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Shaping the future of animal health
“Find out how technology could be set to change the way the veterinary market works”

Stunning before slaughter is in the headlines again this month; results of the Food Standards Agency’s 2018 slaughterhouse survey have been released, revealing that 94 million cattle, sheep and poultry were slaughtered without being stunned first, and that there is uncertainty over where a proportion of this non-stunned meat is sent. In response, the BVA and RSPCA are calling for change. Read the full story in the news section.

Elsewhere, veterinary preparations are underway for a no-deal Brexit; the RCVS Council has approved a pathway for paraprofessionals to become accredited and free certification training is now available to vets. We have two interesting Brexit-based articles this issue: the first on the potential impact on animal welfare and the second in the OV column, which looks at the effects on transport of animals around the EU.

There is lots of news for OVs to catch up with, with many changes to OV training underway and further information regarding potential changes to practice in the case of a no-deal Brexit. Find out how technology could be set to change the way the veterinary market works in a fascinating interview with the co-founders of a new app in our innovation column this month.

Ian Wright provides an update on exotic worms in the small animal section, and Bob Partridge explains the dangers of dental units for the health of those working with them.

Dermatology is in focus this month; Anita Patel describes the benefits of immunotherapy in the management of canine atopic dermatitis and our regular columnist David Grant offers an in-depth look at the treatment of canine juvenile onset generalised demodicosis.

In large animal, Richard Gard reports on the 2019 Western Counties Veterinary Association meeting; the discussion generated lots of attention thanks to the involvement of many different TB stakeholders, including TB activist Brian May. Also turn to this section for the second piece in John Fletcher’s series on farmed deer, which this month covers the diseases commonly seen, and how to deal with them.

Treating diarrhoea is discussed in equine, and we have an interesting piece detailing the processes involved in epididymal semen extraction.

The details of offering clients credit options, the importance of monitoring radon levels and management tips for large animal practices can all be found in the practice management section.
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On 14 February, the BVA responded to the Food Standards Agency (FSA) 2018 slaughterhouse survey, which has finally been released following pressure from the BVA and others to make the data public.

The survey, which provides a comprehensive snapshot of slaughter methods by species in England and Wales, had been expected for publication by autumn 2018. Following campaigning activity by the BVA and the RSPCA, as well as a parliamentary question from Kerry McCarthy MP, the government agreed to release the figures following consultation with religious groups.

Figures reveal that in 2018, over 94 million cattle, sheep and poultry were slaughtered without being stunned first. Specifically, the figures show that nearly a quarter (24 percent) of sheep meat that was not stunned before slaughter was exported from the UK. This equates to around 750,000 sheep being slaughtered without prior stunning per year for consumption outside of the domestic market. The current derogation in the law that allows for non-stun slaughter for religious purposes is intended for domestic consumption only.

Although most of this meat is intended for EU markets including France, Belgium and the Netherlands, with post-Brexit trade deals currently in discussion, it brings into question where the remaining non-stun meat is sent. The survey also reveals a lack of transparency with regards to some exports. For example, 19 percent of sheep meat was recorded as destined for “unknown” locations. This lack of information was referenced within the survey as being due to non-mandatory questions being left incomplete by abattoirs.

The RSPCA and the BVA have joined forces to call on the UK government to repeal a legal exemption that permits animals to be slaughtered without pre-stunning, causing unnecessary pain and suffering.

In an open letter to Environment Secretary Michael Gove, the BVA and the RSPCA have urged the UK government to change legislation in England, which currently allows non-stun slaughter for religious purposes.

Until such legislation is in place, the RSPCA and the BVA are calling for:

- Meat to be labelled with the method of slaughter, eg stunned or non-stunned, so consumers are fully informed about the meat that they are buying
- Non-stun slaughter to only be permitted at levels that meet local religious community demand for this type of meat in the interests of limiting animal pain and suffering
- A ban on export of meat from non-stunned animals or live animals destined for non-stun slaughter
- An immediate post-cut stun for cattle, sheep, goats and deer to reduce the period of pain and distress

The letter follows a recent, high profile decision to ban the slaughter of animals without prior stunning in the Flanders region of Belgium, which came into force at the start of the year. Belgium joins several other European countries, including Iceland, Sweden, Switzerland and Denmark, in making this decision, demonstrating that a full ban on non-stun slaughter is possible within EU law.

BVA President Simon Doherty said: “The UK government has repeatedly stated it would prefer to see all animals stunned before slaughter but has taken no action to address this critical welfare issue that affects millions of animals every year.

“There is a huge groundswell of support for a ban on non-stun slaughter, and recent developments in Belgium show that decisive change is possible where public support is matched by political will. Michael Gove has made clear that he wants to maintain and build on the UK’s reputation as global leader on animal welfare; banning non-stun slaughter is a sure-fire way of showing he will deliver on this commitment.

“If slaughter without stunning continues to be permitted in the UK, then meat and fish from this source must be clearly labelled, to help customers make informed choices about the food that they buy and eat.”

Sign the open letter at: rspca.org.uk/endnonstun and join the online debate using the hashtag #EndNonStun
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On 6 February, the House of Lords passed a Statutory Instrument (SI) to allow the RCVS to continue to register veterinary surgeons from the EEA after the UK leaves the EU.

The Veterinary Surgeons and Animal Welfare (Amendment) (EU Exit) Regulations 2019 were debated in the House of Lords after being introduced by Lord Gardiner of Kimble, Parliamentary Under Secretary of State for Rural Affairs and Biosecurity at Defra.

The key part of the amendment was that the RCVS would, after Brexit, be able to introduce the Statutory Examination for Membership for EEA and Swiss nationals where they hold a degree that does not meet RCVS educational requirements and standards. Under the existing Mutual Recognition of Professional Qualifications Directive, EEA and Swiss nationals with a veterinary degree from these areas can join the Register without any additional assessment being made. Currently, the Statutory Examination for Membership is only undertaken by prospective registrants from outside the EEA who hold a qualification that the RCVS does not recognise.

On the same day, the RCVS Veterinary Nurses Council agreed changes to how it registers veterinary nurses who qualified in the EEA should the UK depart the EU without a deal. The changes are in line with new regulations drawn up by the Department for Business, Energy and Industrial Strategy (BEIS).

RCVS to recognise quality-assured European veterinary degrees

The annual Animal Welfare Foundation (AWF) Discussion Forum will return to London on 5 June 2019 with an exciting new debate format that will feature expert speakers putting forth opposing arguments on the welfare of the UK’s farmed animals and exotic species in captivity.

The Discussion Forum invites experts from around the world to discuss a range of fascinating sessions designed to address key issues impacting animal welfare today and to inspire change. The morning debate session, chaired by Amanda Boag, will pose the question: “UK farming: is welfare good enough?” The afternoon debate, chaired by Sky News Sports Editor Nick Powell, will ask if we can meet the welfare needs of the growing numbers of non-traditional companion animals and wildlife in domestic settings or in zoos.

New format for 2019 AWF Discussion Forum

More information is available at: animalwelfarefoundation.org.uk/education-and-debate/2019-discussion-forum/
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**Free certification training in Brexit preparations**

The BVA has warmly welcomed plans to offer free certification training for vets to help meet increased demand for this service in the event of a no-deal Brexit.

Under the new plans, announced on 8 February 2019 by the APHA, vets will be able to access Official Control Qualification (Veterinary) (OCQ(V)) training in the qualifications required to certify the export of animal products to the EU. The APHA is rolling out the training in recognition of a potential surge in demand for veterinary certification of animal products for export in the event of a no-deal Brexit.

Official Veterinarians who are already registered on the database but do not hold a products exports qualification (OCQ(V) - PX) will be able to access free training in the Essential Skills and Exports General modules: courses which need to be completed ahead of gaining the full qualification. Vets who are not OVs but who wish to offer certification services can receive registration with Improve International’s database and train in all three required qualifications free of charge.

Simon Doherty, BVA President, said: “A no-deal Brexit could see the requirement for veterinary certification services spiralling, so it makes sense to prepare ahead to ensure that there is adequate supply of suitably qualified vets to meet this demand in case no agreement is reached.”

**New scheme launched to tackle brachycephaly**

Developed by the University of Cambridge and funded by the Kennel Club Charitable Trust, the new Respiratory Function Grading Scheme assesses dogs for the presence and severity of Brachycephalic Obstructive Airway Syndrome (BOAS). The scheme is currently available for flat-faced breeds and has the potential to improve the health and welfare of these breeds for generations to come. The assessment, which can now be carried out by a number of specially trained assessors located across the UK, involves listening to the dog’s airway both before and after an exercise tolerance test.

Assessors, who are all specially trained BOAS vets, then use a predefined protocol to grade the dog from zero to three. The scheme issues guidance that dogs graded three should not be bred from.

For Kennel Club registered dogs, these grades will be recorded on the Kennel Club’s database and published in the Breed Records Supplement, on the dog’s registration certificate and on the Kennel Club Health Test Results Finder and Health webpages. The BOAS scheme will be supported by guidelines for breeders, which enable them to understand the grade for their dogs in terms of risk when considering potential matings.

For more details on the scheme, visit: thekennelclub.org.uk/rfgs

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**RCVS Council opens the path for paraprofessionals**

The RCVS Council has approved a pathway for veterinary and animal health paraprofessionals to become associates of or accredited by the college, and therefore fall within the RCVS regulatory remit.

At the June 2017 meeting of RCVS Council, members decided to look into two separate models by which paraprofessionals working in the veterinary, animal health or related fields might be regulated by the college in the future under powers granted by the RCVS’s new Royal Charter in 2015.

The first was an “accreditation model”, which would involve the RCVS accrediting an organisation which would regulate the profession in question; the second was an “associate/full regulation” model, in which individual paraprofessionals would receive a similar level of regulation to that already received by veterinary surgeons and veterinary nurses.

As part of its legislation review, the college met with numerous paraprofessional organisations and further considered the two different models before making its recommendations to RCVS Council. At its January 2019 meeting, the RCVS Council agreed to proceed with both proposed models of paraprofessional regulation (the associate and accreditation models), with the suitability of each model being considered on a case-by-case basis, depending on the nature of the profession applying for recognition.

Paraprofessionals whose work will need to be underpinned by Schedule 3 reform would need to apply for the associate model, as the RCVS would be required to be directly responsible for the register of any individuals undertaking such minor acts of veterinary surgery.

Council members also confirmed that two paraprofessional groups that have already expressed an interest in being regulated by the college – meat inspectors and animal behaviourists – will now be invited by the college to apply for associate or accredited status.

The RCVS is also in communication with a number of other paraprofessional groups, including those representing animal musculoskeletal practitioners and equine dental technicians, about the future of paraprofessional regulation. However, the RCVS Legislation Working Party (LWP) and RCVS Council agreed that, before such professions could become associates, there would need to be reform of the Veterinary Surgeons Act in order to remedy some of the deficiencies of the current legislative regime and make sure that these groups have appropriate legal underpinning for their work.

This complements the ongoing discussions on changes to the legislative framework to bolster the role of veterinary nurses. Defra has been asked to consider these specific changes to the legislative framework along with its wider review of improving the legislative underpinning of the veterinary professions.

One particular issue concerns equine dental procedures, which are often carried out by well-trained paraprofessionals but without supporting legislation or regulation. The RCVS proposals are designed to remedy these deficiencies by providing a framework for these activities.

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**Anderson Moores and the RVC ask for support in vital Alabama rot research**

Anderson Moores Veterinary Specialists and the RVC, along with Bayer Animal Health, are asking vets across the country to report suspected cases of cutaneous and renal glomerular vasculopathy (CRGV), or Alabama rot.

The disease has been increasingly discussed within the veterinary profession. However, many vets may not be aware that prevalence of the disease has been steadily increasing across all regions of the UK. In a bid to gain vital insight into CRGV and what may be causing it, researchers are asking for information on cases seen in practice.

Vets are being asked to contact Anderson Moores with any suspected cases of CRGV. If the pet does not survive, then histopathologic assessment of tissue will be performed free of charge to confirm the diagnosis. In confirmed cases the veterinarian will then be sent a link to a 10-minute survey to be completed by the owner. Along with encouraging the owner of the confirmed case to take part, four unaffected control cases from the same clinic, on the same day, will also need to be recruited.

When a set of five qualifying surveys (one confirmed case and four control cases) are provided, practices can claim an Amazon Echo Dot, provided by Bayer as a thank you for helping with this research.

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Why are so many vets unhappy?

Caroline Clarke explained the results of her research into the profession at the 2019 SPVS/VMG Congress

Practice will never make perfect for those veterinary surgeons who believe the hype about their profession’s omniscience, a leading sociologist has warned. Caroline Clarke, senior lecturer in organisational studies at the Open University, explored the reasons why many vets are unhappy with their career choice in her presentation at the Society of Practising Veterinary Surgeons/Veterinary Management Group conference in Newport on 25 January 2019.

Her research has shown that new graduates enter the profession with unreasonable expectations and the resulting disappointment does much to explain the heavy toll of mental health problems among practitioners – and why up to 50 percent have considered leaving the profession within five years of qualifying, she suggests.

Working with David Knights from the University of Lancaster, Caroline interviewed 78 clinicians from all branches of veterinary practice and at various stages of their careers. Their findings were published last year in the paper “Practice makes perfect: Skillful performances in veterinary work” in the journal Human Relations.

Many of the comments made by practitioners about their career choice showed them to be plagued by self-doubt. While this may be more common in younger clinicians, these anxieties are never fully resolved for many experienced colleagues. Caroline quoted an anonymous practitioner’s poignant admission on the Vet Confessions website.

“It’s a career I’ve mostly hated, convinced that if I just worked harder, learned more, specialised … there would come a point at which I would suddenly start enjoying the job, or at least find it bearable. That point has never come and I now know it never will.”

Caroline argued that this dissatisfaction results from vets’ struggles to cope with the conflict between the precise and unambiguous nature of their training and the unpredictability and imprecision of their everyday practice.

She quoted an unnamed small animal practitioner who had been qualified for 16 years. “Undergraduate training is black and white. Come out to the real world and it’s just grey. You struggle with things, and as you go through your career, you realise that it never really was black and white, just it was easier to digest if it was presented that way.”

As a self-selecting group of academic high achievers, vet students will usually graduate with little experience of failure. So, when things go wrong and a patient dies, this may come as a profound shock, she said. “Vets are no more able than any of us to render their world orderly and predictable, but perhaps because of the knowledge, training and notions of attaining particular forms of idealised expertise and pragmatic protocols, together with the life and death consequences of failure, they feel more troubled by these outcomes.”

Vets should stop feeling individually responsible for every failure that occurs in practice, Caroline suggested. This requires interventions at three different levels – in the vet schools, in the national veterinary bodies and within each practice.

During the undergraduate course, vet students need to learn the limitations of the scientific method and that they should abandon their quest for perfection, which is based on “erroneous beliefs that uncertainty can be eradicated”, she said. Their teachers should also be prepared to admit that in a large proportion of patients seen in routine practice, treatment is not a matter of life or death – “80 percent of them will get better despite what you do to them.”

Caroline acknowledged that vets are not alone in experiencing professional failures like the death of a patient. But some features of their practice set vets apart. Veterinary practitioners are working for a private business subject to strong commercial pressures and they will often carry out their duties on their own without the advice and encouragement of professional colleagues, she pointed out.

One of the most striking findings from more than 100 hours of interviews with veterinary practitioners was that no one was ever sure whether they were doing a good job. She urged all practices to introduce a system for regular appraisals that would give encouragement to those with fragile self-confidence. It was essential that these assessments should concentrate on the positive aspects of the clinician’s performance, she said.

Meanwhile, the veterinary organisations should try to counter the impression held by some clients that veterinary medicine is an exact science. “Unadulterated scientific logic can be almost as dangerous as the magic and myth that it replaced,” she argued.

All members of the profession should remember to exercise the humility shown by their most celebrated colleague, Alf Wight – the man responsible for inspiring many of them to choose a career in veterinary practice. “It’s a funny profession. It offers unparalleled opportunities for making a chump of yourself. It helps to be good at the job... but even if you’re a positive genius, humiliation and ridicule are lurking just around the corner,” he once said. ☺
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Highlights for Congress 2019

What can delegates most look forward to at the 2019 BSAVA Congress?

Every inch of BSAVA Congress 2019 has been crafted with delegates in mind. From the varied programme to the largest small animal-focused exhibition in Europe, the whole event is designed by a team of volunteer vets and nurses. BSAVA President, Philip Lhermette, provides his top picks for this year’s event.

First-class CPD
Alongside international speakers and experts, the programme is underpinned by the current needs of the profession, providing topical, clinically relevant and evidence-based content within a first-class learning environment.

Congress continually evolves and (among countless highlights) 2019 includes an “Advanced practitioner” stream, a new interview format in “Immunology” and state-of-the-art lectures led by 2019 Bourgelat winner Mike Herrtage. There are new themes running across many streams to ensure the content is delivered in an accessible format. Due to popular demand, the ophthalmology stream makes a return in 2019, and the capacity of the incredibly well-received cardiology sessions has been increased.

It’s about you
The new stream of non-clinical CPD, “Beyond the clinics“, received a fantastic reception in 2018 and BSAVA continues to provide this holistic support with lectures including how to drive day-to-day efficiencies, looking after physical health and how to build a career by design. Plus, the congress is proud to offer a crèche facility supporting working parents to access high-quality CPD.

Industry expertise
The congress exhibition is the only place to see the latest products, innovations and services all focused on the needs of the small animal vet and veterinary nurse. It’s also completely free to attend – so if you are a vet, veterinary nurse or work in practice and don’t have time for lectures, make sure you take advantage of booking a free exhibition pass online.

The exhibition is also a fantastic location to access relevant CPD from leading companies, and in an exciting development for April, a new lecture theatre will be built within the exhibition floor, meaning access to latest industry insight has never been so easy.

Work hard, play hard
Not only is the education inspiring, but there is a full social programme to help you unwind. The V19 Beach Party on Saturday night is packed full of bands, buskers, comedy and food from around the world. Plus, head to the exhibition for complimentary drinks every evening, catch Mamma Mia! and Mamma Mia! Here We Go Again at “Movie Night“, enjoy a coastal cookout on Sunday and join us at the new President’s Soirée on Friday evening at Birmingham Museum and Art Gallery.
Free-of-charge Product Export training for veterinarians, funded by APHA

Who is eligible?

• Those who are registered as Official Veterinarians (OVs) but don't currently hold the Official Controls Qualification (Veterinary) - Product Exports (OCQ(V) - PX):

  Training will be provided free of charge in OCQ(V) - PX as well as OCQ(V) - EX (Exports General) and/or OCQ(V) - ES (Essential Skills) if not already held.*

• Veterinarians who are not currently OVs but wish to offer Product Export certification services:

  Free-of-charge registration with Improve International and online training in OCQ(V) - ES, OCQ(V) - EX and OCQ(V) - PX will be provided.

To apply, contact the APHA OV Team on 0208 026 1094

This offer is made as a direct result of the potential for new demand for certification of animal products that may result if the UK leaves the EU without a deal.

Please note: the offer and access to any free training may be withdrawn before this date if the UK agrees on a deal with the EU that results in an implementation period or if the available budget is reached.

*APHA will not provide free-of-charge access to revalidation training for OVs whose OCQ(V) - ES and OCQ(V) - EX qualifications are due to expire on 30th June 2019.

For more information about training and revalidation, please visit www.improve-ov.com
Leading vet to receive 2019 Bourgelat Award

Professor Mike Herrtage will receive the prestigious Bourgelat Award from the BSAVA at this year’s congress, in recognition of his enormous contribution to the development of the veterinary profession and particularly specialisation in the UK and Europe.

As one of the world’s leading small animal medicine specialists, Mike has been a co-author on more than 100 scientific papers covering small animal medicine, diagnostic imaging and neurology, and has written more than 200 other publications. He continues to be an inspirational teacher to generations of undergraduate and postgraduate students.

At the same time, he has remained an active clinician, providing a referral service in small animal medicine and diagnostic imaging. Retiring this year as Dean of Cambridge Veterinary School, he holds qualifications in internal medicine, diagnostic imaging and dermatology.

The Bourgelat Award – in honour of Claude Bourgelat, founder of the world’s first veterinary school in Lyon, France, in 1761 – is presented annually by the BSAVA for outstanding international contributions to the field of small animal practice. It takes the form of BSAVA manuals and a financial award.

Mike will deliver two lectures as part of the Bourgelat stream of four 45-minute lectures on Friday 5 April at the 2019 congress:

- Atypical hypoadrenocorticism
- Diagnosis of canine hyperadrenocorticism: is it always straightforward?

Additional lectures in the Bourgelat stream are:

- Imaging the adrenals (Raquel Salguero, Madrid)
- Monitoring treatment in canine hyperadrenocorticism (Ian Ramsey, Glasgow)

Mike has made a major contribution to veterinary research and scholarship by his investigations into metabolic and endocrine diseases such as diabetes mellitus, Cushing’s disease (hyperadrenocorticism), Addison’s disease (hypoadrenocorticism), Bedlington Terrier toxicosis, fucosidosis and endocrine responses in critical illness.

He has held numerous prestigious positions in national and international veterinary organisations, including the presidencies of the European College of Veterinary Internal Medicine, European Board of Veterinary Specialisation, European Society of Veterinary Endocrinology, British Veterinary Radiological Association and BSAVA. He also served as a member of the Council of the RCVS for over 20 years and held many positions in the college’s committee.

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Friday 5 April
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8 to 10.30pm, £65
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Could a new app spark change in the veterinary market?

The introduction of a first-of-its-kind veterinary app for cat and dog owners may disrupt practice as we know it

**SARAH WARREN**
Sarah is a veterinary dermatologist with 20 years of clinical experience and is currently President of the British Veterinary Dermatology Study Group. She’s a key opinion leader for 10 leading pharmaceutical companies and highly experienced in CPD provision and postgraduate teaching in dermatology.

**PAUL HALLETT**
Paul has built a successful marketing agency where he led global marketing campaigns for renowned brands. He gained significant experience in med-tech, having worked at board level with Ash Patel (ex-Babylon Health) and Rich Mills (ex-Google).

**ROBERT DAWSON**
Robert is a vet with 28 years of clinical experience. He spent 25 years in Highcroft vets, helping to make it the largest veterinary group in the South West. Since co-founding Vet AI in January 2018, he has been fully immersed in exploring the potential of technology to improve animals’ lives.

*Veterinary Practice* magazine spoke to co-founders of Vet AI, Paul Hallett, Sarah Warren and Robert Dawson, about the development of the new pet health app, Joii. Launching in April 2019, the app is designed to give pet owners access to vets without having to visit a practice.

The app will be a cost-effective means to allow the many pets in the UK that are not registered with a vet professional to receive advice and care. The team plans to introduce artificial intelligence to detect and predict conditions in pets and envisions positive changes to the work/life balance of veterinary professionals.

**How will the app work?**

**RD** The app will give owners access to free veterinary advice in the form of a triage process that’s been written by our own veterinary team in conjunction with vets from pharmaceutical companies.

The triage process will tell them whether they need to go and see a vet, whether it’s a problem that they don’t really need to worry about, just keep an eye on, or if it’s something that we can deal with in the form of a remote veterinary consult. If our triage process advises a remote consultation when the pet has a problem that requires a visit to a veterinary practice, they will not be charged for the remote consult.

**SW** We’re focusing on dermatology at launch; we know that’s beautifully aligned with remote consultation, because it’s such a visual disease. When we were designing the app and the triage process, we collaborated with some European veterinary specialists and took part in a feasibility study. It proved that remote consultation for dermatology cases was just as accurate in providing differential diagnoses as it is in clinic.

**What are the main aims for the app?**

**RD** The idea behind the app is to try and bridge that gap between Google and veterinary practice; almost everyone goes to the internet to try to find out what a problem is first, unless it’s an absolute emergency. We’re trying to engage people with the veterinary profession at the earliest possible stage.

**PH** We’re finding that more and more people are avoiding the vets because of price. And that ultimately is an animal welfare issue. We feel that by providing this service, we’ll have an impact on animal welfare.

**We’re trying to engage people with the veterinary profession at the earliest possible stage**

**RD** The bigger picture is that we’re going to be recording the data we get from people entering problems into the app and from the veterinary consultations in a structured way. It will give us insights into pet diseases and health that haven’t been available before. Our ultimate goal is to have a system where we can increasingly predict disease and inform owners on how to prevent the disease rather than waiting for it to come along.

**If the triage is free for the client, how is the app financed?**

**PH** We will sell products and do tele-consults straight away. But the bigger picture is to work with the large pharmaceutical companies and help them reduce spends on drug trials and improve medication – things like that. I think we’ll be able to leverage our data when it becomes significant enough.
How much will it cost a client for a remote consultation?
RD It would cost about £20.

How does the app sit in terms of veterinary regulations and the definition of “under his or her care”?
RD We’re working really closely with the RCVS, who are going through a process of reviewing the guidelines of remote prescribing. If we can set out a framework which controls it from an early stage, we can make sure that pet owners and vets are protected.

The potential for somebody to come in from a larger business outside the veterinary profession and do something similar in an unethical way is considerable. And I think the Royal College are very aware of that. We would like it to come under the Practice Standards Scheme; if they want to, we will help set up the guidelines around antibiotic resistance and other areas and we can show that, where appropriate, we’re sending people into practice.

Do you think you will be able to prescribe in future?
RD Yes; it’s just a question of when, really, and what product ranges. I don’t think remote prescribing would be suitable for any potentially abusable drugs. But I think it certainly would be for parasiticides, for instance, and for things like anti-inflammatories for arthritis, and antibiotics, although there could be some restrictions on the amount of antibiotics that we prescribe.

Will you be working with insurers?
RD We probably will work with an insurer, or several. For them, I think the most exciting thing about what we’re doing is potentially identifying predictive and preventative care plans. It could make insurance much more affordable.

Which areas of practice do you think it will work well for, and where do you think it could never work remotely?
RD [It will work for] low risk conditions, I think. Management of long-term cases is another area, even if at some point you have to have a work-up in practice.

Things that aren’t suitable include: anything that’s an emergency; seizing animals; a vomiting dog where you need to palpate the abdomen. Some things: operations, X-rays, ultrasound scans, will never be available as a remote consult. I think, over time, practices are going to deal with the high-level stuff, and more of the less urgent things will be dealt with remotely.

Are you expecting to have a relationship with practices whereby if the vet diagnoses a condition that is easy to manage, they will direct the client to the app?
RD First, we want to demonstrate that we’re creating a significant amount of traffic into practices: that we’re identifying problems that maybe people wouldn’t have identified had they not had the remote consult. We would like to partner with local practices; we wouldn’t charge them for sending cases in, but would like to have a relationship where we can exchange clinical notes freely. Potentially, if the owner prefers to carry on managing something remotely, they have that option to do that with us. We see ourselves developing a network of partner practices over the country.

Would your veterinary staff be working full time?
SW We’ll be employing a small number of full-time vets at launch, and then taking on a pool of vets that can come on board quickly, who will want to work with us part-time and combine that with their job in practice. It’s the same for nurses. We’re planning on taking on three nurses at launch: two full-time, and one part-time. We’ve had a hugely enthusiastic uptake from vets who want to improve their work/life balance.

What are your longer-term goals?
RD We are committed to pet healthcare and our goal long term is to go outside of the UK. The UK has got very good veterinary provision anyway. And pets, on the whole, are looked after well here. In some parts of the developing world, people have the same relationships between pets and owners, but without access to the veterinary care. We’re going to be able to make it really affordable with the app once the AI develops and is completely available to anybody with a mobile phone. Hopefully it will transform the lives of pets in large parts of the world.

Could a new app spark change in the veterinary market?
Blocking the pain of castration in cats and dogs

The benefit of intratesticular blocks in reducing pain in cats and dogs undergoing orchiectomies depends on the type of premedication used

In a clinical scenario where a pure µ-opioid agonist is not used (ie a partial µ-opioid like buprenorphine is administered instead), an intratesticular block may be indicated. However, where a pure µ-opioid is used, an adjunctive intratesticular block may not provide significant benefit.

A clear pattern
Analysis of seven studies presented across two Knowledge Summaries in Veterinary Evidence – one for cats and one for dogs – initially demonstrated extreme inconsistency in the effect of intratesticular blocks on post-operative pain scores. However, when the study samples were considered separately by the type of premedication used, a clearer pattern emerged:

For dogs, in studies that used pure µ-opioid agonists, there was less significance between control and intratesticular block groups in post-operative pain scores. In all studies where a pure µ-opioid agonist was not used, there was clinical significance in the use of intratesticular blocks (to favourable effect).

For cats, in the study that used a pure µ-opioid agonist, there was marked improvement of the pure µ group over intratesticular groups (and epidural groups) in pain scores.

As such, the most significant factor in the reduction of post-operative pain, in either species, appears to be the analgesic used perioperatively. It must be noted, however, that much of the available literature was based on small-scale study populations, included non-standard clinical environments or had the potential for bias. That being said, the pattern was reproduced across the studies.

Other considerations for the vet
The clinical questions of the two Knowledge Summaries specifically targeted intratesticular blocks as an adjunctive analgesic. If the questions were modified to look at other forms of analgesia, such as isoflurane, propofol and rescue analgesic sparing effect, the conclusions may be different. Similarly, the majority of studies only used lidocaine as the intratesticular block, with the alternative bupivacaine rarely utilised. Only one study utilised pure µ-opioid premedication and bupivacaine but it had positive outcomes, so this is an area for further study. However, there are concerns about bupivacaine toxicity, while lidocaine led to no significantly aversive events in any of the studies.

Lidocaine is relatively inexpensive and is easy to administer. Although it may not be necessary to use it as an adjunctive analgesic to premedication with a pure µ-opioid agonist, in light of the low cost and minimal risk, an argument could be made that it is still worthwhile to administer in most clinical scenarios.


Authors: Erik Fausak, Elizabeth Rodriguez, Anna Elizabeth Simle, Netwarat Merman, Dakota Cook
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Learning to take the ups with the downs

Could we change our mindsets to enjoy the paddle to sea as well as the surf back to shore?

A tiny proportion of each surf session is spent actually standing up on your surfboard on a wave – maybe 1 percent of the time – so if you're looking to enjoy yourself, it is essential that you find a way to enjoy, or at least good-naturedly bear, paddling out to catch the wave. And in that way, I thought, surfing can be a good metaphor for life.

A tiny proportion of each surf session is spent actually standing up on your surfboard on a wave – maybe 1 percent of the time – so if you're looking to enjoy yourself, it is essential that you find a way to enjoy, or at least good-naturedly bear, paddling out to catch the wave. And in that way, I thought, surfing can be a good metaphor for life.

The extremely good stuff – eating chocolate, having great sex, attending weddings and hearing hilarious jokes – fills a minute portion of an adult lifespan. The rest of life is the paddling: working, paying bills, flossing, getting sick.

I started to entertain the thought that maybe I could start to deal better with that kind of paddling too...

In his book, Saltwater Buddha, Jaimal Yogis describes how he discovered Zen Buddhism, creatively using the sea as a metaphor for life: the mundane majority of life and the occasional highs which thrill us and bring huge amounts of satisfaction, albeit concentrated into a short amount of time. The bread and butter daily working life with the predictable commute, punctuated with the odd great night out with friends and the annual awesome ski holiday.

The fabulous times are captured in our memories forever and are recorded in albums on our iPhones. We recount stories of great times to friends and colleagues, which further consolidates the good feelings they bring. It's easy to be mindful while on a mogul field under an icy blue sky or chilling in an infinity pool with views of the ocean. We are totally present and immersed in the moment, which adds to the pleasure.

Could we apply this concept to the rest of life? What if we could enjoy the post-holiday period instead of feeling post-holiday blues and quickly booking the next holiday in order to banish them? Wouldn’t life be amazing if we could appreciate the highs and the lows and everything in between as part of regular life?

I'm not recommending for a minute that we stop having the great moments, or that we don't try to plan amazing holidays. However, by living life from great time to great time and "killing" the time in between, we are in danger of spending the majority of our time in a state of low level, subconscious grumbling dissatisfaction, which ultimately leads to the Buddhist concept of "suffering".

If we can accept the impermanence of life, that everything changes, nothing stays the same, and that's OK – then the stark contrast of good times compared to regular daily life doesn’t hurt or even bother us.

Acceptance of all that we experience isn’t about lying down like a submissive dog and taking it on the chin. It isn’t about being soft and bullied without defending ourselves; it is about being truly present at all times, so that the small, previously unnoticed details of what we felt was mundane can be seen with fresh eyes and "awaken" us to the fact that daily, predictable life isn’t so bad or boring after all.

As Sylvia Boorstein said, "Mindfulness is the aware, balanced acceptance of the present experience. It isn’t more complicated than that. It is opening to or receiving the present moment, pleasant or unpleasant, just as it is, without either clinging to it or rejecting it."
The potential impacts of Brexit on welfare

Would a no-deal Brexit lead to compromised animal welfare standards?

S
Since the withdrawal agreement was rejected by a majority of MPs, it would appear as though the UK is heading for an abrupt departure from the EU. Animal welfare activists have long petitioned against a no-deal Brexit as fears mount over extra regulations, increased border delays, extortionate export tariffs, food “rotting in the fields”, medicine shortages and slackened animal welfare standards. Exacerbating matters is a brutal consequence of no deal is that there would be no “implementation” period to smooth over the transition.

The UK is racing against the clock to ensure some 12,000 EU regulations are transferred into UK understanding before Brexit, including 80 percent of the EU’s animal welfare legislations covering farm animals, wildlife, companion animals and research. With Brexit now fast approaching, the BVA warns that all these laws must be converted by 29 March 2019 or risk animal welfare standards “evaporating”.

The UK boasts some of the highest food hygiene and welfare practices in the world. However, a cause for concern over animal welfare is born out of the UK’s future trading terms with countries beyond the continent.

The casualty of a trade deal with the US could drive UK farmers out of business: foreign producers with unethical methods offer significantly cheaper meat. Farmers may be inclined to resist any further expensive welfare reforms or may lobby for relaxed regulations, just to stay competitive within the market. US Commerce Secretary Wilbur Ross has already stated that the UK would have to adopt American standards in a US–UK trade deal, and the US’s agri-business sector appealed to Washington to stand firm against the UK’s regulatory “barriers”. UK ministers, with little place left to turn, could cave to such demands, paving the way for chlorine washed chicken and hormone pumped beef and pork to be sold on British supermarket shelves.

Once the UK is listed as a third country in the EU’s eyes – a process which the National Farmers’ Union found could take as long as six months – the demand for Official Veterinarians who oversee the trade and hygiene of animal produce will rocket. UK Chief Veterinary Officer, Christine Middlemiss, estimates a no-deal will require 225 percent more OVs to sign off Export Health Certificates for trading purposes.

With the removal of veterinary roles from the UK’s Shortage Occupation List in 2011, free movement stepped in to supplement the shortages. Statistics from the RCVS show that most of the UK vet profession are either of EU origin or graduated from an EU university, including 22 percent of academic staff who train undergraduates, 45 percent of vets who work in governmental services and 95 percent of OVs who work in public health critical roles. Prior to the EU referendum, a 2015 BVA survey showed 40 percent of practices took over three months to recruit – or ended up withdrawing their vacancy entirely. In a follow-up survey in November 2018, shortages in veterinary surgeons and nurses accounted for workforce shortages of 11.5 percent and 7.6 percent respectively.

Combating skills gaps and existing vacancy shortages at a time when OVs are required the most will only be hindered by the government’s post-Brexit immigration plan. The December 2018 Immigration White Paper hints of a seasonal agricultural pilot which will welcome no more than 2,500 non-UK workers to support the farming industry, which is a drop in the ocean to the 60,000 staff members the Farmers’ Association claims it hires every year.

For the majority of migrant abattoir staff and veterinary graduates, the Tier 2 visa salary requirement of £30,000 will exempt them from working in the UK altogether. The BVA claims that this could lead to a “near total wipe-out” of vets in UK slaughterhouses. Yet without a “significant increase in the UK’s veterinary capacity”, Defra claims it will “be unable to process the increased volume of export health certificates it expects if there is a no-deal.”

While Brexit does offer the UK an opportunity to improve welfare, eg by banning live animal exports, advancing produce labelling, banning cosmetic animal testing, tightening on illegal and exploitative pet trading and incentivising good animal welfare practices for farmers, it is expected that the UK will mostly be at the mercy of the World Trade Organisation, which is unlikely to reciprocate such measures.

Time is ticking for the government to extend its commitment to the welfare of animals. Despite Defra championing its latest trade deals with 15 countries as a success, it still has a further 139 to go before 29 March. It’s a depressing outcome for UK farmers, vets and animals. Irrespective of the UK’s trade negotiations, without a revised immigration system or streamlined alternative to recruit dedicated workers across the veterinary and agricultural sectors, shortages and delays will only grow, sacrificing the welfare of animals with them.
The latest on exotic worms

Four exotic worms you’re likely to see in your practice in 2019 and how to deal with them

IAN WRIGHT

Ian Wright, BVMS, MSc, MRCVS, is a veterinary surgeon and co-owner of the Mount Veterinary Practice in Fleetwood. He has a master’s degree in veterinary parasitology, is head of the European Scientific Counsel of Companion Animal Parasites (ESCCAP) UK and Ireland and guideline director for ESCCAP Europe.

Since the Pet Travel Scheme (PETS) was relaxed in 2012, pet travel has increased year on year at a time of increased human migration, pet movement and climate change, providing favourable conditions for the rapid spread of parasites and their vectors. This has increased the risk of pets and their owners encountering exotic parasites while abroad, and their introduction to the UK through travelled dogs and cats.

Legal and illegal importation of dogs from foreign countries are also increasing the risk of foreign parasite and vector introduction, with Defra reporting 30,000 dogs being imported into the UK in 2016 alone. As a result, a variety of exotic parasites are being seen in UK practices on a regular basis.

As well as microscopic vector-borne pathogens such as Ehrlichia and Leishmania, exotic worms are also being seen with increasing regularity. Veterinary professionals need to be aware of these foreign travellers to maintain animal and human health as well as national biosecurity. There are three exotic parasitic worms (and one worm-like parasite) that are likely to be coming to your practice in the near future.

The latest on exotic worms

P. variegata, the primary fruit fly vector of T. callipaeda, has been recorded in the UK with conditions favourable for spread (Graham-Brown et al., 2017). It is vital therefore that infections are detected rapidly in travelled dogs and treated.

Diagnosis can be achieved by visualisation of the worms on the conjunctiva of the eye. Sedation may be required to fully visualise worms residing under the nictitating membrane, where many or all the worms will be residing. This should be carried out on any dog with travel history abroad with conjunctivitis or other eye surface pathology of unknown cause. Elimination of the worms can be achieved by flushing of the eye in conjunction with a systemic macrolactone. An imidacloprid/moxidectin spot on treatment or two milbemycin oxime oral treatments given two weeks apart are both licensed for treatment.

Heartworm (Dirofilaria immitis)

Dirofilaria immitis is a filarial heartworm primarily of dogs, but also can infect ferrets and felines. It is a significant cause of heart disease and also of bronchitis in cats. Transmission occurs through feeding by infected mosquitoes. Infections may remain subclinical or potentially severe signs can develop. Acute clinical signs include: sudden death, anorexia, weakness, dyspnoea, ascites, anaemia, haemoglobinuria, vomiting and, rarely, pleural effusion. Chronic signs are due to inflammatory responses and aberrant migration. These tend to be respiratory in nature and include: coughing, dyspnoea, anorexia and vomiting.

It is present throughout southern Europe but the mosquitoes capable of transmitting the parasite can be found throughout the whole of Europe, including the UK. The climate in northern and central Europe has been too cold to allow D. immitis to complete its life cycle in the mosquito, but climate change along with increased movement of pets and people throughout Europe is allowing the parasite to spread. The distribution of D. immitis is illustrated in Figure 1, and it is now endemic in eastern European countries including Serbia, Romania and Bulgaria.

Rapid diagnosis in imported pets is important to manage infection and preventative treatment for pets travelling to endemic countries vital to keep pets safe. A number of useful diagnostic tests are available in suspected cases.

Examination of blood for microfilaria

Concentration techniques, such as Knott’s test (a form of sedimentation test) and buffy coat examination, are more sensitive than direct whole blood examination in canine patients, but still extremely insensitive in the cat due to microfilariae being absent or present in low numbers.
Radiology
Thoracic radiographic changes are not pathognomonic but diffuse interstitial patterns, right sided heart enlargement and enlargement of the pulmonary arteries, particularly the caudal lobar arteries, may all be present.

Ultrasound examination
The cuticles of adult heartworms are highly echogenic and so in experienced hands echocardiography is very sensitive and specific.

Antigen serology
This test is considered the gold standard in the living canine patient. It is highly specific and in canine patients, also highly sensitive. Although specificity still approaches 100 percent in cats, it is much less sensitive. Sensitivity increases as adult female worm burden increases with the test detecting antigens in uterine secretions.

Antibody serology
This is the most sensitive blood test available for heartworm diagnosis in cats (Atkins, 1999). A positive result may indicate past or present exposure to infection and should be interpreted in relation to clinical signs and other diagnostic tests.

Treatment of infections with adult worms requires surgical removal or treatment with an adulticide. Intravascular snares and forceps are often used in endemic countries to remove large numbers of worms in the least invasive manner, and this is essential in caval syndrome, where death can occur within two days of onset of acute signs.

Echocardiographic visualisation of large numbers of worms in the pulmonary artery allows the use of flexible alligator forceps under fluoroscopic guidance to remove the worms (Figure 2). These techniques require experience and specialised equipment and so most UK vets will require a medical approach to treatment of adult worms.

The vital components of any treatment protocol are pre-treatment with doxycycline and a macrocyclic lactone prior to three adulticide treatments. Variation in protocols tends to occur around the length of these pretreatment periods, but all agree that three adulticide treatments are essential to maximise elimination of adult worms. These are given by deep intramuscular injection, two being given 24 hours apart, 30 days after administration of the first injection. An example of a typical adulticide treatment programme is:

- Day 1: Doxycycline 10mg/kg sid orally for 30 days
- Heartworm preventative (macrocyclic lactone on day 0 and 15)
- Day 30: Melarsomine dihydrochloride 2.5mg/kg IM
- Day 60 and 61: Melarsomine dihydrochloride 2.5mg/kg IM

The patient should then be tested for microfilariae 30 days post-treatment and antigen serology tested six months post-treatment. Prednisone has some benefit in reducing the risk of thromboembolic complications if given alongside adulticide treatment where worm burdens are high. If high burdens are suspected, then oral prednisolone can be used from the initiation of adulticide treatment at 0.5mg/kg twice a day for one week and 0.5mg/kg once daily for the second week, followed by 0.5mg/kg every other day for two weeks. These doses are also useful in managing bronchitic signs.

The three most significant factors involved in post-adulticide treatment complications are the severity of existing pulmonary vascular disease, the number of worms present and level of exercise. Of these three, over-exercise is thought to be the most significant. Exercise should therefore be restricted during treatment, starting from day 0 to at least one month after the last adulticide injection. The highest risk period of complications from pulmonary thromboembolism is 7 to 10 days after adulticide treatment, but can occur up to four weeks after adulticide treatment is completed.

An alternative treatment which avoids the use of the adulticide melarsomine is the “slow kill” regime. This should not be used as a first-choice treatment as it has been linked to the development of resistance (Bowman et al., 2012).
and carries some risk of anaphylaxis due to the killing of microfilariae from active infection over a long period of time. This is particularly true when large numbers of microfilariae are present in the circulation. It should therefore only be used if surgery is not indicated or practical and melarsomine is not available. The protocol is:

- Doxycycline 10 to 20mg/kg sid or bid for 30 days
- Ivermectin at minimum dosage of 6 to 12mcg/kg bimonthly or topical moxidectin (2.5mg/kg) bimonthly until two consecutive negative antigen test results after 12 months

Exercise restriction is also recommended with this protocol from the start of treatment until infection is eliminated.

**Dirofilaria repens**

*Dirofilaria repens* is closely related to *D. immitis* but is less pathogenic to cats and dogs with adult worms living in the skin. It has the potential to cause creeping eruptions and conjunctivitis in people. It can complete its life cycle at lower temperatures than *D. immitis* (Morgan, 2016) and so has a far wider distribution across Europe (Figure 1).

The first cases confirmed in the UK were from dogs imported from Corfu and Romania (Agapito et al., 2017; Wright, 2017); if infected dogs continue to enter the UK and are not treated quickly, UK mosquito populations could be exposed to the parasite and the disease could become endemic. Imported dogs should be checked for ocular and skin lesions and diagnosis confirmed by Knott’s test for microfilaria, biopsy or identification of aberrant adult worms (Figure 3). These are long and thin without any grossly obvious identifying features. Males are about 5 to 7cm and females 10 to 17cm in length. Under magnification, a series of small papillae arranged in a ‘v’ shape may be seen in male worms. They have two unequal spicules at their caudal end.

Discrete subcutaneous nodules containing adult worms can be removed surgically with an excellent prognosis. Moxidectin/imidacloprid spot on preparations are licensed for medical treatment.

**Linguatula serrata**

This parasite is known as a “tongue worm”, but is actually a pentastomid, more closely related to arthropods than true worms. The adult parasite is an elongated tongue-shape (Figure 4) and is found in the nasal cavities or sinuses of dogs and foxes. Infection occurs through the ingestion of nymphs in raw offal of infected intermediate hosts, such as ruminants, rabbits and horses. Eggs from the adult parasite are passed in the faeces or nasal secretions of infected dogs and are immediately infective. Adult parasites are large, with females typically 30 to 130mm in length.

Although the parasite has been reported in UK foxes, it is thought to be rare. There has, however, been a sharp increase in clinical cases reported in UK dogs imported from eastern Europe and the Middle East where raw meat is routinely fed. This is a concern due to the zoonotic potential of the parasite. Although in endemic countries zoonotic infection occurs primarily through the ingestion of raw or undercooked viscera, it can also occur through ingestion of eggs in the environment or in mucoid discharge from infected dogs’ noses. This can lead to a variety of clinical presentations, including nasopharyngitis, blocked nasal passages, visceral pain and aberrant larval migration to the anterior chamber of the eye.

Imported dogs expulsing adult parasites or presenting with rhinitis, gagging or chronic upper airway signs should be examined by endoscopy to check for infection. Alternatively, nasal discharge can be tested by flotation methods for eggs. This can also be performed on faeces but with a much lower sensitivity. There are reports of infections being successfully treated with oral milbemycin or moxidectin/imidacloprid spot on solution. Parasites may also be physically removed by endoscopy. Infections should be treated promptly and good hand hygiene maintained by owners.

**Exotic roundworm prevention**

Pets travelling to *D. immitis* endemic counties should have monthly treatment with a licensed macrocyclic lactone for heartworm prevention. Moxidectin/imidacloprid spot on solutions are also licensed for *D. repens* prevention. While there is no specific preventative treatment for *T. callipaeda* infection, routine macrocyclic lactone treatment may be of some benefit. A licensed pyrethroid fly repellent will also have some effect in the reduction of vector-borne disease.

ESCCAP UK and Ireland recommends four key steps (the “four pillars”) when dealing with all imported or travelled pets arriving in the UK to manage exotic parasite risk:

1. Check for ticks and identify any found.
2. Treat dogs again with praziquantel within 30 days of return to the UK and treat for ticks if treatment is not already in place.
3. Recognise clinical signs relevant to diseases in the countries visited or country of origin.
4. Screen for *Leishmania* spp., heartworm and exotic tick-borne diseases in imported dogs.

Following the “four pillars” allows veterinary professionals to prepare owners if parasites are present, improve prognosis of clinical cases, minimise the risk of spread of any disease and carry out effective disease/parasite surveillance.

**Conclusion**

Increased movement of pets and fluid vector and parasite distributions in Europe make protecting UK pets and owners from exotic disease increasingly challenging. Exotic parasitic worms and worm-like organisms must be considered as possible infections in imported and inadequately protected travelled pets. Vets and nurses are in the front line of UK biosecurity and must be prepared to give accurate travel advice to clients and remain up to date with the latest parasite distributions in Europe and across the globe.
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What dangers lie within your dental units?

Harmful biofilms found within veterinary dental units could be a health hazard to veterinary professionals

As a veterinary dentist, I am preoccupied with biofilms. The commonest biofilm I come across is, of course, plaque: the thin layer that forms on teeth within minutes of any scaling procedure and which is the primary agent responsible for periodontal disease.

Plaque, like all biofilms, consists of various bacteria enmeshed in a hydrated matrix. This matrix has many important roles – but provides protection for the bacteria (from antibiotics and many disinfectants) and allows complex communication between the contained individual bacteria, the different colonies of bacteria and different species of bacteria. This helps provide further protection by “sharing” resistance and allowing phenotypical changes to occur.

However, biofilms are not limited to the mouth. They are seen on indwelling catheters and other medical devices. And that is the tip of the iceberg; biofilms are found just about everywhere from oil pipelines in frozen Alaska to the lid of your kitchen waste bin.

One important biofilm, which is often completely ignored in veterinary practice, lives the pipes within your dental units (dental unit water lines; DUWLs). These are generally quite narrow and create a laminar flow in use. They are also virtually impossible to fully dry out. These conditions are almost designed to encourage biofilm development.

The biofilm “sludge”, if dislodged, can pass down into your handpieces, resulting in blockages and damage. This is not an uncommon reason for handpieces to be sent for service as “faulty”. From a health and safety viewpoint, far more important are the bacteria (and bacterial products) that are contained within the biofilm. It is not surprising that water sampled from DUWLs typically yields fungi and protozoa. In addition, soil and aquatic environmental bacteria, typically gram-negative, are in abundance. Opportunistic pathogens such as Legionella spp., Pseudomonas aeruginosa and non-tuberculous Mycobacterium spp. are also often found.

Given the abundance of gram-negative bacteria, it is not surprising that high levels of endotoxins are often found. On the human dental side, research into the potential harmful effects of contaminated DUWLs has yielded a lot of information. However, until now, I am unaware of anyone even considering the possible harm that could result from contamination of veterinary DUWLs. The reason for this appears to be summed up by the veterinary technician who stated that “infected water lines don’t matter, as you are treating animals not people”. Unfortunately, this widespread attitude portrays a frightening ignorance of the issues and potential problems.

Unlike our human dental colleagues, our patients are intubated. Therefore, their airways are generally pretty well protected from the harmful bacteria within our DUWLs. However, it is not uncommon for veterinary surgeons, nurses and assistants to perform dental procedures (or be within a two- to three-metre radius of a dental procedure) without wearing effective face masks.

All these veterinary staff are potentially victims of the contaminated aerosols produced by the dental machines. It does not matter whether the staff are operating on human or veterinary patients – many of the risks come from the dental machines, not the patients.
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0800 587 2581 or visit pethealthplans.co.uk
Let us consider the findings of the human dental research. *Legionella* spp. were isolated from 68 percent of DUWLs, with *L. pneumophilia* present in 8 percent. *Pseudomonas aeruginosa* was isolated from 24 percent of DUWLs. Worryingly, despite “thorough” cleansing of the units, it was repeatedly isolated. This correlates with the fact that *Pseudomonas* can grow in distilled water or even dilute chlorhexidine and iodoform solutions. Non-tuberculous *Mycobacterium* spp. were found at a mean level of 365 colony forming units/ml.

Endotoxins often originate in the cell walls of gram-negative bacteria (the most common bacteria in DUWLs). Endotoxin levels in DUWLs reached 2,560 EU/ml; this can be compared to 66 EU/ml in tap water or <0.25 EU/ml in water for injection.

Given that water from DUWLs is commonly used in veterinary practice for surgical tooth extraction, there are obvious worries about infection and the effects of the endotoxins on wound healing. However, the staff health issues are perhaps more pressing. Detailed epidemiological studies are rare. There are some proven links directly between disease, even death, and infections derived from DUWLs in the human sphere.

Clearing protective biofilms is difficult; it requires a “shocking” procedure followed by ongoing maintenance. With the high levels of contamination recorded in veterinary practices occasionally, even when using the VetDentist Starter Kit, a second deep clean is required. Follow-up consists of regular quarterly testing of the water. Conventional bacteriology samples give inaccurate results – special low nutrient culture media, at room temperature, has to be used.

Dentists and their staff have higher rates of respiratory infections than the general public; they also have higher rates of seropositivity for *Legionella* antibodies than the general public, with titres appearing related to the time spent in clinics. Occupational asthma rates also show some links to clinic exposure times. Most alarming are the deaths of a patient in Italy and of a dentist in California directly linked to the *Legionella* infection in the DUWLS.

My concern is that it might take a veterinary nurse’s death from *Legionella* for our profession to wake up to the dangers in our dental units. Apart from the personal, moral and ethical tragedy that would represent – what about the potential litigation issues?

Given that effective control measures are mandatory in the human dental field and that an effective preventive system would only cost around 40p per day, can you imagine what the likely punitive damages would be on a business that sacrificed the life of a staff member to save 40p per day?

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Improving management with immunotherapy

What are the benefits of allergen-specific immunotherapy in the management of canine atopic dermatitis?

A topic dermatitis is a lifelong pruritic skin condition that has no cure and requires long-term management. The most obvious management tool is allergen avoidance, which on its own is not enough to manage the pruritus and subsequent progression of skin lesions. The alternative is a multimodal approach with allergen-specific immunotherapy and/or symptomatic treatment using various drugs, which are either anti-inflammatory or immunomodulating.

Allergen-specific immunotherapy (ASIT) is a prophylactic treatment for the management of canine atopic dermatitis that has to be tailored to the individual. It involves administering gradually increasing doses of those allergens to which the individual is allergic in order to increase the tolerance to these allergens, with the intention of reducing the clinical signs associated with the disease.

The success of immunotherapy is dependant on an accurate diagnosis of atopic dermatitis, which is based on the history and clinical signs (Figures 1 and 2). Only then should the selection of allergens be made, based on the results of an intradermal allergy test (Figure 3) and/or serum allergy testing which have been correlated with the history of the disease in the patient.

Mechanism of immunotherapy

Although the mechanism(s) involved in ameliorating the clinical signs are not fully understood, there are a number of studies supporting various changes in the immune responses in dogs on ASIT when compared to normal dogs. ASIT affects T-cell and B-cell responses, antibody production and the response of effector cells such as the eosinophils. ASIT significantly increases T-regulatory cells and IL-10 concentrations and other cytokines. A shift in the immune response from Th2 to Th1 cytokine profiles and blocking antibodies are also involved.
Immunotherapy formulation and administration

Injectable immunotherapy
Two types of allergen extracts, aqueous or alum precipitated, are available in the UK (once a special import certificate has been obtained from the VMD, as both are unlicensed preparations in the UK). The aqueous extracts require more frequent administration as they are more easily absorbed, whereas the alum precipitated extracts are absorbed more slowly and therefore the interval between injections can be extended.

Most formulations limit the total number of allergens to 8 to 10 per 10ml vial. When multiple allergens are involved it may be necessary to have two or three vials for an optimal result, even though the therapy then becomes more cumbersome to administer. If this is not possible due to costs, the most relevant allergens should be chosen for the ASIT.

In dogs, the immunotherapy injections are administered subcutaneously. The frequency of administration is usually based on whether the aqueous or alum precipitated extracts are used for the therapy. Most protocols will have an induction phase followed by a maintenance phase. The protocols for induction can be slow (gradually increased concentration over days) or rushed (increased concentration over hours). Rushed immunotherapy should be performed in a hospital where the animal can be intensively monitored by experienced clinicians. A maintenance dose will then be administered, typically every four weeks. Commercially prepared immunotherapies will be supplied with a dosage and frequency schedule.

The frequency of the maintenance doses can be tailored to individual needs, depending on the patient’s response to treatment and seasonal allergen loads.

It is best to monitor the patient for any adverse effects in the induction phase of the injections. The more serious adverse effects (see below under adverse effects) are more immediate. Best practice is to ask the owner to wait in the surgery for about 30 minutes after each injection during the induction phase so that, should the animal require urgent treatment for urticaria, angioedema or anaphylaxis, it is in the right place to receive it.

Sublingual immunotherapy
For oral administration, the allergen extracts are mixed with glycerol to improve stability and absorption in the oral cavity. It is administered twice daily using a pump. The treatment can be carried out at home by the owner.

In the author’s experience, many owners prefer to give the dog a monthly injection as opposed to the twice daily treatment needed with sublingual formulations.

Efficacy
The efficacy of treatment is variable and is demonstrated either by a marked reduction in the clinical signs (including complete remission), or a reduction in the usage of symptomatic medication.

The rate of response varies between individuals and most animals that are going to benefit from ASIT tend to do so within the first 12 months of treatment. It is best to warn the owner at the outset of the slowness of response in some cases and to complete at least the first 10 to 12 months of treatment before discarding it as a potential long-term management option.

Several factors influence the clinical efficacy of ASIT. They include the selection and concentration of allergens, the age of the animal and the severity of the disease.

Adverse effects
Serious adverse reactions to ASIT are uncommon to rare, but clinicians administering the therapy should be aware of the potential adverse effects. Systemic reactions range from serious urticarial reactions, angioedema and anaphylaxis, to lethargy, gastrointestinal disturbances, weakness and changes in behaviour.

An increase in pruritus following immunotherapy (generally during the induction phase) is the most common adverse effect. In the author’s experience, it generally lasts for 24 to 48 hours post-injection. Usually pretreatment with antihistamine for two to three days (the day prior to, the day of and the day after administration) overcomes the problem. Injection site reactions such as localised swelling may occur in some individuals.

One of the most frequent dilemmas is whether concurrent medication should be used to alleviate the pruritus. Because of the slow response to ASIT in some individuals and for welfare reasons, they should be used. Success of immunotherapy in many cases depends on concurrent management of secondary infections caused by bacteria and yeasts.

If pruritus is localised, topical corticosteroids such as hydrocortisone aceponate spray can be added to the management protocol, provided the individual has no infections.

Summary
Allergen-specific immunotherapy is a specific tailored treatment for canine atopic dermatitis. It does not offer a cure, but it is an effective modality as a prophylactic measure in ameliorating the clinical signs associated with atopic dermatitis.

In the author’s experience, about two thirds of dogs benefit from it and it is a safe, lifelong treatment. It is especially worth trying as it has negligible side effects and remains efficacious, even after years of treatment.

Successful outcome depends on the early recognition of flare factors and dealing with them appropriately before the disease becomes chronic. In future, the focus of immunotherapy is likely to be on recombinant peptide therapies providing a more targeted approach, based on the relevant allergenic peptides of each allergen.

Improving management with immunotherapy
Treating canine juvenile onset generalised demodicosis

A guide to the well-known demodicosis which can present in several forms and seems to be on the rise in the UK

Canine demodicosis is a common cutaneous disease caused by two species – Demodex canis and Demodex injai. There is a third short-bodied species previously described but currently considered to be a variant of D. canis, and not differing in its clinical presentation. D. canis is the focus of this article.

Demodicosis may be localised, generalised (juvenile onset or adult onset) or demodectic pododermatitis. Some cases of pododermatitis may have originated as generalised cases but not resolved, while others present just with pododermatitis but are still considered under the generalised heading.

Generalised demodicosis due to D. canis is one of the oldest dermatoses to be described in veterinary literature. In the Middle Ages, it was known as “redde mange” due to the erythematous lesions of some cases (Figures 1 and 2). Juvenile onset demodicosis is the most common type of generalised case and is described here.

Until recently, juvenile onset demodicosis was considered a difficult condition to cure and earlier texts warned that euthanasia needed consideration in the most advanced cases. Recent advances in treatment have altered this guarded prognosis into a favourable outcome for the majority of affected dogs.

It is known that a genetic predisposition to develop generalised juvenile demodicosis exists. The primary defect leading to the disease is unknown, however. With advanced mite proliferation, dogs develop T-cell exhaustion favouring increasing mite proliferation and secondary pyoderma. Treatment with effective acaricidal products reverses T-cell exhaustion and leads to a clinical cure. It is unclear why some dogs develop generalised demodicosis at a young age and why these dogs after treatment usually remain cured. If there were an underlying primary genetic cause, it would be logical to expect relapse to be common, but that is not the case.

It has been suggested that dogs with demodicosis have an inherited Demodex specific T-cell deficit of varying severity (Miller et al., 2013). This would explain the higher incidence in some breeds and why not all pups in a litter suffer from demodicosis. Indiscriminate breeding of dogs such as Staffordshire Bull Terriers by back street breeders has led to a marked increased incidence of the disease in recent years in the UK.

There are four stages to the life cycle: eggs (lemon pip shaped), six-legged larvae, eight-legged nymphs and eight-legged adults. The mites are transferred from the mother to the pups in the first two to three days of life, which explains why lesions tend initially to involve facial and pedal regions. After initial transfer of mites has occurred, the disease is non-contagious.
Clinical features
Canine generalised demodicosis is much more common in pedigree dogs although, particularly with indiscriminate breeding, many breeds may be affected. A recent study in the United States identified the American Staffordshire Terrier, Chinese Shar-Pei and Staffordshire Bull Terrier as predisposed breeds (Plant et al., 2011). With indiscriminate breeding of dogs deemed to be popular and not normally thought to be predisposed, eg the Chihuahua, cases of demodicosis may be seen. In the author’s series, many dogs have been Staffordshire Bull Terriers or their crosses.

Lesions
The distinction between localised and generalised cases differs slightly between veterinary dermatologists but a consensus is five to six patches, or one area of the body widely affected, and/or more than two feet suggested as defining the generalised condition. Most cases seen by the author have involved large parts of the body and have developed rapidly. The disease usually begins before 18 months of age with the majority in the first year of life:

- Numerous lesions appear on the head, legs and trunk and eventually occur everywhere
- Patches of alopecia become more generalised (Figure 4)
- Scaling and erythema (in many early cases, the erythema may be quite pronounced, as mentioned above, and is an important diagnostic clue)

Diagnosis
Undertake a full history and physical examination. The history is particularly important, as the disease may be missed initially and continue into adulthood. A distinction needs to be made whether the dog has juvenile onset or adult onset disease. Cases that began after two years of age, and in most instances older than this, are adult onset and more difficult to cure due to concomitant immunosuppressing disease. Juvenile onset disease has a much better prognosis.

As the consequences of not diagnosing the disease are considerable in terms of welfare and cost, it is suggested that time is allocated for adequate sampling to maximise the ability to make a diagnosis. It is more difficult to do this within the constraints of a normal consultation and either sufficient time can be allocated, or the dog admitted for sampling and scanning of slides. Trained veterinary dermatology nurses can be invaluable for these procedures.
IN FOCUS

Sampling techniques
Rather than rely on just one sampling technique, it is suggested that several procedures performed sequentially on an affected dog may help to maximise success in finding the parasite. These can be done in the following order:

1. Hair plucks: This simple technique may show mites in hair follicles. It is very useful in areas where more invasive techniques could cause damage to the dog or sampler, for example in the feet and perioral regions.

2. Adhesive tape preparations: Tape strips (preferably ultra-transparent) are pressed against lesions and the tape is transferred to a microscope slide. This is another useful non-invasive technique in difficult-to-sample areas but also where secondary infection has produced an exudate.

3. Impression smears with a glass slide: These are often successful where there are exudative lesions (Figure 6).

4. Skin scrapings: The skin is squeezed first and scraping performed in the direction of hair follicles using a blunt scalpel blade. The area to be scraped may need clipping, after which liquid paraffin is applied to the skin surface. This enables material to adhere to the blade. Deep scrapings, causing capillary ooze, are necessary.

The initial three tests can be performed in a matter of minutes, with the scrapings taking a little longer. The bulk of time necessary to rule the diagnosis in or out is taken up with careful scanning of the microscope slides. This is done under low power, facilitating efficient slide scanning. Generalised cases often yield high numbers of mites; however, a failure to diagnose the condition may be due to inadequate time to perform the procedures outlined above (or not doing them at all) and/or not spending sufficient time at the microscope. With suggestive clinical signs, finding a few mites on a slide should be considered diagnostic, as it is very rare to find mites in healthy dogs.

In spite of the above, there will be some cases that defy attempts to isolate the mite. In these cases, a biopsy is necessary, particularly if there is a strong suspicion based on the history and physical examination. Biopsy is a very useful procedure in difficult-to-sample areas and in chronic cases with lichenification. General anaesthesia or deep sedation is required and the histopathologist should be made aware that demodicosis is suspected. It is not uncommon, however, for the histopathologist to make the diagnosis where the clinician has overlooked that possibility. This has happened to the author who was very grateful at the time!

Treatment
Since medieval times, there have been numerous treatments for generalised demodicosis. Recently, there has been a dramatic improvement in the prognosis with new products, and only those licensed in the UK for the treatment of demodicosis are considered here.

Acaricidal products
Isoxazolines are a new class of ectoparasiticide. They are potent inhibitors of arthropod nervous systems, working by antagonizing GABA and glutamate receptors.

Fluralaner (Bravecto, MSD) was the first of these new compounds demonstrating efficacy against demodicosis. A small study (Fourie et al., 2015) reported reduction in mite numbers of 100 percent at days 56 and 84 following a single oral administration at 25mg/kg. Since this initial publication, there have been many case studies showing similar results. Bravecto is administered orally at a dose of 25mg/kg every 8 to 12 weeks.

The isoxazolines are now considered first-choice treatments for generalised demodicosis and will perhaps remain so for the foreseeable future. Other equally effective isoxazoline (oral) products include: Afoxolaner (NexGard; 2.7 to 6.9mg/kg every two weeks); Sarolaner (Simparica; 2 to 4mg/kg every four weeks); Lotilaner (Credelio; 20mg/kg every four weeks)

Oral administration allows for much better compliance in comparison to other licensed products and to date there have been few side effects of any importance.

For many years, amitraz (Aludex) has been an effective treatment for generalised demodicosis as a weekly wash at a concentration of 500ppm. Side effects included mild sedation, especially with the first few applications, and in a few cases, bradycardia, ataxia, polydipsia, polyphagia and pruritus. The product needs to be applied in a well-ventilated room and protective clothing is necessary.

Moxidectin 2.5 percent combined with 10 percent imidacloprid (Advocate) can be applied as a spot on at a dose of 2.5 to 5mg/kg weekly. Side effects occasionally include transient lethargy, anorexia and ataxia.

In the past, treatment failure has often been associated with compliance, as a dedicated owner sticking to treatment protocols was crucial. Additionally, many generalised cases are secondarily infected with Staphylococcus pseudintermedius and failure to treat secondary pyoderma effectively is a potent cause of failure. The presence of a secondary pyoderma is easily assessed by cytological examination, either with impression smears or tape strips.

Antibacterial products
Deep exudative pyodermas should be treated with systemic antibacterial agents, based on culture and sensitivity testing, until clinical resolution plus a few weeks. Many less severe cases of pyoderma may respond to topical therapy using antibacterial shampoos, such as those containing chlorhexidine, thus avoiding the use of antibacterial agents in the long term.

A consensus view worldwide is that in order to diminish the incidence of demodicosis, affected dogs or their parents should not be used for breeding.

A full reference list is available on request
A look through the latest literature

Assessment of the sensitivity and specificity of diagnoses of equine sarcoids

Christoph Koch and others, University of Berne, Switzerland

Sarcoids are the most common skin tumours identified in horses and are associated with infections with bovine papillomavirus types 1 and 2. However, the accuracy of clinical diagnoses of this condition has not been critically assessed. The authors gathered details of 26 confirmed equine sarcoid cases and 14 patients with other confirmed diagnoses. That information was examined online by 181 veterinarians ranging from experts in equine sarcoids to novice practitioners. The overall diagnostic success rate was 82 percent, with sensitivities and specificities of 83.3 and 76.9 percent, respectively. Less experienced clinicians were frequently wrong in their clinical judgement despite a high level of clinical confidence.

The Veterinary Journal, 242, 77-82.

Review of the safety and efficacy of canine generalised demodicosis treatments

Roberta Perego and others, University of Milan, Italy

Generalised demodicosis can be life threatening. Many different agents have been used to treat the condition, but most were not licensed against this parasite. The products may also have a low safety margin, be poorly efficacious and be time consuming. The authors performed a critical appraisal of the literature and conclude that only six treatment regimens can be recommended for use against generalised disease – doramectin (oral or parenteral), fluralaner (oral), imidacloprid plus moxidectin spot-on, ivermectin (oral, but not as a first-choice treatment), milbemycin oxime (oral) and sarolaner (oral).

BMC Veterinary Research, 15, (Open Access).

Peripheral arteriovenous fistula manifesting as an antebrachial dermatopathy in a cat

Philip Hyndman and others, Atlantic Veterinary College, Prince Edward Island, Canada

A 13-year-old neutered male Abyssinian cat was presented with multiple scab lesions over the distal aspect of the right forelimb, which haemorrhaged after grooming. An initial examination showed atypical dermal haemodynamics and inflammation. Contrast-enhanced CT angiography identified an arteriovenous fistula with a large aberrant vessel coursing distally. Surgical ligation of the arterialised vein distal to the fistula successfully resolved the clinical signs. Journal of the American Veterinary Medical Association, 254, 393-398.

Treatment of skin malodour in Bloodhounds with essential oils

Courtney Meason-Smith and others, Texas A&M University, College Station

Dogs with malodorous skin can be a source of frustration to their owners. In dogs, the condition is usually associated with Staphylococcus and Corynebacterium species. The authors used next generation gene sequencing and quantitative PCR to identify the bacteria on the skin of 27 Bloodhounds. Psychrobacter and Pseudomonas species were found to be significantly more abundant on those dogs with the most severe malodour. Treatment with a topical product formulated with essential oils and plant-derived fatty acids produced a significant improvement in skin odour and changes to the skin microbiota.


Retrospective analysis of records from feline pemphigus foliaceus cases

Petra Bizikova and Amanda Burrows, North Carolina State University, Raleigh

Feline pemphigus foliaceus is an autoimmune condition with clinical signs of pustular erosive and crusting dermatosis usually affecting the face, ears and feet. Most cases described in the literature involved individual patients or small case series. The authors examined all published records since 1950, together with 35 original cases. They found that clinical signs were controlled in the majority of cases with the most basic treatment, such as glucocorticoid monotherapy. However, they point out that owners should be aware of the need for long-term therapy and the high risk of relapse.

BMC Veterinary Research, 15, (Open Access).
Positive changes agreed for OV training in response to OCQ(V) review

A review of the OCQ(V) training qualifications was carried out in collaboration with Improve International and the BVA. Numerous sources of feedback were used to inform the review, including: BVA survey results; Improve International training feedback; feedback from the Veterinary Defence Society (VDS); APHA survey results, where views were sought on (a) what OVs considered to be valuable in the current courses and (b) what they considered should be changed and how; and direct communications from OVs.

Common themes presented in the feedback and certain issues were particularly dominant. Recommendations, including areas for further review, were agreed at a joint meeting with the BVA, Improve International and the APHA on 23 November 2018. These recommendations have since been approved. The agreed recommendations will be rolled out as soon as practical.

Timelines will vary depending on the extent of the work required to implement them. Some recommendations require further investigation and consultation, for example with course accreditation providers, before finalising. Implementation times will depend on other commitments – notably EU Exit work – that must take priority. The majority of this review work will not commence until after EU Exit. However, the APHA intends to take all recommendations forward as soon as possible.

Revalidation interval
Revalidation intervals are currently variable between courses. Future revalidation intervals will be standardised to four years for all courses in a staged process.

For all CA and SX qualifications completed by 30 April 2019, the original five-year revalidation interval will be applied. For those completed from 1 May 2019, the new four-year revalidation will be applied.

For all ES and EX qualifications completed by 30 June 2019, the existing five-year revalidation interval will be applied. For those completed from 1 July 2019, the new four-year revalidation will be applied. For all other qualifications, the four-year interval will be applied from 31 January 2019 once the next revalidation (or the main qualification) is completed.

Invigilation
Most respondents to the BVA and APHA surveys supported the principle to complete the online examination in the presence of an invigilator. However, concern was raised over the financial and resource implications of the requirement.

The option of permitting a more flexible invigilator choice for all OVs (to reduce the time and cost burden and assist those working in sole-charge or remote practices) is being further discussed with the course accreditation providers. The use of remote invigilation is being investigated with the course accreditation providers as an option. If implemented, this would be in addition to the existing options and not compulsory. The OV would incur an additional cost for this option.

Multiple choice question (MCQ) online examination
All MCQs in all courses will be reviewed to ensure that the questions are accurate, test the ability to perform the relevant role and are not just a memory test. Where possible, this will be done alongside EU Exit course updates currently in progress, or soon thereafter.

Candidates will be given more feedback at the end of the MCQ online examination. They will be informed of the result and be given a list of questions they answered incorrectly. This is being developed, but implementation will be dependent on prioritisation of IT updates required for EU Exit work.

Consideration will be given to use of time-limited open-book online examination. Improve International are consulting with the course accreditation providers. If it is considered a suitable option, it will require extensive work to set up. If implemented, this is not expected to be before 2020.

The recommendation is that MCQs with multiple disciplines should be split into sections and questions selected at random from each section. This would ensure that a disproportionate number of questions on one discipline is not selected (eg an excess of equine questions in the ungulates exam). This option is being investigated and updates will follow.

CPD requirements
The CPD requirement of 10 hours is to be completed over the standardised four-year timeframe. The option to permit the time taken for completion of scenarios to be considered as CPD has been agreed but the details are being discussed with the course accreditation providers. The number of scenarios required is also seven, being reviewed to assist those completing multiple courses. Clarification will be added to the training website of what can be considered relevant CPD, including the use of some typical examples for OVs to access.

Course content and structure
More policy and relevant legislation will be included within the courses and policy changes will be added on an ongoing
basis. The initial revalidation qualifications were similar to the main courses to provide those with grandfather rights the full training material. These have been (in the case of OCQ(V) - TT) or will be (in the case of all other courses) reviewed following completion of the grandfather rights revalidations.

Moving forward, other new content and updates will be added every revalidation cycle as a minimum (ie every four years) to ensure that new material is incorporated and OVs receive new information as well as the standard material for revision. Revalidation updates will include topics that have been a common subject of OV query or misunderstanding or reported as a common area for errors.

APHA will review all courses to consider: how the number of courses and topics can be rationalised to meet the needs of OVs specialising in one discipline as well as those covering multiple disciplines; how to reduce the number of qualifications any OV may require and/or the time spent on revalidating; and how to reduce the content of the courses without losing quality and vital content.

The provision of species-specific courses will be considered in relation to demand for their inclusion.

The ungulate course (OCQ(V) - UX) will be addressed as a priority. A separate farm animal course will be introduced to give OVs the option of completing one or the other.

The incorporation of material from the OCQ(V) - ES (Essential Skills) into other OCQ(V) revalidations to reduce the requirement to revalidate as a stand-alone course is being investigated. In this case, the material would be flagged and could be missed out of the training if covered in another recently completed OCQ(V). However, the content would be assessed in all OCQ(V) examinations. The OCQ(V) - ES would still be maintained as a stand-alone course for initial qualification.

Case logs

Some OVs support the requirement for case logs/scenarios but many felt that case logs were unnecessary and too time consuming, particularly if only doing the work infrequently. Case logs are no longer compulsory for any qualification. Scenarios are now used as an alternative to completing case logs and these have been well received to date.

Minimum animal numbers for OCQ(V) - TT revalidation requirements

The current minimum number of cattle to be tested between revalidations is 250. It is considered that this must remain for the initial OCQ(V) qualification but that it is unnecessarily high for revalidation. The minimum number of animals to be tested between subsequent revalidations will be reduced to 30 animals as of 31 January 2019.

Further OV briefings

22 FEBRUARY 2019
Update on implementation of recommendations from the 2018 OCQ(V) Review

The option of permitting a more flexible invigilator choice for OCQ(V) examinations for all OVs (to reduce the time and cost burden and assist those working in sole-charge or remote practices) has been further discussed with the course accreditation providers. Registered veterinary nurses (RVNs) are now permitted to act as invigilators for the OCQ(V) examinations. OVs and RVNs are reminded that the Code of Professional Conduct for Veterinary Nurses (especially the five principles of practice) are applicable to invigilation.

The details for the option to permit the time taken for completion of course scenarios to be considered as CPD have now been agreed with the course accreditation providers. Each scenario completed can now contribute up to one hour of CPD for the relevant qualification.

20 FEBRUARY 2019
New Export Health Certificates made available in the event that the UK leaves the EU without a deal

New EU Export Health Certificates (EHCs) are now available through the EHC form finder on Gov.uk. The 127 new EHCs are to enable the facilitation of UK trade to Member States of the EU and will replace the current use of Intra Trade Animal Health Certificates and commercial documentation for exports entering the EU after 11pm on 29 March 2019.

8 FEBRUARY 2019
Free Official Control Qualification (Veterinary) (OCQ(V)) training to certify the export of animal products to the EU

Given the increase in demand in the event of a no-deal scenario for EHCs for exports of animal products that must be signed by an authorised signatory or an OV, free training is on offer to encourage additional OVs to offer certification services. Training is available for the Official Control Qualification for Products Exports (OCQ(V) - PX) and, where candidates are eligible, prerequisite courses in Essential Skills (OCQ(V) - ES) and Exports General (OCQ(V) - EX).

17 JANUARY 2019
Listing of export health certification providers on Gov.uk

The APHA is launching an accessible and managed list of export health certification providers on Gov.uk. The listing will support exporters in identifying organisations able to provide certification services in their region and by commodity type. The list may include local authorities if they offer a service to sign APHA-issued EHCs; it will include businesses, sole traders or local authorities which offer a service.

Businesses which do not currently offer export certification services but who would be prepared to do so if there is demand can be also be listed. Organisations must opt in to be included.
Changes to OCQ(V) export training and OV instructions in the event of a no-deal

In a no-deal scenario, changes would be required for the export to the EU of animals and animal products (excluding pets and small animals). As usual, OVs must ensure they obtain an up-to-date EHC and familiarise themselves with the requirements and the notes for guidance in case any conditions may have changed.

Defra published a series of technical notices in 2018 detailing possible implications of no-deal on the UK’s ability to export animals and animal products, and horses and other equidae. The notices state that in the event of a no-deal, the UK will become a third country and will need to be listed as such to be able to export to the EU. The European Commission also published a series of notices on the movement of animals and food of animal origin, for member states.

Third countries have to apply to the EU to be listed in EU legislation as a country authorised for the export of different commodities to the EU. If the UK does not achieve listing by 29 March 2019, exports to the EU of animals and animal products (except pets) could not continue. The UK has applied to the Commission to be listed as a third country authorised for exports of animals and their products to the EU. This briefing note assumes the UK has been listed as a third country for the commodities it intends to export.

OVs are to read and understand the technical notices and their implications on the different sectors. Note that the course content/guidance/assessment for OVs as part of their initial training and subsequent revalidation (ie the OCQ(V) courses/modules provided by Improve International) and the OV instructions available through the APHA Vet Gateway will be amended, once the final position is known, to remove references to intra-EU trade and use of the Intra Trade Animal Health Certificates (ITAHCs) for the export of animals and animal products to the EU.

The associated TRACES support documents will no longer be relevant and will be removed. These will be replaced by Export Health Certificates (EHCs) based on the model certificates that the European Commission have in place for the importation of various (categories/classes/types of) animals and animal products from non-EU countries. OVs must use the correct EHC for the commodity category/class/type, bearing in mind that EHCs for the export of animals and animal products to the EU will be different to the ITAHCs currently used for intra-EU trade, and that EHCs will be required for the export of animal products to EU-27, which currently do not need to be officially certified.

Examples of significant changes from current procedures are highlighted in the separate sections of the Briefing Note; to read the full note, go to: apha.defra.gov.uk/documents/ov/Briefing-Note-0419.pdf

Further OV briefings

15 JANUARY 2019
Sam – online TB test submission update

Updates have been made to the Government Gateway and therefore the links to the Sam – online TB test submission and guidance (Sam login) for both organisation and agent has changed. HMRC is decommissioning the Government Gateway Service; all services have moved to its replacement. OVs are to use the new links to the Sam – online TB test submission (Government Gateway) pages and also the APHA Vet Gateway Sam – online TB test submission pages.

9 JANUARY 2019
Annual surveillance TB testing for lower-risk herds in the six-monthly testing parts of the Edge Area in England

From May 2019, cattle herds in the six-monthly testing parts of the Edge Area in England that meet certain criteria will be eligible to move to annual surveillance testing. Defra’s public consultation in 2017 on the introduction of routine six-monthly surveillance testing in the High Risk Area (HRA) included a proposal that less frequent surveillance testing of cattle herds should be allowed depending on their TB histories and herd health accreditation for bovine TB.

This policy change recognises and rewards those cattle keepers with a reduced risk of suffering a TB breakdown and/or who are proactively trying to increase their resilience to bovine TB by participating in a Cattle Health Certification Standards (CHeCS) accredited bovine TB health scheme. It will also help to incentivise other keepers to reduce the bovine TB threat to their herds.

17 DECEMBER 2018
Introduction of Official Control Qualification (Animal Health Paraprofessional) – Certification Support Officer (OCQ (AHP) - CSO)

The Official Controls Qualification (OCQ) for Certification Support Officers (CSOs), which is an Animal Health Paraprofessional (AHP) role, has been released. This qualification (OCQ(AHP) - CSO) supports the delivery of Export Health Certification for animal products excluding germplasm/germinal products. CSOs are not able to support live animal certification. The use of CSOs is expected to increase the efficiency and productivity of OVs providing export certification for animal products (excluding germplasm/germinal products). However, the APHA will direct which EHCs are suitable for deployment of CSOs. An initial list of eligible EHCs will be made available as part of OV Instructions Product Exports and this should be checked by the OV at appropriate intervals.

6 DECEMBER 2018
Launch of Export Health Certificate form finder service

The APHA launched an Export Health Certificate (EHC) form finder on gov.uk on 30 November 2018. The EHC form finder is an online catalogue of all EHCs, Export Application forms (EXA), notes for guidance (NFG) and other support documents associated to EHCs. The service will enable OVs to view or download these forms directly without having to contact the Centre for International Trade in Carlisle by email or telephone to request the forms.
Deal or no deal, transferring animals will change

What impact will Brexit have on the movement of animals to and from EU countries?

ZAK SHOWELL

Zak Showell is the Director of Shaldon Wildlife Trust. He spent seven years of his career as registrar, coordinating the animal transfers and records for Twycross Zoo. He is also the co-chair of the BIAZA Records group and a Species 360 ZIMS Expert advocate.

From blue passports to increased costs of that French cheese you like, Brexit’s effects will be far and wide. One element that has not had so much mainstream press coverage is the potential impact on the transport of animals.

From pets and livestock to pandas and lemurs, the UK undertakes a large volume of imports and exports to and from other EU countries each year. In 2016, livestock exports alone, excluding poultry, accounted for over half a million animals crossing the border to mainland Europe. Thousands of pet owners will have taken their pets under the pet passport scheme.

Zoos also undertake animal transportation for several different reasons – a key one being contributions to breeding programmes. Animals that are part of a breeding programme are often moved to other collections to maintain the genetic and demographic viability of captive populations.

Many of these breeding programmes are for endangered species and they are often coordinated by individuals from across Europe as part of the work of the European Zoo and Aquaria Association.

At the time of writing, there is no formalised agreement of how the UK will leave the EU, potentially resulting in a no-deal Brexit. This would mean that from 29 March 2019, the UK would be classed as a third country for animal transport considerations: the same classification as other non-EU countries such as the USA and Australia.

This will result in a large-scale change in the way that all animals are transported from the UK to the EU, but its changes to the transportation of zoo species may be the most significant.

Defra has produced 106 technical notes on how processes will change if the UK leaves the EU without a deal, including several on animal transportation and trade. The information below is based on these technical notes and the writer’s professional experience.

Currently, most commercial animal transports from the UK to the EU must be registered under the Trade Control and Expert System (TRACES). TRACES is managed by the European Commission’s Directorate-General for Health and Consumer Protection and facilitates the generation of the necessary documentation, as well as sending copies to the appropriate authorities at the exporting and importing countries – all of which saves traders time.

TRACES can create intra-trade animal health certificates (ITAHCS), common veterinary entry documents (CVEDs) and more. As TRACES is an EU-managed facility, the UK’s departure from the EU, whether with a deal or not, will change the status of the UK to that of a third country and therefore render TRACES ITAHCS null and void, and will require the creation of a UK-specific trade application system.

Defra has declared that it is creating a new system: IMS. Its implementation and roll-out will require some time, which could increase waiting times for certificates and extend the whole application process.

Another major consideration for zoos will be the transfer of CITES listed specimens. Under current EU law, the transfer of CITES Annexes B to D do not require any additional paperwork; only Annex A specimens require certification.

Under a no-deal circumstance, all CITES listed specimens (A to D) will require certification.

The certification required will also change: from Article 10 certificates to the import- and export-based certificates currently utilised when dealing with non-EU countries. This change will necessitate further planning of transfers and cause longer waiting times.

The route in which an animal enters the country, through a Border Inspection Post (BIP), will also change. Currently, the vast majority of species can enter through most ports, but Defra has declared that Dover, Holyhead and the Eurotunnel will not be CITES designated points of entry or exit. Routes routinely taken by animal transporters will have to be rerouted, resulting in potentially longer journey times as well as increased transport costs.

Given the uncertainty of the current deal situation and with Defra releasing the no-deal guidance, businesses are having to prepare for these scenarios.

Whilst many zoos within the UK will continue to be part of the European Zoo and Aquaria Association and remain involved in the breeding programmes, the increased paperwork will mean more time is required to plan and apply for all the relevant permissions.

Instances where species are short-lived or have quick generation times may pose problematic; overall, it will make it harder for the UK to cooperate with other European zoos in achieving their goals of saving species.
Antimicrobial resistance (AMR) is not a new topic to anyone involved in livestock and food production, and there is a wealth of information raising awareness and imparting knowledge about how to tackle the issue, plus many examples of government interventions and NGO and industry-led initiatives.

The aim of this article, however, is to highlight the significance of the extraordinary mobility and potency of horizontally transmissible genetic elements of antimicrobial resistance (also called antimicrobial resistant genes, or ARGs), and the necessity for coordinated and rapid global responses to new and emerging threats. ARGs do not respect geographical, political or bacterial species boundaries. They spread very widely and rapidly, and can be found in all bacteria, not just the pathogenic ones. This reservoir of transmissible resistance is known as the "resistome".

Overuse and misuse of antibiotics in both humans and animals has dramatically increased the size and diversity of the resistome, underpinning the dire position we find ourselves in now (von Wintersdorff et al., 2016).

The emergence of horizontally transmissible colistin resistance in China in 2015 (Liu et al., 2016), and its rapid global spread, is one such example – and one that is particularly pertinent to the pig industry.

The tale of colistin
Colistin is an antibiotic in the family of polymyxins. It was not commonly prescribed in humans due to its potential for renal toxicity. However, with the increase in global AMR, colistin is now considered the last line of defence for several multi-drug resistant gram-negative infections in humans – its value in the treatment of life-threatening infections needs to be preserved for as long as possible (Rhouma et al., 2017).

Historically, colistin has also been a mainstay antibiotic used in pig production systems across the world – often in the prevention of post-weaning diarrhoea (PWD) (Kempf et al., 2013). This usage did not come under particular scrutiny in the early days of the AMR debate because any resistance to colistin, observed up to that point in time, was non-transferrable genome-mediated, meaning it was not considered likely to amplify and/or disseminate rapidly (Rhouma et al., 2017).

However, with the discovery of the mcr-1 plasmid-mediated gene, in Escherichia coli isolated from people,
pigs and retail meat in China in 2015 (Liu et al., 2016), this all changed. Suddenly, there were ARGs to colistin with the ability to transfer horizontally between different bacterial species, sounding warning bells in the scientific community across the globe (Hu et al., 2016; Tse and Yuen, 2016).

What was the global response?
WHO added colistin to their list of highest priority critically important antimicrobials, HP-CIAs, along with the now well-known list of fluoroquinolones, third and fourth generation cephalosporins, macrolides and glycopeptides (WHO, 2017).

The Chinese government banned the use of colistin in feed for livestock (Walsh and Wu, 2016). The European Medicines Agency (EMA) added colistin to their Category 2 class of antibiotics, which includes medicines reserved for treating infections in animals for which no effective alternatives treatments exist (EMA, 2016).

The EMA also advised all Member States to reduce colistin use to a target of 5mg/PCU (population correction unit). The EMA cautioned that reductions in colistin use should be achieved through improved animal health, and not by the use of other antimicrobials to compensate.

How did the industry react?
The biggest global producers of pork are China, the EU and the United States (Figure 1). Within the EU, the biggest producers are Spain and Germany (Figure 2). China banned the use of colistin in animal feed. In the US, colistin is not marketed for livestock use, although the mcr-1 gene has been isolated from pigs in the US (Meinersmann et al., 2017).

In EU countries, colistin was still being widely used in pig production systems prior to its addition to the list of HP-CIAs in 2016, despite reductions in total antimicrobial usage (Figure 3).
Colistin reductions are, however, now being reported. For example, recent data from Denmark, Spain and the UK demonstrate encouraging trends (Figures 4A to 4C).

What does the future look like?
A word of caution here. Data from Denmark indicate that as the use of colistin has declined, so the use of other antibiotics (penicillins, macrolides and aminoglycosides) has increased, suggesting that this may be compensatory use, and that tackling PWD is proving challenging.

Tackling AMR is not about focusing on zero-usage. It is about focusing on improving and maximising animal health and welfare, to minimise the necessity for antimicrobial use. Routine preventive use is a particular issue that needs to be addressed, and success may require systematic change and human behavioural change.

Progress from the pig industry in many countries to date has been impressive, but the complex causality of PWD, together with problematic endemic pig diseases (such as PRRSV and Mycoplasma hyopneumoniae) and unpredictable future bacterial attempts to outwit us humans, will pose ongoing challenges for the industry.

This article was first published on The Pig Site (thepigsite.com)
A full reference list is available on request.
The opening Western Counties Veterinary Association (WCVA) meeting of 2019 attracted a broad church of people to listen to Dick Sibley report on the findings of an alternative approach to the control of bovine tuberculosis (bTB) and discuss the way forward. A slightly more formal presentation had been delivered at the BCVA Congress meeting in October 2018, but this evening was more directed at working cattle vets in Devon.

Defra and APHA advisors, wildlife protectors, testing developers and Cymorth TB managers shared understanding with Devon-based farmer Robert Reed, who had engaged in an in-depth alteration to management of his cattle to reduce the financial and practical burden of bTB.

The topic received lots of public interest, particularly thanks to the involvement of musician and TB activist Brian May, who explained his role in supporting farmers and vets to control bTB and protect badgers.

The TB control strategy, led by cattle vet Dick Sibley, involved the use of Actiphage to clear a dairy herd that had been suffering with TB since 2012. Measuring the presence of live bacteria in the blood was incorporated as a complementary method to other techniques. The method was claimed to enhance early detection and containment of the infected cattle.

It will be no surprise to cattle vets that the government has been very protective of TB policies over the years and reacted unfavourably to approaches that go beyond the initiatives of the day. But any difficulties that were encountered with this project now seem to be in the past and everyone appears to be pulling in the same direction – although the speaker recognised that not all questions can be answered to full technical satisfaction.

Many people have visited the test farm and the programme is likely to be rolled out in Wales, involving as many farmers in the Gower peninsula as wish to participate. It is well recognised that it is the willingness and dedication of the farmer that will determine the effectiveness of the programme. Recognition that herds with repeated skin test failures are a risk to their neighbours may prove to be a significant factor in the programme, and how this comes about is an essential start to understanding disease control options.

The test farm – Gatcombe Farm, run by Robert and Thomas Reed – is located near Seaton in Devon. The farm is an intensively managed dairy herd with five robot milking parlours and an extensively managed beef herd. The dairy cows stay in their robot group, do not graze and are housed 24/7. Bovine TB has been detected in the dairy cows for years, with repeated failures and over 100 animals slaughtered. The farmer was simply fed up with the time, effort and money involved in having repeat testing with no apparent endpoint. His challenge to his veterinary practice was to control the disease and allow the herd to be managed to maximum benefit without having to keep more animals than wanted because of trading restrictions.

Initial analysis of the testing history showed that only the dairy cows had bTB failures, with no animals from the beef herd failing the skin test. The audience was asked to indicate whether they felt that, within their practice, bTB was being controlled and that the plan to eliminate the disease by 2035 seemed likely. Very few vets raised their hands, but when asked whether they were dissatisfied with progress, there was a forest of arms raised aloft. How many of the vets would be prepared to put in the time and effort needed to help their clients wasn’t asked. More information was awaited by the WCVA members.

The role of badgers

The fact that the beef cows graze the pasture but have no bTB failures was an obvious anomaly and the involvement of badgers was investigated. Setts were located, and dung samples sent to Warwick University, with the finding that *M. bovis* was present at many locations. Wildlife cameras showed that there was a great deal of badger activity around the woods and pastures but no penetration into the buildings housing the dairy herd. This led to a greater understanding of “infected”, “infectious” and “shedding”.

Analysis of the number of organisms in badger dung and cattle dung, and the volumes of dung excreted,
indicated that one shedding bovine will contaminate pasture equivalent to 500 badgers. However, the badgers were a risk factor. Brian May provided funding to vaccinate the badgers; he explained to the audience that his involvement has developed from badger protection to supporting farmers and vets in the control of bTB. If the cattle disease ceases to be an issue, then the badgers will be left alone. He further commented on the intensity of badgers around the maize fields and that dung from the cattle spread on the maize ground encourages worms and grubs, which in turn attracts the badgers. Whatever has been carried by the cattle dung is also available to the badgers. The vaccine is not expected to prevent disease but to reduce the number of animals changing from latency to infectious.

With an understanding from research that inhaled organisms tend to lead to the development of lesions more than ingested mycobacteria, and that radical changes in diet stimulate latent mycobacteria to become active, disease control was targeted on the dairy herd. The dairy herd had shared air space and experienced diet changes throughout the production cycle. Preventing faecal contamination of food and water was identified as a management necessity and cleanliness of the bedding and walkways was an absolute priority.

**Testing methods**
Examination of the history of past reactors showed that having a bottom lump, regardless of the size of the avian lump, was a factor in subsequent enhanced test failure. Cows with a bottom lump passed further skin tests. Bottom lump cows have also been tested for presence of the organism and antibodies. The findings are not conclusive; the tests are not necessarily validated, but repeated enhanced testing indicates that whatever procedure is adopted, detection of \textit{M. bovis} varies with time and that no one test, at one time, indicates freedom from disease. Initially, approximately 10 percent of the herd that passed the skin test had bottom lumps and 88 percent of those showed positive to an Actiphage blood test. Comprehensive testing of bottom lump cows continued involving Actiphage, qPCR and IDEXX Elisa.

Those who were concerned about interpretation of the tests remain so, but the speaker explained that only the cows that failed the formal skin test were slaughtered. Other positive test cows were managed so that the risk of disease spread was reduced, utilising Johne’s control principles to prevent new infections from contaminated faeces. Robert Reed pointed out that high-risk cows were bred to beef bulls and bedded on straw, which was then composted. Resistance to disease by some animals was briefly mentioned, but that is a major topic for clarification on another day.

**Potential for expansion**
There are some 67 herds in Devon that have been under restriction for 18 months or more. Veterinary practices are encouraged to identify which of their clients are included. It is expected that the majority will be dairy herds with over 300 cows. It is further anticipated that the farmers will be totally fed up with bTB and could be resistant to yet another initiative. This has not been the case with other herds within the West Ridge Veterinary Practice; of greater concern is the cost of control and the effort required. Robert Reed has received subsidised testing and veterinary time; converting what has been learned on his test farm to more general use will require careful awareness and veterinary support.

Within a few days, over 30,000 comments about the meeting were posted on social media. Such is the impact of involving a musician in disease control. Further conversations have shown that this meeting highlighted a widening expectation between those who are responsible for bTB eradication policy and veterinary surgeons delivering that policy at farm level.
Diseases of farmed deer

Learn about managing disease in the second article of a two-part series on deer farming in the UK

Virtually all deer farmed in Britain are red deer (*Cervus elaphus*). Other species, especially fallow deer (*Dama dama*), are common in deer parks where the deer are subject to low levels of intervention in comparison with farmed deer. Red deer have proven to be more amenable to the regular handling and more invasive procedures that characterise deer farms.

But red deer have not been selectively bred in the same way as conventional livestock, and consequently are not yet subject to diseases associated with high productivity, such as mastitis, ketosis, hypocalcaemia, etc. The number of diseases having an economic impact on deer farms is thus rather limited and of all protein production systems, deer farming must use the least quantity of antibiotics. However, because deer remain effectively wild, they are especially susceptible to stress, which may cause subclinical conditions to become apparent.

It must be remembered that no drugs are licensed for use in deer in the UK.

Parasites

The only diseases which are routinely treated prophylactically are parasites. Lungworm (*Dictyocaulus eckerti*; Figure 1) is the most common cause of clinical signs and probably the biggest cause of financial loss and mortality in farmed UK deer, although gastrointestinal nematodes are possibly of increasing importance.

In New Zealand, pour-on anthelmintics have been incriminated in the development of drug resistance. Whilst they may provide longer protection, pour-ons do not achieve the levels of drug in the blood provided by oral and injected routes. Administration by mouth or injection is preferred and all of the available macrocyclic lactones are used, with moxidectin perhaps the most effective. Levamisole is ineffective in deer. Changing the drugs used and treating with combinations of anthelmintics may delay the development of drug resistance.

Faecal egg and larval counts should be treated with circumspection. Samples must be absolutely fresh, and it should be remembered that the counts only relate to adult parasites.

Obviously, management to provide as clean pastures as possible by rotation, grazing aftermaths and reseeds (especially using chicory, red clover, brassicas, etc), mixed grazing with cattle and sheep and lower stocking densities are all good practice.

Red deer develop good resistance to lungworm and gastrointestinal parasites, and it is common practice to restrict use of anthelmintics to calves and yearlings. Worming of calves pre-rut, which normally coincides with handling for other purposes, is important.

Other parasites, such as deer warbles, nostril maggots and lice, are also eliminated or reduced by anthelmintics. Liver fluke (*Fasciola hepatica*) is a common cause of liver condemnation in red deer but does not normally cause clinical disease. Closantel is contraindicated, causing well-documented adverse reactions.

*Toxoplasma gondii* is increasingly causing abortion in New Zealand red deer but has not yet been recognised in Britain as a cause of abortion.

*Cryptosporidium parvum* can have a serious impact, with mortality of up to 20 percent among young calves born outdoors. In some herds, this may reappear for several years before resolving apparently spontaneously.

When naïve red deer are moved into areas with high tick populations, mortality can be high as a result of infection with *Babesia*.

Bacterial diseases

Amongst the bacterial diseases affecting farmed red deer, mycobacteria are economically the most significant. Johne’s disease caused by *Mycobacterium avium paratuberculosis* (MAP) is widespread, although it may be clinically inapparent where grazing is abundant and deer are well nourished. Deer are susceptible to both cattle and sheep strains and presumably can also become infected due to contact with wildlife.

Deer are infected early in life and possibly in utero. They often differ from cattle and sheep in becoming clinically affected as yearlings showing delay in shedding their winter coat, failure to gain weight and eventually chronic diarrhoea. There are no available measures to control Johne’s, although farmers with infected herds should cull yearlings that are not thriving. Ensuring good grazing and management may reduce shedding of bacteria.

*M. avium avium* (avian tuberculosis) can cause mortality in housed calves around weaning and also in adults, causing visible lesions which cannot be distinguished from those caused by bovine tuberculosis without culture.

Red deer are susceptible to bovine tuberculosis (*M. bovis*), although they are considered a dead-end host of limited epidemiological significance in spreading disease to cattle. Where farmed deer herds have become infected, losses have been sporadic but internal and external...
abcesses can be common. The retropharyngeal and mesenteric and mediastinal lymph nodes are most commonly infected. Infection spreads more quickly where herds are of mixed social groups presumably due to social stresses.

The comparative cervical skin test using avian and bovine tuberculin remains the standard test for the disease in deer. It has not been validated but remains a useful screening test, especially where large numbers of deer are being tested. At the time of writing, several serological tests are being evaluated. Without better tests, it is not easy to create a statutory testing regime but, in the meantime, deer farmers must exercise extreme caution in moving deer from high-risk areas or herds of doubtful status. As a notifiable disease, any suspicions of tuberculosis must be reported. This is most likely to occur following identification of visible lesions at meat inspection.

Farmed deer do not appear to contract clostridial diseases very often and few farmers vaccinate. Sporadic cases of enterotoxaemia caused by *C. perfringens* type D (pulpy kidney) is probably the most common, but other types, even including tetanus, have been reported.

Of greater significance is *Yersinia pseudotuberculosis*, which affects calves. This is normally subclinical and results in good immunity, but occasionally calves at, or just after, weaning that have been stressed due to rough handling, changes of nutrition, transport or bad weather will develop clinical disease. This is normally manifested as sudden death but occasionally foetid diarrhoea and recumbency may be seen. At post-mortem, there is a severe haemorrhagic gastroenteritis with fibrinonecrosis (*Figure 2*) of small and large intestine and necrosis and haemorrhage of the mesenteric lymph nodes. Where a group of deer are affected, losses can be very high and this is one of the few indications for the urgent administration of long-acting antibiotics to all in-contacts.

E. coli O157 has been identified in healthy deer, though a recent project in which a large number of farmed and wild deer were screened suggests that the prevalence is much lower than in cattle.

**Viral diseases**

Amongst viral diseases, malignant catarrhal fever causes sporadic losses in adult deer resulting from contact with healthy sheep – usually around lambing. Normally death occurs within 12 hours but affected deer may survive much longer with mucopurulent discharge from the eyes and nose (*Figure 3*).

Herpesvirus of Cervidae (HVC-1) can cause disease in newly weaned calves, which may present as conjunctivitis that can lead to corneal opacity with mucopurulent discharge. This virus is related to infectious bovine rhinotracheitis and most deer are seropositive, but outbreaks of disease are rare.

Red deer have been shown in the laboratory to be able to contract foot and mouth disease (FMD) but it is doubtful whether any wild deer have contracted the disease and no cases of clinical disease or seroconversion occurred during...
the 2001 FMD outbreak, despite widespread high populations of wild deer and in-contact farmed deer.

**Other health considerations**
The spongiform encephalopathy known as chronic wasting disease has spread throughout the USA since it was first recognised in the 1970s and it has now been diagnosed in Scandinavia. It does not appear to be infectious to humans but is transmissible between deer by fomites and mortality rates can be high. There is widespread concern that this disease could enter the UK.

Deer are not often affected by plant poisons – they eat yew, for example, with impunity – but sudden access to acorns has caused disease and hand-reared calves died as a result of eating foxgloves.

Copper deficiency presents in adult red deer as ataxia with conspicuous loss of coordination of the hind quarters and affected deer may struggle on for many weeks. Calves in copper deficient herds can usually be identified in late summer as having swollen hock and knee joints. Farmers frequently administer boluses to all deer although evidence that this improves performance in healthy herds is limited.

Deer are highly susceptible to ruminal acidosis, usually due to accidental access to cereal-based concentrates. Changes of diet must always be carried out with care.

High carbohydrate diets such as potatoes, especially in the absence of palatable forage, often results in laminitis and overgrown hooves. Clipping of hooves and hard floors may allow affected deer to make a good recovery. Other problems of the feet are uncommon; occasional abscesses occur, often due to injury (usually at handling). Traumatic injuries are relatively common in deer and even fractured limbs may resolve spontaneously without permanent lameness.

Finally, it must be emphasised that deer are not well insulated and have low energy reserves but are adept at finding shelter. It is important that farmed deer have access to woodland or ground which provides shelter from wind.

**FURTHER READING**
The Veterinary Deer Society has published a handbook, *Management and Diseases of Deer*, which is now available on disc from Mark Dagleish (mark.dagleish@moredun.ac.uk).

For over 30 years, the Deer Branch of the New Zealand Veterinary Association have published annual proceedings of their deer courses. These are available online from: info@sciquest.org.nz. For more information, visit: sciquest.org.nz/deer.


The book *Farming Wapiti and Red Deer* (1993) by Haigh, J. C. and Hudson, R. J. is an invaluable source, but unfortunately is no longer in print.
“Maybe more personal support on a daily basis is the key to keeping people happy”

Daddy… Daddy! Can we ask you a question?” asked my three sons 15 years ago, when they were seven, five and three years old. “What would you like us to be when we grow up?” Well, that was easy. “Happy!” I replied. “No!” they cried, “What you would like us to do?” That was a completely different question – one that I couldn’t answer. That would be for them to decide in years to come.

Now Sam, having done earth sciences at university while spending much of his time acting, teaches kids to computer code while co-running a physical theatre company. Jack is at Swansea reading zoology with rock climbing – as a hobby not a joint honours degree – while Ross’s life is immered in playing the oboe at the Royal Scottish Conservatoire. I could never have predicted those career paths, but hopefully I was right on the happiness front.

I couldn’t be so confident about the happiness levels of vets, it would seem. The Vet Record told us on its front cover recently that 37 percent were thinking of leaving the profession. This hasn’t been the impression I’ve had while on my ambulatory referral service seeing ophthalmic patients in around 30 veterinary practices.

I’ve asked vets I met over the past fortnight whether they were thinking of leaving the profession. They were all rather surprised at this question but when I explained that I wanted to see if that 37 percent was mirrored in the vets I encountered, almost all (47 out of 50) said they were happy to stay as vets.

Many said they had wanted to be a vet since their youth and that hadn’t changed. Several were looking for a pay rise or not to work over Christmas but only three reflected that they were thinking of leaving. There is a problem here though, which revolves around two words with which you may not be familiar: ontology and epistemology.

Wikipedia tells us that ontology is “the philosophical study of being”. Basically, ontology asks what is out there in the world. In the situation we are discussing, it is to ask the question: “What do vets actually think?” What then of epistemology? That is the philosophical study of knowing. How can we really know what vets are thinking?

Maybe you can now see the problem. Here I am, bouncing up in my bow tie with a broad smile on my face and I ask, “Are you thinking of leaving the profession?” Am I likely to get a truthful answer or are people more likely to fudge the issue rather than telling me what they really think?

Here’s the difference between quantitative and qualitative research. Evaluating the effect of an antiviral compound on a cell culture infected with herpesvirus or seeing what giving a tear replacement drop does to dogs with dry eye results in numbers. They don’t change with the way one does the counting, be it number of cells killed by the virus or changes in Schirmer tear test values.

But ask people what they think and the result might change with the way the question is asked. That’s because the researcher is interacting with their informants. And I wonder whether that too is the crucial element in keeping vets in the profession.

I’m not sure whether the three people I talked to who were considering whether to leave had talked to many about their worries. To return to where we started today, maybe more personal support on a daily basis is the key to keeping people happy, which is what we must all want them to be.
Lessons from the influenza outbreak

Was the outbreak of equine “flu” a dress rehearsal for something more serious?

Jonathan Pycock is an equine claims consultant for the Veterinary Defence Society and an equine reproduction expert. He is the immediate past president of the British Equine Veterinary Association.

Throughout the end of 2018 and into 2019, many of us became aware of an unusual number of equine “flu” cases on the other side of the English Channel. Several practices put posts on their Facebook pages encouraging clients (again) to vaccinate their horses. However, it was pretty much business as usual and it seemed that no one really took much notice. Then we were hit by a whirlwind when it was announced that racing would be suspended for a day, and then that this would be extended to six days. Not since 1981, when mandatory vaccination was introduced, had racing been stopped as a result of equine “flu”. Concern soon turned to frustration, even anger, in some circles and the British Horseracing Authority (BHA) faced a degree of criticism for overreacting. The British Equestrian Federation (BEF) and many smaller equestrian organisations faced an equal, though less well publicised, barrage of criticism for under-reacting. Of course, for many, the risk was there but they simply did not see the evidence. Many of the criticisms levelled at the authorities were understandable. The most important backlash was directed at the British Horseracing Authority (BHA) for not acting sooner.

Not since 1981, when mandatory vaccination was introduced, had racing been stopped as a result of equine “flu”. Concern soon turned to frustration, even anger, in some circles and the British Horseracing Authority (BHA) faced a degree of criticism for overreacting. The British Equestrian Federation (BEF) and many smaller equestrian organisations faced an equal, though less well publicised, barrage of criticism for under-reacting. Of course, for many, the risk was there but they simply did not see the evidence. Many of the criticisms levelled at the authorities were understandable. The most important backlash was directed at the British Horseracing Authority (BHA) for not acting sooner.

What was wrong and what was right is likely a matter of perception that will vary markedly between stakeholders, who all have different priorities. Those involved in making decisions of this magnitude presumably learn to accept that you are never going to please all the people all the time.

What was wrong and what was right is likely a matter of perception that will vary markedly between stakeholders, who all have different priorities. Those involved in making decisions of this magnitude presumably learn to accept that you are never going to please all the people all the time.

What is more important, the economic loss from stopping racing for six days or 5 percent fatalities among the 60 to 70 percent of UK horses that are not vaccinated for “flu”? In many parts of the country, large percentages of the equine population are not vaccinated. There is a significant potential for contact, direct or indirect, between racehorses and other horses. Is that a problem for the racing industry? Should racing be penalised for the unacceptably low rate of vaccination in the general equine population? Should racing have to pay for infectious disease surveillance?

In many parts of the country, large percentages of the equine population are not vaccinated. There is a significant potential for contact, direct or indirect, between racehorses and other horses. Is that a problem for the racing industry? Should racing be penalised for the unacceptably low rate of vaccination in the general equine population? Should racing have to pay for infectious disease surveillance?

Assuming the situation hasn’t changed dramatically between writing and printing this, which is a distinct possibility, has much harm been done? Racing stopped for six days but should be back on track before the Cheltenham meeting, before too many foals hit the ground and before the flat season. One horse has died, a few dozen others were sick and a lot of owners have spent money on extra vaccines. Was that so bad? We’ve coped with divergence of a “flu” strain. We’ve done that before and we’ll do it again.

But what if the next information text that hits our smartphone is not alerting us to a case of equine “flu” but to West Nile virus or African horse sickness? Are we ready? Do we know enough to spot the signs and advise our clients? Is the communication between equestrian bodies sufficient to ensure a joined-up approach? Would the involvement of government help or hinder? Do we have effective means of communicating information to the profession? Can we control or even come close to controlling the misinformation on social media? Can the profession effectively communicate with horse owners and ensure they take appropriate action without panicking?

Many thanks to David Rendle for input into this piece. □
Treating diarrhoea cases

Treatment of diarrhoea in the adult horse is considered in part two of the series on equine diarrhoea

Diarrhoea is a frequent problem in the equine population, with specific aetiologies infrequently diagnosed. Therefore, treatment will often be empiric, but specific treatment modalities can be instigated if the aetiology is known or suspected. The approach to treatment for these cases will be discussed further and broken down into non-specific treatments and specific treatments.

*Clostridium difficile* and *perfringens*

**Metronidazole**

Antibiotic therapy should be instigated when there is clinical concern over an infectious bacterial aetiology but also weighed up against the increased risk of further dysbiosis. In most clinical cases of diarrhoea (unless severely septic), the author avoids the use of broad spectrum or penicillin-based antibiotics. Cephalosporins should be avoided in all cases due to their increased risk of inducing a clostridial diarrhoea alongside their protected status (O'Connor et al., 2004).

When considering clostridial disease, the mainstay of antibiotic therapy will be metronidazole, with doses ranging from 15 to 30mg/kg q12h PO (the author generally uses 25mg/kg q12h PO). Metronidazole has also been shown to have an anti-inflammatory effect on the gastrointestinal tract as a beneficial side effect and therefore can play a role in inflammatory bowel disease cases.

Some horses will show anorexia secondary to metronidazole; administration per rectum (increase the dose by 25 percent) can ameliorate these signs (Steinmann et al., 2000).

**Biosponge**

Di-tri-octahedral smectite has been shown to be effective at absorbing and neutralising endotoxins, particularly those from clostridia, and therefore should be given in any case where there is a potential for either *Salmonella* or clostridial disease. The first dose should be 3g/kg followed by 1g/kg q6h PO, although many horses won’t tolerate this dose without stomach tubing. If performing nasogastric intubation, the veterinary surgeon should be careful to not have any oral contact with the nasogastric tube due to the risk of zoonotic infection.

**Salmonella**

If *Salmonella* is considered, or proven to be, a pathogen in a clinical case then gentamicin is a suitable monotherapy. Its penetration into the GI tract is limited but will reduce the rate of translocation and therefore the risk of sepsis and SIRS. The dose should be 6.6mg/kg IV q24h but if there is severe oedema secondary to hypoalbuminaemia, the dose may need to be increased. Monitoring of the therapeutic levels (both a trough and peak) can ensure adequate dosing as well as reducing the potential nephrotoxic nature of the medication.

**Encysted cyathostomins and parasitism**

**Anthelmintic**

Parasitism is a very common cause of diarrhoea within the equine population, particularly in the UK. The mass emergence of encysted cyathostomin larvae can lead to a severe, life threatening diarrhoea requiring anthelmintic treatment. It should be noted that the use of these products can initially make the clinical signs, including hypoalbuminaemia, far more severe but must be undertaken to allow for resolution of the disease.

Fenbendazole (7.5 to 10mg/kg q24h for 5 days) has historically been used as the treatment protocol but given the very high rate of resistance seen throughout the UK and the world, its use should be limited. Instead, a tendency to use either ivermectin or moxidectin-based products should be undertaken and with the increased duration of action of moxidectin, this should have an increased kill rate. The encysted larvae, though, are metabolically inactive and as
such are relatively resistant to any anthelmintic; repeat dosing is required to ensure most parasites are killed.

**Glucocorticoids**

If a diagnosis of encysted cyathostomins has been made, the horse is clinically sick and there is a hypoalbuminaemia then glucocorticoid pretreatment should be considered. The theory is to reduce the amount of inflammation within the GI tract secondary to killing the encysted cyathostomins and reduce the risk of hypoalbuminaemia. Prednisolone can be used at 1mg/kg q24h PO or dexamethasone at 0.1mg/kg q24h IV.

**Anti-endotoxic**

**Flunixin meglumine**

During endotoxic episodes, there is a rationale in using flunixin at 0.25mg/kg q8h IV to ameliorate the cardiovascular effects of endotoxaemia. When starting NSAID therapy, consideration should always be given to the side effects on the colon and the kidneys and an informed clinical decision made.

**Polymyxin B**

When used at sub-therapeutic antibiotic doses, polymyxin B has been shown to have excellent endotoxin binding effects and therefore, in those cases that present with sepsis, it is well worth considering administering polymyxin B (1,000 to 6,000 IU/kg q8h IV). If there is concern about renal perfusion or damage, then the use of polymyxin B should be considered carefully due to its marked nephrotoxicity.

**Lidocaine**

More frequently used as a prokinetic in ileus cases, lidocaine can be used both for pain relief and anti-inflammatory/anti-endotoxic cases. Its use is obviously isolated to those cases in hospitals where drip pumps can be used to reduce the risk of toxicity.

**Inflammatory bowel disease**

**Glucocorticoids**

Following diagnosis based on biopsy or ultrasonography, glucocorticoid therapy will be the lynchpin of treatment. It should be noted that the oral bioavailability may be reduced in IBD cases and that treatment with intramuscular or intravenous administration of medications might be warranted. Prednisolone (1mg/kg q24h PO) is an appropriate starting regime and if an excellent response is seen then a gradual tapering of the medications can be undertaken. The author normally undertakes a month of full dose treatment followed by tapering over another one to two months depending on the outcome. If clinical signs do not improve then it is worth considering treatment with dexamethasone (0.1mg/kg q24h IM or IV) to bypass the reduced bioavailability.

**Azathioprine**

When monotherapy with glucocorticoids has failed then azathioprine can be added to the protocol, initially at 1mg/kg q24h and increased up to 3mg/kg q24h if required. Repeat monitoring of the white blood cell count should be performed as azathioprine can lead to a lymphopaenia. The author frequently uses azathioprine and glucocorticoids.
to a relatively small increase in plasma albumin achieved with a 4L transfusion of plasma. Reactions to plasma are infrequent but when starting each new donor’s plasma, the patient should be monitored for signs of a reaction, including tachycardia, tachypnoea, pyrexia and urticaria. If any of these are seen, the plasma rate should be reduced immediately, and administration of steroids considered.

Non-specific therapies

Pre/probiotic
There is a paucity of clinical research into the use of pre- or probiotics within equine patients. More recent research has looked at products that contain *Saccharomyces* with some evidence to show a reduction in the duration of the diarrhoea (Desrochers et al., 2005). Therefore, although not truly evidence based, the author will regularly put horses on a pre/probiotic during colitis. Other options can include placing faeces from a normal horse in the stable or even considering transfaunation of normal faeces.

Psyllium
The use of psyllium in sand enteropathies has some limited evidence of a beneficial effect at 0.5 to 1g/kg q12h PO (Hotwagner et al., 2008). It also has a beneficial production of volatile fatty acids that will help with mucosal health and therefore can play a role in any enteritis/colitis.

Misoprostol
Misoprostol is a prostaglandin E1 analogue that is used in humans to induce labour and abortions as well as treat gastric ulceration. In equids, it has been shown to help ameliorate the side effects of NSAIDs in the colonic walls and possibly to help induce increased healing of the colonic wall which would, theoretically, be beneficial in any colitis case. The dose is 5mcg/kg q12h and in some rare cases, it possibly to help induce increased healing of the colonic wall. In humans to induce labour and abortions as well as treat gastric ulceration. In equids, it has been shown to help ameliorate the side effects of NSAIDs in the colonic walls and possibly to help induce increased healing of the colonic wall which would, theoretically, be beneficial in any colitis case. The dose is 5mcg/kg q12h and in some rare cases, it possibly to help induce increased healing of the colonic wall.

Conclusions
No one treatment protocol is appropriate for all diarrhoea cases but with the above guidelines, a sensible course of action can be undertaken in most cases.

References


Epididymal semen harvesting

Post-castration epididymal sperm extraction is a pioneering method of semen collection that permits semen extraction where other options don’t allow.

Referring to the removal of semen from the epididymis of the testes, the epididymal semen extraction procedure can be used following routine castration, upon death of the animal or where the testes have suffered a severe trauma or testicular torsion; the latter unplanned terminal/traumatic situations the pinnacle of its use.

Sudden death and semen extraction

The loss of a breeding stallion is a distressing time for stallion owners; it can also have devastating financial implications. Customarily, the breeding potential of a stallion is lost with death; however, advances in cryopreservation techniques have meant that stallions can now have genetic material collected and stored indefinitely. In ordinary circumstances, valuable breeding stallions have semen collected and cryopreserved during periods of competing rest, or when fresh breeding programmes have concluded. If this is not possible, and when stallion death is sudden and unanticipated, semen can now be salvaged and cryopreserved retrospectively via epididymal semen extraction.

The epididymis

The epididymis is a long, highly convoluted tubular duct that lies alongside the testes. Consisting of a head, body and tail, the epididymis acts as a storage area and site of final maturation for sperm cells prior to ejaculation (Figure 1).

The production of spermatozoa (spermatogenesis) takes approximately 57 days in the stallion. Sperm cells formed in the testes drain into the head of the epididymis before passing along the epididymal duct into the body and tail of the epididymis. As they do so, they undergo a series of crucial final maturation changes and gain the ability to move and fertilise. At any point, up to 62 percent of sperm cells in the epididymal duct can be found in the tail of the epididymis, providing a significant reservoir of potentially fertile semen that can be harvested post-castration of the stallion.

Testes removal and shipping

For the procedure, the stallion has one or both testes removed using standard castration techniques, leaving the tail of the epididymis and as much of the ductus deferens as possible intact. The deferent duct is then ligated with a suture material to prevent sperm from leaking in transit (Figure 2). Each testis is washed with saline and placed in a sterile plastic bag.

Following castration, the testicles should be transported to the place of semen harvest as rapidly as possible to maximise the chances of successful sperm extraction. Semen can be extracted up to 24hrs after castration; however, success rates can be considerably lower. Same day processing, ideally within a couple of hours of their removal, is therefore the preferable situation.

During shipping, the testes must be kept chilled to aid in semen preservation. They should therefore be packaged in an insulated shipping container with ice packs. It is vital the testicles are just chilled and are not allowed to freeze. Bubble wrap/newspaper should therefore be placed between the ice packs and testicles, which should be wrapped themselves (Figures 3 and 4).

Extraction of semen from the epididymis

Upon arrival at the semen collection centre, the testicles are washed and the epididymis and adjoining vas deferens are removed and washed again (Figures 5 to 8).

The sperm cells are then harvested from the epididymis using a combination of techniques including aspiration, flushing and flotation. The procedure is repeated for both testes and the extracted semen is pooled together (Figures 9 to 11).

The sample is then centrifuged, and a density calculation is carried out before final dilution. The semen is then packaged and cryopreserved using standard laboratory techniques for normal ejaculated semen (Figure 12).

Health testing

Although epididymal semen extraction is normally carried out at short notice and often under difficult circumstances for the stallion owner, it is essential that biosecurity is not overlooked to prevent future disease outbreak. Stallions must therefore be tested for equine infectious anaemia (EIA), equine viral arteritis (EVA), contagious equine metritis (CEM) and Klebsiella and Pseudomonas in accordance with the semen collection centre regulations.

In cases of planned castration and euthanasia, these samples should be taken in advance of testicle removal and the results sent to the semen collection centre in preparation.
for the procedure. In unplanned situations, samples can be taken at the point of castration.

**Doses and semen quality**

The amount of semen harvested is highly variable between stallions and dependent upon numerous factors including age, testicular size and condition and ejaculation frequency prior to semen extraction. On average, the total dose number can range from 10 to 60 doses.

Semen quality is usually good for reproductively normal stallions but is dependent upon the stallion’s inherent semen quality prior to the procedure. Stallion related factors such as age, health status and reproductive history and extrinsic factors such as time from castration to semen extraction and temperature the testes were maintained at post-castration are highly influential to the semen quality produced.

Fertility rates can be lower with epididymal semen versus ejaculated semen due to lack of exposure of the semen to components of the ejaculate that continue to mature the semen in preparation for fertilisation of the egg cell. The addition of a synthetic version of this component prior to freezing helps to mitigate the effects of this.

For the future, intracytoplasmic sperm injection (ICSI) may be the preferred method of use for epididymal semen. This procedure requires only one sperm cell to be injected into an oocyte and therefore would help to conserve spermatozoa banks. When using ICSI to obtain a viable pregnancy, epididymal semen produces the same pregnancy rates as that of ejaculated frozen sperm (Figures 13 and 14).

**Epididymal versus ejaculated semen**

Whilst epididymal semen extraction is a highly beneficial method in non-planned, emergency situations, it is not recommended as an alternative to ejaculated semen freezing. Due to the factors that can affect semen quality, it should be viewed as a last chance method of semen harvesting. If situations permit for collection and freezing of ejaculated semen prior to castration of the stallion, this should always be recommended as the primary course of action. This way, semen quality can be assessed prior to testes removal and actions can be taken to improve the semen quality if necessary, e.g. nutritional supplementation of the stallion, extend testing of the semen, sexual rest of the stallion, etc.

**Summary**

Stallion AI Services has carried out over 70 extractions, banking and saving the genetics and breeding potential of stallions that would otherwise have been lost. Epididymal semen extraction is undoubtedly a pioneering method of semen collection that permits semen extraction where other options don’t allow.
To finance or not to finance?

Key legal and compliance considerations for practices planning to offer credit options to clients

To twenty-first century consumers are credit savvy. Unlike their parents and grandparents, the millennial generation is less likely to save up for that new bike, lavish holiday or home improvements – they are happy to buy now and pay later. Consumers expect to be offered credit terms when they make expensive purchases; if they aren’t, they can always turn to their credit card or apply for a personal loan.

But what about situations involving owners with pets that need care? Injuries and illness tend to come along when they’re least desired – or affordable – leaving owners in an expensive bind. Those practices that can offer a “one stop shop” by selling them the credit alongside treatment are likely to increase sales.

And pet treatment credit is available. One firm offers loans at 0 percent APR over 12 months, or 9.9 percent APR over 24 months. It will lend between £250 and £25,000 to pay for treatment for uninsured pets, including horses and other farm animals, or for treatment that isn’t covered by pet insurance policies.

The company says it can afford to sell interest-free loans because it charges vets who sign up for the service £10/month, as well as a small arrangement fee on any loan granted, also paid by the vet. The loans are only offered via veterinary practices signed up to the scheme.

But consumer credit is a highly regulated business and before you can offer credit to your clients, there are a number of legal and compliance standards you will need to meet. The following sets out the key issues you will need to consider.

**Becoming regulated**

Most businesses serving the public do not provide credit terms themselves; they typically partner with one or more specialist lenders. In these circumstances, the practice is a “credit broker”.

To operate this way, they must either be authorised by the Financial Conduct Authority (FCA) or be an “Appointed Representative” (AR) of another organisation (usually the lender to which you refer business) which is so regulated.

Getting regulated as an AR is quicker and cheaper than applying to be directly authorised, which requires the completion of detailed forms, the provision of considerable amounts of information and payment of a fee.

In both cases you will need to agree a contract with the lender, setting out your respective legal roles and responsibilities, and this is likely to include provisions under which you are obliged to compensate the lender for losses they suffer because of your acts and omissions outside the scope of the agreed activities.

**Regulatory responsibilities as a credit broker**

Whichever route you choose, however, your role as a credit broker will mean you are subject to a wide range of FCA rules set out in its handbook. You must be assessed as “fit and proper” by the FCA to undertake regulated activities.

You may receive compliance visits from the regulator and will need to report details about the business you write every year.

A failure to comply can result in FCA disciplinary action, including fines, and in some cases may mean the loan agreements you introduce are unenforceable without a court order.

**Advertising**

Any “invitation or inducement” you make to a client to take out a credit agreement is subject to strict rules; certain adverts must include a representative APR or a representative example of the loan product you are offering.

**Sales process**

As a broker, you have to explain the key features of the loan to the client and take reasonable steps to ensure that it is not unsuitable for the client’s needs/situation. You need to give them time to read the terms and conditions and must not pressurise them to take out the credit.

**Your fees**

In most cases, “retailer” credit brokers don’t charge the client for their services. Some receive commission from lenders, but some don’t on the basis that their benefit is in improving their sales penetration via the credit offering. However, if you are charging the client for the service, you need their express consent to pay you and if you receive a commission for the introduction, you need to disclose this too.
Do you trust your home insurer to pay a claim?

- I should hope so
- No idea at all
- No, they never do
- Hmm ... maybe

If you don’t think your insurer would pay your claim, what are you paying for?

If your house is worth insuring, it’s worth insuring properly. To settle any doubts, you have a couple of options: study insurance so you know what is and isn’t covered, or seek advice from professionals who can help you get it right.

Either way, we can help.

Learn more by reading our online guide: www.lloydwhyte.com/bvahomeclaim

or receive further guidance by calling: 01823 250 700

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Complaints
You must have a client complaints policy and you will be subject to the jurisdiction of the Financial Ombudsman Service (FOS). When a client complains about your credit broking services, you have to consider their complaint and issue a final response within eight weeks, failing which they can complain to the FOS which has the power to award compensation up to £150,000.

Some key risks you may not have considered
On the face of it, partnering with a lender to give your clients credit options is a win/win for everyone; you sell more services, the animal is treated, the lender gets more business and your clients can spread the cost of payment to suit them.

But it isn’t quite that simple and as a broker you need to be fully aware of the risks and responsibilities you are taking on, for example:

Section 75 rights
Just as when you buy goods on a credit card, when a client uses credit to pay for goods and services, say a new TV, the lender is jointly liable with the supplier for claims arising from misrepresentation or breach of contract. In a veterinary context, this could apply to claims relating to specific treatments that may be novel or new.

In this case, the lender will be liable for any claims from your clients, which is why lenders are often very careful to undertake due diligence on their broker partners which supply goods and services. They also build in contractual protections to seek to claw back from the supplier – the practice – any payments they have to make. Sometimes this may extend to a requirement for personal guarantees from directors.

Rules governing staff and agent remuneration
The FCA recently undertook a review of how retail credit brokers paid their staff and found that the commission and incentive or bonus schemes presented a high risk of mis-selling in 64 percent of cases. This is because the people selling credit to clients were paid more if they met sales or performance targets.

Even if related to the goods or services rather than the credit itself, this meant sales people were more likely to prioritise the sale over the suitability or affordability of the credit used to pay for it. The FCA has now introduced new rules which require credit brokers to put policies in place to ensure that their payment structures don’t risk consumer detriment.

To conclude
Selling via credit can most certainly increase the revenue a practice can generate. However, there are onerous obligations to meet which, if ignored, may lead to penalties and unenforceable contracts. But get the process right, and everyone wins.

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For further information or to purchase your copy please visit: 5mbooks.com or email marketing@5mpublishing.com
The importance of monitoring radon levels

Don’t forget to check the radon levels within your practice and monitor changes over time

Radon is a naturally occurring gas which is emitted from the ground and is odourless and colourless. Despite its invisible nature, Health and Safety Executive (HSE) has announced that radon gas is the second largest cause of lung cancer in the UK, after smoking.

As an employer, you have a duty of care towards your employees to ensure that the workplace is compliant with health and safety regulations as per the Health and Safety at Work Act 1974. The Ionising Radiation Regulations 2017 ensure that where radon levels exceed 300Bq/m$^3$, local authorities and HSE are afforded the powers to ensure that employers put measures in place to meet the required standard. To put this into context, the average indoor reading in the UK is 20Bq/m$^3$.

As the presence of radon is invisible to the naked eye, it is important that you are aware of the level of radon within your practice. You should firstly identify what the level of radon is at your practice and follow up by putting appropriate measures in place.

As the presence of radon is invisible to the naked eye, it is important that you are aware of the level of radon within your practice.

Checking radon levels

You might be concerned about the cost of investigating radon and any follow-up which might be required. There are simple steps you can take initially to identify whether your practice sits within a low or high area of radon. Give your local authority a call or alternatively, you can do your own radon search on the Public Health England website for a small fee of £3.90. You will instantly be provided with a report that you can download.

The report will generally advise whether the practice sits in a low or high level of radon area, and whether basic radon protection or full radon protection is expected accordingly.

Once armed with this basic information, you can follow the appropriate steps to ensure that the levels of radon at your practice do not exceed 300Bq/m$^3$.

Protecting your practice

Basic radon protective measures involve installing a damp-proof membrane on the ground floor to provide a radon-proof barrier. In addition to the requirements of basic protection, full radon protection will require provision for a subfloor depressurisation (a radon slump) or ventilation (a ventilation subfloor void).

To ensure that you have taken full precautionary measures, and especially if your practice is old and has no radon protection measures in place, it is best practice to get a test done. You will be able to order a testing kit online at ukradon.org.

Upon receipt of the testing kit, you will need to install the radon detectors as per the instructions and these will need to measure the radon level over a period of three months. You will then return the testing kit to the organisation and your results should be processed and returned to you within four weeks. Depending on the outcome of the test, you will be advised accordingly how best to ensure your practice is compliant and which measures, if any, you will need to put in place.

Radon will fluctuate over time, and it is therefore important that you monitor its presence accordingly. HSE advise that where radon levels are found to be significantly less than 300Bq/m$^3$, you should re-measure once every 10 years. If your radon reading was just below 300Bq/m$^3$, you will need to re-measure more often than every 10 years. Where your result was well above 300Bq/m$^3$, you will need to re-measure frequently to check that the measures you have put in place are effective.

Do ensure that you are aware of the levels of radon which might affect your practice, that you put the appropriate measures in place and that you continue to monitor as necessary.

If you would like further advice on this issue, please contact Louise Crook on lcrook@hcrlaw.com

LOUISE CROOK
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Louise Crook is a partner leading the healthcare property team at Harrison Clark Rickerbys, with a particular focus on veterinary transactions. Louise offers a depth of insight into the market and deals regularly with sales to large corporate acquirers.
Tackling the management challenges of large animal practice

At the 2019 SPVS/VMG Congress, the owner of an award-winning farm animal practice explained how she keeps her team happy.

Sophie Aylett’s practice was the first farm animal winner of the Vet Wellbeing Award (small practice) in 2017 and is the only farm practice to hold three Practice Standards Awards at Outstanding. Sophie is an RCVS PSS assessor. At the SPVS/VMG Congress, she talked delegates through the methods her practice uses to maintain a happy, efficient team. She introduced her process of considering the four “c”s: construction, communication, conflict and catastrophes.

Construction
At the heart of Sophie’s practice is a focus on recruiting and retaining staff with the right qualities that fit the team. She emphasised the importance of personal qualities and utilising the probation period when you hire someone – if you have doubts that they will fit the team, don’t let them stay beyond probation. The temptation to accept anybody with an MRCVS, particularly in farm animal practices, is significant, but one new person can have a very negative impact on the whole team, Sophie said, stating that it is much better to “get by” with a reduced team until a good fit comes along.

Communication
The communication between vets, other practice staff and clients is very important and can be difficult to maintain – particularly in an ambulatory practice. Sophie is an advocate of utilising modern methods of communication. In particular, she encouraged the use of social media to highlight good work from team members and the use of WhatsApp groups for keeping everybody in the team up to date. She also noted that vets very rarely talk to vets from other practices and recommended joining vet groups on Facebook and speaking to VetLife if you need to discuss a problem with somebody outside the practice team.

More traditional means of communication used by the practice include making sure you say thank you (be that in person, on a Post-it note or with cake) and sharing positive feedback from clients with the whole team. Sophie also thinks it can be important for vets to work together on a farm; this is a good opportunity to share experience and for senior vets to give direction to junior vets, allowing them to develop their confidence in a safe environment.

Conflict
The major lesson here, Sophie said, is that if you don’t deal with conflict at an early stage, it will escalate. Common conflicts she has experienced within her team include staff changes, people leaving, people being promoted and flexible time. Issues can also arise from poor communication and personal issues at home, as well as more common factors such as tiredness, stress and hunger.

One method Sophie uses at Meadows Farm Vets is to allow people the chance to write a letter, sleep on it and hand it to Sophie the next day. In the letter they can express themselves freely and this can prevent a discussion becoming aggressive.

There are also lots of tools that can be used to tackle the blame culture, she said. The one they have chosen to adopt is the fishbone diagrams provided by VDS, which allow the whole team to work through an issue together and learn from the experience.

Catastrophes
Make sure you conduct exit interviews, Sophie urged. Though they can be very uncomfortable, they are important and can highlight key areas for improvement that you may otherwise have never known were an issue.

Catastrophes on-farm are not uncommon for the ambulatory practice; Sophie’s advice for these was to keep things simple, make sure junior vets are prepared to deal with catastrophes and always say thank you once you have made it through a difficult situation.

Summary
Managing a farm animal practice team can be challenging; with most of the team on farm visits most of the time, it is rare to have everybody in the office at once. This makes it hard to maintain relationships and provides the perfect environment for miscommunication. It is extremely important in these practices to ensure you hire people that are the right “fit” for the team, encourage communication through less traditional means, provide the time for team members to work together, tackle conflict at the earliest stage possible and ensure all members of the team are prepared to deal with catastrophes.
How you can get the most out of each consultation

CHRISTINE MAGRATH

Christine Magrath, BVMS, MRCVS, Hon FRCVS, is a Training Consultant with VDS Training. Christine is at the forefront of veterinary training; in 2009, she was awarded an Honorary Fellowship for her work in communication skills training and in 2010, she received a Chiron Award from the BVA.

At a recent party, I was accosted by a fellow reveller who, on discovering that I was a vet, made it her mission to disparage anyone associated with our profession. Her biggest complaint centred on the practice dismissing her thoughts about “Bella” and belittling her contribution concerning what might be wrong with her. Not having her views acknowledged had led to her believing that the vet was only interested in her money and not Bella’s illness. On reflection, this was an example of a mismatch between wants and needs, which led me to thinking about the skills to avoid this pitfall.

Making sure that a client’s wants become their needs entails ensuring a genuine collaborative partnership. This involves determining the client’s starting point early in the dialogue. The client may have a medical background; may have dealt with something similar in the past; or, having seen multiple vets for an ongoing condition, the client’s understanding may be very different to that in the notes.

It is wrong to be overly prescriptive here as your own personality will dictate what language you use, but opening the conversation with comments such as “I don’t know how much you know about diabetes in cats” can be helpful. The client may respond with a human experience and following this up with “it would be helpful for me to understand a little of what you know about diabetes from that experience” means we can be more specific and meaningful with our explanation.

Similarly, it is important to ascertain each individual client’s overall preference for information. Research shows that most clients would prefer more information, but this is not always the case.

Furthermore, it is useful to ask the client what other information would be helpful. Frequently, this is something we haven’t thought about. Research shows this is often "What has happened?", "Why has it happened?" and "What does it specifically mean for my pet?" rather than information about treatment.

Research tells us that clients are more interested in prognosis than diagnosis. It is therefore difficult to predict each client’s individual needs and asking them directly is a way to prevent the omission of important information. Also, failure to ascertain a client’s ideas, concerns and expectations can derail the dialogue.

It is important to relate any discussion to these needs to bring them on board with your agenda; it is imperative that we break any information down into bite-sized pieces using easily understood language. This alone is not enough unless we give the client space, ask what their thoughts are and listen. Otherwise the client is going to feel pushed into a course of action. During our experiential learning sessions, clients often complain about being listened to but of not being heard, because the vet has not summarised their thoughts and concerns back to them.

There are many more skills involved in getting the client on board and turning a want into a need. But unless we check a client’s understanding, we can never be sure that everyone is on the same page. We know from human medicine that only 50 to 60 percent of information is recalled. Phrases such as “I appreciate I have given you lots of information; just to ensure I have explained it thoroughly would you like to recap for me what you need to do between now and when you next see me?” can be helpful.

The skills outlined in this article can turn any want into a need, ranging from dieting to considering a specific surgical intervention or medical course of action.
“You can’t de-tune your mind to pick up on adversity, so complaints will still disproportionately affect us”

To keep the public happy all the time is an impossible task. We all know that, but still get affected by complaints, grumbles and social media diatribes. People are now more likely to publicise their perceived grievances than phone or write to the practice and then speak face-to-face with the management. It is much easier for them to shout into the echo chamber of social media and have their anger validated by a selection of people who already share their views and have been algorithmically steered towards that comment.

I keep telling myself that sooner or later the public will realise that not all statements on the internet are true, and most opinions expressed on social media are at best extremely dubious. However, when they are about you or your practice, they still upset you.

I asked a psychologist friend why these negative comments affect us so much. We all know that most of the working day, most of the people we deal with are grateful, pay the bill and do not complain, even when the outcome for the patient is suboptimal (interpret that how you will!).

We can have a working day full of those decent people, then one angry client or one letter of complaint ruins our day, our week or, occasionally, months of our lives. However much we tell ourselves to put it in proportion, it doesn’t really help. My psychologist friend explained that humans (and all animals, I would imagine) are exquisitely tuned in to threats. Our minds are extremely reactive to things that pose danger or present something to be avoided. We learn what it was and are even more tuned in to look for it and react again in the future.

Anyone who has seen the film The Croods will remember the caveman father of the prehistoric family who, at the slightest sign of a dangerous animal or adverse weather, would rush his entire family back to the cave and block the entrance until the danger had passed. Some moments at work, that seems like a good idea – back to the cave, roll a big rock in front of the entrance and wait until it’s safe again to come out.

To put complaints into perspective does help, but you can’t de-tune your mind to pick up on adversity, so complaints will still disproportionately affect us. A source of much distress for vets now is complaints on social media. Social media is very targeted. When reading some horrible Facebook post about your practice, that’s all there is. It’s not like other media where it may be a one-inch column on the inside of page 9 of a newspaper. It’s just right there, all about vets, all about you. There may be 1.49 billion active Facebook users but there is only one you are seeing. Imagine seeing 1.49 billion screens and your negative hater post maybe appears on 10 or a hundred of them.

According to one social media company, to keep your brand on your customers’ radar, you should be doing one Facebook post a day, 15 tweets and 11 pins on Pinterest (no, me neither). If it takes that much activity to keep your practice’s name on the radar, then just one bad social media story is not going to have as much impact as you might think.

It often seems that the world of social media is geared against us vets, be it from complaints, the anti-vaccine brigade, etc. Let me reassure you it’s not just us! I won’t name websites and will paraphrase slightly, but here’s a very quick look at what’s out there for others:

From a complaint website about teachers: “uses clever search engine ranking technology to ensure that any complaint made about a specific school or teacher is extremely transparent to any future or potentially new student”.

A complaint about a dentist is on a public money saving website: “I am fuming. Today as [a] private patient I went to a dentist (Irish) I hadn’t been to before... After all the other work was done, the dentist re-cemented the crown. On the way out at the desk, while paying for the treatment, I was taken aback when I was charged for recementing the crown...”

There is a whole mini-industry of lawyers out there encouraging the harassment of GPs. From one website: “Do you have a claim? You could be owed compensation. For a 100 percent free check fill out the form below.”

Don’t think the world is aiming its vitriol just at vets, and just at you. There are plenty of nasty people out there and plenty of other people on the receiving end of their abuse. Gradually, both the rest of the world and those of us on the receiving end of their literary efforts will learn to give them all the attention they deserve.
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Thanks to fifty years of scientific research, obsessive observation and partnerships with veterinarians, we know that targeted nutrition can play a key role in supporting cats and dogs with urinary conditions.

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