail reception, hosted by the eThekweni Municipality Mayor.

**10<sup>th</sup> – 14<sup>th</sup> August 2009 Attendance at the 12<sup>th</sup> International Symposium on Veterinary Epidemiology and Economics (ISVEE XII)**

The theme for ISVEE XII was “*Epidemiology Unplugged – Providing power for better health*” and the aim was to facilitate an integrated approach to animal and human health, by creating an environment for the exchange of ideas and methodologies. ISVEE XII aimed to promote the creation of multidisciplinary teams by providing an

opportunity for epidemiologists and economists, involved in both human and animal health, from around the world to interact and form networks.

Each day of the conference began with a plenary lecture, the first of which was a lecture entitled "Surveillance and disease control – what's over the horizon?", given by Professor Marion Wooldridge from the Veterinary Laboratories Agency. She discussed the development of disease surveillance and how technological advancements may change this in the future. On the final day, Dr Karl Rich from the International Livestock Research Institute presented "The poverty impacts of animal disease in developing countries: new roles, new demands for economics and epidemiology", highlighting the need to understand the differences involved in treating disease in developing countries compared to disease control measures used by developed nations.

The scientific research abstracts were broadly grouped into categories which supported the overall theme of the conference. These categories were animal health economics, aquatic animal epidemiology, epidemiological tools, poverty alleviation, food safety and environmental epidemiology, investigation of determinants and distribution of disease, risk and decision analysis, surveillance and disease control, wildlife diseases and zoonoses. These presentations were run in seven parallel sessions and each oral presentation lasted 15 minutes, including time for questions. Time-keeping throughout the entire conference was excellent which meant that it was possible to move between streams easily, without fear of interrupting talks or missing a presentation of interest.

Equine epidemiology featured in several sessions, with topics ranging from athletic injuries (such as joint and tendon injuries) in racing thoroughbreds, to the surveillance for specific disease in the general equine population, with a full session devoted to equine influenza surveillance. Although the epidemiology of injuries in racehorses would not appear to be directly applicable to my study of geriatric equines, the epidemiological and statistical methods described in this series of presentations were similar to methods I will use for my own data. The session on epidemiological tools applied to the surveillance of equine grass sickness was excellent, and demonstrated the role that veterinary practices can play in disease surveillance and research.

Having spent time volunteering for the Gambia Horse and Donkey Trust, I was very interested in the poverty alleviation sessions, especially where studies investigated owner's knowledge and perceptions of health and disease. Description of these factors will aid identification of the most effective method to improve owner knowledge and animal husbandry, which should ultimately improve animal welfare in developing countries.

I found the multidisciplinary nature of this conference very interesting, but quite a departure from the annual BEVA Congress which I regularly attend. I particularly enjoyed the very popular small animal determinants of disease sessions. In the first of these sessions, highlights were a study of owner's knowledge and perceptions of

dog-associated zoonoses, and a UK study reporting cross-species transmission of H3N8 equine influenza into foxhounds. The canine and feline session on the final day was one of the best sessions of the entire conference. Most applicable to my area of research were results from a pet ownership and cat health study and the presentation entitled "Owner misperception of canine body shape: an important determinant of canine obesity? It was interesting to compare results of my owner survey for geriatric equines with the responses given by cat owners in the first study. From my survey, we have identified obesity as a significant problem in geriatric horses and there a distinct trend towards owners underestimating the body condition of their horse, therefore I was very interested to see the results of a study specifically investigating this problem in the canine population. These sessions also highlighted the difficulties in obtaining a population estimate for any particular species. An issue which I have had to address during my PhD is the problem of sample selection, and some of the presentations discussed the problems faced in this area and the potential biases introduced by selecting a veterinary-registered population.

The conference also featured a large display of posters, with subjects again categorised by the key themes. Delegates were encouraged to vote for the best poster, for which a prize was awarded at the African-themed Gala Dinner held on the last night of the conference. The highlight of the social programme was the visit to uShaka Marine World, including a dolphin show and a very informative and entertaining talk describing some of the research and veterinary aspects involved in caring for the inhabitants of one of the largest aquariums in the world. This was followed by a buffet dinner and drinks reception held within the ship-wreck themed aquarium.

## **Conclusion**

The survival analysis workshop served as an excellent introduction to advanced statistical techniques which I will use in analysis of my study data. Attending the ISVEE XII conference provided me with the chance to learn about a variety of epidemiological methods which will be invaluable in the course of my PhD study. It was fascinating to be involved in such a multidisciplinary event, with my first opportunity to present my work at an international conference. This proved to be an excellent opportunity for me to develop my presentation skills in advance of attending BEVA Congress as an invited speaker. I am very grateful to the BEVA Trust for providing the financial support that made my attendance at both the conference and the pre-conference training course possible.

## **Appendix**

### **Abstract**

#### **Demographic characteristics, health and management in geriatric horses in the UK – a cross-sectional study**

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The aims of this study were to assess the demographics, health, disease prevalence and management of the equine geriatric population in the UK.

**Methods:** An information pack was mailed to 117 veterinary practices with equine clients in the study area. Once a reply was received, the practices were contacted directly to discuss participation. Client details from these practices amounted to 30449 owners and 23% from each practice database were randomly selected. A total of 7350 horse owners were mailed postcards aimed at identifying the age demographics of the population. Clients owning horses/ponies  $\geq 15$  years and interested in participating were identified. A postal questionnaire was designed using TeleForm and an online version was created. The questionnaire covered horse/pony details, management, feeding, health, disease and quality of life. Owners of multiple eligible horses were asked to complete the questionnaire for the horse named first alphabetically. Reminder postcards were sent to non-responders 5 weeks after the initial mailing. Second questionnaires with covering letters were sent 4 weeks following reminder postcards to non-responders.

**Results:** From the 117 equine veterinary practices the response rate was 35.9%, with 33 practices interested in participating and 20 practices enrolled in the study. 32.7% of postcards were returned, providing a useable response rate of 28.5% (n=2097) and response rates per practice varied from 18 – 42%. Age information was collected for 7088 horses/ponies; 20% were aged 0-4 years, 25% aged 5-9 years, 25% aged 10-14 years, 16% aged 15-19 years, 11% aged 20-30 years and 2% aged over 30 years showing a decline in numbers within the population after age 15 years. The mean number of horses per owner was 3.35 and the median was 2.

In total 1986 owners (95%) indicated they were willing to participate in further equine studies. Willingness to participate varied with age of horses owned: 98% of owners with horses aged  $>30$  years agreed to participate; 97% of owners (n=1143) with horses aged  $\geq 15$  years agreed to participate (owning 2031 horses/ponies aged  $\geq 15$  years) compared to 93% of owners (n=868) with horses  $< 15$  years of age.

The initial response rate to the questionnaire was 81%. The frequency of owner reported clinical signs was high and further analysis will describe the distribution of these and associated health and management factors.

**Discussion:** The age distribution of the animals enrolled in this study is similar to that previously described for the UK equine population and may suggest that the population of geriatric horses is increasing. Description of management practices and routine healthcare in aging horses/ponies, prevalence of disease and identification of risk factors will aid improvements in veterinary care, owner education and welfare of the geriatric equine.