Epidemiology and the giant elephant

JULIAN DREW
(MSc, CertZooMed, BVetMed, CertTVH, MRCVS)

A common thread was the feeling we should be undertaking rigorous research to inform policy decisions.

The earliest pneumonia* protection

Unique vaccination with Rispoval® IntraNasal
- Can be used in young calves from 9 days of age
- Protection as early as 2 weeks of age against BRsvs
- Up to 12 weeks protection against BRsv and PI3vs after a single dose

Young calves that suffer pneumonia don’t perform as well and don’t gain weight as quickly. To minimise the risk, you should ensure your calves get at least 2-3 litres of colostrum in the first 6 hours of life, house the calves in a dry, well bedded, draught-free area with good ventilation, rear the calves in batches by age and use an appropriate vaccination protocol.

*Against BRsv and PI3v

Rispoval® IntraNasal
For further information please contact your veterinary surgeon or Pfizer Animal Health, Walton Oaks, Tadworth, Surrey KT20 7NS.

For further information please contact your veterinary surgeon or Pfizer Animal Health, Walton Oaks, Tadworth, Surrey KT20 7NS.

© POM-V Veterinary Times 2010

Used from 9 days of age

La Cité Internationale des Congrès was the comfortable venue for this year’s SVEPM conference in Nantes.

A common thread was the feeling we should be undertaking rigorous research to inform policy decisions.

Wild challenge

A common thread was the feeling we should be undertaking rigorous research to inform policy decisions, emphasising that since no answer is black and white, communication of the level of uncertainty associated with any prediction is essential. This is something we could all probably do better.

I was first to present on the second day and I spoke on the application of epidemiological tools to the investigation of wild-life diseases. Wild animals pose novel challenges when it comes to infectious disease research, free-ranging animals are often difficult to locate, catch and sample, and repeated targeted sampling of the same individuals over time is rarely possible.

In addition, interpreting the results of diagnostic tests in wildlife can be difficult due to the lack of validated reference tests or knowledge of disease prevalence. I discussed some applications and limitations of three epidemiological tools for studying wildlife diseases: social network analysis, Bayesian statistics and dynamic network modelling. As an example, I used my PhD study of tuberculosis transmission in a population of 300 wild meerkats in the Kalahari Desert in southern Africa.

I believe network analysis to be a valuable tool for studying wildlife diseases because it can be used to identify the minimum necessary time frame over which data needs to be collected to be representative. Given that it often takes a lot of resources to study free-ranging wild animals, this method helps to keep down costs while still providing meaningful results.

Several poster sessions during the conference provided plenty of opportunities to find out about a wealth of veterinary economics and surveillance run during the epidemiology conference held in Nantes, providing a summary of the themes discussed and what challenges lie ahead.

EPIDEMIOLOGY conferences are rather like Marmite and Irn Bru. Not everybody loves them, but they do contain lots of essential ingredients — although too much in one sitting may be bad for you.

This year’s meeting of the Society for Veterinary Epidemiology and Preventive Medicine (SVEPM) was held in the French city of Nantes (pleasingly near La Rochelle for any Tri-coloure language book readers). More than 200 delegates attended this three-day conference. A national train strike — yes, they have such things on the continent too — only slightly delayed our arrival at the impressive conference venue, La Cité Internationale des Congrès.

Variety

A series of six workshops ran on the first morning, covering topics such as antimicrobial resistance, ecosystem sustainability, and diagnostic test evaluation.

I attended the workshop on economics and surveillance run by Keith Howe (University of Exeter) and Barbara Haesler (RVCE). This provided an excellent insight into the intrinsic link between disease surveillance and intervention. The take-home message was that the question should not be “Is surveillance worth it?”, but rather “How much surveillance is worth it?”, taking into account the cost to society of disease being present and the impact of disease on animal welfare. So, surveillance is more than simply keeping half an eye out for unwanted infections.

Over the course of two and a half days, 21 papers in eight themes were presented. Topics ranged from specific diseases such as salmonellosis and avian influenza to predictive modelling and epidemiological tools. Sessions on zoonoses, disease surveillance and control also featured.

Wild challenge

A common thread was the feeling we should be undertaking rigorous research to inform policy decisions, emphasising that since no answer is black and white, communication of the level of uncertainty associated with any prediction is essential. This is something we could all probably do better.

I was first to present on the second day and I spoke on the application of epidemiological tools to the investigation of wild-life diseases. Wild animals pose novel challenges when it comes to infectious disease research, free-ranging animals are often difficult to locate, catch and sample, and repeated targeted sampling of the same individuals over time is rarely possible.

In addition, interpreting the results of diagnostic tests in wildlife can be difficult due to the lack of validated reference tests or knowledge of disease prevalence. I discussed some applications and limitations of three epidemiological tools for studying wildlife diseases: social network analysis, Bayesian statistics and dynamic network modelling. As an example, I used my PhD study of tuberculosis transmission in a population of 300 wild meerkats in the Kalahari Desert in southern Africa.

I believe network analysis to be a valuable tool for studying wildlife diseases because it can be used to identify the minimum necessary time frame over which data needs to be collected to be representative. Given that it often takes a lot of resources to study free-ranging wild animals, this method helps to keep down costs while still providing meaningful results.

Several poster sessions during the conference provided plenty of opportunities to find out about a wealth of veterinary economics and surveillance run during the epidemiology conference held in Nantes, providing a summary of the themes discussed and what challenges lie ahead.
epidemiological research going on around the world. Some of the 89 posters on display focused on species (honeybees, horses, cattle and pigs), some on diseases (anthrax, tuberculosis and West Nile virus to name but three) while others demonstrated techniques, including questionnaire design, education evaluation and risk quantification. These sessions were an excellent opportunity to network and it was impossible not to learn something interesting.

Change of tactics
The conference ended with a very entertaining and thought-provoking lecture from David Waltner-Toews of the University of Guelph, who spoke on “Beyond one world, one health, and eco-health… what’s out there?”

The inter-connectedness of the health of all species on the planet was emphasised, as was the need for fully incorporated, multidisciplinary approaches to tackling emerging infectious diseases that go beyond short-term collaborations thrown together at a time of crisis. This represents and requires a fundamental change in the way we view global health and includes a key role for vets.

The giant elephant
It would have been a shame to visit Nantes without seeing some of the city’s sights. So, during a brief period of sunshine, I popped out to explore the surrounds. Just up the road was the Château des ducs de Bretagne (Nantes castle) – an impressive fortress built in the late Middle Ages by Francis II, Duke of Brittany, and his daughter, Anne, to defend the independence of the duchy of Brittany, then under threat from the kingdom of France.

No trip to Nantes would be complete without a visit to see Le Grand Eléphant, a 12-metre tall locomoting pachyderm complete with indoor lounge, French doors and balconies overlooking the Loire river.

The advertising for this formidable beast indicates it is made from 50 tonnes of American tulip wood and steel and its hydraulic workings are lubricated by four tonnes of oil (that’s a lot of synovial fluid). Unfortunately, it wasn’t out for a “walk” when I saw it, although it can take up to 49 people at a time for a ride around the city.

The conference was superbly organised by staff from ONIRIS (the Nantes-Atlantic College of Veterinary Medicine, Food Science and Engineering) and INRA (the French National Institute for Agricultural Research).

The hospitality was superb – the conference banquet was served with an exquisitely French flourish. The dancing afterwards by the SVEPM committee and conference delegates was less stylish. At the end of the week, we left with plenty of food for thought on the present and future roles of veterinary epidemiology in global health. The good news is, it is not all Marmite and Irn Bru. Next year’s SVEPM meeting will be held in Leipzig in Germany from March 23 to 25.

I am grateful to the RCVS Trust for awarding me a travel scholarship so I could attend this conference.