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Wound management is in focus this month. Anna Frykforst von Hekkel gives her advice for approaching cases of dog bite wounds, as the injuries you see on the surface may just be the tip of the iceberg. Previous Veterinary Practice editor Jennifer Parker spoke with Georgie Hollis about the latest advances in wound management technologies and techniques. Be sure to check out Ashton Hollwarth’s article on managing thermal burn wounds in reptiles.

Our small animal section is full of interesting topics, from managing feline diabetes mellitus to new approaches in canine multicentric lymphoma. In dermatology, Anita Patel highlights the utility of trichography and John Redbond, group manager of the Veterinary Nursing Dermatology Group, reflects on the group’s first year. The RCVS Knowledge column compares the outcomes of different surgical options for the treatment of canine cruciate ligament ruptures.

In equine this month, BEVA past president Jonathan Pycock explores how BEVA’s new welfare case toolkit will help horse vets navigate welfare cases with confidence. You can also read an event report from BEVA Congress 2019 on a debate around the use of telemedicine in equine practice. Gareth Cross’s opinion piece this month details how to deal with the situation when a disgruntled owner complains to the RCVS – reminding us that every profession suffers this, and that most of the time it’s not your fault.

Holiday season is fast approaching, and in his piece this month, Paul Rose highlights what vets can look out for to ensure the welfare of geese and turkeys, traditionally birds of Christmas, is maintained.

A report on the 2019 RCVS ViVet Symposium explores how artificial intelligence will impact practice and in the large animal section, Richard Gard details large animal concerns discussed at the OV Conference 2019.

Make sure to check out our top picks for the 2019 London Vet Show, returning for its 11th year. This year will be my first time attending and I’m very much looking forward to everything that the show has to offer.
What are the best ways to manage diabetes mellitus in cats?

REGULARS

4 News
A snapshot of the topics currently hitting industry headlines.

5 Recruitment
VetFinders is a recruitment business with a strong mission to give back.

12 London Vet Show
With over 100 lectures to choose from, what should you look out for at London Vet Show 2019?

18 Innovation
How will artificial intelligence impact the veterinary profession?

20 Mental Health
Focusing on the present through meditation can help improve your mental health on a daily basis.

21 Sustainability
How can veterinary professionals use their leverage to drive progress in sustainable development?

22 RCVS Knowledge
Surgical treatment of canine cranial cruciate ligament ruptures.

23 Insurance
Agria offers cover for dental disease, including treatment for disease, illness and injury.

24 Exotics
From first- to fourth-degree burns, what are the best ways to treat thermal burns in reptiles?

26 Animal Welfare
Assuring the welfare of geese and turkeys this Christmas.

28 Equipment
Should you opt for single-use or reusable surgical instruments?

30 Nutrition
What are the best ways to manage diabetes mellitus in cats?
33 Dermatology
Anita Patel asks if trichography is an underutilised diagnostic aid and Vetruus reflects on the first year of the Veterinary Nursing Dermatology Group.

36 Reproduction
Why should the medical castration of dogs be considered as an alternative to permanent surgery?

38 Oncology
New approaches in canine multicentric lymphoma.

41 Feline medicine
Diagnosis of early feline chronic kidney disease.

52 Hot topics at the 2019 OV Conference
What were the key areas of discussion at this year’s conference?

56 Dealing with welfare cases
Jonathan Pycock details how BEVA is assisting equine vets in dealing with welfare cases.

58 Telemedicine in equine practice
A debate at BEVA Congress 2019 raised concern over the use of telemedicine in the profession.

60 Business
The case for the reform of Companies House.

62 Marketing
How to develop an annual marketing plan.

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CPD policy changes set for 2020

Following concerns raised by veterinary professionals regarding the RCVS’ upcoming transition to an annual CPD requirement, the college has made two key additions to its CPD policy to address feedback and support veterinary surgeons and veterinary nurses through this transition.

These additions aim to address the shift to annual hourly requirements from January 2020, with veterinary surgeons required to complete 35 hours of CPD each calendar year and veterinary nurses required to complete 15 hours. This replaces the previous requirement of 105 hours and 45 hours of CPD over a rolling three-year period for veterinary surgeons and veterinary nurses respectively.

The shift to annual hourly requirements has been made to ensure that every vet and vet nurse achieves their CPD targets each year; simplifying the hourly requirement, in addition to allowing the RCVS to address non-compliance in a meaningful way. The switch to annual hours will also take personal circumstances into account.

The first of the two new additions is the option for taking a “CPD pause”, which aims to address some of the feedback the college received about the need to consider personal circumstances. This means that, for planned periods away from work, such as parental leave, and exceptional circumstances, such as serious ill health or unforeseen changes to family responsibilities, CPD can be paused for up to six months without the need to make up the hours when returning to work. This will reduce the burden on professionals returning to work after a break.

For the second change, the RCVS will allow some of the CPD hours accrued in 2019 to be carried over into 2020, to smoothen the transition. Vets will be allowed to carry over 25 hours and vet nurses 10 hours of accumulated CPD. This will apply once, in 2020 only, and is only applicable to those who have been CPD-compliant from 2017 to 2019 and have a surplus number of hours to carry over.

The other significant change is the introduction of a new CPD recording platform, with the working title 1CPD. The platform, an app for recording CPD, will be launched in January 2020, and will support the new outcomes-based, reflective approach to CPD. 1CPD will replace the existing Professional Development Record (PDR) and all content from the PDR will automatically be exported over to 1CPD.

The new platform will also aim to facilitate reflection on the impact of the CPD individuals have undertaken, to drive the outcomes-based approach that will be recommended in January 2020, and become mandatory in January 2022. This approach aims to support positive CPD outcomes by encouraging professionals to reflect on what they have learned, how they will apply their learning and how it will improve their practice.

“The most important aspect of CPD, both now and after the new changes are introduced, is that it is relevant to your role and own personal development needs, so that it can support you to provide the best care possible,” said RCVS Director of Education, Linda Prescott-Clements.

“There are many types of CPD which can achieve this, including accessible options such as webinars, lectures, and reading relevant clinical papers, as well as learning events or opportunities in the workplace such as reflecting on significant events or audits, in addition to traditional CPD such as attending courses or conferences. “The process of reflection is particularly important as it facilitates a culture of actively looking for ways to improve. Our new tool will support this reflection in a fast, effective and cost-free way... CPD is incredibly important for a flourishing profession but it doesn’t need to be expensive, stressful or demanding.”

More information about the CPD requirement for both vets and vet nurses, what activities might count as CPD, how to record your CPD and a series of frequently asked questions about CPD please visit: rcvs.org.uk/cpd

Two new cases of the deadly dog disease Alabama rot, also known as CRGV (cutaneous and renal glomerular vasculopathy), have been confirmed by veterinary specialist referral centre, Anderson Moores. It brings the total number of cases this year to 16, and these are the first cases since June. The two latest confirmed cases are located in Westbury (Wiltshire) and Coleford (Gloucestershire). In total, the UK has now seen 191 confirmed cases of Alabama rot across 39 counties since 2012. The number of cases has risen from 6 in 2012 to 52 in 2018. The highest number of confirmed cases have been in Greater Manchester, Dorset, Devon and the New Forest in Hampshire.

Huw Stacey, vet and director of clinical services at Vets4Pets, has been supporting research on the condition for a number of years. He said: “If a dog becomes affected, the best chance of recovery lies with early and intensive veterinary care at a specialist facility such as Anderson Moores. Treatment is supportive, but is only successful in around 20 percent of cases, which is why we’re encouraging all dog owners to use the online interactive guide to help them understand the clinical signs and confirmed locations of the condition, and visit a vet if they have any concerns.”
Placing vets, saving pets

A new recruitment company for the veterinary sector has launched with a unique approach, by pledging to donate a minimum of 25 percent of its net profits to animal and children’s charities. VetFinders is a social business with a strong mission at its heart to give back.

Based in York, VetFinders recruits for permanent and locum positions for veterinary practices throughout the UK, from administration roles through to nursing staff and vets.

Chris Worthington, managing director of VetFinders, said: “We have chosen four specific charities and our support for them does not stop at the point of donation. We will also be working closely with them, funding specific projects and working on their front line.”

The chosen charities are:

- Hope Pastures in Leeds, which rescues, rehabilitates and rehomes horses, ponies and donkeys. It opened its doors in 1974 and has helped countless animals since. The charity also provides the opportunity for people to meet the animals

- Moorview Rescue in Harrogate, which has rehomed almost 2,000 dogs in the UK since it was registered as a charity in 2009. Most of the dogs they have rescued came from council pounds and were at risk of being put to sleep within seven days if they had not been claimed by the charity. Moorview cares for them until they find new forever homes with suitably matched owners

- Nuzzlets, a small charity based near Great Ouseburn in York, specialises in giving loving homes to unwanted animals and enabling young people free access to them for therapy and education. Nuzzlets specialises in visits for children with disabilities, special needs and life-threatening illnesses. It also helps adults with mental health issues

- Blue Cross, a registered charity that has been helping sick, injured, abandoned and homeless pets since 1897. It provides support for pet owners who cannot afford private veterinary treatment, helps to find homes for unwanted animals and educates the public in the responsibilities of animal ownership. It helps thousands of pets in need every month

Darcy’s rehabilitation

VetFinders is currently sponsoring a German Shorthaired Pointer through her rehabilitation at Moorview Rescue. The charity has named her Darcy. She was found stray in the South of England, underweight, dirty and with no microchip or collar. She has enlarged teats and it is suspected that she had been used for breeding. Moorview Rescue will nurse Darcy back to health until she is ready to find a loving home. The VetFinders donation was made possible after the company placed candidate Katie at a vet practice in Surrey.

Joanne, of Moorview Rescue, said: “Thank you to everybody at VetFinders, this donation will see Darcy through her whole rehabilitation process. We are so grateful to VetFinders for choosing us as one of their partner charities. “As a small charity, this support will make a huge difference to us. It is heartening and admirable to see a company making charity work a core element of its business, especially from day one!”

VetFinders is a social business with a strong mission at its heart to give back

When a candidate is placed by VetFinders, they choose which of the four charities they would like a percentage of their fee to be donated to. The client and placed candidate will then be given regular updates of how their money has benefitted children and animals through photos, videos, emails and website updates.

Other members of the VetFinders team are recruiters Gabrielle Dawson, Martin Wilson and Ian Andrews, accounts and payroll manager Anna Worthington and administrator Suzy Buttress, who is also a fundraiser for Hope Pastures.

“VetFinders’ approach is totally unique to the industry and what we do will set us apart. VetFinders is a business with a purpose, a force for good and a business with a double bottom line,” said Chris Worthington. “Our success will be measured not by the profits we make but by what we give back.”

For more information please visit vetfinders.co.uk or call the VetFinders team on 01904 563118
Surrey veterinary degree gets the go ahead

The University of Surrey School of Veterinary Medicine’s degree has received approval by the RCVS Council, meaning that, pending final approval from the Privy Council, those completing its veterinary degree will be able to register with the RCVS as veterinary surgeons in the UK.

The School of Veterinary Medicine welcomed its first cohort of students in September 2014, with its university building being formally opened by Her Majesty the Queen in October 2015. The 2014 intake of veterinary students graduated in July 2019 with RCVS President Niall Connell and RCVS CEO Lizzie Lockett in attendance.

Over the five years since the course was founded, the RCVS has been working with the university to help ensure that the development of its programme meets the college’s standards. This has included, in 2017 and 2018, interim visitations with a team of accreditation reviewers, and a final accreditation visit in 2019 comprising representatives from not only the RCVS but also from the Australasian Veterinary Boards Council (AVBC) and the South African Veterinary Council (SAVC).

Susan Paterson, Chair of the Education Committee, who also attended the final visitation as an observer, said: “We are very glad to have reached the stage where we can formally welcome the University of Surrey on board as the eighth UK veterinary school to offer an approved degree, and that we will, from now on and pending Privy Council’s approval, be able to welcome its graduates onto the Register as proud members of the RCVS.

“We appreciate the immense hard work of both the faculty and the student body over the past five years in working to meet the College’s stringent accreditation standards and the effort that they have made to address our feedback and advice in a constructive and engaged way.

“When I observed at the final accreditation visit earlier this year, along with the other visitors, was particularly impressed with the enthusiasm and commitment of the staff, the network of partner veterinary practices and the student body to the school’s ethos and success. We also recognised that, with its unique ‘distributive model’ meaning that students can get direct clinical experience across 49 veterinary practice partners, the students have access to a large and diverse medical and surgical caseload.

“The final report contained a number of further recommendations and we look forward to continuing to work with the school over the next two years to help them meet our recommendations and suggestions.”

Professor Chris Proudman, Head of School of Veterinary Medicine at the University of Surrey, added: “This decision recognises the huge investment in veterinary education made by the university and the quality of the education that we offer. It is also validation of our innovative model of delivering clinical teaching through working in partnership with clinical practices and other organisations involved in animal health, which has proven very popular with our students.”

A Recognition Order to recognise the University of Surrey’s Bachelor of Veterinary Medicine and Science (BVMSci Hons) will now be put before the Privy Council and, if it approves the Order, this will be laid before Parliament. If the Order is approved by both the Privy Council and Parliament, the University of Surrey will enter the cyclical RCVS accreditation process and be subject to annual monitoring.

ESVPS goes global

The European School of Veterinary Postgraduate Studies (ESVPS), which accredits veterinary training courses and awards qualifications for veterinary practitioners, is to be relaunched as the International School of Veterinary Postgraduate Studies (ISVPS) in January 2020. The not-for-profit organisation is making the move in recognition of the increasing global spread of its candidates and growing demand for postgraduate veterinary qualifications worldwide.

The ESVPS provides attainable, balanced qualifications for veterinary professionals. From just 56 candidates when it was first established in 2003, it now boasts almost 5,000 certificate holders worldwide, having launched into Australia, the US, Korea and China during the last 12 months. The range of certificates it awards for veterinary surgeons and veterinary nurses has increased significantly.

The ESVPS works closely with veterinary CPD providers Improve International and SCIVAC, which deliver the training for its certificate programmes. Harper Adams University provides the higher education quality assurance in the UK.

New app from BSAVA

BSAVA has launched a new app for members to give them easy access to the information they need for daily practice. The app, which can be downloaded from the App Store or Google Play, is intended for veterinary and veterinary nursing professionals who are members of BSAVA and carries useful resources to help with day-to-day small animal practice. It enables the user to view BSAVA CPD and podcasts, the BSAVA library and upcoming courses. It also provides access to the BSAVA Small Animal Formulary, BSAVA Guide to Procedures in Small Animal Practice, the BSAVA medicines guide and the poisons database.

Larsson Kabukoba, BSAVA’s app developer, said: “The app content has been devised by vets, for vets and we have already received some enthusiastic feedback about how useful it is. We will continue to develop and expand the app in response to feedback from our members to make sure it changes and evolves with the times and becomes an indispensable tool for every member’s pocket.”
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Queen’s Speech brings animal sentience back into the spotlight

The BVA has welcomed proposals set out in the Queen’s Speech that would see animal sentience finally being embedded in UK legislation. The government has pledged that the principle will come into law as part of a package of measures on key animal health and welfare issues. The action on sentience would mean that animals are recognised in domestic law as sentient beings, and that the welfare of sentient animals is taken into consideration in government policy making.

The BVA led a long campaign for the principle of animal sentience to be embedded in law, which saw over 1,200 veterinary professionals signing an open letter in support. However, the progress with embedding the principle stalled with other demands on parliamentary time and the government is still looking for the right legislative vehicle to introduce it.

The Queen’s Speech also reintroduced the Agriculture Bill, which pledges to reform agricultural policy and introduce schemes that support public goods, including animal welfare, and the Immigration Bill. Other measures include a commitment to gather views on areas including compulsory microchipping of cats, live transportation of animals and keeping primates as pets.

BVA urges vet diligence when signing consent forms for treatment

Vets should familiarise themselves with the work of allied professionals and make sure they are properly regulated before signing consent forms for the treatment of animals under their care, the BVA urges. The advice comes as it launches a poster explaining its vision for effective teamwork between vets and allied professionals.

The BVA’s concept of the vet-led team calls on vets and appropriately trained and regulated allied professionals to use a “hub and spoke” model that has the vet at its heart to coordinate services for clients and patients.

Vets act as the hub for treatment, directing clients to an allied professional after examining an animal, making a diagnosis and determining the best course of action. Allied professionals such as veterinary nurses, farriers, hydrotherapists, animal behaviourists and veterinary physiotherapists operate as spokes surrounding the hub, returning cases back to the vet whenever further direction is necessary.

BVA President Daniella Dos Santos said: “As gatekeepers for animal healthcare, vets must familiarise themselves with the work of allied professionals and have oversight of any treatments or services carried out by a regulated professional as part of a vet-led team.”

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Vets warned of a major disease risk under the radar

While much attention is focused on the growing risk from exotic zoonotic diseases, the threat posed by the arrival of increasing numbers of exotic ticks in the UK is passing under the radar. This was the warning given to delegates at this year’s OV Conference by parasitologist Ian Wright, who is head of the European Scientific Counsel Companion Animal Parasites UK and Ireland (ESCCAP).

Ian cited increased pet travel and importation as key risk factors, including the growing number of rescued dogs arriving in the UK from other countries in Europe and further afield.

Exotic ticks, including the *Rhipicephalus* tick (*Rhipicephalus sanguineus*), can transmit pathogens including *Ehrlichia canis*, *Anaplasma platys*, *Rickettsia spp.*, *Babesia vogeli* and *Hepatozoon*. The *Rhipicephalus* tick is a distinctive dark brown colour and, unlike the UK’s native ticks, the combination of its short lifecycle and our centrally heated homes enables it to infest homes to the extent that fumigation can often be the only solution. Each stage of the tick’s lifecycle will feed on “just about anything”, Ian explained. This includes humans, creating a significant zoonotic threat once an infestation is established in a home.

Ian said that *Ehrlichia canis* and *Anaplasma platys* are among the most common tick-borne bacteria in imported dogs, particularly those arriving from Eastern and Southern Europe. Both can be transmitted by the *Rhipicephalus* tick. There were also three cases of *Hepatozoon canis* in 2018, caused by dogs ingesting *Rhipicephalus* ticks while grooming.

According to figures from a Bristol University pet travel survey, 54.5 percent of dog travel on the Pet Travel Scheme from the UK is to France, with Southern European countries also popular destinations. These are all countries in which *Rhipicephalus* is present and on the increase. Ian said that the ticks are moving north into Austria, Switzerland, central France, Romania and Bulgaria. Worryingly, during the last few months, he has also been alerted to ticks found on dogs coming in from North America, Latin America and Africa. These bring with them the risk of new diseases, including a variety of zoonotic rickettsial pathogens, such as *Rickettsia rickettsii*, which causes Rocky Mountain spotted fever.

To address this issue, Ian urged delegates to redouble their efforts on tick prevention. He recommended tick prevention before, during and after travel, noting that products offering rapid kill and repellency should be used to reduce transmission. He urged that dogs be checked for ticks both while abroad and on their return.

He recommended “drilling” clients and staff on tick removal and reminding them that finding a tick on a pet is not a failure as no product is 100 percent reliable and it is easy to miss them in long-haired dogs. He also suggested asking clients to take photos of any ticks they find on their pet while abroad so that their vet will know on their return what pathogens they may have been exposed to. If necessary, the Public Health England Tick Surveillance Scheme can help with identification.

He said: “While you could argue that diseases such as Lyme disease are ‘lifestyle’ diseases because people and dogs are exposed to our native ticks while out enjoying the countryside, the *Rhipicephalus* tick comes to your home, exposing you to a wealth of rickettsial diseases for the first time. We are already seeing instances of this in France, Germany and Scandinavia and, as pet travel continues to grow, the risk here will only increase. It’s equally possible that a dog with a native tick could travel abroad and return hosting a new pathogen.

“The only way to manage this risk is to provide consistent advice to the public and to support increased disease surveillance. Vigilance is key – assume that any travelling dog may have ticks and do not assume that because it is tick-treated, it’s a case of ‘job done’.”

VMA awards open for entries

Entries are now being accepted for the Veterinary Marketing Association (VMA) Annual Awards. The awards will return to the five-star Royal Lancaster Hotel in London on Friday 20 March 2020.

“Each year, the VMA brings together marketers from across the veterinary and animal health industries to recognise and celebrate success,” said VMA chair, Liz Rawlings. “The awards provide a unique platform to showcase and reward skill, creativity and professionalism in marketing industry products and services, as well as a fantastic networking opportunity, with more than 300 guests attending annually.”

Submissions are completed online, offering a simple way for entrants to upload their work for the appropriate categories. The awards celebrate activities and projects completed throughout 2019.

New to the 2019 awards is the Digital Innovation Award category. This award recognises the use of leading-edge digital technology in the veterinary and animal health markets, or the innovative use of older digital formats.

The deadline for entrants to all award categories, including the VMA New Marketing Talent Award (formerly called Young Marketer of the Year Award), will fall on 8 January 2020.

To enter the awards, go to: vma.org.uk/vma-annual-awards-entries/
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London Vet Show returns for 2019

With over 100 lectures to choose from, what should you look out for at the London Vet Show 2019?

London Vet Show is back on the 14 and 15 November 2019 and it’s set to be bigger and better than ever. Now in its 11th year, the annual event is designed to provide veterinary professionals with opportunities to grow their knowledge base in different areas, covering all species and a broad array of clinical and business topics.

The London Vet Show is a great place to learn about recent advances in different areas of veterinary medicine, to discover new products and services available on the exhibition floor and to network with colleagues.

With over 100 hours of accredited education from over 200 internationally renowned speakers in seven clinical streams, a business stream, sponsor-led workshops and association rooms, trying to figure out where to go next can seem daunting.

“Planning your time in advance is key to making the most of your time at the London Vet Show,” advises Rachel Kilmartin, marketing manager of the show. To make this process easier, the team at Veterinary Practice magazine has taken a look at the programme and has come up with a list of top picks for this year’s show.

Focus on wellness

This year, wellness is a major focus of the BVA. The BVA is sponsoring a number of lectures at this year’s show, including the BVA careers development lecture stream in gallery suite 23/24 – the theme of which is “vets can develop into better clinicians if they learn to look after themselves as well as their patients”. Thursday’s talks include tips on best practice for delivering bad news, and what to do when the work/life balance gets tough. On the Friday, Rosie Allister of Vetlife, Sophie Halhead of The Vet and Chloe Hannigan of VetYogi will be delivering a talk entitled "How to look after yourself: mind and body".

Furthering the theme of wellness, the BVA members’ area is taking the form of a well-being lounge, in partnership with Simplyhealth. Here, BVA members will be able to enjoy a relaxing atmosphere, with soft lighting, sound-cancelling headphones and comfortable seating. Meditation sessions will be held, and each day the first 500 members will receive a complimentary smoothie, made for them with fresh ingredients at the smoothie bar within the lounge.

Community masterminds

For the first time, in 2019 the London Vet Show is hosting Community Mastermind sessions. These workshops will be an opportunity for veterinary professionals to meet in small groups of around 20 people and discuss pressing
topics that are of interest to them. Many online groups have emerged in the last five years, where professionals can get support and advice from peers and discuss topics that are close to their hearts. The hope is that these Community Mastermind sessions will provide veterinary professionals with a space to meet peers face-to-face and have these conversations in person. There will be many community groups featured, including the BVA Young Vet Network, Vet SUSTAIN, Simply Locums, etc. To attend one of these sessions, you must simply register on the London Vet Show’s website; places are limited so make sure to secure your space to avoid disappointment.

Nurses in the spotlight
Also new for 2019 is the RVC nursing theatre, bringing you two days of lectures aimed specifically at practising vet nurses. From talks discussing anaesthesia to fluid therapy, the RVC nursing theatre will cover all areas of clinical practice. On the Thursday, Lisa Angell of the RVC will address how to maintain anaesthesia "when a gas just ain’t good enough", following the recent isoflurane shortage. On the same day, Eleanor Haskey, Head Emergency and Critical Care Nurse, will be giving a talk in the same theatre about fluid therapy and a comprehensive overview on using tubes, drains and lines to manage a patient’s condition.

On Friday 15, as well as more lectures in the RVC nursing theatre, the British Veterinary Nursing Association will be hosting talks. Here, Niamh Clancy of the RVC will discuss the nurse’s role in pain assessment in companion animals, and Jane Davidson will discuss how to use your nursing
skills in all areas of the clinic. BVA Congress will also have a talk focused on the importance of veterinary nurses on Friday morning, entitled "Vet nurses are not mini-vets! Shaping a distinct future for RVNs".

"This year’s focus on veterinary nurses and the invaluable work they do aims to bring practices closer together. We really want to foster relations between all members of the veterinary profession," explains Rachel.

**Small animal theatres**

This year there are not one, not two, but three RVC clinical theatres, on top of the nursing stream mentioned previously. As well as these, Vets4Pets will be hosting a specialist division theatre, IDEXX are organising an advanced diagnostics stream and IVC will be hosting their popular referral theatre. The British Association of Veterinary Emergency and Critical Care will be hosting talks in gallery suite 12 on Friday 15 November, and there are plenty of sponsored talks as well.

One of the themes of this year’s clinical programme is "What’s plan B?" and over the course of the two-day show, you will be able to attend 13 lectures across the RVC clinical theatres attempting to answer this question. Kersti Seksel, from the Sydney Animal Behaviour Service, will discuss different approaches to cases of recalcitrant cats with recurrent elimination issues on Thursday in theatre 1. In the same theatre, David Church, deputy principal of the RVC, will be addressing the question for the trilostane-resistant dog with hyperadrenocorticism at 12pm and at 3.40pm, David Twedt of Colorado State University will discuss plan B for acute pancreatitis in the dog. Various other speakers, including Rachel Perry and Edward Hall, will be discussing plan Bs for various situations across the different theatres on both days – so make sure to look out for talks beginning with "What’s plan B?"

**Equine stream**

There will be three equine streams this year, packed full of expert speakers ready to share their knowledge with delegates. From an update on laminitis by Nicola Menzies-Gow on Thursday to an update on endemic and exotic infectious diseases (including flu) by Fleur Whitlock on Friday, the BVA/BEVA equine theatre will be home to interesting discussions and debates from the equine world.

The RVC is hosting two equine theatres as well, in which you will find a wide range of talks. On the afternoon of Thursday 14, RVC Equine 1 will be computed tomography (CT) focused – Dagmar Berner will address the value of CT of the cervical spine in horses, Melanie Perrier will discuss when CT is useful in headshaking cases and William Barker will explore the use of CT in equine orthopaedic surgery. On the Thursday morning, RVC Equine 2 will be focusing on equine back pain: Andy Fiske-Jackson will be discussing the causes, diagnosis and treatment of back pain, non-surgical management of back pain will be addressed by Melanie Perrier, and Renate Weller, BEVA past president, will be giving an interactive lecture on whether imaging of the back is worthwhile in equine practice.

**Farm animal stream**

Farm animal medicine is also on the agenda for the 2019 London Vet Show. With two streams dedicated to large animals, delegates will have plenty to choose from. In the BVA Farm Theatre 1, you can attend an update from APHA on small ruminant notifiable diseases and get practical tips to improve client engagement on day one. You can also find out more about bovine respiratory disease with Tim Potter of Westpoint Farm Vets and about cattle endoparasites with Matthew Colston of Elanco Animal Health. On day two, Benjamin Dustan will be giving tips on how to tackle the goat, and Stephen Smith will demonstrate a practical approach to dealing with common chicken presentations.
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BVA Farm Theatre 2 will be dedicated to farm animal veterinary associations. On Thursday, the Sheep Veterinary Society will be providing talks focused on sheep medicine; the afternoon will see two talks entitled "Oh no. I've got to see a goat", with Bryony Kendall detailing medicine and diagnostics, and Nick Perkins covering common treatments and procedures. On Friday, the morning lectures will be hosted by the Pig Veterinary Society and will feature talks on different aspects of pig medicine such as notifiable diseases of pigs by Edward Fullick of APHA, and how to treat cases of individual pigs by Beth Reilly of Synergy Farm Health. Afternoon lectures will be hosted by the British Cattle Veterinary Association – make sure to check out cool case studies with Nicki Hopkins and thoughts on how to engage with farmers to improve calf health with Katie Fitzgerald.

Non-clinical programme
London Vet Show will also be hosting a number of non-clinical talks. Two theatres will be hosts to the majority of these talks – the BVA careers development stream and the business theatre. BVA Congress 2019 will also be occurring at the show and will see various non-clinical lectures as well. On top of the dense lecture programme, you can of course discover what over 400 exhibitors have to offer on the exhibition floor – from CPD providers to surgical equipment, you will be able to find everything you need for your practice and stay up to date with the latest services and tools available to veterinary practitioners in the UK.

BVA Congress
BVA Congress 2019 will take place at the London Vet Show. From sustainability in the veterinary world to the ethical issues with puppy farming, the lectures from BVA Congress are set to be hot topics for discussion. On day one, Temple Grandin, named one of Time magazine’s 100 most influential people, will be giving a talk on improving stockmanship and welfare. On day two, Pru Hobson-West will give advice on how vets should respond to the rise of “anti-vaxxers”, and a panel chaired by senior vice president Simon Doherty will discuss the future of the EMS system.

As well as the well-being theme previously mentioned, a major theme for Daniella Dos Santos’s time as BVA President is #VetDiversity, and this is reflected in the BVA programme at London Vet Show. Laura Haycock will be discussing the value of difference in her talk entitled "Why we should all care about diversity and inclusion in the workplace" on Friday 15. Daniella also highlights that #VetDiversity also encompasses the diversity of career options there are for veterinarians that aren’t conventional “practice jobs”, such as veterinarians in the army, in research, in academia, working for charities, etc – look out for these talks on day two in the BVA careers development lecture stream.

Networking
London Vet Show is Europe’s largest conference-led exhibition with over 5,600 delegates due to attend.

“What I’m most excited about at this year’s show is the ever growing community feel. Networking happens organically, but we’ve softly engineered this aspect this year, with various platforms – formal and informal – for vets to get to know their colleagues from around the UK. Look out for various workshops, social events and mentoring opportunities. There will also be some surprise features made available on the day,” explains Rachel.

Social calendar
With up to 17 hours of RVC- and BVA-accredited CPD available over the span of 36 hours, you will no doubt need to let your hair down and relax between the two lecture-filled days – the London Vet Show has prepared for this as well. The BVA are hosting their annual gala dinner at the five-star London Marriott Hotel West India Quay of Canary Wharf on Thursday 14 November. Catch up with your friends with a delicious three-course dinner and enjoy entertainment, a DJ and dancing.

Alternatively, you can join your colleagues for the London Vet Show party in The Pearson Room of Canary Wharf. Food and drink vouchers and entertainment are all included in the ticket, but make sure you book quickly as this event sold out last year and is set to be better than ever before! “The London Vet Show party is infamous,” Rachel says. “It’s the perfect place for people to come together and let their hair down after a day packed with lectures. Catch up with old friends, meet new people – whether you attend alone or in a group, join us for a fun evening of informal networking. It’s a great opportunity for vets to let off some steam in a safe environment, and celebrate the profession. After all, the London Vet Show isn’t only for people to come and discuss issues and developments in the veterinary world; it’s also important for vets to have positive affirmation of the amazing work they do on a daily basis, and I’m very proud that the London Vet Show provides an annual platform for this.”

To find out more about this year’s show programme and book your tickets, visit london.vetshow.com
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How will artificial intelligence impact the veterinary profession?

The influence of the emergence of digital technologies was discussed at the 2019 RCVS ViVet Symposium.

"If your business does not have an artificial intelligence strategy now, it is going to die in the world that is coming." eBay boss Devin Wenig offered this apocalyptic view of the danger in failing to fully embrace new technologies before an audience of senior managers in the retail sector in 2017.

But surely veterinary businesses are different? For their survival, they can rely on the natural intelligence of their expensively trained staff to continue providing the high-quality clinical services that animal owners need, now and in the future.

Don’t bank on it, digital technologies expert Nancy Rade-maker warned at the RCVS ViVet Symposium on the impact of innovation on veterinary practice in Manchester on 1 October 2019.

She said both the human and veterinary medical professions were just as vulnerable as any other industry to the impact of rapid technological change and the effects that this is having on the behaviour of customers.

Nancy, a former Microsoft executive who now works for the digital transformation consultancy Nexworks, gave the keynote presentation at the meeting on "Survival in the new normal". She argued that the emergence of digital technologies has fundamentally changed what the public expects from all providers of goods and services.

Clients are better informed about the options available to them; they are more individualistic in their attitudes and more impatient about getting what they want, she said. And don’t expect them to be reasonable in their demands – in a faster-paced world, people increasingly rely on intuitive processes rather than logic when making their decisions.

In order to succeed, businesses will have to anticipate and respond to changes in the way that technology is used by their customers. "It is not about extrapolating from the past any more; it is about looking into the future and working your way backwards to now," she said.

Looking at the wide range of technologies that are likely to influence veterinary practice over the next few years, she pointed out that some products are already on the market and will become increasingly popular. It is expected that the global wearable devices market for remotely monitoring the health and activity of pets will reach $8 billion by 2025.

In the human health market, such products are becoming increasingly sophisticated and will not only measure simple parameters like movement, heart rate and body temperature, but will also monitor things like food intake and make recommendations on appropriate behavioural responses, such as telling diabetics of their need for glucose or insulin.

Devices will become available that can measure any parameter that is worth tracking, Nancy said. In the veterinary area, this will mean cattle can be fitted with movement sensors that will identify the onset of oestrus. Similar technology will also be available for other species such as pigs, and although the sensors are currently too expensive for routine use in relatively low-value animals, there are significant efforts going in to producing cheaper versions, she said.

This would mirror the rapid reduction in the cost of genome analysis, which is likely to usher in a new age of personalised medicine in animals, as well as human patients. In addition to identifying those individuals with genotypes that may make them more or less susceptible to the effects of particular drugs, genomic analysis will also be carried out on microbiome samples from the gut, skin and other sites to assess which disease-causing organisms may be present in the patient’s body. There has been some speculation on whether these methods will eventually lead to a reduction in the demand for antibiotics, she said.

Progress in developing monitoring technologies will present some challenges in how to process and apply the data that becomes available. By 2020, doctors will have access to 200 times more data than the human mind can process – so the next priority will be developing artificial intelligence software that will be able to analyse this mass of information and draw accurate conclusions about what it means.

Technology giants like Google and Apple have teams working on these problems and there has already been significant progress made. One team has produced diagnostic software that can identify human patients with early indications of diabetes, based on continuous measurements of variation in heart rate, she said.

These results prompt an obvious question as to whether machine learning and artificial intelligence will eventually result in human and veterinary clinicians becoming redundant. Nancy reassured her audience that, at the moment, this appeared unlikely. She argued that these technologies will change clinical practice for the better, in the same way that the invention of the stethoscope made a huge difference to the diagnosis of heart problems. She noted that there was a tremendous amount of opposition from the medical establishment to the use of this simple and effective diagnostic tool when the first stethoscopes appeared in the early 19th century.
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Alyson Hardman
Principal Vet - Rowly House Vets

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In the February 2018 issue of Veterinary Practice magazine, I introduced mindful meditation as a part of living mindfully. Meditation can have profound effects on those who subscribe to doing it habitually. If we can make it part of our daily routine, the results can be life changing.

I was sceptical too; and yet almost as soon as I discovered how powerful mindful meditation is (and that it works immediately), I was sold.

Although mindfulness has been around for thousands of years, its application in Western psychology is relatively recent. Meditation will help you discover an understanding of how thoughts and feelings influence your behaviour.

John Kabat Zinn, a very well-known mindfulness practitioner, defines mindfulness as “paying attention to the present moment on purpose, non-judgementally”.

So many of us don’t have the time to meditate. One solution is to set the alarm an hour earlier than before. Only you can do this. Only you can meditate for you.

A word of caution from personal experience: although the beneficial effects are immediate, which is very rewarding and incentivising, if you skip a morning or two, there are no residual benefits from the meditation you did last week. It has to become a daily habit to change every day for the better.

And I suppose that is a no-brainer. If we are truly living in the moment, on purpose, then it is fitting that the meditation we do today affects today.

Also, there is a huge difference between non-guided meditation, which we are aiming for here, and guided meditation, which can be done using apps such as Headspace, Calm and buddhify.

While any meditation is better than none, the benefits of non-guided over guided meditation are enormous. It takes so much more time to achieve the same results with an app than it does if you are your own guide.

Paying attention, on purpose
It’s so hard to make ourselves aware of “just now” for an extended period of time. Our minds naturally wander to tasks that need to be done, things we need to sort out, what happened last night, what may happen next weekend, etc.

If you’ve been meditating for some time already, well done. Sometimes it can be useful to bring yourself back to the basics of pinpoint concentration on “nothingness”. See how long you can manage that for. It takes enormous focus and discipline to be able to maintain this clarity of the mind. It is so important to start any meditation session clarifying the mind like this.

For those embarking on meditation for the first time, it may be too difficult to focus on nothing. I advise beginners to focus on “something” instead.

For example, try focusing on your breath and nothing else. It doesn’t have to be deep breaths, or shallow. It can be any breaths you take. Notice it. See if you can maintain focus on your breathing and nothing else. If that’s not working for you, some people find it useful to count the breaths to maintain focus.

All thoughts that try to enter your mind at this stage, you need to gently push aside. Right here, right now, you are clearing your mind and all thoughts can wait until another time. By creating extra time in your day, you deserve these moments to not be spent organising, sorting or thinking. If you hadn’t set the alarm to meditate, you wouldn’t be sorting them out either – you would be asleep – so they just have to wait until later.

If you do find that your mind has wandered, it isn’t failure. Rather it is useful that you notice it. Each time you gently push those thoughts to the left or to the right, you are getting better at clearing your mind. It takes training to become good at maintaining the focus.

Some people imagine a narrow slit of light in front of them. This light is the clear mind they are aiming for. As each thought enters their mind, they push it to the left or to the right as if pushing back the shutters to open their mind and make this slit of light wider and wider until it becomes a window of light to focus on. One practitioner I met started his meditations with reciting the words “just” at every inhalation and “now” at each exhalation until he achieved total focus. Whatever works for you is great.

So, my mind is clear. Big deal. Now what?
It’s hard for me to describe just how much maintaining clarity of the mind for extended periods of time can make an average day feel fantastic.

Worries about the future and past can negatively influence our behaviour in the present. Mindfulness can counter this process by teaching us to focus on the current moment.

For this month, achieving a clear mind each morning for as long as you possibly can is enough. Observe if you find it easier as the weeks go by. Notice if some mornings it’s easier than others.

Next month, I will introduce how to allow emotions into this clear space one at a time and how to accept those emotions non-judgementally.
A fork in the road for the veterinary profession

Vets already lead the way for animal health and welfare; so, shouldn’t we also be a driving force of sustainability?

Last month saw a groundswell of climate awareness across the world. Spearheaded primarily by the remarkable teenage activist Greta Thunberg, the world seemed to wake up to the unfolding peril of ecological collapse that we face. There is frequently talk of “saving the planet”, but I’ve often wondered about this phrase: our planet Earth will likely endure long into the future, but on the current trajectory, we will need systemic, concerted action to save the life forms that call it home – ourselves, our animals and the diverse wild plant and animal species that we depend on for our survival.

Such rhetoric is considered dramatic and inflammatory by some. But as veterinary professionals and multi-disciplinary scientists, we only need to review the mounting body of evidence to give these claims credence, and accept that we face a fork in the road. One route – “business as usual” – is easy and familiar; the other involves a seismic shift; it is arduous, disruptive but ultimately necessary.

Vet Sustain was established on 4 October 2019, led by a group of prominent veterinary professionals representing a variety of backgrounds from practice, consultancy and academia, to business, policy and politics. Our vision is clear: for the veterinary profession to be a driving force for sustainability, supporting each other to make a positive and lasting contribution to our society.

Sustainability has become a loaded and alienating term to some – but we are following the simple definition of Newcastle University of “Enough, for all, forever” to inform and influence our profession to integrate sustainability principles and practices into our working lives.

As a profession, we have so much to give and already make a significant, if largely under-recognised, contribution to some of the most pressing sustainability challenges of our time. In this first month of Vet Sustain, we have been exploring and celebrating this contribution with our fledgling but growing network.

Vets and vet nurses lead the way for animal health, safeguarding welfare and fostering the vital roles of animals in society for our nutrition, employment, companionship and well-being. In farm animals, our work to prevent, control and treat disease also means dramatically cutting food waste and resource use.

We are the gatekeepers of medicines, and through prudent use, we limit contamination of the environment with toxic residues and help to safeguard human health by reducing the threat of antimicrobial resistance – a challenge considered among the greatest facing human civilisation. We directly protect the health and welfare of wild animal species, through research and conservation, and the work of specialist clinics, but also through the unwavering commitment of individual veterinary practices and staff that self-fund their treatment of the wild animals that arrive in boxes on their doorsteps. This work requires greater public visibility in order for us to receive due recognition for the multiple sustainability services we deliver.

We can do more. Veterinary professionals occupy an extraordinary niche at the human-animal-environment interface, that we can leverage to drive progress towards the many sustainable development goals that we can influence.

Opportunities for change lie in cutting the environmental footprints of the 5,500 veterinary practices in the UK. We can utilise veterinary premises as wildlife and pollinator sanctuaries in urban and peri-urban areas, and as community hubs for domestic waste reduction. Opportunities await to drive reductions in the environmental footprints of domestic animal populations, asking ourselves some difficult questions about the size of the populations that we truly need, and that our environment can sustain.

We can support the farming decisions that minimise the negative consequences of animal agriculture and maximise its value for biodiversity, carbon capture, soil health and rural communities. And we can double-down in our mandate as custodians of animal welfare, addressing the root causes of suffering from genetics to production systems that are responsible for the many problems that exist for some of the species under our care.

We’ve heard that small changes are not sufficient to prevent the environmental disaster we face. But we believe that everyone can utilise their niche at home and at work to make a positive and lasting contribution in sustainability, not least veterinary professionals with our influence within communities, and in the fields of science, policy and politics. It’s time for us to choose the most difficult fork in the road, and Vet Sustain will support the profession in navigating it. [3]

Find out more about Vet Sustain at vetsustain.org
Surgical treatment of canine cranial cruciate ligament ruptures

Does osteotomy or lateral suture provide a better outcome?

A seven-year-old neutered male crossbreed dog weighing 23kg presents with an acute history of unilateral hind-limb lameness. On clinical examination, pain is localised to the stifle joint. Radiography of the affected joint demonstrates the presence of increased soft tissue opacity, suggestive of stifle effusion. At examination under sedation, both cranial drawer and tibial compression tests are positive, and a diagnosis of cranial cruciate ligament (CCL) rupture is made.

You discuss surgical treatment options with the client. Both tibial plateau levelling osteotomy (TPLO) and lateral fabellotibial suture (LFS) placement are performed locally and are financially feasible; other techniques are not available within a distance that the client is willing to travel and so are not considered. When considering post-operative limb function, owner satisfaction and complication rates, what evidence is there to suggest a TPLO technique is superior to LFS placement (or vice versa)?

The evidence

Eight papers and one addendum were identified, generally focusing on one or more of the following categories: post-operative limb function, owner satisfaction, complication rates and radiographic evidence of osteoarthritis.

The best quality paper available reported a significant improvement in the kinematic results of the TPLO group, compared to the LFS group, at 6 and 12 months post-operatively. This finding was supported by a second observational study.

Two studies of equivalent evidentiary quality found no statistical significance in force plate analysis between treatment groups. However, the first study reported follow-up to six months only, while later studies reported the greatest difference in treatment groups to occur after six months. The second study found a non-statistically significant improvement in the TPLO group, compared with the LFS group between 6 and 24 months post-operatively. However, both of these studies assessed patients at walking velocity only (it has been reported that trotting velocity is more sensitive for detection of low-grade pelvic lameness).

Only one paper reported an improvement in any outcome after LFS, compared to TPLO. However, wounds were classified as infected-inflamed on the basis of retrospective medical record review, and the clinical relevance of findings (ie if patients required additional treatment) was not clear.

The one paper that looked at owner satisfaction as an outcome found a significant improvement in the TPLO group compared to the LFS group at 12 months post-operatively. Two papers reported no significant difference in complication rates between both procedures. Only one study found a difference in complication rates.

What does the available evidence mean?

Extrapolating the data reported here in order to make recommendations for changes in current clinical practice does have several inherent problems.

Firstly, all procedures reported were performed at referral centres; thus, it may not be correct to assume the findings can be extended to LFS and TPLO performed in general practice, or to instances where the choice is between LFS performed in a first-opinion practice or referral to a specialist centre for a TPLO procedure.

Secondly, there are a number of other factors not discussed here that could have an impact on procedure selection. Cost, hospitalisation duration, aftercare and local availability of services are expected to vary between procedures and, therefore, will be of importance to clients.

That being said, the evidence suggests that TPLO results in superior limb function and owner satisfaction, compared to placement of an LFS.

Further research – including multi-centre, randomised, controlled clinical trials and investigation of the outcomes of surgery performed in general practice – is indicated.

Full Knowledge Summary: bit.ly/CCLrupture
Authors: Catrina Pennington, Ben Walton and Mark Morton
Differentiating dental health cover

Are your clients covered for dental disease?

Poor dental health and gum disease are so common in cats and dogs that the British Veterinary Dental Association states that the majority of those over three years old have gum disease requiring treatment. The RVC says that periodontal disease affects over 70 percent of adult cats and 90 percent of adult dogs.

With such serious implications in store for pets with untreated oral health problems, getting the message out to owners about the importance of dental care for their pets is crucial. As well as providing dental checks at every preventative care appointment, helping owners to look after their pets’ teeth and learn how to spot problems is crucial.

But when a problem is identified, how many clients have an insurance policy that will cover treatment? Surprisingly few. While many insurers will cover dental accidents, what’s different about dental cover from Agria Pet Insurance is that dental treatment for disease, illness and injury is covered.

Nick White, Head of Veterinary Channel at Agria, explains why: “At Agria, we have long recognised the importance of including cover for dental care within our policies. By doing so, our aim is to help raise awareness of the need for good oral pet health, and help owners access any treatment their pets might need to address any problems that arise before they become more serious.

“We’ve seen the impact of this, as our specialist cover has allowed customers to have their pet treated by dental specialists who can save their teeth rather than extracting them. All we ask for is that customers have regular check-ups and that any treatment that’s recommended is carried out within three months, to ensure the disease doesn’t progress and cause the pet more issues.”

Furthermore, as there’s no limit on cover for dentistry, providing treatment costs fall within the annual vets’ fees limit of up to £12,500, cover is there. While this level of cover is unusual, it is something that is supported by the vets that work with Agria Pet Insurance, and championed by their Vet Lead, Robin Hargreaves. “Education of owners, which can easily be addressed in practice, is crucial. This, along with lifetime pet insurance that covers dental treatment for disease – not just accidents – gives owners an effective umbrella to maintaining good oral health for their pets.

“With these two approaches combined, we hope to continue to address issues with oral health before they develop into a more advanced disease which is not only painful, but may lead to damage to other organs. By focusing on education and prevention, we can reduce the incidence of dental disease and discomfort felt by so many pets.”

Enabling older pets to also access the dental care they might need, Agria’s Age Amnesty continues until the end of November. During this time, usual upper age limits applied to new lifetime insurance policies are removed, enabling dogs, cats and rabbits of all ages to access a policy to cover them throughout their retirement years.

Agria has also made the importance of promoting good dental health a focus at London Vet Show this year. Delegates visiting the specialist Agria Vet Team will have the opportunity to put their surgical skills to the test – for a chance to win one of two iM3 P6 Piezo Ultrasonic Scalers, worth £585.

Hosting a giant game of Operation, the Agria stand is once again set to challenge steady-handed surgeons, with the most accurate each day winning a scaler to treat the pets in need of dental care at their practice.

Award-winning Agria Pet Insurance provides lifetime policies only and works with vets to provide pets with 5 Weeks Free Insurance. Read more at: agriapet.co.uk/vets

If you’ll be at this year’s London Vet Show, visit stand F50 where the Agria Vet Team can tell you more and you can test your steady hand to win an iM3 P6 LED Ultrasonic Scaler for your practice.

Agria’s Age Amnesty ends on 30 November 2019. To help your clients find out more about insuring their older pets, get in touch with the Agria Vet Team by contacting your local Business Development Manager, or calling 03330 30 83 90.
Wound management in reptiles

From first- to fourth-degree burns, what are the best ways to treat thermal burns in reptiles?

Thermal burns are a common presentation for a range of different reptile species. It is unknown exactly why they are so prone to thermal injury, but it has been theorised that reptiles have different pain receptors compared to mammals. This could explain the lack of withdrawal reflex in response to thermal pain, as reptiles will continue to sit upon a heat source that is causing thermal burns (Mader, 2006). Thermal burns could also be an indication of a clinically ill reptile that is weak or unable to move away from a heat source. Burns can be classified from first to fourth degree (Pees and Hellebuyck, 2019) and can have significant systemic consequences if not recognised and treated correctly.

Thermal burns usually occur due to prolonged contact with inappropriate or faulty heating equipment (Figure 1). Hot rocks or heat mats can malfunction and overheat when not properly thermostatically controlled (Scheelings and Hellebuyck, 2019), and many cases of hot rocks or heat mats short-circuiting and causing burns to reptiles have been reported in the literature (Fraser and Girling, 2004; Mader, 2006; Scheelings and Hellebuyck, 2019). Burns can also occur when basking lamps are provided without adequate protective housing or are placed too close to the reptile’s basking spot (Figure 2).

Upon the presentation of a reptile patient for thermal burns, a full physical examination must be performed. The extent of the burns should be identified as well as the cause of the burns. Fully assess the patient – are there any defects that could inhibit the patient’s ability to move away from a heat source? Is there any clinical reason as to why the patient might be seeking more heat than is normal for the species, such as a clinically apparent infection? A full husbandry review should be performed, including asking the client the temperatures of both the hot and cooler end of their vivarium or chosen housing, the way in which heat is provided and if that heat source is thermostatically controlled. If temperatures within the vivarium are below the preferred optimum temperature zone for the patient, they may be seeking out heat in ways they may not if adequate heat was provided, for example snakes wrapping themselves around heat bulbs for warmth.

Diagnosis of thermal burns is made from history and physical examination (Wellehan and Gunkel, 2004). Burn classification is based on the severity and thickness of the wound in a similar way to mammalian burns. First-degree burns (Figure 3) are superficial, involving the epidermis (Fraser and Girling, 2004), and due to exposed...
nerve endings, these burns are painful (Scheelings and Hellebuyck, 2019). First-degree burns are of least concern, but should be monitored closely as if they are not kept clean they can result in secondary bacterial infection (Pees and Hellebuyck, 2019). Second-degree burns, involving the epidermis and underlying dermis, present as blistering and bruising of the affected area, often with a crusty covering to the burn (Mader, 2006). These burns are also painful and should be treated with adequate analgesia. Third-degree burns result in the destruction of the epidermis, dermis and underlying adnexal structures, including the nerve endings, which may result in a lack of pain with this type of injury (Fraser and Girling, 2004). These can be severe and result in months of treatment with contracture of the skin due to scar formation and, in some cases, skin grafts may be required (Mader, 2006). Fourth-degree burns involve destruction of the entire skin thickness and the underlying tissues including muscle and bone, sometimes resulting in entry into the coelomic cavity (Scheelings and Hellebuyck, 2019).

The extent of a thermal burn may not become apparent until days or weeks after the initial trauma (Scheelings and Hellebuyck, 2019). It is therefore important to continue reassessing the affected areas throughout treatment. Any necrotic skin should be debrided under local or general anaesthesia and it is often at this point that the client becomes aware of the extent of the damage. Some burns will look worse before they look better as the degree of tissue damage becomes clear.

Analgesia should be a priority in treatment, with the type of analgesia depending on the severity of the burn. Opioids such as morphine or hydromorphone can be used in severe cases with non-steroidal anti-inflammatory drugs for less serious burns (Scheelings and Hellebuyck, 2019). The author tends to administer opioids when the patient is under care in hospital and discharge with oral tramadol and non-steroidal anti-inflammatories for home care. It is important to remember that off-licence use of medications should be discussed with the owners prior to dispensing and that a range of drug doses are available in peer-reviewed literature; however, it is each veterinary surgeon’s responsibility to ensure adequate and sensible analgesia in reptile patients.

In acute cases, the patient should be immediately immersed in cold water or have a cold compress applied for 15 to 20 minutes to limit further tissue damage (Fraser and Girling, 2004); however, most cases present a number of days later. Fluid therapy should be considered in reptiles with large surface areas of burnt skin, as fluid loss occurs through burnt skin (Scheelings and Hellebuyck, 2019). This can be provided in the form of warmed lactated Ringer’s solution either subcutaneously, intracelomically or intravenously.

The risk of secondary bacterial and fungal infection is high, especially as most burns tend to be on the ventral surface of the patient and therefore in contact with the substrate and environment. For this reason, the wound should be cleaned at least once daily with dilute chlorhexidine or iodine (Mader, 2006) and topical silver, such as silver sulfadiazine cream, should be applied (Fraser and Girling, 2004). Ideally the wounds should be covered with a non-adherent, silver- or honey-impregnated dressing daily (Scheelings and Hellebuyck, 2019); however, practically, this can be difficult and in some cases the dressing may need to be sutured to the patient (Fraser and Girling, 2004). Initially bandage changes may need to be performed daily in conjunction with frequent debriding of necrotic tissue. In burns with a large surface area, systemic antibiosis may be considered, especially if concurrent surgical debridement is planned (Pees and Hellebuyck, 2019).

Substrate within the vivarium should be changed to kitchen paper or another clean, non-adherent substance to prevent further trauma. Supplemental nutrition should also be considered, as burn injuries can cause loss of proteins and hypoproteinaemia (Scheelings and Hellebuyck, 2019) and pain from the injury can result in anorexia. Finally, the cause of the burn should be identified and removed. It is important that the heat source is not removed without another supplemental heat source being introduced, as it is imperative that the reptile patient stays warm and within its preferred optimum temperature zone during the healing process, which may take months.

All reptile species require supplemental heat; however, it is essential to ensure that this heat is provided with adequate thermostatic control. A number of different types of thermostats are commercially available depending on the type of heat source used. Heat sources should not be used without thermostatic control and it is important for reptile keepers to constantly monitor the temperatures within the vivarium to ensure the patient is being provided the temperatures required to thrive. As the veterinarian, it is important to be aware of the optimum temperature ranges for different reptile species and to work with clients to ensure these are provided to patients.

Thermal burns can take months to heal; however, reptiles are surprisingly resilient creatures. Analgesia and hygiene are cornerstones of the treatment of thermal burns in reptiles and care must be taken that secondary infections do not occur. Treatment of thermal burns can be rewarding; however, the clients must be adequately informed of the length of treatment and overall costs of treatment, which can span many months.

References
Assuring the welfare of geese and turkeys this Christmas

What should vets look out for to ensure the welfare of these birds is not compromised?

Turkeys and geese are traditionally birds of Christmas. Whilst they may be the centrepiece of the holiday season for many, it’s important to consider the animal behind the dinner. Around 250,000 geese are raised for Christmas annually in the UK – a tiny number when compared to the millions of turkeys that are reared for slaughter (Gerrie, 2012). Both geese and turkeys are intelligent birds with complex social behaviours and specific husbandry requirements. It is important to be aware of their welfare needs to ensure you’re selecting from a supplier that provides excellent care (Figure 1).

Choosing a “higher-welfare” bird (ie one allowed to grow and mature naturally in comfortable, spacious conditions) ensures welfare on the farm has not been compromised (Compassion in World Farming, 2019).

Welfare concerns for turkeys

Several authors review current welfare issues associated with commercially reared turkeys (Martrenchar, 2007; Glatz and Rodda, 2013), which include:

- High stocking densities
- Birds kept indoors with no outdoor access
- Selection for accelerated growth rates
- Heavy breast muscle development and associated skeletal issues
- Joint and leg problems caused by faster growth and increased weight
- Artificial insemination and an inability to breed naturally in broad-breasted strains
- Pododermatitis (“bumblefoot”) caused by damp, unsanitary substrates
- High mortality rates of young birds due to external temperature fluctuations
- Boredom-related injuries (feather and vent picking) due to stocking density and a lack of enrichment

Wild turkeys are intelligent, with individual personalities that stem from an overall inquisitive nature (Figure 2). These characteristics are inherited by their domestic cousins. Consequently, farmed birds need mental and physical stimulation to remain fit and healthy. Research shows that as space per bird is increased, aggression decreases (Buchwalder and Huber-Eicher, 2004) and on higher-welfare farms, the space to perch and extra room keeps birds in a more positive social environment. Heritage turkey breeds, such as the Bronze and Norfolk Black, are slow growers and farmers allow them to mature at a longer rate, reducing the changes of skeletal problems commonly seen in fast-growing, white turkeys. Consider checking with your supplier about the breed of turkey you’re purchasing and look for quality assurance marks, such as Golden Turkey run by the Traditional Farmfresh Turkey Association, that define good welfare conditions.

Turkeys are clean birds from a naturally clean environment. Many of the diseases prevalent in domestic flocks are caused by dirty, crowded conditions and poor air quality.

FIGURE 1 Commercial, fast-growing birds on an intensive system (left) compared to heritage breeds using their perching in open grounds on a higher-welfare farm. Photo credit: Scott Bauer; Wikimedia Commons (left); Ashford Farm Free Range Turkeys (right)
Pests are vectors of disease into commercial flocks, meaning that pathogens spread quickly between birds living in close confinement. Histomoniasis, or blackhead, caused by the protozoa *Histomonas meleagridis*, has a very high morbidity and mortality rate in domestic turkeys, with 80 to 100 percent of birds in a flock succumbing to an outbreak (McDougald, 1998; McDougald, 2005). Histomoniasis can enter a flock through the eggs of a nematode worm and survives in the environment after being consumed by earthworms (McDougald, 2005). Blackhead can also be directly transmitted bird-to-bird by turkeys pecking at the cloaca of others. A high degree of sanitation, excellent biosecurity, quarantine procedures and clean ground to keep birds on is required to prevent entry of this deadly disease into a turkey flock (Liebhart and Hess, 2019). Use of enrichment, such as straw bales for perching, provides turkeys with a chance to explore more of their environment and thus reduces boredom that is associated with vent and feather pecking.

**Welfare concerns for geese**

In the UK, there are no goose-specific quality assurance schemes, so producers generally adhere to the welfare requirements stipulated in assurance schemes for domestic ducks (Clarke, 2015). The intelligence and flocking behaviour of geese make them one of the easiest domestic birds to work with, but their need for outdoor space with the ability to graze means they come with specific challenges. Farmed geese should have ad lib access to feed. Restricted access to grazing will cause undue stress resulting in abnormal behaviours and a poor quality of life. Grass grazing and a goose’s anatomy is an excellent evolutionary example of how a specific behaviour to collect a specific resource is so important to welfare.

Poor nutritional practice can result in disorders such as “angelwing” (Figure 3). A high-energy diet (specifically too much protein) causes the growth of flight feathers at a rate that is too fast for the skeletal system to keep up (Lin et al., 2012). Consequently these fast-growing feathers bend the new bones of the developing wing outwards and the goose ends up with primary feathers that protrude outwards from its body (Greenacre and Morishita, 2014). This condition, when adult, cannot be rectified and such feathers get damaged and soiled easily. In goslings, when wing slippage is first noticed, taping the growing wing to the body to keep the feathers in the right orientation and reducing food consumption can rectify the problem and revert growth to a normal rate. Avian veterinary surgeons should be able to provide help and advice if dealing with angelwing.

Domestic geese are wildfowl and therefore enjoy a swim. Basic requirements for farmed waterfowl (ie ducks) stipulate access to a container of bathing water that a bird can fully immerse its entire head in (Defra, 2019). Whilst geese are more terrestrial than ducks, water for swimming and bathing is something birds will readily use. A goose kept without bathing water will quickly develop poor feather condition. Regular washing, oiling and preening is essential for keeping their feathers water- and weather-proof.

“Wet feather” (Figure 4) occurs when plumage loses its shiny, water-proof properties and the feathers retain water like a sponge (Ashton, 2012). The goose can become cold and prone to infections and will avoid bathing – which makes the condition worse. Affected birds should be moved into warm, hygienic conditions and kept calm, whilst provided with clean, regularly changed, bathing water to encourage preening and oiling. Wet feather can rectify itself at the next moult. Observing wet feather in a flock of geese is a sign that birds are being kept in cramped conditions, on soiled ground, with limited access to bathing water.

A full reference list is available on request.
Apex Vets Surgical Instruments brings the latest technology from the single-use market to the veterinary world. Learn more about this development in a Q&A with Apex Vets’ business development manager Kevin Welch.

Can you tell us a little about yourself and your company?
I spent nearly 30 years in the human surgery operating theatre. My career has been focused on patients always being number one and best practice has always been an ongoing process within the NHS and private sector. At Apex Vets, we have the same philosophy – that our animals deserve the best care possible. We believe that the quality of care you give as veterinarians depends upon the quality of the products you use.

Apex Vets Surgical Instruments is a respected UK company with years of experience in our field. We treat our customers as partners, providing you with the service and products you expect in your quest to provide the very best for your patients – our animals. Above all, we are also animal lovers!

Your products are single-use surgical instruments – why should we be focusing on these rather than reusable ones?
Despite our evolutionary progress, we as humans still find the concept of change difficult. Many years ago, the human surgical field, led by the NHS, faced the same dilemma – single-use or reusable? Now, there are numerous policies in place in human surgery requiring single-use instruments as best practice. In 2010, the Scottish NHS conducted their Decontamination of Surgical Instruments and other Medical Devices assessment and promoted “wherever possible, employing single-use instruments for a range of procedures”.

This premise is brought under National Institute for Health and Care Excellence (NICE) guidelines, so that today, single-use instruments are the preferred choice.

These developments are based not just on the idea of risk reduction and prevention in surgery, but in the prime driver that single-use instruments are of the same quality as reusables, if not mostly higher. With single-use, you have a fresh, sterile and sharp pair of scissors every time. It is important to remember that single-use instruments have the same rigorous standards applied as reusable. The technical files and production procedures are heavily scrutinised, and our ISO regulation is controlled in the same way. So many customers compliment the quality of our instruments, claiming them to be superior to recycled instruments.

Although there are no empirical studies directly comparing infection rates between surgeries using single-use instruments and surgeries using reusable instruments, overcoming infections caused by improperly maintained surgical instruments is a growing medical concern. Spoiled sterility of stainless steel or metal instruments because of poor post-surgery maintenance is an opportunity for cross-contamination from other patients or handlers.

Mishandling and poor cleaning (Figure 1) have a cumulative effect. Biofilm builds up on the instruments and scratched surfaces eventually leave the instruments unsterilisable. Zoonoses are becoming an increasing concern to all and single-use can certainly contribute to a reduced risk of contamination.

Consider the life of the instrument. In the surgeon’s hands, no matter how skilled, needle stick injury can occur. In the post-surgery cleaning, disinfection and sterilising routine, needle stick injury occurs. In the case of human use, that is a huge risk. In the veterinary world the threat of zoonosis is a hidden, escalating danger. Remove the cleaning process by opting for single-use and you remove an important part of the risk.

Take our example of scissors: reusable, un-sharp scissors are not only frustrating to use but will tear a wound rather than create a clean surgical incision. The healing process is undoubtedly inhibited and infection risks can be expected to increase as a result. Remember the intention of best practice is always to achieve best outcomes.

You claim that your products are more cost-effective than reusable instruments; how can that be?
The idea of reusable instruments was born out of a naive notion that the medical instruments, once purchased, would remain assets and avoid repeated costs. The truth is that there are hidden costs associated with the continued use of reusable surgical tools.
A pair of reusable scissors may cost up to £30. However, reprocessing for repeated use can cost the hospital, clinic or veterinary practice somewhere between £8 and £20 depending upon the complexity of sterilisation. Transportation to an autoclave facility has a cost and, even on-site, sterilising materials in the form of microbicides and disinfection chemicals need to be added, as well as costs associated with repackaging the instruments. There are also significant human resource costs for handling the process, legislation, procedures, servicing regime protocols and costs for all of the equipment. Then, after as little as six uses, the scissors should be resharpened – which adds further costs.

If you consider single-use disposable scissors can typically cost as little as £2.50, there are reduced direct cost implications, not to mention the costs of all of the above processing steps – in terms of both money and time.

Single-use instruments are seen as higher quality as they are made to the same standards but are new every time. The function of reusable instruments is impaired with every use – breakages, misalignment, no longer sharp, etc.

Are single-use instruments as eco-friendly as their reusable counterparts?

Single-use instruments are readily recycled; in fact they are more “green” than reusables. We have already considered time, costs of detergents, etc, but there is an obligation for incineration companies to collect and recycle metals – so single use are in reality rapidly and inexpensively recycled.

Reusable instruments contribute to the piles of bio-waste produced by hospitals and other medical facilities. In the United States’ healthcare system, a reported $4 billion of medical waste is created annually. Reusable instruments can be recycled but require thorough decontamination before reusing is safe. The preparation for recycling a reusable medical tool requires a quantity of electricity and large amounts of water, disinfectants, detergents, special brushes and steam, because of contamination from extended use. These often-hazardous chemicals usually find their way into the waste water supply – hardly a “green” practice.

Fans of Disney’s Toy Story will know the scene in the third film, where the toys, heading to the incineration plant, are quick to grab metal to escape on the magnetic conveyer belt. As ingenious as their plan was, incineration companies are obliged to recover metals from waste for total incineration and reuse. So even disposed-of single-use instruments are recycled: not as the same instrument but as a molten mass that may end up in the car you drive or even a space satellite project.

Are there clinical or surgical scenarios that you believe would particularly benefit from single-use instruments?

Oncology surgeons already have a “clean and dirty” principle when carrying out procedures. Single-use instruments take this principle to the next level, and using a new set at the clean table can only further reduce the possibility of transferring cells from the procedure.

In ophthalmology, instruments are so fine that cleaning them for reuse can only result in damage, implying the next use on the next patient will not achieve the same results.

Single-use instruments also have a huge advantage for mobile vets; transporting used instruments either from various sites, or indeed if you are in an ambulatory setting, poses its own risks of injury, time costs and even losses. Losing very expensive reusable instruments in an equine, or perhaps a farm, setting, is at the very least inconvenient, irrespective of the costs. We have encountered vets with multiple sites sending vans out to collect instruments for reprocessing and then delivering them back at a huge cost – fuel alone and unnecessary travel is greater than the cost of single-use instruments, so our question is: “Why?”

Do you think single-use instruments should be used throughout all areas of surgery?

At Apex Vets, we are sincere in our message and honest enough that in areas such as dental surgery, for example, the larger, robust instruments required are better suited to be reusable for just very practical reasons. Certain orthopaedic procedures are likely to be the same; however, constantly expanding our range, we are looking to introduce instruments and procedure packs here also.

If our readers were to take away only three key messages about your products, what should they be?

- High quality, low cost, extensive range
- Significant reduction in time-management, monetary and environmental costs
- Best practice: reduce cross infection and zoonosis risk

To find out more visit fclveterinary.com or call +44 (0)133 232 1819
Management of feline diabetes mellitus

Diabetes mellitus is one of the most common endocrinopathies in cats; what are the best ways to manage it?

Diabetes mellitus is estimated to affect around 1 in 200 cats and is the second most common endocrinopathy, after hyperthyroidism. It is believed that the prevalence of this disease is increasing. Risk factors include genetic factors, obesity, gender and neuter status, lifestyle and medication history. A recent UK study reported an increased risk of diabetes in certain breeds including Tonkinese, Burmese and Norwegian Forest (O’Neill et al., 2016). Diagnosis can be made more challenging by the stress hyperglycaemia phenomenon that cats are vulnerable to and presence of concurrent diseases which may make interpretation of laboratory parameters more difficult.

The majority of diabetic cats are non-ketotic, and their diabetes is analogous to human type 2 diabetes mellitus, characterised by insulin resistance, obesity and pancreatic amyloid deposition. Ketoacidotic diabetic cats need to be treated urgently, with attention being paid to electrolyte imbalances, fluid therapy and reversing the hyperglycaemia and ketoacidosis.

Treatment of diabetes mellitus should aim to achieve diabetic remission if possible. Additional aims include resolution of clinical signs associated with diabetes mellitus (eg polyuria, polydipsia, polyphagia and weight loss), maintaining blood glucose levels below the renal threshold (between 12 and 14mmol/l) for the majority of the time. This should be associated with prevention and/or minimisation of ketoacidosis and the development of other long-term complications of diabetes such as peripheral neuropathies (Figure 1). Hypoglycaemia should also be avoided by maintaining blood glucose levels above 5mmol/l.

Early diagnosis and aggressive treatment increases the chances of diabetic remission. Efforts should therefore be concentrated on:

- Insulin therapy and dietary management: resolution of glucose toxicity greatly increases the chance of achieving diabetic remission. Glucose toxicity describes the situation whereby prolonged hyperglycaemia suppresses insulin secretion by the β-cells of the pancreas. As glucose toxicity resolves, the β-cells may recover some ability to produce and secrete insulin leading to improved glycaemic control and diabetic remission in some patients.
- Where possible, withdrawing any diabetogenic drugs the cat may be receiving (eg glucocorticoids). If not possible to withdraw then consider replacing with less diabetogenic alternatives (eg using inhaled corticosteroids for asthma; Figure 2).
- Managing obesity, where present (Figure 3). Obesity causes insulin resistance and is an important risk factor for the development of feline diabetes. A weight loss regime resulting in 1 percent loss of bodyweight per week is recommended. A low carbohydrate diet fed at an appropriate caloric intake for weight loss is often an ideal choice for an overweight diabetic cat.

SARAH CANEY
Sarah Caney, BVSc, PhD, DSAM(Feline), MRCVS, is an RCVS specialist in feline medicine who has worked as a feline-only vet for over 20 years. She trained as a specialist at the University of Bristol and is one of 12 recognised specialists in feline medicine working within the UK.

Figure (1) Peripheral neuropathies can be seen in diabetic cats, most common is a plantigrade stance.
Identifying and supporting pancreatitis, where present. Many diabetic cats are thought to have pancreatitis which may be subclinical but may still have an impact on diabetic stability and likelihood of achieving diabetic remission (Zini et al., 2015; Shaefer et al., 2017).

Identifying and addressing other underlying conditions. All inflammatory, infectious and neoplastic conditions have the potential to increase insulin resistance and destabilise diabetic control. Successful resolution of these may be enough to result in diabetic remission. For example, dental disease should be addressed early in the course of treatment for diabetes. Acromegaly may be more prevalent than once thought – a recent study indicated that the prevalence of this may be as high as 25 percent of UK diabetic cats (Niessen et al., 2015).

Identifying and managing concurrent illnesses which may be linked to the diabetes. For example, urinary tract infections are a potential complication of diabetes and will increase insulin requirements and complicate stabilisation. Reported prevalence of bacterial UTIs in cats with diabetes mellitus has varied from 7 percent to 14.3 percent (Bailiff et al., 2006; Mayer-Roenne et al., 2007; Michiels et al., 2008; Bailiff et al., 2008). Urine culture is recommended as a priority in all newly diagnosed diabetic cats and those whose diabetic control has recently deteriorated.

Increasing physical activity increases insulin effectiveness and is especially beneficial in aiding weight loss in an obese inactive cat.

Remission typically occurs within one to three months of initiation of treatment, although relapse occurs transiently or permanently in around a quarter of these patients.

Typically, a third to half of diabetic cats treated with insulin may achieve diabetic remission, and are able to maintain normoglycaemia without insulin therapy or use of other glucose-lowering drugs (Michiels et al., 2008; Gostelow et al., 2014; Hazuchova et al., 2018). There is evidence that early intensive management with long-acting insulin (glargine or detemir) and dietary management can increase this figure to greater than 80 percent in some situations (Roomp et al., 2009; Marshall et al., 2009; Roomp et al., 2012; Gostelow et al., 2014).

Diabetic remission is also possible for patients presenting in diabetic ketoacidosis. Remission typically occurs within one to three months of initiation of treatment, although relapse occurs transiently or permanently in around a quarter of these. Remission from relapse is generally much harder to achieve. Most patients in diabetic remission have reduced pancreatic function as a result of β-cell loss and
damage resulting from glucose toxicity, as well as any underlying pancreatic pathology which contributed to diabetes development in the first place. Other clinical problems are often present in these cases and also may account for the patient's predisposition to diabetic relapse through increasing insulin requirements. Common concurrent illnesses include gingivitis, obesity, hyperthyroidism, concurrent diabetogenic drugs and renal disease.

**Dietary management of diabetes mellitus**

Studies have shown benefits to glycaemic control by feeding diabetic cats a low carbohydrate diet. These studies reported diabetic remission rates between 33 and 100 percent when using a combination of dietary management and insulin therapy (Roomp et al., 2009; Marshall et al., 2009; Roomp and Rand, 2012).

There are now a number of specially formulated veterinary prescription diets available for this purpose. Wet diets are generally recommended over dry because these often contain lower carbohydrate levels. The lower energy density and greater water content is also useful for managing obesity. Use of low carbohydrate diets may reduce or eliminate the need for insulin therapy in the long term.

In those cats where the diet is changed following diagnosis of diabetes, it is important to do this slowly and to monitor the patient carefully since insulin requirements can change very quickly. Low carbohydrate diets are suitable for use in diabetic cats of all weights – whether needing weight loss or gain. Since cats have a very prolonged postprandial glycaemia, timing of meals is not critical for management of most feline diabetic patients.

**Insulin therapy**

Insulin therapy is required to stabilise most diabetic cats. In general, twice daily insulin therapy is associated with better results than once daily, regardless of the insulin preparation chosen although there is considerable inter-cat variation in duration of action and response to insulin. Longer-acting insulins are generally recommended for treatment of diabetic cats where possible (Sparkes et al., 2015; Behrend et al., 2018).

The two veterinary licensed insulins in the UK are:

- Longer-acting protamine zinc insulin (Prozinc, Boehringer Ingelheim): a recombinant human insulin in a 40iu/ml formulation and typical duration of 13 to 24 hours. Some studies have indicated improved glycaemic control when using twice daily protamine zinc insulin compared to twice daily lente insulin (Gostelow et al., 2018) and this should be prioritised for cats with a short duration of action on lente

- Medium-acting lente insulin (Caninsulin, MSD Animal Health): this is a porcine insulin zinc suspension with an insulin concentration of 40iu/ml and typical duration of 8 to 10 hours. Caninsulin provides good to excellent clinical control of diabetes in the majority of patients

When using 40iu/ml preparations it is essential to also use 40iu/ml syringes. Use of a magnifying glass or reading spectacles can be helpful for care providers with poor eyesight, especially when low doses are prescribed. Caninsulin is available in a pen doser which accurately dispenses insulin in 0.5iu increments (VetPen, MSD Animal Health). Pens facilitate more accurate dosing, especially when a low dose is required, helping to reduce the risk of hypoglycaemia (Thompson et al., 2015). Use of pens is associated with fewer “needle stick” injuries although carers do not always find them easier to use (Albuquerque et al., 2019).

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**Dietary management ideally involving feeding a therapeutic diet improves patient outcome**

Most cats require only small doses of insulin. Non-ketotic diabetic cats should be started on insulin at a dose of around 0.25 to 0.5 units per kg bodyweight per injection (maximum starting dose 2iu per cat). The dose of insulin should not be increased more often than every five days as it takes several days for the effects of a new dose to “settle out”. Detailed guidelines for diabetic stabilisation and monitoring are available elsewhere (Sparkes et al., 2015; Behrend et al., 2018).

**Future therapies**

Diabetes mellitus is an area of much active research in cats with several current strands of investigation. Future therapies currently being assessed include incretin analogues. Incretins are hormones released by enterocytes in response to small intestine nutrient content; use of incretin analogues such as exenatide may improve diabetic remission rates and reduce/avoid the need for insulin therapy (Gilor et al., 2016; Behrend et al., 2018).

**Conclusions**

Many cases of diabetes are straightforward to stabilise although it may take several weeks or months to identify an optimal insulin regime. Dietary management ideally involving feeding a therapeutic diet improves patient outcome. Early diagnosis and treatment increase the chances of diabetic remission. Detailed survival statistics for diabetic cats are not available but a recent study reported a median survival time of 516 days with almost half of the cats living for more than two years (Callegari et al., 2013).

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A full reference list is available on request
Is trichography an underutilised diagnostic aid in dermatology?

What to look out for during a microscopic examination of plucked hairs

Trichography is the examination of hair under the microscope in which a hair pluck (about 50 to 100 hairs) is obtained using a haemostat (tips covered with drip set tubing to prevent damage to hair shaft) and mounted onto a slide with liquid paraffin. Laying all the hairs facing in one direction makes examination easier and faster.

The examination of the hair should be performed systematically. Changes to the hair bulb, the hair shaft and the hair tip are all of interest. When combined with the history and clinical examination, they can help make a tentative diagnosis, or give an indication of the relevant differential diagnosis. The procedure is a very good diagnostic aid. Not only is it inexpensive and easy to perform, it also gives instant results and is useful as a diagnostic aid in small mammals too. Like all procedures it does require practice, but with experience the results are easy to assess.

Hair bulb

The hair growth cycle consists of three main phases. Anagen is the active growth phase; catagen is the transitional phase; and telogen is the resting phase. Anagen and telogen hair bulbs can be easily recognised microscopically. Adult animals should have a mixture of anagen and telogen hairs, with the anagen:telogen ratio varying with seasons, breed, age, nutrition and disease status. This ratio can be determined by examining approximately 100 hairs. On its own, the ratio is not particularly useful, but combined with the history and clinical presentation it can give an indication of the possible differentials.

Anagen hair bulbs are smooth and pigmented, and when plucked they tend to bend looking like a club (Figure 1). The presence of mostly anagen hairs in an alopecic dog can indicate anagen defluxion, or that the alopecia is not associated with a defect in hair growth cycle.

Telogen hair bulbs are generally rough, non-pigmented, straight and arrow or spear shaped (Figure 2). If the hair is easily epilated and the hairs mostly in telogen, it suggests that the skin disorder may be associated with a nutritional, endocrine or metabolic disorder; or, if the history is that of sudden hair loss, it could be telogen effluvium. Telogen hairs are predominant findings in alopecia associated with follicular dysplasia, such as cyclical flank alopecia, hypothyroidism and hyperadrenocorticism.

FIGURE (1) Anagen hair bulbs are smooth and pigmented. They tend to bend when plucked, looking like a club (2) Telogen hair bulbs have an arrow- or spear-shaped appearance (3) Melanin clumping and fractured hairs are seen in dogs with alopecia, here from a blue Chihuahua (4) Dysplastic hair with melanin clumping can also be seen in dogs with colour dilution alopecia, here from a blue Doberman dog (5) Ectoparasites can be detected during trichography. Here, Polyplax spp. (louse) and Mycoptes musculinus (fur mite) from a rat can be observed.
Hair shaft
Normal hair shafts are smooth and of uniform diameter, with well demarcated cortex and medulla. The pigmentation in the hair shaft will depend on the coat colour of the animal. Smooth-haired dogs have straight hair shafts whereas the curly-coated animals have twisted ones. Hair shafts, if misshaped or uneven, can be associated with nutritional or metabolic disease, or with congenital or genetic disorders.

Abnormal melanosomes can result in bulges and fractures in the hair shaft (Figure 3) and are seen in dogs with colour dilution alopecia. This condition is caused by abnormalities in the transfer of melanosomes from melanocytes to surrounding keratinocytes and hair bulbs and by the degradation of melanosomes.

Melanosome clumping, seen in dysplastic hair bulbs (Figure 4), is also seen in colour dilution alopecia. Ectoparasites, such as Cheyletiella, fur mites (Figure 5) and lice, or their eggs (Figure 6), may be seen on hair plucks. Uneven hairs with a fuzzy appearance should be examined for fungal elements. Hyphae may be seen inside and arthrospores on the outside (Figure 7) of the hair shaft. They are best seen under x100 magnification, with increased contrast by partially closing the condenser. Trichoptilosis, a longitudinal split in the hair shaft, indicates trauma. Trichorrhexis nodosa, associated with mechanical or chemical damage, is the loss of cuticle and appears as a nodular swelling in the centre of the hair shaft where the fracture occurs (Figure 8).

Hair tip
Normal hairs taper into a tip. If the tip is fractured or broken (Figure 9) it is generally due to trauma and in most cases associated with licking, biting or scratching.

An onion-shaped hair tip affecting the whiskers and primary hairs of Abyssinian cats has been reported. Affected cats have a poor lustreless hair coat.

Other findings
Follicular casts are accumulation of keratosebaceous substance seen around the hairs. This is an indication of a follicular disorder associated with abnormal follicular keratinisation. They can be seen in diseases such as folliculitis, demodicosis, follicular dysplasia, endocrinopathies and sebaceous adenitis (Figure 10).

Summary
Trichography is a rapid and cost-effective test in which abnormalities of the hair bulb, the hair shaft and the hair tip are all of interest. Findings can be used to support a diagnosis and/or to rule out potential differentials. It requires practice, but once mastered is a very useful tool in either making a list of the most likely differential diagnosis or a tentative diagnosis.

FURTHER READING
Happy Birthday to the VNDG!

Group manager John Redbond reflects on the first year of the Veterinary Nursing Dermatology Group

It has been a year since the Veterinary Nursing Dermatology Group was set up, with the aim of supporting and developing nurses in the field of dermatology, where we believe they can make a real difference to cases by becoming more involved. One year in, I am happy to say that the group is now firmly established and is showing very strong growth. Past RCVS surveys have suggested 4 percent of nurses consider dermatology their area of expertise, roughly equating to around 300 nurses. We already have nearly 500 members after just one year, with more joining every week – so we are already growing this percentage through the work of the group.

Here are just some of the things we have achieved in our first year together, to build on moving forward:

- A Facebook and Instagram group has been set up for members to connect and get advice for their peers and dermatology CPD has been signposted to members
- We developed our own dermatology questionnaire for nurses to use when gathering history for skin cases, our own ear cytology work-up chart for guidance and a VNDG dermatology toolbox, with everything a nurse needs to complete a skin work-up
- We had our very first CPD meeting, with delegates coming along for four free lectures by different speakers, lunch and some great dermatology giveaways
- In recent months we have delivered our first webinar and put together an online survey on nurse clinics at the request of our members; we will let you know in these pages what we found out once the results are in!

Our second VNDG meeting is in London on Thursday 28 November, "A Master Class on Otitis" with Dr Susan Paterson, MA, VetMB, DVD, Dip ECVD, FRCVS Recognised Specialist in Veterinary Dermatology, will be held on Thursday 28th November 2019 at the Royal Society of Medicine in Wimpole Street, London.

Attendence is FREE and includes lunch, a VNDG dermatology toolbox and workup chart.

With three lectures from Dr Paterson on the nurses role in Otitis and the chance to ask Sue any questions or put forward any difficulties you have with ear cases in your practice, the day aims to educate and equip you to get involved with your practice ear cases, from the simple to the complex.

Register to attend on the Events page at www.vetnursedermgroup.co.uk

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To castrate or not to castrate?

Why should the medical castration of dogs be considered as an alternative to permanent surgery?

Along with positive socialisation, training and appropriate nutrition, castration is often considered a key component of responsible dog ownership. However, in recent years, attitude towards castration has changed slightly, both from a veterinary and an owner’s perspective.

From a medical point of view, castration has some benefits but also some downsides, so the decision should be made on a case-by-case basis. Castration can be beneficial in preventing specific testosterone-related diseases and can help in the management of some behavioural issues. However, there are some negatives: castrated animals have an increased tendency to obesity and some conditions are more prevalent in gonadectomised dogs, such as incontinence, osteoarthritis and some neoplasia. These conditions are clearly multifactorial, but research suggests disruption to the hypothalamic–pituitary–gonad axis and excessive gonadotrophin release as a possible component.

For the pet owner, preventing unwanted mating is obviously a major part of the decision-making process. Behaviour is more of a mixed picture: castration might be very beneficial in some cases, but disappointing in some others. The owner might realise that the unwanted behaviour is either not testosterone related (so unaffected by castration), or even made worse following neutering. Moreover, the anaesthetic risk is never nil. As a result, a recent survey showed that 25 percent of pet owners were concerned or very concerned that neutering could be harmful for their dog (Mo Gannon and Associates, 2017).

All the observations above highlight the need for a discussion between vets and pet owners, in order to weigh up pros and cons but also manage expectations. Offering the option of a medical castration with a reversible effect can be extremely helpful in this dialogue. This achieves the same effect as surgery (sterility, same effect on behaviours, etc) but without the permanence, allowing both vets and owners to decide in due course what the best option is for the pet.

Normal reproductive physiology of the male dog

The two principal functions of the male reproductive system are to produce sperm and the steroid hormone, testosterone. One. The gonadotrophins luteinising hormone (LH) and follicle-stimulating hormone (FSH) are secreted by the anterior pituitary gland in response to gonadotrophin-releasing hormone (GnRH) production from the hypothalamus, which is released in an episodic manner (Figure 1). In the testes, LH binds to receptors on Leydig cells and stimulates the synthesis and secretion of testosterone.

In addition to its systemic effects, testosterone also acts locally in conjunction with FSH to support spermatogenesis through stimulation of the Sertoli cells in the testis. There is an integrated negative feedback system for the control of hormone secretion: testosterone and its metabolites oestra-diol and dihydrotestosterone provide negative feedback at the level of the hypothalamus and the pituitary gland. This contributes to the regulation of GnRH release and therefore regulation of the gonadotrophins, LH and FSH. In addition, other hormones such as activin (stimulating effect) and inhibin (inhibiting effect) can exert selective effects on FSH without affecting LH levels; therefore, the concentrations of LH and FSH do not always rise in parallel despite the linkage of control through the common feedback loop.

The average testosterone level in entire, adult male dogs ranges between 2 and 4mg/ml but it is important to appreciate that this is highly variable and can fluctuate considerably even within a 24-hour period (DePalatis et al., 1978). Despite this variation, fertile dogs with normal libido rarely show testosterone concentrations of less than 0.4ng/ml. Once levels of testosterone fall below 0.4ng/ml, this results in infertility due to reduced spermatogenesis, reduced ejaculate volume, reduced sperm motility, increased sperm abnormalities and reduced libido.

Medical castration

Deslorelin is a GnRH superagonist created by modifying the amino acid sequence of endogenous GnRH at positions six and nine. This results in a compound with the same action as GnRH but with seven-fold increased GnRH receptor binding affinity, increased stability and increased potency (Padula, 2005). Although more stable than endogenous GnRH, GnRH analogues are still rapidly absorbed and eliminated following parenteral administration, but by administering deslorelin within a lipid matrix implant, this allows continued release of the superagonist over time.

The effect of GnRH on target cells is mediated via binding to specific GnRH receptors (GnRH-R) located in the anterior lobe of the pituitary gland. Under the normal pulsatile release of GnRH, the GnRH-R activates secondary messengers which are responsible for the production of the LHβ and FSHβ subunits, and for the α-subunit which is common to both FSH and LH. However, under sustained stimulation which occurs with a deslorelin implant, a complex series of network transduction pathways involved in gene expres-
sion are activated. This results in an inhibition of the mRNA coding for the β-subunits and therefore a decrease in the circulating level of gonadotrophins.

Understanding the mechanism of gonadotrophin and testosterone production, and the effect of continued stimulation of GnRH-R as opposed to episodic stimulation through pulsatile release of endogenous GnRH, allows an understanding of what to expect once an implant has been placed.

Initially, there is an increase in plasma testosterone as the deslorelin released from the implant binds to GnRH-R and stimulates production of LH, FSH and consequently testosterone. This flare-up effect is transient and testosterone levels then decrease rapidly to below 0.4ng/ml under the continued secretion of deslorelin and consequent down-regulation of GnRH-R; this usually occurs within 9 to 20 days. Once testosterone levels reach 0.4ng/ml, three to four additional weeks are necessary to observe a total absence of sperm production. Infertility is therefore achieved six to eight weeks after an implant has been placed, so treated dogs should be kept away from bitches in heat until these time periods have been observed. After implantation with deslorelin, clinical studies demonstrated maintenance of testosterone below 0.4ng/ml for at least six months post-implant rising to at least 12 months where larger implants are used.

In terms of clinical effects, as expected, the lowered testosterone levels result in reduced semen volume, sperm production and motility with increased sperm abnormalities. A reduction in libido is also seen, though it is important to note that a lack of testosterone does not always lead to complete absence of mating behaviour. A retrospective study of neutered dogs, both male and female, found that 27.3 percent continued to display sexual behaviour following surgery (Spain et al., 2004) and the same would be expected of implanted dogs. There is a reversible reduction in testicular volume in the vast majority of dogs following the implant due to atrophy which can provide a useful external marker of the implant’s action.

Clinical trials have demonstrated reversibility after deslorelin implantation with return to normal plasma testosterone levels (0.4ng/ml or higher) over time as the implant dissolves. Once normal testosterone levels have been established, fertility does not instantly return to normal as spermatogenesis generally takes seven to nine weeks in the dog. After recovery, the seminiferous tubules, epididymal ducts and prostate tissue all show functional activity.

**Conclusion**

As is often the case in veterinary medicine, nothing about castration is black or white. Though surgical neutering can confer many benefits, it is important to remember that every animal is different, and the decision has to be made carefully. Medical castration is a powerful tool when it comes to the discussion about castration and can help in making the right decision for the animal.

**References**


New approaches in canine multicentric lymphoma

How does applying the human classification system to canine lymphomas affect the management of the disease?

Lymphoma is the most common haematopoietic malignancy in dogs and encompasses a broad spectrum of diseases with diverse mechanisms of oncogenesis, diagnostic criteria and biologic behaviours. Recent studies have shown the World Health Organization (WHO) classification scheme for human lymphoma can be applied to dogs. Consequently, the veterinary oncology community has started to consider lymphoma as a multitude of different diseases. Different types of canine lymphoma respond differently to chemotherapy and have different prognoses. The purpose of this short article is to provide an update on current veterinary understanding of canine lymphoma and how this directs our approach to diagnosis, staging and treatment.

Presentation

In 2011, 20 veterinary pathologists undertook a large histological study of 300 cases of canine lymphoma, classifying them according to the WHO criteria. The most common types of lymphoma were diffuse large B-cell lymphoma (DLBCL; 40 percent), peripheral T-cell lymphoma not otherwise specified (PTCL; 15 percent), T-zone lymphoma (TZL; 12 percent), T-cell lymphoblastic lymphoma (T-cell LBL; 4 percent) and marginal zone lymphoma (MZL; 4 percent).

All of these subtypes of lymphoma can present as a multicentric disease with multiple lymph node enlargement (Figure 1); however, they can have very different prognoses. Clinically, the majority of dogs are asymptomat-
ic, especially for DLBCL, TZL and MZL, and these dogs might present at consultation for vaccination without the owner suspecting anything. PTCL and T-cell LBL are normally more aggressive forms of lymphoma and dogs are usually lethargic, hypercalcaemic or presented with respiratory signs due to the presence of a mediastinal mass or pleural effusion.

Paraneoplastic syndromes
Hypercalcaemia is an uncommon but well-documented paraneoplastic syndrome in dogs and is almost exclusively associated with T-cell lymphoma, although it has occasionally been documented in B-cell lymphoma. Hypercalcaemia is most commonly caused by the production of PTH-rP (parathyroid hormone related peptide) by CD4+ T-cell lymphoblasts; however, other mechanisms of action are also possible (ie bone lesion from metastatic lymphoma).

Other paraneoplastic syndromes include monoclonal gammopathy, hypoglycaemia, polycythaemia when kidneys are involved, eosinophilia and immune-mediated diseases including immune-mediated haemolytic anaemia, immune-mediated thrombocytopenia and polymyositis.

Diagnosis
In dogs, lymphoma is often diagnosed from cytology alone, although this will not allow classification (other than high or low grade). Increasingly, immunophenotype is determined using flow cytometry (FC), immunohistochemistry (IHC) or PCR clonality testing (PARR).

Immunophenotyping involves identifying the proteins (antigens) present on the surface or within the cytoplasm of a population of cells. These antigens are classified using the cluster of differentiation nomenclature (CD) and the expression of certain antigens can be specific to a particular lineage of cells, or to cells of a certain stage of development (Table 1).

Flow cytometry is a powerful non-invasive tool that has gained importance in immunophenotyping canine tumours and is used to differentiate clinically significant subtypes of lymphoma by objectively evaluating cell size, cell complexity and the expression of multiple leukocyte antigens.

Immunohistochemistry remains the standard phenotyping for solid tumours, but flow cytometry shows some advantages, providing results in a shorter time, easily detecting antigen co-expression and quantitation.

Flow cytometry does not, and cannot, replace standard methods of investigation of lymphoproliferative disease, such as cytology or histopathology (Figure 2), and should primarily be used to immunophenotype lymphoma once a confident diagnosis has been achieved. Morphological evaluation of the cells by cytology or histopathology is still required for lymphoma grading and to assess the proportions of the populations of lymphocytes and other cells present to aid in the interpretation of flow cytometry results.

Major lymphoma subtypes are accurately identifiable using flow cytometry together with cytology and, for T-zone lymphoma, FC is probably more accurate than histopathology. Detection of neoplastic cells in circulating blood and bone marrow helps refine prognosis in DLBCL and minimal
residual disease can be evaluated by FC on aspirates and is predictive of early recurrence. In addition, FC allows differentiation between thymoma and mediastinal lymphoma. Demonstrating cells all express the same immunophenotype does not prove they are genetically clonal. This is tested for using the PARR technique and is sometimes required when flow cytometry results are equivocal.

A stepwise strategy recommended in lymphoma:
- Cytology or histopathology
- Immunophenotyping with flow cytometry or immunohistochemistry
- PARR

**Staging**

Staging multicentric lymphoma is done according to the WHO staging scheme (Table 2) and requires a thorough patient history (substage), physical examination and evaluation of the peripheral blood and bone marrow. Although additional laboratory tests and diagnostic imaging are recommended, it should be appreciated that increasing the number of staging tests or choosing more sensitive staging techniques will result in more correct staging and most likely stage migration, but not necessarily in a better prediction of the prognosis.

**Prognosis**

Many prognostic factors have been evaluated in the dog and include clinical data, pretreatment clinical pathology results, histology, immunophenotype, grade, proliferation markers, molecular prognosticators and biomarkers. In human high-grade non-Hodgkin lymphoma, prognosis is successfully stratified using the International Prognostic Index (IPI) (which includes the factors age, stage, elevated serum LDH activity, performance status and involvement of extranodal sites) but a similar index has not yet been developed for multicentric high-grade canine lymphoma.

In general, T-cell lymphomas have shorter remission and survival times than B-cell lymphomas. Peripheral T-cell lymphomas (PTCL) are usually characterised by an aggressive disease course (median survival 159 days) and they normally express CD4 with low expression of MHCII and CD25. However, a minority of T-cell lymphomas are characterised as CD4+ CD45− with high class II MHC expression, a combination diagnostic for T-zone lymphoma (TZL). T-zone lymphoma is a low-grade lymphoma typically diagnosed in older dogs with lymphadenopathy and peripheral lymphocytosis and carries a good prognosis (median survival 637 days). DLBCL is the most common form of multicentric lymphoma and is reported to have 90 percent rate of response to doxorubicin-based protocols and long survival (median survival 308 days). Some subtypes of T-cell lymphoma may respond more favourably to lomustine-based protocols; however, further studies are needed.

In summary, dogs with TZL had the longest median survival time, followed by DLBCL. LBL and PTCL had the shortest survival times.

**Future goals in canine multicentric lymphoma**

Although our knowledge on the genetics, molecular biology and diagnosis of canine lymphoma has grown substantially over the past 25 years, this has had little effect on treatment and has only marginally improved prognosis.

Chemotherapy still remains the mainstay for the treatment and it appears that we have reached a plateau in what this treatment modality has to offer. More elaborate and more intense chemotherapy protocols increase toxicity, but do not improve treatment outcome.

Since local therapies including surgery and radiotherapy remain to be of limited value, and new classes of drugs are not available, we need to focus on other systemic treatment modalities including immunotherapy and targeted therapy. Especially for this last form of treatment, a detailed understanding of the molecular pathways involved in lymphomagenesis is essential and requires a thorough characterisation of each of the specific subtypes of lymphoma.

**TABLE (2)** The World Health Organization clinical stages for canine multicentric lymphoma

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Single node or lymphoid tissue in single organ (excluding bone marrow)</td>
</tr>
<tr>
<td>II</td>
<td>Regional involvement of multiple lymph nodes (± tonsils)</td>
</tr>
<tr>
<td>III</td>
<td>Generalised lymph node involvement</td>
</tr>
<tr>
<td>IV</td>
<td>Stage I to III with involvement of liver and/or spleen</td>
</tr>
<tr>
<td>V</td>
<td>Stage I to IV with involvement of blood or bone marrow</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUBSTAGE</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Absence of systemic signs</td>
</tr>
<tr>
<td>b</td>
<td>Presence of systemic signs (ie fever, more than 10 percent weight loss, hypercalcaemia)</td>
</tr>
</tbody>
</table>

**FIGURE (2)** Flow cytometry is most appropriate in aspirates where there is a prominent population of atypical cells. The lymphoid population in the aspirate above is labelled as large cell lymphoma; in this particular field are appreciable multiple mitotic figures.
Diagnosis of early feline chronic kidney disease

More and more vets are able to detect IRIS stage 1 chronic kidney disease in non-azotaemic cats

ELLIE GROVES
Ellie Groves, BA (Hons), VetMB, MRCVS, is the Veterinary Affairs Manager at Purina Petcare. Since joining Purina, she has co-founded a cross-business initiative to drive advanced nutritional training, and her mission is to achieve a greater understanding of clinical nutrition in veterinary practice.

Chronic kidney disease (CKD) (Box 1) is a highly prevalent disease in older cats, estimated to affect 30 percent of cats over the age of 12 (Lulich et al., 1992). There is still much unknown about feline CKD. The risk factors and causes associated with the development of CKD are not well elucidated, with most cases classified as idiopathic in origin. We do know, however, that early diagnosis and management of CKD can slow down the progression of disease.

Dietary management, ideally with a therapeutic renal diet, is arguably the most important aspect of treatment for cats diagnosed with CKD in IRIS Stage 2 onwards (Polzin and Churchill, 2016), where staging is primarily based on blood creatinine levels (Table 1). Generally, this tends to be accepted by most veterinarians. However, they may face more of a clinical conundrum when trying to identify the best diet for a cat with IRIS Stage 1 disease – a stage which, until fairly recently, the veterinarian had not been able to identify in most patients.

So, how should clinicians approach diagnosis, what should these cats be fed and when should we be introducing any dietary changes? This is the first article of a two-part series on early feline chronic kidney disease and will focus on diagnosis. The second article, in next month’s issue, will explore the approach to nutritional support.

Diagnosis
CKD is primarily diagnosed by a history, physical exam and clinical signs compatible with CKD, alongside identification of azotaemia and a USG below 1.035. However, urea and creatinine – the conventional diagnostic test used – are insensitive markers of glomerular filtration rate (GFR) and do not start to rise above the reference range until 75 percent of nephron function has been lost (Polzin and Churchill, 2016). They can also be affected by other factors: creatinine concentrations are affected by hydration and lean muscle mass, and urea is affected by a large number of extra-renal factors.

Although often measured together, creatinine is preferred to urea as a marker of GFR as its concentration is inversely related to GFR, and it is affected by fewer extra-renal factors. Urea is passively absorbed, has a variable excretion rate and may be influenced by a great number of factors, including catabolic or anabolic states, liver disease and protein content of the diet. Creatinine does, however, have an exponential relationship with GFR, so substantial early declines in GFR may be accompanied by only small changes in creatinine, whereas later in disease a large change in creatinine may represent only a small change in GFR (Geddes, 2019) (Figure 1).

Cats with IRIS Stage 1 kidney disease, however, do not have measurable azotaemia and may not show clinical signs of disease. Whilst previously it was challenging to diagnose cats with CKD before azotaemia was present, more clinicians are now starting to identify non-azotaemic cats with IRIS Stage 1 or early IRIS Stage 2 disease (“early” CKD).

Increased screening of cats in senior clinics and suspicious clinical signs (Box 2) or urine samples can prompt further investigation and result in diagnosis of early disease (Table 2). For example, reduction in USG (below 1.035) – which may be picked up incidentally on a screening urinalysis – usually precedes azotaemia and can be an important early indicator of CKD.

- Alteration in kidney structure and/or function, present for over one to three months
- Renal insufficiency: A loss of concentrating ability (USG <1.035) – occurs when 67 percent functional nephrons are lost
- Renal failure: Glomerular filtration rate (GFR) no longer adequate to maintain normal excretory function (azotaemia plus USG <1.035) – occurs when more than 75 percent functional nephrons are lost

**BOX (1)** What is the definition of chronic kidney disease?

**Table 1** International Renal Interest Society staging of CKD, based on blood creatinine levels. Note that creatinine can be brought down into the reference range (<140µmol/l) if a cat has poor muscle mass, and muscle condition score should therefore be considered in conjunction with blood creatinine results. Substaging according to blood pressure and degree of proteinuria should be done. Staging influences treatment recommendations and prognosis, and can be used to assess the success of treatment interventions. See iris-kidney.com for further information.

<table>
<thead>
<tr>
<th>IRIS Stage</th>
<th>Description</th>
<th>Fasting blood creatinine</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Non-azotaemic</td>
<td>&lt;140µmol/l</td>
</tr>
<tr>
<td>2</td>
<td>Mild renal azotaemia</td>
<td>140 to 250µmol/l</td>
</tr>
<tr>
<td>3</td>
<td>Moderate renal azotaemia</td>
<td>251 to 440µmol/l</td>
</tr>
<tr>
<td>4</td>
<td>Severe renal azotaemia</td>
<td>&gt;440µmol/l</td>
</tr>
</tbody>
</table>

**Figure 1** Glomerular filtration rate (GFR) no longer adequate to maintain normal excretory function (azotaemia plus USG <1.035) – occurs when more than 75 percent functional nephrons are lost.
Veterinarians also now have access to a greater number of diagnostic tests, most significantly the advent of a commercially available symmetric dimethylarginine (SDMA) assay. On average, SDMA has been shown to detect CKD 17 months before serum creatinine concentrations increase above the reference range (Hall et al., 2016), and, importantly, is not affected by muscle mass. SDMA is primarily eliminated by renal clearance, and plasma concentrations correlate with GFR (Hall et al., 2016). SDMA increases as a result of reduced renal function, and is a useful biomarker to identify early CKD in non-azotaemic cats (Hall et al., 2016).

Early diagnosis of CKD is important because it has been suggested that early intervention, before clinical signs become evident, can significantly reduce the rate of progression of disease and increase longevity in affected cats (Hall et al., 2016; Geddes, 2019). However, when early CKD is detected, it can present a challenge to the form that these interventions should take, and at what point they should be implemented.

### Recommended initial approach for IRIS Stage 1

The recommended approach to a feline patient confirmed to have IRIS Stage 1 kidney disease is prompt measurements of UPC and blood pressure, if not already performed during diagnostic work-up. If both are within normal limits, current advice recommends monitoring the patient, at least every 6 to 12 months dependent on case, to check for azotaemia or development of proteinuria or hypertension. If UPC is higher than 0.4, treatment with telmisartan or benazepril as anti-proteinuric therapies should be started. If systolic blood pressure is found to be persistently over 160mmHg then anti-hypertensive treatment should be commenced with amlodipine or telmisartan (Geddes, 2019). The clinician is referred to the IRIS guidelines for further discussion of such treatments.

### Nutritional management for IRIS Stage 1 feline patients

While dietary intervention is regarded as a cornerstone of management of CKD, there is controversy over the timing of renal diet introduction and the degree of protein restriction required (Witzel, 2018; Geddes, 2019). There are a number of different commercially available renal diets in the UK, but the evidence base for recommendation of most therapeutic diets for CKD is centred on starting at IRIS Stage 2 of disease. Studies for clinical efficacy have been historically focused on cats from IRIS Stage 2 onwards, since it is only relatively recently that commercially available tools to identify IRIS Stage 1 have been available. Thus, optimal dietary management for IRIS Stage 1 is currently still unknown.

Part two of this series will focus on the approach to nutritional management of the early CKD patient.
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Dog bite wounds are regularly encountered in general practice, and the thorax is reported to be one of the most commonly bitten regions. Bites to the thoracic region have been associated with higher mortality rates than bites elsewhere. This is potentially due to the compliance of the canine and feline rib cage and the potential for damage to vital underlying structures. Dog bites can cause a unique combination of injuries in dogs and cats, including damage by crushing, tearing, avulsion and puncture.

The high elasticity of the skin in dogs and cats means that the external wound is not necessarily representative of the degree of underlying injury and the visible wound is often referred to as the “tip of the iceberg” (Figure 1). This is perhaps most significant in smaller dogs and cats, which can be grasped across the thorax by a larger dog. Crushing of the thorax can potentially cause rib fractures, lung lacerations and intercostal muscle avulsion, among other injuries, and these have all been reported in the absence of an externally visible wound (Scheepens et al., 2006). In addition to the injuries described, dog bite wounds are inoculated with bacteria from the attacking dog’s mouth, as well as contaminants from the patient’s own flora.

Physical examination
With the aforementioned concerns in mind, a thorough physical examination should be carried out, with particular attention being paid to respiratory rate, effort and sounds. The thoracic wall should be thoroughly inspected for paradoxical movement, likely representing avulsion of the intercostal musculature (pseudo-flail chest), with potential for concurrent rib fractures.

Stabilisation
Patient stabilisation should take priority and may require intravenous fluid therapy, analgesia and oxygen supplementation. Antimicrobial therapy should be started early and the author routinely uses an intravenous, broad-spectrum antibiotic such as amoxycillin-clavulanate or cefuroxime empirically, until culture and sensitivity results are available. If definitive treatment is delayed, a temporary protective dressing can be applied to the wound, to prevent further contamination. Point-of-care ultrasonography can be used to diagnose pleural effusion or pneumothorax, while ensuring minimal stress to the patient. Therapeutic thoracocentesis may be clinically indicated.

Treatment
Given the potential for underlying injury and bacterial contamination, surgical exploration of all bite wounds is strongly recommended, in spite of an innocuous looking external wound. This should be performed as soon as patient stability allows. Wound exploration should be performed under...
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general anaesthesia in case positive-pressure ventilation becomes necessary. This would occur in cases where the thoracic wall has been disrupted, allowing a communication between the pleural cavity and the subcutaneous space, or even with an external wound. If an open, penetrating wound is present (ie “sucking” chest wound), a closed thoracic cavity must be established using an occlusive dressing. Cellophane film or adhesive waterproof dressings can be wrapped around the thorax to facilitate this. If a closed thoracic cavity cannot be established, emergent anaesthesia (with positive pressure ventilation) and surgery is indicated.

Thoracic radiography is encouraged in all cases of thoracic bite wounds, ideally including inflated right lateral, left lateral and dorsoventral views. If available, computed tomography can be beneficial. Radiographic studies should be carefully evaluated for abnormalities including pneumothorax, pleural effusion, rib fractures, diaphragmatic rupture and lung contusions (Figure 2). Presence of these lesions should alert the clinician to potentially significant underlying injury including intra-thoracic damage. Clinicians should be aware that absence of radiographic abnormalities does not preclude underlying injury.

During clipping, the wound should be temporarily covered with a protective dressing or sterile lubricating gel. A generous area of surrounding skin should also be clipped as extension of the surgical wound or placement of drains may be necessary. Once clipped, the surrounding skin should undergo routine sterile preparation. If used, the protective dressing should then be removed and the wound itself flushed with a copious volume of sterile saline.

When draping, a wide area should be included in the sterile field, again in case an extended incision or drain placement is necessary. It is sometimes possible for small wounds to be excised en bloc within an elliptical incision. When damage is more extensive, the wound can be extended as necessary, ideally along tension lines. Exploration should be continued until the clinician is able to ascertain that injury does not extend further and any devitalised tissue is debrided. Additional injuries should be addressed as necessary.

Additional injuries may include lung lacerations, pseudo-flail chest, rib fracture and significant thoracic wall defects. Lung lacerations are generally managed with lung lobectomy and this can be performed using a stapling device or can be hand-sutured. Current understanding suggests that pseudo-flail chest in itself does not necessitate surgical repair (Olsen et al., 2002). If intercostal muscle damage is encountered during exploration, however, attempts can be made to repair the defect. This may require circumcostal sutures and repair of soft tissues. Similarly, in patients suffering a true flail segment (that is to say fracture of two adjacent ribs, with each rib being fractured in at least two places), a "basket-weave" suture pattern can be used to stabilise the free-floating segment; however, true flail chest is unlikely from bite wounds as it requires an impact trauma, such as may be encountered in a road traffic accident.
In cases where rib fracture results in a de-vascularised section of rib, that segment can be excised. Removal of up to four, or even six, adjacent ribs has been reported to be feasible in dogs, although it is likely to result in a significant thoracic wall defect. Adequate reconstruction of large thoracic wall defects may require recruitment of local muscle flaps, such as the latissimus dorsi, external abdominal oblique, transverse abdominis or part of the diaphragm.

Once definitive treatment has been carried out, the area should be flushed with a copious volume of sterile saline. The author recommends obtaining a swab for culture and sensitivity testing after final flushing. In all wounds, it is prudent to ensure a means of continued drainage, either via open wound management or placement of passive or active-suction drains.

Post-operative management

Overall, thoracic bite wounds have a reported mortality rate of 12.5 to 27 percent and post-operative complications have been associated with poorer outcome (Scheepens et al., 2006). Patients requiring thoracotomy have not been shown to have a worse outcome, so owners should not be discouraged from pursuing treatment based on level of surgical intervention required (Scheepens et al., 2006; Cabon et al., 2015; Frykfors von Hekkel and Halfacree, 2019).

Post-operatively, the patient should be closely monitored, particularly for signs of respiratory difficulty, tissue necrosis, wound infection, sepsis and pain. Antibiotic therapy should be continued throughout, based on culture and sensitivity results once available. Drains should typically be removed once drain fluid production has reduced and plateaued, as presence of a drain itself is likely to drive a degree of fluid production. In cases of open wound management, definitive surgery to close the area may be necessary.

Conclusions

- Assume a degree of underlying injury, until proven otherwise, and communicate this risk with the owners
- Thoracic radiography can be helpful in assessment of extent of injury
- All wounds should be explored, debrided and flushed and a sample obtained for bacterial culture and sensitivity testing
- Be prepared for more severe injury, including intra-thoracic damage. That means ensuring a wide clip and surgical field as well as being able to provide positive-pressure ventilation if necessary
- Be cognisant of post-operative complications including sepsis or delayed skin necrosis (which can occur several days post-bite) and communicate this risk with the owners

A full reference list is available on request.
The latest advice on wound management

From telemedicine to tilapia, what technologies and techniques are advancing wound healing?

G eorgie Hollis, founder of the Veterinary Wound Library, is passionate about wound management. She is an independent expert on healing and lectures across the UK and abroad in the small animal and equine fields. I asked Georgie about her thoughts on the latest advancements in veterinary wound care.

Can you see telemedicine being widely used in wound management?

Telemedicine from the Vet Wound Library point of view is vet-to-vet; we don’t do any client-to-vet. We provide a service where member vets and nurses are able to get help for a case when they have seen a patient and would like to know what to do. It’s very much a supportive role from start to finish.

Telemedicine sounds high tech, but it’s something that everybody is doing anyway – they’re using Google or ringing up the specialists informally. In that situation, it’s the people that dare to ask who get the answers. By providing a formal service, we standardise the help we give, but can also collate data that will help others in future.

Helping clinicians via telemedicine is just a relay to those who know the answers, and a means of giving people permission to ask. Our feedback tells us that through assisting with early decision making, we build their confidence and help reduce healing times and cost of care. At the end of the day, it’s about animal welfare and we want to do all we can to help everyone get the best possible outcome.

Is there any space for vet-to-client telemedicine in wound management cases?

I think it is inevitably going to happen to one extent or another. In terms of wound care, there is poor legislation on what can be used, so really anyone could set up an advisory service and recommend and supply products that may not meet VMD standards. This is particularly frustrating when cases require a multidisciplinary approach, where surgical repair is the most viable (and cost-effective) option, and where a whole range of factors and differential diagnoses may be responsible for persistent or chronic wounds.

In terms of client perceptions, it is unfortunate that many wounds can be costly to manage and Dr Facebook, home remedies, creams and potions may be used well before veterinary attention is sought. Confirmation bias tends to be an issue as many wounds will heal anyway; that’s why we developed the wound library – to support cases and capture the best practice outcomes to find out the most cost-effective routes to closure in the fastest time.

How can we prevent owners from trying to treat wounds themselves?

Sometimes people make up their own potions because they’ve read about it – that’s very much demonstrated with horse owners, who tend to share their favoured methods readily in the equine arena. We need to remind people that just because they invented it themselves, doesn’t mean it’s safe. I’ve often said that arsenic is natural, but is not something I want in my tea. Unfortunately, there is little to stop a company incorporating their favoured plant oils into a product and claiming natural benefits.

The VMD, which oversees the products used in this way, has its hands tied by its own rules. A CE mark (used to guarantee quality, safety and conformity) is used to validate wound products and medical devices for use in human healthcare. But in the veterinary sector, it isn’t required for wound dressings. So you can literally fill a tube with margarine and promote it as aiding healing by preventing moisture evaporation while soothing the area. Its components don’t need to be declared in full. This is something I find deeply troubling.
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Remember the uproar of the images of rabbits being used to test cosmetics? Yet those who happily experiment with highly sensitising essential oils (tea tree oil, for one) faithfully believe it to aid healing. It comes down to marketing and regulation.

The case is similar with medical devices that claim to influence physiological function positively with anecdotal data. It’s almost unbelievable that something with a plug on the end can be used on our pets with little or no regular calibration tests, safety testing or service plans. Unfortunately, it’s not only clients who fall for these products that claim to achieve wonders. They are rife in the veterinary world.

What is the one common practice in managing wounds that you would change?

Use of chlorhexidine! There is huge variation in the concentration and use of chlorhexidine and other antiseptics. It seems that people often confuse Hibiscrub and Hibitane, using them interchangeably when they are intended for different purposes and at specific dilutions. Approximating measures of antiseptics should be the new taboo.

I’ve caused a bit of a stir recently after I found out that the manufacturers of Hibiscrub are adamant that Hibiscrub (4 percent) is intended for use neat. That doesn’t happen in veterinary practice. A lot of people mix 50:50 and although as long as the contact time is sufficient that may be OK, there is a significant risk of resistance to Hibiscrub at levels less than 3 percent. I believe that new guidance needs to be set up for veterinary use.

Where could nurses be doing more in wound management?

Everywhere but surgery. Most of the tasks that are involved with wound management are best done by the vet nurse. We talk about “prepare, promote and protect” when we’re teaching. Prepare means getting the patient ready: admitting the patient, evaluating the wound, history taking, liaising with the client and preparing the wound so it is clean. That’s something nurses do really well. Good wound care is all about timing and having a vet nurse take responsibility for continuity of care and monitoring of the wound means that progress (or lack of it) can be acted upon quickly. In many of the wounds we assist with, we find that we are coaching through the phases of healing and once that wound gets to two weeks old and it’s granulating well, it is time to pass the case back to the surgeon for a decision on whether to close or continue with open wound management.

A large number of cases we see have been managed for many weeks, sometimes due to constraints on funding. Dressing it may be considered less costly than surgery. These are the cases we love to help early as we can often assist with decision making and nursing advice, helping clinicians to work well as a team and learn as they do. These cases that tend to be managed open for six weeks or more just to see how far the wound will close are the ones we find may have missed an opportunity to close earlier in the healing process.

Nurses are vital and really help the decision making; they help to choose the right wound dressings, enable continuity of care and play a huge role in education and encouraging client compliance to help avoid healing delay.

Do you have any advice for vets on how to get nurses more involved?

Nominate a wound nurse in the practice. If someone’s keen, whenever a wound case comes in, make sure they get a tap on the shoulder and they get to watch what happens. The nurses aren’t going to take the surgeon’s job away; they’re just going to make the outcomes a lot better.

What’s your opinion on manuka honey?

Ten years ago, I would ask if anybody used honey and one hand would go up. Now, everybody uses it and I’m trying to stop people using it on everything. Honey should only be used for the inflammatory stage of healing. It helps to clean the wound up and reduce bio-burn (bacteria and debris). Once the wound is granulating and it’s got a wound bed in it, the properties of honey can be detrimental because it’s quite acidic and has a high sugar content, which we’ve seen anecdotally can cause overgranulation. My tips are that it’s the yellow stuff for yellow wounds and clear for clean.

Do you have any recommendations for reducing antibiotic use in wound management?

Yes – wash it! We did about 200 audits as part of a wound course we ran from 2014 to 2018 and one of the key things that people didn’t do was wash wounds enough. They didn’t use enough volume and they didn’t use the right solution.

People would use a small solution of chlorhexidine as opposed to a large volume of lavage. It’s volume of solution that’s really important. For every hour earlier you wash a wound, you reduce the bacterial load by half. If the owner can’t get to you for six hours, wash the wound with warm water under a shower if it’s safe to do so.

There have been several instances of tilapia fish skin being used for wound management in the press. What are your thoughts on that method?

Tilapia skin has been used quite widely now and is often seen as a miracle product on the internet. It has been used in the UK a fair bit too, and the press loves these cases. It is quite a pretty skin, after all. But I feel it can be used more for show than as a miracle cure. It is just a xenograft – a collagen-rich substitute for skin that will be tolerated for long enough for the healing process to occur beneath. It’s waterproof, of course – that is handy – but it really is a technique that has been used for decades in many other forms.

It is a biological dressing and not a substitute for functional skin that patients may be able to supply in abundance themselves. Tilapia does have its place but its properties are not so unique; in fact, I’ve often joked that sausage skins could be used in the same way, given a similar preparation process to make them sterile. Wound care is a fascinating area; you never know what is going to be on the market next!
A look through the latest literature

Outcomes in 92 reconstruction procedures using subdermal plexus skin flaps
Coleen Jones and Victoria Lipscomb, Royal Veterinary College, Potters Bar

Subdermal plexus skin flaps, also known as local or random pattern flaps, are used to reconstruct skin defects when primary closure is not possible. These procedures are generally easier to perform than free skin grafts or axial pattern flaps. The authors describe the indications, complications and outcomes recorded in 64 canine and 20 feline procedures between 2000 and 2017. Major complications were reported in 14 percent and minor complications in 37 percent of cases. In 48 percent of cases, the outcome was considered excellent, while it was good in 36 percent, fair in 14 percent and poor in just 2 percent of those treated. The authors note that owners should be counselled about the likely need for additional visits and the costs associated with treatment for these post-operative complications.

Journal of the American Veterinary Medical Association, 255, 933-938

Risk of infection after different TPLO methods in larger dogs
Jayson Tuan and others, Fitzpatrick Referrals, Surrey

As a standard treatment for canine cranial cruciate ligament disease, tibial plate levelling osteotomy is one of the most frequently performed surgical procedures in veterinary practice. The authors compared the incidence of surgical site infections using three variations on this procedure: double locking plate and screw fixation, standard locking plate and screw fixation, or conventional non-locking plate and screw fixation. When used in 275 dogs weighing more than 50kg, there were no differences in the rate of wound site complications between the three groups.

Veterinary Surgery, 48, 1211-1217

Positive contrast radiography to identify synovial involvement in traumatic limb wounds
Helen Bryant and others, Royal Veterinary College, Potters Bar

Bacterial contamination of the synovia may occur following traumatic injuries to the limbs in horses. This can result in irreversible damage to the articular cartilage and other soft tissues within the joint. The authors used positive contrast radiography as a potential diagnostic aid in identifying cases in which there is communication between the wound site and the adjacent synovial compartment. Their findings show that positive contrast radiography is useful in investigating synovial infections in horses with limb wounds, particularly in cases where it is not possible to obtain synovial fluid samples for laboratory investigation.

Equine Veterinary Journal, 51, 20-23

Fluorescence biomodulation in the management of canine interdigital pyoderma
Andrea Marchegiani and others, University of Camerino, Italy

Canine interdigital pyoderma is a chronic inflammatory condition affecting the pedal skin. It may be associated with various underlying problems: allergy, adverse food reactions, endocrine disease, ectoparasites, etc, and will usually require long-term treatment with antibiotics and anti-inflammatory drugs. The authors examined the efficacy of fluorescence biomodulation as an adjunctive treatment in dogs receiving systemic antibiotics. By week three, there were significant improvements in lesion scores and immune responses in those dogs receiving this form of low-energy light therapy.

Veterinary Dermatology, 30, 371-e109
The role of surveillance in disease control

OV Conference delegates were told that detecting and reporting unusual cases is key to protecting the UK’s livestock.

The role of the practitioner
A lunchtime workshop, facilitated by Linda Smith and Gareth Hateley, discussed the role of the practitioner in surveillance and it surprised the group to discover that there are some 348 veterinary surgeons employed by the government, including 35 field officers. Some of their work focuses on providing information to veterinary surgeons in practice so that an effective network is maintained and developed, to identify and eliminate threats. Many false alarms are investigated but the clear message is that if you see something unusual, tell someone. Surveillance is not about numbers; one observation may be a vital factor. There is a list of over 40 large animal notifiable diseases, but not seen for over 100 years are Brucella melitensis, contagious bovine pleuropneumonia, epizootic lymphangitis, glanders, cattle plague and sheep pox.

New and emerging cattle diseases
Gareth enlarged on new and emerging cattle diseases in the main hall, recognising that there are known threats that are currently unknown, but also unknown threats that are unknown. A scanning surveillance network is accessible to 100 percent of farms in England and Wales. A risk assessment of any threat follows a detection alert involving vets, farmers, horizon scanning and the integration of data-sets with threat characterisation, utilising pathology with laboratory testing, farm visits and epidemiology. A human animal risk surveillance group is actively involved with the veterinary risk group and the four chief veterinary officers receive a risk assured monthly update.

Communicating a threat to decision makers for action by the agricultural industry or the government is essential. The monthly surveillance report and dashboards within UK Vet Gateway are important sources. Included in current concerns are summer scour (weaned calves with unexplained diarrhoea and weight loss), astrovirus (nervous disease akin to BSE), congenital bluetongue (present in Europe and causes abortions, weak calves and neuropathic lesions), udder cleft dermatitis (unknown cause probably related to udder confirmation) and the need for more understanding about Mycoplasma bovis.

African swine fever risk in the UK
Alastair George, of the APHA Veterinary Exotic and Notifiable Disease Unit, highlighted the threat of African swine fever to the UK pig industry. The disease has been detected in Belgium and has spread from Africa to Eastern Europe, Central Europe and Asia. Currently classified as a medium risk for the UK, there is no vaccine and slaughter is the recognised control option. Over the past five years, there have been two to five suspected cases per year. The tests for classical swine fever and African swine fever yield a result in one to two days, so suspect herds can be cleared quickly. Wild boar are considered responsible for spread of the disease, linked to soft ticks. Biosecurity at pig premises is considered essential and veterinary surgeons are reminded to engage with clients to emphasise the need for effective disease precautions.

Alasdair Macnab gave a hard-hitting account of lax biosecurity by veterinary surgeons in cattle practice. Over coffee, the head of a major practice indicated that as a result of the points made, he was reviewing the procedures of all the practice staff with the aim of eliminating the transfer of animal-related material from farm to vet, vet back to the practice and vet to another client. The topic is already generating considerable angst at practice level.

Brexit – where are we now?
Kulin Patel of the Veterinary Trade Directorate accepted the impossible task of explaining likely changes in legislation after Brexit. It is clear that much thought has been given to
the effect of the UK leaving but still complying with existing legislation developed by the EU-28. Exports to the EU are considered “work in progress” and any changes to export health certificates will be flagged up as a matter of urgency. Despite the planning, the speaker recognises that Brexit will continue to surprise and bring new challenges. It was explained by Arjen Brouwer, Course Director at APHA, that 47 Certification Support Officers (CSOs) have been authorised, with another 5 due and 10 in training. Free training places are still available. The officers support the OV-led teams by collecting information and evidence for export certification but the CSOs are not certifying officers. Initial reports are that the role of these officers is valued by OVs and depending on the political outcomes, the need for OV support is expected to grow substantially.

Bovine TB update

There were five significant presentations on bovine TB. Claire Wade, veterinary advisor for TB Policy, highlighted that, in England, on-farm actions are intended to be linked to slaughter compensation, a new Implementation Forum is being established and the TB Hub is having a makeover together with the TB Knowledge Exchange. From January 2020 herds within the High Risk Area will be tested six-monthly instead of annually. David Harris, veterinary advisor to the Welsh government, indicated that a triple test pass with validated tests is considered as a skin test pass and that persistent breakdown herds have high numbers of severe interpretation inconclusive reactors. Testing of badgers found dead and trapped has shown that around 7 percent are *M. bovis* positive. There has been a poor uptake by farmers of the Cymorth TB advisory visits and so, instead of opting in to the programme, a farmer will have to opt out. There are recognised issues with on-farm biosecurity and TB, and biosecurity requirement notices are being served to farmers.

Vivienne Mackinnon of APHA Northern Scotland pointed out that Scotland has few persistent breakdown herds, but imported cases do not count towards the 0.1 percent infected incidence. Pre- and post-movement testing is required for imports. Surveillance is risk based and 57 percent of herds are not tested. A farmer receives only £1 compensation for a positive animal that has been moved into a restricted herd. The plan is to involve more private vets to provide advice and support for farmers.

Sue Quinney of APHA’s Contract Management Team discussed the findings from the pilot study of Approved Tuberculin Testers, selected from outside the Defra animal health staff, that has operated since December 2018 in 11 veterinary practices. Each trainee has an approved veterinary supervisor and online training and tests 500 cattle in at least 10 different herds. A minimum of 80 skin reactions are read. Nine applicants have been authorised and an audit has shown that each has excellent skills in dealing with farmers, in handling cattle and with biosecurity. The pilot ends in February 2020 and then a decision will be made whether to initiate the programme more widely. Tenders for the new TB testing contract are due in April 2020, with the new contract starting in March 2021. No outstanding issues have been identified, and it is likely that the new contract will include non-veterinary surgeon approved tuberculin testers.

Ellie Brown, Veterinary Head of TB Policy Advice, gave an encouraging review of the use of novel TB tests. Defra spends a large proportion (80 percent) of the £4 million TB research funding on novel test development. A high predictive value (truly positive) is sought, incorporating high specificity and high prevalence. A DIVA test (one injection) to identify specific antigens not present or not expressed by BCG is ready to be field tested. Laboratory testing of lesions and enhancing the culture medium for non-visible lesions is improving the identification of *M. bovis* and other mycobacteria. Validation trials for 11 *M. bovis* antigens (Enferplex) are in progress in herds that are undergoing gamma interferon testing (persistent breakdown herds). Follow-up skin tests have shown no false positives.

The possibility outlined of bulk milk testing as a herd screening test and individual cow milk testing stimulated considerable discussion during and after the presentation. For veterinary surgeons in practice, to be able to routinely monitor TB in client herds and to separate out cows that are potentially infected, as with other diseases, is an exciting development. Validation testing would need to go beyond problem herds as quickly as possible as a strong potential is seen with unrestricted, but worried, clients. Compensated slaughter, initially, is thought only likely to take place following a skin test.

It was explained that test validation requires confirmation of disease freedom, with reproducibility and repeatability between different laboratories. Results would need to be able to stand up to legal challenge. The use of non-validated tests requires the written consent of the Secretary of State with the application procedure available on the APHA Vet Gateway. The speaker indicated that current procedures were finding most breakdown herds but within the programme these herds need to be better dealt with.
“We should forever be thankful for being vets”

It saddens me to read research suggesting that one in five vets would choose a different career given the chance. There is rarely a day that goes by that I do not feel that this is the best profession one could imagine. Caring for animals and their owners offers such opportunities to make the world a happier place, that we should forever be thankful for being vets, as far as I can see.

But maybe this is a question of how we approach life as a whole, not just veterinary medicine. The American poet Emily Dickinson mused “To live is so startling it leaves little time for anything else!” Most days I feel the same thing about our wonderful profession.

Perhaps I can share with you what my day held for me yesterday. I started at 8.30am with a brief service of morning prayer in our chapel at St John’s. I always find this a great way to focus before the day begins. By 9am I was at the vet school to hear a student’s presentation of her work on how zoos deal with ageing tigers in their collections. There was not much time to spare, for my first case was a dog with a longstanding corneal ulcer in a practice a fair few miles from Cambridge. I had been trying to treat this dog for a month, using diamond burr debridement but without success. The final option was a superficial keratectomy under general anaesthetic. Having almost exhausted the owner’s limited insurance cover with previous attempts to heal the ulcer, I offered to operate for £50. The dog’s own practice quoted £550 for hospitalisation and anaesthesia, so the owner moved to another practice that was, in this situation, prepared to match my fee and charge £50 for 10 minutes of anaesthesia to perform the surgery. The value of a happy owner and a healed animal are priceless though.

On to my next case of the day, which was a 15-minute drive away. This little Bichon had a cataract in one eye, but mere nuclear sclerosis in the other, and was able to see quite well. I advised doing nothing – benign neglect. The owner was almost in tears. She had been worried all week, nervous of how she could afford the cataract surgery which she thought I was bound to recommend, as the £3,000 she had spent on the cruciate surgery last year had left next to nothing in the kitty.

The chat I had with her left me rather late for my next call to an ageing dog with gradually failing vision. At the age of 15, though, the phacoemulsification surgery suggested by another referral practice was just, as far as I could see, an opportunity for a financial transfer from the owner’s wallet to that of the practice in its chrome and glass magnificence. We talked about how much of this dog’s problem was in the eye and how much in an ageing brain. A difficult but valuable conversation.

As I drove home, a phone call (hands-free of course!) alerted me to a case, which was quite a few miles away, of a dog I had previously treated for a keratitis which now was afflicted with an acutely painful eye. I was meant to be hosting pre-dinner drinks for the vets and medics matriculation dinner at St John’s but had just enough time to race to that emergency. Actually, by the time I had got there, “David’s Distance Healing Ministry” had worked its wonders and the dog was back to normal! I think the wind had blown something irritant into the eye and I told the owners I was much happier to come to a dog that was miraculously cured than one where they had been less concerned and the eye had deteriorated beyond repair. Not that I could make much money from that of course, but honestly is that our main concern? Of course not. Somehow as a profession we have got ourselves into a financial fix as far as I can see – but maybe that’s enough said!
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Dealing with welfare cases

BEVA has launched a new toolkit to guide vets acting as expert witnesses in welfare cases

Animal welfare is absolutely central to our role as veterinary surgeons. Indeed, in the UK, the new veterinary surgeon on becoming a member of our governing body must say an oath along the lines of: "Inasmuch as the privilege of membership of the Royal College of Veterinary Surgeons is about to be conferred upon me, I promise and solemnly declare that I will pursue the work of my profession with integrity and accept my responsibilities to the public, my clients, the profession and the Royal College of Veterinary Surgeons and that above all, my constant endeavour will be to ensure the health and welfare of animals committed to my care".

Throughout the Code of Professional Conduct, the RCVS states veterinary surgeons must make animal health and welfare their first consideration when attending to animals. So based on that it would be reasonable to assume that veterinary surgeons were experts in animal welfare. That may indeed be the case, but I wonder how many of us could either provide a succinct sentence or two on what animal welfare is or write for longer on the topic.

This difficulty may be because animal welfare lacks a succinct definition. The BVA has stated that animal welfare relates to both the physical health and mental well-being of the animal, as encapsulated by the five welfare needs:
- The need for a suitable environment
- The need for a suitable diet
- The need to be able to exhibit normal behaviour patterns
- The need to be housed with, or apart from, other animals
- The need to be protected from pain, suffering, injury and disease

For specific information on the welfare of the horse, the Code of Practice for the welfare of horses, ponies, donkeys and their hybrids is a really useful document.

Despite constantly considering equine welfare in our daily work as vets, when we become involved in welfare cases, once we have dealt with the immediate needs of the horse there is potential for confusion about next steps. Working with the various animal welfare organisations is an obvious and important course to take but it is apparent from my work as an equine claims consultant at Veterinary Defence Society that guidance is lacking.

There are many reasons for which we are contacted, but six main themes arise:
- Called out to a case without being warned is potential seizure and therefore expert witness scenario
- Called by the welfare organisation to examine a horse whose owner is a client
- Didn’t realise the case would go to court and now not wanting to give evidence in court
- Having to go to court and worried about cross examination (especially less experienced graduates)
- Considerations of whether a “seizure certificate” is warranted
- What to do when faced with a client who is causing unnecessary suffering

JONATHAN PYCOCK
PAST PRESIDENT, BEVA

Jonathan Pycock is an equine claims consultant for the Veterinary Defence Society and an equine reproduction expert. He is a past president of the British Equine Veterinary Association.
The RCVS Code of Professional Conduct sets out veterinary surgeons’ professional responsibilities. Supporting guidance provides further advice on the proper standards of professional practice. On occasions, the professional responsibilities in the code may conflict with each other and veterinary surgeons may be presented with a dilemma. In such situations, veterinary surgeons should balance the professional responsibilities, having regard first to animal welfare.

So, as a vet involved with a welfare case there are two important areas we must appreciate: our responsibilities with regard to client confidentiality and the difference between being a witness of fact and an expert witness.

Client confidentiality issues are well explained in the code and we see more confusion over the witness of fact/expert witness scenario.

A veterinary surgeon may be called as a witness of evidence of fact. This means the witness is being asked to tell the court what they personally saw, said or did. A witness of fact should not in ordinary circumstances be asked questions, or offer answers, which require the witness to venture an opinion on a fact in issue. A professional witness is one who, by reason of some direct professional involvement in the facts of a case, is able to give an account of those facts to the court – that is a witness of fact who is also professionally qualified.

An expert witness is a person who is qualified by their knowledge, experience or formal qualifications, to give an opinion to a court on a particular issue to assist the court.

An expert witness is a person who is qualified by their knowledge, experience or formal qualifications, to give an opinion to a court on a particular issue to assist the court.

Recognising these potential pitfalls and problems, BEVA has developed a one-stop shop for horse vets to help them navigate welfare cases with confidence. Launched in October, the practical Welfare Case Toolkit has been developed in conjunction with the RSPCA and includes a welfare workflow and quick download guides and welfare case forms.

The new Welfare Case Toolkit from BEVA gives you access to the information and resources you need even when you are on the road to support you in dealing with a welfare case.

The interactive welfare workflow provides a step-by-step guide to what happens when a vet is called upon to provide an opinion on the health and welfare of the animals involved. It has been produced in a mobile-friendly format or can be printed out and kept in the car. Supporting the workflow is a series of quick downloads, covering all aspects of the process.

The new Welfare Case Toolkit from BEVA can be accessed at: beva.org.uk/Resources-For-Vets-Practices/Clinical-Practice-Guidance/Welfare-guidance/Welfare-toolkit

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An expert witness is a person who is qualified by their knowledge, experience or formal qualifications, to give an opinion to a court on a particular issue to assist the court.

An expert witness is a person who is qualified by their knowledge, experience or formal qualifications, to give an opinion to a court on a particular issue to assist the court.

The over-riding duty of expert witnesses is to the court, even if they are called and paid for by one of the parties to the case.

Sometimes the need to appear as a professional witness results from having already made a statement or provided a certificate, in response to a request from a client, or an organisation such as the RSPCA. In responding to these requests, veterinary surgeons very often go beyond a solely factual account in an effort to be helpful, without considering the possible need to stand behind their opinion in the witness box, at a later date.
The future of telemedicine in equine practice

A debate at BEVA Congress 2019 raised concern over the use of telemedicine in the veterinary profession

Some equine practitioners appeared to have second thoughts on whether telemedicine will be an entirely benign influence on the veterinary profession’s future, after a session at BEVA Congress in Birmingham on 13 September 2019. A debate on the question “Telemedicine: friend or foe?” borrowed the format of the long-running BBC radio programme The Moral Maze, with advocates speaking for and against the proposition and then interrogating a panel of six witnesses.

Victoria Johnson, director of the radiology service VetCT, spoke on the value of a vet-to-vet service, allowing practitioners to consult with specialist radiologists on their conventional radiographs, MRI or CT images. "This has the advantages of putting two brains together; it reduces the error rate and improves outcomes. There are other benefits as well in providing CPD opportunities for general practitioners and improving their job satisfaction.”

The availability of expert advice can reduce the stress that a practitioner experiences in dealing with difficult cases, but the biggest beneficiaries are the animals themselves. "I am in absolutely no doubt that the ability to get a rapid report from a remote vet has saved lives," she said.

One witness, Huw Griffiths from the Liphook Equine Hospital, argued that using mobile technologies to seek advice from senior colleagues, within or outside the practice, can boost the confidence of inexperienced vets. Another, Marianna Biggi, head of VetCT’s equine service, noted that long-distance supervision has become an essential element in the training of veterinary radiology specialists.

Simon Staempfli, director of the Sussex Equine Hospital, believed that an increasing reliance on telemedicine technologies was inevitable in first opinion practice. The ability to download images and documents from home base has revolutionised the way that ambulatory clinicians operate over the past decade, he said.

It would not be long before consultations with clients via Skype (or similar platforms) become routine, he said. There were generational differences in attitudes to these technologies but millennials have grown up with them and will apply them to other professional tasks.

Patrick Pollock, senior lecturer in equine surgery at the Edinburgh veterinary school, argued that colleagues have little appreciation of the challenges facing vets in more remote parts of the country where veterinary services are only maintained through government support. "Relying on telemedicine in areas like the Highlands and Islands is not a choice, it is an imperative – and it would be a mistake to think that this hasn’t been happening for years," he said.

Jonathan Pycock, claims consultant with the Veterinary Defence Society, took a stand against this emerging consensus. "While these technologies do have many advantages, there will be a price to pay," he warned.

He was supported by David MacGuinness, president of Veterinary Ireland, who said he did not recognise the service described by Victoria as telemedicine: "It sounds like what we would call a second opinion," he said.

Instead, he was more concerned about veterinary professionals offering remote consultations with animal owners that aren’t regular clients, and issuing prescriptions without a proper physical examination. BVA President at the time, Simon Doherty, acknowledged the possibility of owners having consultations with a vet lying on the beach in a distant country was the worst-case scenario and a major concern for the profession’s regulatory bodies. He insisted that any consultation must take place under the aegis of an existing vet–client relationship.

Jonathan warned colleagues to be careful when asked, even by an established client, to examine an image taken on a mobile phone. "It is irrelevant whether you have charged for this; as soon as you have passed your professional opinion, it is possible that you will be held accountable.”

Huw suggested that looking at a phone image was something that he would be prepared to consider, but only to give guidance to a client that he knew well. Simon Staempfli said this would not be regarded in his practice as a chargeable service but when there is suitable software available to incorporate images into the clinical records then it will become chargeable.

Phil Cramp from the Hambleton Equine Clinic, North Yorkshire, wondered if the next step would be an “Uber vet” system in which horse owners might find a vet available to visit when their practitioner is not. But Jonathan warned against "cherry-picking" those aspects of telemedicine that a practitioner likes and disregarding the rest. Vets need to know more about the clinical, economic, legal and ethical aspects of new technology before adopting them.

His warnings clearly sowed seeds of doubt in many minds. While nearly 100 percent of respondents at the beginning believed that the technology would be the profession’s friend, another poll later produced a different result – 54 percent were more, and 46 percent less confident about the potential benefits. The issues raised in the debate will also provide plenty to mull over as part of the RCVS review of the “under our care” concept announced in June.
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The case for the reform of Companies House

When working for a corporate client, it’s important to know their financial viability

The work and practices of Companies House, the repository for all information on the majority of the UK’s companies and similar registered entities, is under review. A business is started in the UK every 75 seconds and we are home to five of the top ten fastest-growing businesses in Europe. Technological developments and increased reliance on information for credit and referencing purposes mean that what we access from Companies House is becoming ever more business-critical.

And for vets working for corporate rather than “retail” clients, knowing who the customer is will be central to getting paid. While retail clients pay cash, vets working for corporate clients will invariably be paid in arrears, and on invoice submission. They’re offering credit to clients making it critical to understand their financial viability. As a number of high-profile retail failures have shown, even the biggest of firms get into trouble. Many firms rely on information from Companies House to understand the viability of their clients; the problem is, at present, much of that information is not much better than a work of fiction, and there are four major areas for concern which need to be amended.

Accordingly, in May, the Department for Business Energy and Industrial Strategy issued a consultation about options to enhance the role of Companies House and increase the transparency of UK corporate entities. Responses to the proposals were required by 5 August 2019.

Knowing who is setting up, managing and controlling corporate entities

Most UK companies are legitimate; however, some are misused by international criminals and corrupt elites for money laundering. The government is proposing that individuals who have a key role in companies should have their identity verified. This would apply to company directors, People with Significant Control and those filing information.

Improving the accuracy and usability of data on the companies register

From 2015, almost all information at Companies House has been accessible online, free and without delay. However, there are cases of false information being filed, whether by accident or deliberately. These include fraudulent audit reports, where companies falsely claimed that their annual accounts had been audited by well-known audit firms.

There have been a series of proposed reforms that would deliver better quality information on the register – including extending the powers of Companies House to query and seek corroboration on information before it is entered on the register and making it easier to remove inaccurate information. In addition, the government has proposed improvements to the process and delivery of annual accounts to Companies House. The government intends to maintain the current approach to retaining records of dissolved companies on the register for 20 years from dissolution.

Protecting personal information

Not all personal information is made publicly available and the government has taken action to protect directors’ information. Nonetheless, company directors are a target for, among other things, identity theft.

The government has outlined how Companies House will store and control access to information, how personal information will be stored and accessed, and the circumstances under which it may be disclosed and to whom if its proposals are adopted. Under identity verification proposals, access to the register will be carefully managed, allowing only identified or authorised persons to file information. New processes are proposed for sensitive information to be protected. Proposals to allow directors some additional rights to suppress their information from public view have also been set out.

Information on the register should be of real, practical use to those who wish to find out information about those taking advantage of the privilege and protection of limited liability. At the same time, it is recognised that information on the register should not become a tool for abuse and so information of a sensitive personal nature will not be made publicly available.

Measures to deter abuse of corporate entities

The limited nature of cross checks between Companies House and other public and private sector bodies can
be abused by persons who report one set of information to Companies House and different information to other agencies and private sector bodies.

Companies House data on UK corporate bodies could be improved through cross checks against data held by other government and private sector bodies. The government wants to see the exchange of intelligence made easier in order to enable greater sophistication in identifying possible criminal behaviour. This will lead to faster identification of anomalies between data at Companies House and elsewhere. It will deliver a more effective link between different company records on the register and provide those searching the register with faster access to better information.

The proposals set out how Companies House will work with other agencies to ensure compliance and take action against offenders. It also proposes additional measures to further deter abuse of UK-registered corporate entities.

The routine cross-checking of information against external data sets and powers to obtain feedback from obliged entities on discrepancies identified is proposed alongside adopting a new risk-based approach to the sharing of intelligence with law enforcement agencies and requiring companies to provide details of their bank account.

Implementation
If implemented in full, this would amount to the most significant reform of the UK’s company registration framework since a register was first introduced in 1844 and go to the core of the Companies Act. There are significant implications for Companies House’s operating model and approach. All the services it provides will need to be modernised and transformed to improve its service to customers.

There will be an impact on the fees levied by Companies House, though the government fully expects them to remain very low by international standards.

On completion of the programme Companies House will be a truly digital organisation, inside and out; its services will be simple and easy to use, allowing customers to interact with it using the latest technology. It will be better able to respond to broader challenges and adapt to changing needs. This, in turn, will mean Companies House is able to better support wider government policy on corporate transparency and tackling financial crime.

As they say, it is always better to aim for the stars. Making the UK a better, safer place to do business is an excellent and worthwhile ambition; the hope has to be that the watchdogs who will be manning the fort at Companies House will not be toothless and will have the wherewithal to help keep the majority safe.
A well-made annual marketing plan will help you to capitalise on those parts of your business that have maximum impact in growing revenues and promoting your brand. Creating a marketing calendar allows all your staff to know what you’re doing at any time, and creates a framework to follow to ensure that everyone is aligned and key milestones are acted upon. With a plan in place you’ll have a blueprint for success that will help you to take your business to the next level. In short – you need a plan!

Right, where do I begin?

Your marketing plan should actually be more of a strategic calendar, with key dates marked for the planning stages and the execution stages of each marketing action you want to perform over the financial year.

It should take you a morning or a day to plan a calendar that you can follow for the upcoming year. This will be time very well spent, as this is a very important and profitable process for you to undertake for your business. Following a marketing plan means putting an end to costly and unsuccessful reactionary promotions and instead gives you a clear and conscious strategy to free up your time.

Your annual marketing calendar should focus on a mix of different formats, including: clinic promotions, social media, local promotions and adverts, SEO, Google My Business and internet presence and staff-facing marketing and events.

Clinic promotions

These are the number one way to drive revenues and new customers to your clinic. Arguably the best promotions for driving revenues are around things like dentals, neutering, puppies, kittens and senior pets. However, it always comes down to what staff at your practice prefer doing: promotions that you personally enjoy running will always resonate more with staff and therefore with clients.

Try to ensure that you run season-specific promotions; for instance, flea and worm awareness promotions are best run in spring when parasites are a tangible issue.

Some practices want to do a new offer each month, but experience has shown that the ideal length to run a clinic promotion is two or three months, as it often takes a few weeks after the start of a new offer for your staff to acquaint themselves with a promotion, and for clients to organise themselves to come in.

Get social

You should make a separate social media calendar to support your clinic marketing, with a good mix between useful information about the current clinic promotions, alongside your usual features. Ideally, you’ll create a social media calendar with a fair bit of granular detail as to the exact timings and topics you will be talking about each month in the year ahead, as this will make it easier for your team to plan and create some killer content.

Focus on local

Make sure to have local marketing events planned well in advance on your calendar. Try to agree to run at least one special event day per year – summer holidays are a good time to do these. This could be a dog show in the local park or a practice open day with fun games for everyone for example.

Don’t forget your team

Your brand is nothing without your team – so make sure that a key part of your marketing plan involves some interesting learning events and fun days throughout the year to keep your team happy and on board with living and breathing your brand on a daily basis.

Plan for success

The most important thing about a marketing plan is measuring your success. Once each promotion is over, you need to go into your practice management software and calculate exactly how many more procedures you did in comparison to the same months the year previously. You should be aiming for an increase of a minimum of 10 percent on the previous year. Any growth over this amount means that your promotion has really caught the public’s attention, and you should consider repeating it again at the same time next year.

Make sure you report any marketing successes to your staff and recognise and encourage their efforts to help drive promotions, and don’t forget that a marketing plan is an ongoing thing that should be tweaked and improved upon every year as you find the promotions and strategies that really work for you and your clinic.
Cyber-attacks: the virtual way to steal, threaten & vandalise

In 2019 alone, more than half of UK businesses have suffered a cyber-attack.¹

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M y psychologist friend would have told me to start with: “This article is highly sensitive – DO NOT READ ANY FURTHER”. I have opted for “This article is important – please read it!” A visit to his house is a journey into these sorts of psychological games. The toilet has no light in it, so visitors need to decide to be bold and pee with the door open to let in light, or be shy and sit in the dark. There is a box with “do not open this box” in red letters on it, and what looks like a fire safety device with the words: “break glass in case of existential crisis”. This is a slight digression but this month’s subject is about complaints and the link to my friend is that recently he was facing an investigation. One of his clients committed suicide and he was the last professional to speak to him before he died. That puts some of our worries into context.

Receiving a complaint is something we have to face at work. It is never pleasant and takes a lot of time to deal with. With ready access to online “advice”, disgruntled clients can quickly work out how to write a very unpleasant and threatening letter to a vet practice. They also can quickly find the route to the RCVS.

If you google “how to complain about a vet” you will find high up on the list an interesting article from Which? magazine which approaches it from the point of view of the Consumer Rights Act. This was a new and unfamiliar way that we could be complained about. I think our practice’s last complaint may have been copied and pasted from some of its text!

We are all familiar and terrified of the RCVS complaints department, and the looming spectre of that has a background effect on the way many vets practise and work. It is not a very healthy mindset, but essential for survival. As an internet search for complaining about vets is skewed towards the RCVS, I imagine that their workload has mushroomed.

The point of this article is to raise awareness of the Veterinary Client Mediation Service (VCMS). This is an alternative dispute resolution (ADR) service delivered by a company called Nockolds Solicitors. It is funded by the RCVS and is free to clients and vets to use. Their website, vetmediation.co.uk, is very useful. A short quote gives an idea of the service: “In all areas of our society, despite our best efforts, complaints do arise, and the veterinary sector is no different… When you feel your practice has responded fully to a complaint but the client remains dissatisfied, you feel that you have reached an impasse. Clients may seek redress from the RCVS or civil courts. These routes can be ineffective, contentious and disproportionate which can further aggravate the client and have a detrimental impact on the reputation of the veterinary industry.”

Clients can be referred there by a practice, with their consent. The process is detailed fully on their website but is physically done via “shuttle conversations” by the mediators between the client and practice. The two are never on the same line together.

Many clients will not be happy with a meeting at the practice, and some do not want to deal with the practice at all for a complaint and immediately take to the internet and then directly to the RCVS or solicitors. In communication with vets who have been on the receiving end of the RCVS complaints process it would seem that once a complaint has been received, the RCVS does not ask that the client exhausts the practice’s own complaints process first. Most regulators (see for example Ofcom) will insist that the service provider’s own complaints process is exhausted before turning to them. The RCVS seems to take up every complaint straight away without this step. If you can make clients aware of the VCMS at an early opportunity, it may save you that. I can also recommend the VDS handout on complaints process as a framework for dealing with complaints.

Every sector has complaints and I think it helps to remember that. As vets we are not singled out. Teachers are vulnerable to spurious allegations from pupils and doctors from patients with ambulance-chasing lawyers looking for very high financial rewards. Everyone – from architects to waitresses – has to deal with complaints. My daughter has a waitressing job and, at the age of 15, was the only member of staff who a particularly charming table of guests could not reduce to tears with their constant complaining.

Remember, it is (nearly always) not you; it’s them.

Remember, it is (nearly always) not you; it’s them. Once they’ve pressed “send” on their stroppy email they will be off to a restaurant to make waitresses cry. Don’t let them grind you down.
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