Pain management
What are the best options for managing pain in the horse?

Plus
IN FOCUS Pain management and pig productivity / EVENTS Are opinions on telemedicine changing? / ANIMAL WELFARE Identifying priority welfare issues / SUSTAINABILITY Is it time for vets to adopt a bigger role in sustainability? / DERMATOLOGY Demodicosis in the hamster

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I am sorry to announce that I will soon be stepping down as editor of *Veterinary Practice* magazine. I don't think you'll blame me when I explain that I'm off to the Caribbean, where I'll be joining my partner in Montserrat and moving back into the freelance editorial world. This announcement is coming a little early (I still have a few issues to go!) because we are, of course, looking for the right person to take over the reins. If you are a keen editor who knows and loves the veterinary profession, please do apply for the role; details can be found on page 10.

In this issue, read reports on recent veterinary events, including BSAVA Congress and VetsSouth. Also check out an interesting piece on the advantages of incorporating mentoring into an international charity's work, and find out how a Delphi study is helping to prioritise animal welfare issues in the UK.

The small animal nutrition column covers the difficulties of feline lower urinary tract disease; we have a piece on feline hypertension by Sarah Caney and a focus on hamsters with demodicosis for David Grant’s dermatology column.

It was fantastic to see the release of a sustainability position statement from the BVA in April. Results of the most recent Voice of the Veterinary Profession survey showed that the majority of vets would like to be more active in pushing the sustainability agenda. The statement details the roles that vets can play, and we interviewed Simon Doherty to find out more about how the profession can drive positive change in this area. The interview marks the first installment of a new sustainability column that will appear regularly in *Veterinary Practice* magazine.

In the large animal section, Richard Gard continues the conversation by asking what it means to be a sustainable large animal practice.

Our focus for May is pain management; we have two great articles on the topic – the first looking at the role of pharmacogenetics in pain management in companion animals and the second looking at the approach to managing pain in pigs. Our equine feature by Jamie Prutton follows the same theme, analysing the pros and cons of various pain management techniques used in horses.

Articles in practice management cover a range of topics this month, from hiring employees with criminal convictions to pursuing debt recovery and unpaid fees.

*We interviewed Simon Doherty to find out more about how vets can drive positive change*
Treatment of feline lower urinary tract disease will depend on the underlying cause and should be targeted accordingly.

What are the current recommendations for identifying and managing hypertension?

How results of a recent study will help to prioritise animal welfare issues in the UK using expert consensus.

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Supporting sustainability as a profession

The BVA has highlighted the key role that vets have to play in furthering the sustainable animal agriculture agenda in the UK. In its latest Voice of the Veterinary Profession survey, 89 percent of vets said that they would like to play a more active role in this area.

The new BVA position on UK sustainable animal agriculture highlights the integral role of vets in animal agriculture and provides an action plan for vets to take measures in their day-to-day lives. It says that the veterinary profession and those in the farming industry should work closely to ensure that animal health and welfare are front of mind in efforts to improve sustainability.

The position recognises that farming animals can result in significant environmental challenges and recommends that to reduce impact on the environment, changes to the way in which we farm animals for food must be made. Due to the integral part that vets play in animal agriculture and the food sector, they are well placed to advise and influence sustainable husbandry practices and management systems from farm to fork, with a view to better protect and conserve natural resources, wild species and biodiversity.

In its recommendations, the BVA says that any changes, new technologies or innovative methods used to achieve a more sustainable practice must not compromise animal health or welfare. To be considered sustainable, agricultural systems must provide for the five animal welfare needs and both the veterinary profession and other key stakeholders would contribute to making sure that farm animals have a good life and humane death as part of that agenda.

The position was born out of the BVA’s Animal Welfare Strategy and Vet Futures initiative. As part of this, the BVA has provided an action plan. This provides top tips on how vets can contribute to sustainable animal agriculture at an individual, practice and association level. The resource details action points such as creating plans to help control disease and increase efficiency and welfare on the farm, using tools to monitor and help reduce the use of antibiotics, advising on mutilations based on the “3Rs” (replacement, reduction, refinement) and promoting higher welfare systems.

As an integral part of the One Health initiative, vets, alongside other stakeholders, can advise on the use of natural resources, management of antimicrobial resistance, soil health, water quality and habitat provision for wild species to better protect the environment that both humans and animals share. Within the context of One Health, the BVA says that vets should promote the benefits of sustainable consumption of animal products and following a “Less and Better” approach.

It recognises that fewer, healthier and happier animals with better productivity have a lower environmental impact and supports the purchase of higher health and welfare products (where possible) to support sustainability goals and have a positive impact on animal welfare.

BVA President, Simon Doherty, said: “Vets are an integral part of the agriculture and food sector, providing preventive healthcare and treatment for livestock, carrying out disease surveillance, promoting good biodiversity and high animal welfare standards. They are well placed to advise on sustainable systems and husbandry practice and collaborate with their colleagues in the agricultural industry to work towards a more sustainable future for farming.”

New president for BSAVA

Susan Paterson, RCVS and European Specialist in Veterinary Dermatology, has been appointed President of the BSAVA for 2019/2020. She took over the role from Philip Lhermette at the end of BSAVA Congress in April 2019, and Ian Ramsey has become Vice President.

Qualifying from Cambridge in 1984, Sue spent some time in mixed practice in Devon before taking her certificate and then British and European diplomas in veterinary dermatology. She has been an RCVS and European Specialist for more than 20 years. She has recently been elected as a Fellow of the RCVS for meritorious contributions to clinical practice, is an elected member of the RCVS Council and is the Senior Vice President of the European Society of Veterinary Dermatology.

Sue is the Veterinary Director of two companies: Veterinary Dermatological, a manufacturer of a range of veterinary dermatology supplements, and Virtual Vet Derms, a veterinary telemedicine company. She has published seven text books as well as writing numerous peer reviewed articles and contributing chapters to both small animal and equine text books. She lectures extensively in Europe and America.

During her presidency, Sue intends to consolidate everything she believes to be great about the Association.
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Tickets are now available for VetsNorth 2019, which will be taking place on 12 and 13 June 2019 at the Manchester Metropolitan University Business School. The VetsNorth conference programme is designed to equip delegates with in-depth knowledge and practice advice from a variety of areas within small animal medicine, small animal surgery and emergency and critical care nursing. Running across both days of the event, the conference programme provides great value, high quality CPD in a relaxed environment with plenty of opportunity for discussion and networking to enable all delegates to get the most out of their visit.

Each lecture is presented by a world-renowned speaker with extensive knowledge in their field, ensuring that delegates are in the best hands regarding the latest insight and cutting-edge procedures, which could help to enhance practice life. Delegates will also benefit from hearing presentations about real-life cases and will have the opportunity to ask for advice on specific practice scenarios which could strongly benefit future practice performance.

Those who visit VetsNorth 2019 will have the chance to converse with big names from across the veterinary community. Following the extremely popular panel session at VetsSouth, the presidents of the BSAVA and the BVNA will be returning to participate in an interactive Q&A panel to discuss “Hot topics facing the veterinary industry today”. Throughout the course of the event, delegates will have the option of writing down their questions or queries which will then be addressed throughout the discussion. Other key speakers from across the profession include Emma Milne, Carolyne Crowe, Bob Partridge, David Williams and Georgie Hollis.

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The winners of the Ceva Animal Welfare Awards 2019 were announced in a ceremony at the Birmingham Conference and Events Centre, following a record-breaking number of nominations for the third consecutive year.

The awards were hosted by TV presenter and animal lover Matt Baker and renowned retired veterinary surgeon Chris Laurence who put his name to the Vet of the Year Award. They recognise the achievements of remarkable people from the farming, veterinary and charity industries, who go beyond the call of duty to better the lives of animals around the world. The ceremony saw praise bestowed on all the shortlisted nominees and winners were announced across eight categories. A panel of industry professionals chaired by Chris Laurence selected the shortlisted individuals and groups and the ultimate winners.

At the ceremony, one individual was given special recognition. The Outstanding Contribution to Animal Welfare Award was presented to Jacky Reid, Honorary Senior Research Fellow at the University of Glasgow and CEO of the innovative research company, NewMetrica. Her work at the University of Glasgow and as part of NewMetrica is truly innovative and widely respected and she works tirelessly to broaden its reach for the benefit of the welfare of animals.

Winners of the Ceva Animal Welfare Awards 2019 are:

**Chris Laurence Vet of the Year Award in association with Vet Record**
Hannah Capon, Canine Arthritis Management

**Vet Nurse of the Year Award in association with Agria Pet Insurance**
Rachel Wright, TOLFA

**Charity Team of the Year Award in association with PDSA**
Ebony Horse Club, Brixton

**Charitable Contribution of the Year Award in association with Blue Cross**
Fiona Gammell, Wicklow Animal Welfare

**Farmer of the Year Award in association with RABI**
David Finlay, Rainton Farm, Castle Douglas

**Farm Educator of the Year Award in association with NADIS**
James Griffiths, Taynton Court Farm, Gloucester

**International Cat Care Welfare of the Year Award**
Ian MacFarlaine, chief inspector of SPCA in Bermuda
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Concern over “anti-vax” sentiment for pets

Vets are concerned that scepticism about vaccination is creeping over from human health into pet care as new statistics show that 98 percent of vets have been questioned by their clients on the need for vaccination.

Well-meaning owners may be putting their animals at risk by relying on vaccination information gleaned from websites and social media groups, according to new statistics from the BVA, released ahead of World Veterinary Day on 27 April 2019. This year’s World Veterinary Day theme was vaccination and BVA is reminding pet owners of the vital role vaccination plays in protecting the health of animals across the UK.

Of the vets who had been questioned, 95 percent said that their clients’ questions are influenced by their own internet research. And 90 percent of those felt that clients were finding their information about vaccinations mainly from non-veterinary sources. Commenting on these recent figures from the Voice of the Veterinary Profession survey, BVA Junior Vice President Daniella Dos Santos said: “Vets always welcome questions from their clients. However, it’s concerning that almost every companion animal vet has been questioned on the need for vaccination and that vets feel this is so strongly influenced by what their clients read on non-veterinary websites.”

Social media sites are starting to address these issues in human health, with Instagram announcing last month that it will block “anti-vax” hashtags in an attempt to stem the sharing of medical misinformation on its platform. But dozens of sites and social media groups dedicated to discussing these theories remain and 79 percent of vets say that it has become more common for their clients to question the need for vaccinations.

To counter the rise of misleading information available online, the BVA is encouraging vet practices to proactively discuss the importance of preventive healthcare, including vaccinations, with clients. The WSAVA guidelines for vets and owners provide evidence-based information, which may help with client concerns and discussion.

Calls to boost pre-purchase consultations

The BVA, Animal Welfare Foundation (AWF) and RSPCA are urging companion animal vets to promote pre-purchase consultations to encourage responsible puppy buying decisions among both current clients and prospective owners.

The call comes as figures from the latest BVA’s Voice of the Veterinary Profession surveys, released during National Pet Month (1 April to 6 May 2019), show that while awareness of The Puppy Contract among companion animal vets has almost doubled since 2015 (from 29 percent to 56 percent), most vets claim that none or only a very small number of their clients who have recently bought puppies have used the contract. Among vets who are aware of The Puppy Contract, this proportion of clients is estimated to be only around 2.5 percent.

The survey revealed that a vast majority (85 percent) of vets agree that using The Puppy Contract benefits and informs owners, and one in five recommend it to clients at least sometimes. But of the 56 percent of companion animal vets aware of The Puppy Contract, around half said that clients did not come to them for advice on buying a puppy, so the opportunity to recommend the contract did not arise. Among the rest, the extent to which they recommended the contract varies, with only 15 percent recommending it always or most of the time.

The Puppy Contract was launched in 2012 as a one-stop guide that helps prospective buyers navigate the steps leading up to welcoming a puppy home. It includes a 10-step guide to getting a puppy, such as considering which type of dog is most suited to a buyer’s situation, and all the right questions to ask the breeder about socialisation, vaccination, microchipping and health tests.

For more information and to download The Puppy Contract, see: puppycontract.org.uk
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UK listed status to assure animal and animal product movements in a no-deal Brexit

The BVA welcomed the 10 April announcement that EU Member States have agreed the UK’s listed status application after it met the animal health and biosecurity assurances required for a third country to export live animals and animal products.

Securing listed status will mean that the UK will be able to export animal products and most live animals to the EU in the event of a no-deal Brexit from day one. Vets and businesses which import live animals and animal products will also continue to have access to TRACES (Trade Control and Expert System), a web-based veterinarian certification tool, until later in the year.

Under third country listed status, veterinary certification will still be required for all exports and imports and, under a no-deal Brexit, the UK would see a significant increase in the volume of certification.

The announcement does not cover pet travel. Under a no-deal Brexit, pet owners will need to meet the additional testing and certification requirements to travel with their cats, dogs and ferrets to the EU.

Ceva launches feline hypertension initiatives

Ceva Animal Health is running Feline Hypertension Month for the second consecutive year in May 2019 to raise awareness of hypertension and improve the detection and management of high blood pressure in cats.

As part of the campaign, veterinary surgeons are being urged to measure their feline patients’ blood pressure from seven years of age and above, as recommended by ISFM (International Society of Feline Medicine).

The company will continue its Mercury Challenge throughout 2019 in a bid to increase veterinary professionals’ confidence in measuring blood pressure and identifying feline hypertension.

Since June last year, 128 practices and over 1,000 cats have participated in the challenge. It is quick and easy to take part and veterinary professionals can register via the Mercury Challenge website. Participating practices will be given the opportunity to win diagnostic tools to help them diagnose feline hypertension.

Known as the "silent killer" because there are no early warning signs, feline hypertension is common with an estimated incidence risk of one in five cats from nine years old. High blood pressure can cause target organ damage to vulnerable organs including the eyes, kidneys, heart and brain. A simple blood pressure assessment can help identify feline hypertension and, with treatment, the risk of target organ damage is reduced.

To register, go to: mercury-challenge.ceva.com

Join the world’s equine vet community at BEVA Congress this year

Registration is now open and the full scientific programme is online for Europe’s largest equine veterinary conference, which takes place from 11 to 14 September 2019.

BEVA Congress, to be held at the ICC Birmingham, is the ultimate educational, knowledge sharing and networking event for the equine veterinary profession, designed by vets for vets. More than 1,200 equine vets and veterinary nurses, more than 140 world-renowned specialist speakers and more than 100 exhibitors will be getting together from around the globe for more than 90 hours of high quality CPD lectures, workshops and practicals. Veterinary industry leaders will be showcasing their wares in the vibrant exhibition hall and there will be a veritable smorgasbord of outstanding socials.

The programme runs across six streams, providing highly engaging and inspiring CPD with sessions to suit equine vets and mixed practitioners at any stage in their career. Vet nurses can also enjoy specific lectures focused on their areas of expertise and a separate extensive clinical research programme will examine the latest in equine veterinary science.

A full day of Congress will be devoted to keeping the sports horse on the road. The session will bring together leading vets, farriers and physiotherapists including Andy Bathe, Sue Dyson, Rachel Murray, Pat Reilly, Haydn Price, Victoria Spalding and Russell Guire.

Some of the biggest names in veterinary medicine, Valeria Busoni, Myra Barrett, Mads Kristoffersen, Martin Waselau and Dean Richardson, will be contributing to a session on advancing diagnostics in stifle lameness. In the laminitis session an equally big name, Andrew van Eps, will be contributing the latest on the management of this debilitating disease.

This year Congress has the added prestige of being selected to host the Federation of European Equine Veterinary Associations (FEEVA) General Assembly.

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Are opinions on telemedicine changing?

At BSAVA Congress, a panel discussed the drivers behind digital healthcare innovation in the veterinary world.

Telemedicine was once again brought to the forefront in the Big Issues stream at BSAVA Congress on 5 April 2019. Chair of the RCVS Standards Committee, Kate Richards; founder and CEO of veterinary care app Gula, Thom Jenkins; investor and former Chief Marketing Officer of Babylon Health, Richard Guest; and BVA President, Simon Doherty, made up the diverse panel tasked with navigating the complex world of digital patient care.

The journey so far

The availability of information has changed and the RCVS Standards Committee is looking at vet-to-client telemedicine and how it might best be regulated. Kate provided background to the session’s topics with an update on progress that has been made by the RCVS. There are two fundamental principles, she said: we must not compromise animal health and welfare and we must not compromise public safety.

The RCVS Strategic Plan describes an ambition to become a Royal College with leadership and innovation at its heart, and support this creatively and with determination. And so, after much deliberation, the Standards Committee decided that the key issue going forward was whether to change supporting guidance regarding the term “under care”. Responses have been very diverse, and Kate explained that this demonstrates the complexity of what we’re trying to deal with.

“To work out what the risks of telemedicine are, we proposed a trial for discussion at Council.” This discussion took place in November 2018. There were two recommendations: firstly, to amend the guidance to make it clearer and secondly, to undertake a time-limited trial managed within strict boundaries. Council’s opinions were diverse, the discussion was heated and there were concerns, so it came back to the Standards Committee.

Several issues were raised for further consideration:

- The 24/7 requirements
- The impact on antimicrobial resistance
- Whether more species should be included
- Potential wider impacts of “under care”
- The need for wider stakeholder involvement
- More details on trial design and administration

The conversation is ongoing and the main challenge, Kate said, is trying to navigate the RCVS code of conduct, regulators’ code and the RCVS charter 2015 with a profession with very divergent views. “We want to facilitate and enable professional judgement,” she said. Is this an opportunity to be more inclusive and reach out to those owners who are not registered with a vet? And to reach those who are registered with a vet but don’t always go when they should?

Kate used the term “technological myopia” to describe our tendency to underestimate the potential of tomorrow’s applications by evaluating them in terms of today’s technology. She reminded us of Richard Susskind’s research; when asked if the professions need to change, every profession said something along the lines of “Yes, professions do need to change, but it won’t work for this profession.”

To conclude, she asked the audience to consider whether we can afford not to “square the circle”. And here, to consider “afford” not just in terms of cost, but in terms of maintaining our regulatory status and upholding animal health and welfare. “It’s about public safety interest, it’s about proper standards and conduct of welfare.”

A view from the innovators

Thom Jenkins is the founder of an app, Gula, that offers veterinary video consultations to pet owners. Before starting Gula, the team surveyed over 200 pet owners, the results of which provided two resounding conclusions: people love their pets, but they don’t always love going to the vet. We often think about cost in these discussions, but interestingly, only 5 percent of respondents to that survey mentioned cost as a barrier. It seems that perhaps the barriers are in the effort it takes to undertake a visit to the vet clinic.

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book appointment, get pet to vet, wait at reception, nurse check, consultation, communicate next steps, check out and payment, follow up, client feedback… "Most clinics have a website; many have digital appointment booking, digital pharmacies, email, sms and push notifications. But fundamentally, the experience still looks very similar." The experience can be very effortful for the client who thinks their dog has a lump, but it turns out it's a nipple, Thom said. "Telemedicine can provide a curated, tailored experience for each pet and owner, instead of shunting them down the same customer corridor.”

Why should we bother? Recent research indicates that vets currently only address 8 percent of all pet issues, Thom said. And rarely will somebody book an appointment at the vets in the early stages of a problem. "With telemedicine, the hope is that owners will come in earlier because we are reducing the barriers. It will be good for pets, owners, vets and clinics.” Thom doesn’t expect telemedicine to replace veterinary practices, but rather, augment them and allow better access to expertise.

It was interesting to hear the data that have accrued from the early stage of Gula’s launch. Most pets have more than one caretaker, but often it is the female caretaker that brings a pet into a practice. It was interesting then, to hear that 55 percent of callers on the Gula app have been male. Telemedicine may be engaging a different group of owners, Thom suggested.

**Insight from human health**

Richard Guest continued the conversation with his view from the human healthcare perspective; Richard helped to launch the NHS “GP at hand” service in conjunction with Babylon Health. In children down to about four to five years of age, the problem was resolved through telemedicine 60 percent of the time. With babies, because things can go downhill quite fast, the telemedicine service is often used as reassurance for parents, he said, suggesting that users like to be reassured either that their baby is fine or that they do need to book an appointment at a practice.

We can compare this to the early data from Gula: 50 percent of calls resulted in a non-emergency recommendation to see a vet; 40 percent of issues were resolved on the call; and 10 percent were genuine emergencies with recommendations to go and see a vet immediately.

In terms of improving the client journey for human healthcare, prescriptions were available within hours and could be picked up from any pharmacy; it was designed to be very convenient. And as you would expect, prescriptions were banded depending on the medication.

One big benefit was that young female GPs who had just had babies found it very useful to be able to work remotely and flexibly. These doctors could manage a four-hour stint on telemedicine when they wouldn’t have been able to rejoin a surgery, so it adds capacity back into the system. Given the retention issues in the veterinary profession, this would surely be a benefit in our profession too – perhaps helping to ease the transition from maternity leave back into practice.

Another benefit is that video appointments can be recorded and are easily accessible by the patient and doctor – which is useful for both the patient (who may forget what has been said) and the doctor (particularly if there is a complaint about what happened in that consult).

The big question when developing the human healthcare app was, from a clinical point of view, "is it safe?” Richard believes that the right question to be asking is "is it safer than what normally happens?”

"Practically nothing is totally safe – including not seeing the doctor,” he said.

**Food for thought**

Simon Doherty, President of the BVA, added some food for thought in his contribution to the session. The Veterinary Surgeons Act does not provide a clear definition of "under our care”. There is a clear concept, but that is changing, he said. James Herriot had a very hands-on approach with the animals under his care, but consider aquaculture and the poultry industry in the current day. "We don’t lay our hands on all these animals. Fish farms have a huge amount of video technology, robots and sensors that give us a lot of real-time information, and it’s going that way with poultry.”

Richard told delegates that the NHS has a long-term plan which dictates that there will be a new patient right to web and video consultations by 2021. There is an expectation arriving that what’s happening in human health should be available in animal health and veterinary medicine. Simon said, but the question we should start asking ourselves is: are the drivers slightly different? We’ve got non-vocal patients. "That model of reassurance is a powerful one,” he said, "we’ve all been in a situation where we’ve had clients phone us in an evening looking for some reassurance that actually something is OK to wait until the morning”.

In a 2014 BVA survey, 82 percent of vets said clients have challenged their diagnosis, recommendation or professional opinion based on their own internet research. Simon urged delegates to remember that many more will undoubtedly be Googling things that they won’t then bring to the vets.

"Clever use of technology could cause increased productivity, helping vet businesses remain sustainable and keeping costs down for clients. We can refuse to talk about that change, but sooner or later we’re going to be forced to. It’s better that we embrace some of the digital disruptive technology now.”

"With telemedicine, the hope is that owners will come in earlier because we are reducing the barriers. It will be good for pets, owners, vets and clinics."
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How can the profession make a real difference when it comes to brachycephaly?

At VetsSouth, Emma Milne spoke about the ongoing issues with the popularity of brachycephalic breeds.

Brachycephaly isn’t a new problem; the first paper on brachycephaly in dogs is almost 100 years old and around 60 years ago, the WSAVA announced that it would unanimously declare that breed standards should not include requirements and recommendations that hinder the physiological function of organs and parts of the body. We have known about the problem for all that time, but the conformities are still getting worse, and brachycephalic breeds continue to grow in popularity among owners.

At VetsSouth 2019, vet, author and animal welfare activist Emma Milne spoke passionately about the growing problem. We have reduced the number of brachycephalic animals that are shown in adverts. The Breed to Breathe campaign is a great initiative with a 10-point plan that can be put into practice and FECAVA has developed a position statement which states that health and welfare should come before looks. “So, we do have a strong and united veterinary voice about the issues,” Emma said.

A big step was taken in October 2018, when the first law came into force that has protected the future offspring of animals. The Animal Welfare Regulation states that “No dog may be kept for breeding if it can reasonably be expected, on the basis of its genotype, phenotype or state of health that breeding from it could have a detrimental effect on its health or welfare of its offspring.”

“I think anyone who produces a litter of a brachycephalic breed could be convicted under this law,” Emma said, emphasising that we need a test case. If you see a new client with an extremely brachycephalic puppy, you can explain the problems it will face and you can talk to them about prosecuting that breeder, she said. “And I really hope someone will do it.”

What more can practices do?
We need to be stronger and clearer in the way we speak to clients and breeders – we must stop using the term “normal for the breed” and note everything on their clinical records; it is not normal for a dog to have these problems.

Nurses can have a big impact with monitoring the practice’s social media posts. It’s not OK to post about cute brachycephalic animals that come into practice, Emma said.

As well as social media policies, we need practice policies across the board stating that the practice will not help with fertility and will not perform planned C-sections. With extreme conformations more generally, many of the known problems also shouldn’t be covered by insurance; money can make a big difference to people, she added. And make sure that at least one person in your practice is reporting conformational alterations and C-sections. “The Kennel Club needs us to report these so they can make changes.”

Getting the message across to clients
Put the question to your practice: how can we get to people before they buy a brachycephalic pet? We need more pre-purchase advice and education. It is also worth discussing if new owners could talk with the nurse before they see the vet. “Remember that the owner has spent hours with the breeder hearing all the positives; you’re going to be the enemy shooting it all down in 10 minutes.” Time is key to approaching this issue sympathetically, Emma said.

She suggested that framing the problems in terms of welfare needs can be an effective way to communicate the health issues linked to brachycephalism to clients.

For example, when considering environment, explain that brachycephalic dogs will start panting at temperatures 10 to 15 degrees cooler than a non-brachycephalic dog. This is a real issue, particularly in warmer parts of the world. In terms of diet, most, or possibly all, brachycephalic dogs have got some signs of chronic ulceration and changes of inflammation in their guts. We know herniation and reflux are problems, as well as malocclusion and prehension. Brachycephalic dogs have numerous behaviour and social issues; “they must be frustrated with not being able to do the things they want to do”. Pugs, for example, are very social animals and we see lots of excessive guarding as a displacement behaviour, she explained.

And, of course, many brachycephalic animals are not free from pain and disease. There are lots of issues beyond BOAS, such as neuropathies, the inability to reproduce and corneal trauma. The inability to reproduce is, in Emma’s opinion, fundamental. “Something has gone badly wrong if we accept that these breeds must be assisted to reproduce – both with mating and giving birth.”

For more information and advice, visit: vetsagainstbrachycephalism.com
Updates in animal science

The latest developments were discussed at the British Society of Animal Science’s annual conference

The British Society of Animal Science (BSAS) celebrated its 75th birthday at its annual conference in Edinburgh in April 2019. Adopting the theme of “Fit for the future”, the conference addressed pressing current issues in animal science and management as well as those problems that we know are going to be of global concern in the coming years.

Are things moving in the right direction?
On the opening day of the main conference, Sheila Voas, Chief Scientific Officer for Scotland, described how policy based on public opinion can be at odds with the evidence base, citing the example of a lack of hard evidence of welfare problems of wild animals in circuses.

Sheila argued that policy makers don’t always understand the evidence presented to them or may interpret it differently than a scientist would, as can be seen with the badger debate.

Colin Wittemore, a stalwart of BSAS, gave a barnstorming lecture, asserting that research is no longer seen and funded as a public good – as it was in the post-war period. Research has become commercialised, fostering an environment in which pioneering achievements and inventive-ness to meet necessity are unlikely.

Animal science, Colin insisted, should be done in the animal shed and not done by analysing and re-analysing data until the right result is achieved, and that teachers should share with their students what they have done, not what they have been taught.

An interesting debate ensued about scientists’ reliance on statistics, and whether data should form definitive answers or be part of our armoury but not the whole toolkit. Concerning research, Calum Murray of Innovate UK made the interesting point that innovation loans are an alternative to grants, with vets and scientists encouraged to apply for them.

An update on livestock and antimicrobial resistance
In the scientific lectures, Mark Young from the Centre for Innovation Excellence in Livestock described University of Belfast research in using plasma (ionised gas) to clean wounds and disinfect surfaces and food products, creating a clean environment and with implications for better antimicrobial practice.

Dave Ross from the Agri-EPI Centre talked about the advent of 5G in agriculture and how it could allow images and information to be collected in real time and collated directly into the cloud, bypassing the need for PC data collection. Data collected from satellites on individual animals, early disease detection and animal behaviour measured in real time from collar-mounted monitors look like key developments in the near future. HandsFree Hectare, Silent Herdsman and Terahertz imaging are examples of products and projects running that utilise 5G and new technologies.

AMR was a constant theme of the conference. Trevor Alexander from Agriculture and Agri-food Canada presented his study comparing antimicrobial activity in conventional and natural (antibiotic-free) feedlots, finding much higher resistance in the conventional environment. Addressing the issue of North America’s much higher use of antibiotics in animals and use as metaphylaxis, Trevor said that the Canadian Government is investing heavily in alternatives and for the moment better management practices are the best solution.

Philip Howard from Leeds Teaching Hospitals NHS Trust presented the One Health element of AMR. Usage drives resistance, he urged. And usage globally is set to double in the next 10 years. In the UK, the breakdown of antibiotics used in human medicine shows: 72 percent in general practice, 12 percent in hospitals, 7 percent in outpatients, 5 percent in dentistry and 4 percent in other areas. One in three people are using a course of antibiotics at least once per year and approximately 20 percent of antibiotic courses are based on inappropriate prescribing without documented evidence of a bacterial infection.

The European Centre for Disease Prevention and Control is concerned about usage in Greece and Italy, suggesting it may become unsafe to perform major surgery and transplants in those countries due to the risk of subsequent infection. NICE’s aim is to be in control of the AMR situation by 2040, based on a programme of public and medical information, better use of diagnostics and vaccine use.

Addressing the problems manufacturers face in promoting products to vets and the public, Kate Hore, Senior Nutritionist at Greencoat, gave an interesting industry perspective of the problems faced with complying with regulations. Words used in advertising supplements must be chosen carefully to adhere to good labelling practice, and results of clinical trials cannot be promoted unless the product is a licensed medicine.

Specific claims must be avoided and more vague terms such as “supports” employed. This means that products presented to vets may well have a wealth of clinically proven evidence behind them but manufacturers are prevented from promoting this to vets.

However, there are companies, enabled by the internet, that do not comply with the guidelines that actively promote products using terms compliant companies do not, creating a risk that consumers will purchase these products over supplements from responsible companies.
Exercise and mental well-being

Finding the time to do a form of exercise you enjoy could make you happier, healthier and better at your job

Exercise lowers our blood pressure, improves our metabolism, etc. Many of us would agree that as a by-product of exercise, we feel happier and better-focused, and our self-regulation improves. Now, we have credible evidence that exercise also makes us better at our jobs by improving our cognitive function.

Studies indicate that our mental firepower is directly linked to our physical regimen. And nowhere are the implications more relevant than to our performance at work. Consider the cognitive benefits you can expect as a result of incorporating regular exercise into your week: improved concentration, sharper memory, faster learning, prolonged mental stamina, enhanced creativity and lower stress.

Even I can’t argue that membership of David Lloyd should be part of our CPD budget (although that would be nice). However, more and more of the larger corporates are starting to appreciate the link between the fitness levels of their staff and their personal productivity levels.

So how do we spread the knowledge that subsidising gym membership can improve the standard of practice and subsequently profitability? Individually, we can appreciate more than ever that exercise should become part of our working life. Improving our cognitive function at work goes hand in hand with a greater quality of life at work.

The term “work-life balance” insinuates that work is bad and life outside of work is good, and that we should try to balance the bad with the good. In fact, the lines are quite blurred between being in the practice and life outside of the workplace. Veterinary medicine is a vocation; not many of us truly forget about work the moment we leave the premises. So if we can be better and happier at work through exercising when off duty, surely our quality of life overall will improve. That, and we’ll be much nicer to be with.

Why do most of us exercise less than we wish we did? As vets, the reasons are obvious: not enough time, too exhausted, long hours, etc. These are legitimate reasons, not just lame excuses. But let’s be clear: what we really mean when we say we don’t have time for an activity is that we don’t consider it a priority given the time we have available.

And many of us continue to perceive exercise or gym membership as a luxury: an activity we would like to do if only we had more time. While exercise is a form of self-compassion, it should never be a guilty pleasure. Instead of viewing exercise as something selfish we do for ourselves – a personal indulgence that takes us away from our work – it’s time we started considering physical activity as part of the work itself.

Mindful vs mindless exercise

Vybar Cregan-Reid, nephew of Irish marathon runner Jim Hogan, travelled the world in search of the reasons people run. He loathes treadmills, calling them the equivalent of exercise junk food. “If you want to rescue some of your life from oblivion, stay off the treadmill,” he warns. Some people love the monotony of the treadmill. It can be a place to “switch off”, to exercise without really noticing; a form of mindlessness. If that works for you, brilliant.

Other forms of exercise where we “switch off” and focus only on the activity itself include tennis, football and rugby. Mindless exercise and escapism are like stepping off the chaotic hamster wheel of life for an hour for a breather while getting fit at the same time. Even as a mindfulness practitioner, I totally get that. And I do it regularly.

Others will benefit cognitively so much more by exercising in a mindful way – ie by exercising and acutely noticing their bodies, their breath and their surroundings.

For those of you who run outdoors, maybe try turning off the music and listening to yourself breathe; feel the surface beneath your feet and notice it more than ever before; look at your surroundings and pay attention – observe every different shade of green you run past; appreciate your ability to run, breathe and be more alive than when on the sofa. This is mindful running as opposed to mindless running.

The essential message is to find exercise you enjoy, and enjoy it as much as possible each time you do it. If you perceive it as a chore, not only will the mental benefits be much less, but you are more likely to give it up.

In Marketing Letters – a Journal of Research in Marketing, a recent article by Carolina Werle says that the framing of physical activity biases subsequent snacking: “The findings showed that when physical activity was perceived as fun (eg, when it is labelled as a scenic walk rather than an exercise walk), people subsequently consume less dessert at mealtimes and consume fewer hedonic snacks. Engaging in a physical activity seems to trigger the search for reward when individuals perceive it as exercise but not when they perceive it as fun.” No dessert should be a “sin” or a “reward”. How can we really enjoy it if we label sugar like this? Exercise is fun, so we need no reward for doing it.

Regardless of how you go about incorporating exercise into your routine, reframing it as part of your job makes it a lot easier to make time for it. You’re not abandoning work. On the contrary: you’re ensuring that the hours you put in have more value.
A stitch in time saves lives

Incorporating suturing, crocheting and suicide awareness, the sentiment behind this proverb has real significance in today’s veterinary profession

NESSIE RILEY

Nessie Riley, BSc (Hons), is a clinical vet student who graduated with a zoology degree from the University of Nottingham. She is taking a year out from her Graduate Accelerated BVetMed at the Royal Veterinary College. Nessie works part time as a veterinary receptionist and nursing assistant and crochets animals for mental health.

Becoming a vet was a decision I came to late. I’d almost completed the final year of my zoology degree when I realised my strengths and interests really lay in the physiology of the animals I was studying, not their theoretical ecology. But during my third year at vet school, my mental health began to really suffer; course finances were a constant drain, my relationship unexpectedly ended, I then suffered a miscarriage and soon enough, I realised I’d missed more days of university than I had turned up to.

In November last year, I decided to take some time out to look after myself. My internal overachiever initially saw it as a failure, but I began to look at the year as an opportunity to not just seek psychological therapy and work on my physical health; I also knew I wanted to be an advocate for mental health within the profession.

During my darkest weeks I’d picked up crochet to distract myself from feeling like there was nothing to live for. I made little animals for my family for Christmas and I realised this was a skill – completely separate to anything veterinary – that I could do to bring happiness to others. Since then, I have crocheted animals for people all over the world, which I create in exchange for a donation to a mental health charity. The methodical process of stitching round by round really helped give me a focus in my time of need and helped me untangle the feelings of hopelessness.

I know I’m not the only one that has struggled: I’ve personally realised, is just as vital. Nurturing hobbies and interests that keep us going and recharge us so that we can have a genuinely balanced life.

Finding reasons for living other than our work, as I’ve personally realised, is just as vital. Nurturing hobbies and interests that keep us going and recharge us so that we can have a genuinely balanced life.

But there is a part of me that feels we’re just not going far enough, soon enough. The charity VetLife has seen a huge increase in the number of vets, nurses and students contacting them in the last few years. I don’t think this is as much of a cause for celebration as it may sound when the suicide rates of vets are still four times the average, globally. Are we seeing an increase in vets seeking mental health support just because we’re now all more comfortable talking about the subject, or are we seeing an increase because we’re still not addressing the root of the problem?

In November, the BVA proudly presented its workforce study on why so many vets are so unhappy, but the conclusion was a frustratingly small 15cm box on the final page citing that vets are struggling due to being overworked, underpaid and unsupported – what a surprise!

I can’t help feeling we’ve been barking up the wrong tree too long – we’ve had more than enough time now to really start implementing these projects in a practical way and put the bite behind that bark, so to speak.

We shouldn’t still be leaving the onus entirely on the individual, or practice, to overcome these sometimes crippling difficult issues. Projects like Vet Futures, highlighting alternative careers within veterinary medicine, and the Graduate Outcomes survey this year, are the kind of steps we need so much more of when it comes to setting our future vets up for success and shaping the profession they’re dedicating their lives to.

This is an exasperatingly large subject, and there is no single solution. I believe the crisis really needs to be tackled from all stakeholder positions: students, individual professionals, clients and corporations, to have any long-term shift.

I would start at the beginning of the chain, with student expectations and education, and at the end of the chain with clients’ and our own individual perceptions, to ensure we are serving the profession as best we can. Prevention is always better than cure where possible and I really believe putting in the groundwork now will pay dividends for the vets of the future and keep them hooked for life.
What makes good evidence and how do you find it?

To make evidence-based decisions, it is important that we understand what good evidence is and how to find it

Veterinary professionals have to make clinical decisions according to their experience and expertise, based on the best available evidence. But how do they know what constitutes good evidence, and how do they find that evidence?

Every practitioner can get answers to both those questions in just three steps:

1. Ask an answerable clinical question
2. Find the available evidence to answer the question
3. Critically appraise the evidence for validity

The joy of these steps is that anyone can attempt them once they know the techniques

As an example, the question "In adult bitches does neutering versus not neutering reduce the risk of mammary tumours?" can be broken down into just its PICO elements: adult bitches; neutering; not neutering; mammary tumours.

It is important to note at this point that step one can also be approached the other way around: you can either start with a question and break it down or you can begin with the key components and construct a clinical question from there. Either way, the terms above are the starting point for step two, the literature search.

Search the literature

This is perhaps the trickiest step in the process as you need to convert those key elements of the clinical question into a list of search terms that is as exhaustive as possible. RCVS Knowledge has a handy toolkit that will show you exactly how to do this (bit.ly/EBVMToolkit2).

Once you have your search terms, you can plug these in to any number of databases, such as CAB Abstracts, PubMed and VetMed Resource. A combination of CAB Abstracts and one or more other databases is the most likely to return the vast majority of available evidence. Now comes the fun part: reading and appraising the evidence.

It is quite likely that certain studies returned by the search will stand out, but it is always good to read any introductions. Titles and abstracts aren’t always perfect descriptions of a study, and other papers may contain elements relevant to your question that aren’t immediately obvious.

Critically appraise the evidence

Having collated the papers you want to read in more detail, focus on the methods and findings, keeping a critical eye on signs of bias or alternative explanations for the results.

It is important to consider the type of study – different types offer different levels of evidence, and are more appropriate to certain clinical questions. It is also worth considering the quality of the methodology – see RCVS Knowledge Toolkits 3 to 11 (bit.ly/EBVMToolkits) for guidance and a checklist to tackle each type of study. Appraising is a skill unto itself, but one that anyone can learn.

So now you’ve found the best available evidence, what do you do with it? Add it to your knowledge repertoire and put it into practice.
Charity dog walk set to highlight UK’s canine obesity crisis

To raise awareness of canine obesity, owners are invited to take part in charity dog walks all over the UK and internationally.

It’s a shocking fact that 59 percent of the UK’s dogs are classified as overweight or obese, according to the most recent study (Courcier et al., 2010) into the subject. Is this something you’re familiar with in your practice, and if so, do you find it a difficult problem to manage?

Robin Hargreaves, former BVA President and Vet Panel Lead at Agria Pet Insurance, explains that sometimes the link between pet obesity and human mental health can be stronger than we think.

“Problems with pet obesity can often stem from the owner’s own relationship with food. An example of this at my practice demonstrated these complexities very clearly.

“One of our clients had a rescue Staffy that had become very overweight. We’d discussed diet and exercise, and prescribed diet food, but the dog just wasn’t losing any weight. It was only during a home visit that we discovered he was allowing his dog constant access to a bowl of Smarties on the floor!

“It transpired that the owner felt he had rescued his dog from a former life of ‘torture’ where this once fit and lean dog ran up and down a big hill each day with his owner. The adoptive owner really loved that dog, and his actions of ‘saving’ him from this daily physical torture, and feeding him unlimited Smarties, were his way of genuinely thinking he was doing his best; replicating his own relationship and feelings towards food and exercise onto his dog.”

At a recent World Small Animal Veterinary Association One Health meeting, canine obesity was officially classified as a disease, which is consistent with its classification in people (Day, 2017). And the 2016 BVA Voice of the Veterinary Profession poll of over 1,600 UK vets revealed that over 60 percent of respondents felt obesity is the biggest health and welfare concern for UK pets.

While the image of an underweight dog being taken into rescue is possibly more likely to come to mind than one that’s overweight, rehoming organisations are not immune from dealing with obesity either.

Lulu, a six-year-old chocolate Labrador, was taken into the care of Edinburgh Dog and Cat Home in July 2018. She had balding fur, bad ears and was very overweight. The home’s staff quickly went to work and provided Lulu with all the veterinary care she needed.

She was given regular medical baths, steroid ear drops and had two lumps removed from her body. She was also spayed and given all necessary vaccinations.

Throughout her various treatments, the home’s devoted kennel staff worked hard to reduce Lulu’s weight, often taking her for long walks on the beach and to a local nature reserve, where she could spend her days walking and running around the beautiful surroundings. During this time, one of the kennel staff members, Lucy, fell in love with her.

Happily, Lucy rehomed Lulu in January this year and the pair have been inseparable ever since.

Helping the animals that enter rescue care so they are ready for rehoming can be a very costly process – whether that’s dealing with obesity, malnutrition or behavioural problems or simply caring for them while they wait to find their forever home.

The Agria Dog Walk is set to unite thousands of paws across six countries, all on one day, to help raise much-needed funds for the animals that need it most.

On Saturday 25 May 2019, walks will be taking place in Stockholm, Oslo, Helsinki, Copenhagen, Hermes, in France, and several locations in the UK, from Edinburgh to Devon. Each walk is linked to a local rescue, and for every dog that’s walked, Agria Pet Insurance will donate £5 directly to that rescue. So, while it’s a Europe-wide event, every dog that takes part will be directly supporting their local rescue, helping to change the life of another that isn’t yet as lucky as they are.

Lulu’s rescue, Edinburgh Dog and Cat Home, is one of the rescues hosting an Agria Dog Walk. To join their walk, or find a walk that is local to you, visit agriapet.co.uk/agria-dog-walk/ – and make sure you tell your clients, so they can help their rescue and give their dog a little extra exercise this May.

For further information about how Agria Pet Insurance supports veterinary practices, please visit: agriapet.co.uk or call 03330 30 83 90

References


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Using mentoring to increase the reach of welfare efforts

International animal welfare charity Brooke reaches a huge number of working equids every year thanks to its mentoring framework

JOHN PERIAM
John is a photojournalist; he worked as a veterinary salesman in the 1960s and still has strong links to the profession through his equestrian work. John is also a regional correspondent for a trade paper for the UK fishing industry.

In May 2018, the Sussex Equine Hospital opened its doors to the public for the first time at its new purpose-built equine hospital at Ashington in West Sussex (read about the opening in the June 2018 issue of Veterinary Practice magazine). One of the highlights of the day was the opportunity to meet members from Brooke international animal welfare charity, which was founded by Dorothy Brooke in 1934.

The charity works closely with the equine hospital and has a mission to improve the lives of working horses, donkeys and mules all over the world. Brooke is there to protect and improve the lives of working equids along with the families who depend on them around the globe. With over 100 million working animals, the team provides invaluable support to daily life for an estimated 600 million people (8 percent of the world’s population).

Making sure that their horses, donkeys and mules are healthy helps owners put food on their tables and support their children through education. A lot of the work takes place in Africa, Asia, Latin America and the Middle East, and involves specific work with several groups, including the animals, owners, women, health services and government. The team also carries out research to inform its work.

Of course, there are many excellent charities involved in the same field of work, but what makes Brooke different is the integration of an “animal health mentoring framework”.

The mentoring framework
The animal health mentoring framework is a list of essential skills and competencies required to provide good quality animal health services. It is used by specially-trained vets to assess and improve the individual skill and competency levels of animal health providers. This includes anyone who provides animal healthcare, including veterinarians, other veterinary professionals and community-based animal health workers.

The Brooke veterinary competence framework encourages each animal health provider to be:

- An advocate of animal welfare
- An effective communicator
- An excellent clinical practitioner
- Able to demonstrate good clinical governance

Dinesh Kumar Gupta was trained using this framework and has worked as a Veterinary Officer for Brooke India for two years. “We often attend equine fairs and events where we have a stand, so owners and traders can bring their equines if they are suffering from wounds or diseases. We can then take blood and faeces samples and test them to diagnose cases within minutes and prescribe medicine and treatment.”

How animal health professionals impact welfare
In 2016, Brooke stopped providing free medicines to try to create more sustainable, improved equine welfare. This decision was made because owners would often wait to get...
free treatment by members of the Brooke team rather than getting help sooner; it was not good for their animals, some of which would be left suffering for days. Now it is in their interest to source medicines immediately to help their equines.

One of the most important tests the team carries out is for glanders: a highly contagious and fatal disease that causes coughing, fever and nasal discharge. If a case is detected, the team will ensure that the animal is quarantined immediately.

As a result of this, Brooke has been working with local governments to build a compensation scheme for owners. The scheme has been very beneficial in encouraging them to come forward. Before the scheme, owners would often refuse to come forward for fear that their animal would have to be euthanised, resulting in lost income. The support Brooke has given owners through the compensation application process has already started to show a positive impact in equine welfare.

The work of Brooke was endorsed by Animal Health Practitioner Mohammad Rizvan, who is 19 years old. He was approached by Brooke and offered training on equine welfare. “Now I have training I can identify cases of colic, tetanus, surra and glanders. I can take the temperature of an equine if it has a fever, I can tell the age using the horse’s teeth and am able to check the third eyelid for signs of disease. I never knew these things before.”

Brooke vets have given Mohammad a lot of training and he now feels comfortable working with equines. “Recently, I arrived in a village where a horse was showing signs of colic due to severe abdominal pain. He had acute diarrhoea and was severely dehydrated. Having told the owner how grave the situation was, I fetched water to hydrate him and put in an IV drip. The horse made a full recovery and the owner told all of the villagers – and now I am made welcome all the time.”

Mentoring takes place in the field, where animal health providers are seeing cases in their day-to-day practice. It is a student-led initiative, focusing on building practical skills and encouraging reflection, constructive feedback and positive practices.

The figures show it all; in 2017 and 2018, the number of working horses, donkeys and mules reached by Brooke was an astonishing 1,263,637. Their total income was £21.4 million and for every £1 they received, 91p was spent on charitable activities.

Brooke is just that little bit different in the way it operates by “putting the welfare of the animal first” and educating those in the field with expert veterinary knowledge. I can see why the Sussex Equine Hospital had them as their chosen charity for its open day and getting to know the team has given me a new insight into the excellent work they do at Brooke.
ANIMAL WELFARE

Identifying priority welfare issues

Results of a recent study will help prioritise animal welfare issues in the UK using expert consensus

Animal welfare remains an area of consistent public concern. To determine where limited funding resources should be directed, or to raise awareness of best practice, it is sometimes necessary to prioritise particular welfare issues to identify those needing special consideration. The relative importance of specific welfare issues can be determined by public concern, political interests or scientific assessment.

A recent study conducted at the University of Edinburgh used a modified Delphi procedure to create an overall ranking of welfare issues for managed animals in the UK. The species included in the study were: horses, cats, rabbits, exotics, wild life, cattle, pigs, poultry, small ruminants and dogs. The study was funded by the Animal Welfare Foundation (AWF) with the aim of prioritising research and funding areas.

The study recruited 144 animal welfare experts, divided between 10 species groups. Experts were recruited from a range of disciplines, including practising veterinarians, academics, charity sector employees, industry representatives and policy officials. Two rounds of surveys were conducted online, and the final round was an in-person workshop with a subset of experts. The experts agreed that welfare issues should be ranked considering three categories: severity, duration and prevalence.

There are too many results from this Delphi study to present here in this article; however, some results of particular interest are presented below. Full results of this study are expected to be published in the Veterinary Record later this year.

Common findings for companion animals

The results from the first round of online surveys highlighted several similarities that could be seen across companion animal species. For example, social behaviour issues, negative affective states, behavioural restrictions, consequences of long stays in shelters and consequences from breeding decisions (genetic issues and breeding for exaggerated conformation) featured highly in both the cat and dog lists. Issues relating to inadequate diets were very high in the rabbit and horse lists, and obesity featured highly on all four companion animal lists.

Results for farm animals

When considering the survey results for the farmed species many of the high-ranking issues were health-related. For example, common production diseases, lameness, lack of routine healthcare, painful procedures, etc.

However, more emphasis was put onto behavioural restrictions and negative affective states of production animals during the workshop discussions – for example, the inability to express natural behaviours featured highly on the poultry priority lists (it was the third-ranked issue for duration and severity, and second rank for prevalence). Behavioural needs not being met was also the top ranking, and third-top ranking for pigs (severity and duration, and prevalence, respectively).

Recurring issues across all the farmed animal species were delayed euthanasia and delayed veterinary care

Recurring issues across all the farmed species were delayed euthanasia and delayed veterinary care. There are several reasons why delayed euthanasia decisions might occur, including extending an animal’s time for recovery from an illness or injury “to give them a chance”, inexperience of the stockperson in either assessing an animal’s prognosis or carrying out the procedure of euthanasia or waiting for the animal to complete a stage of production before finally being euthanised.

Delayed access to veterinary care may be due to economic concerns (relating to the value of individual animals), an inability to provide individualised care to extensively kept species, reduced access to specialist veterinary care in some areas or incorrect diagnosis and inappropriate therapies from farmers.

Delays in both veterinary care and euthanasia cause poor welfare and unnecessary suffering for the animal. These are complex issues but may be partially addressed through improved staff training programmes and better on-farm protocols.
**Overarching themes**

During the workshop, which involved 21 experts, the top-ranking welfare issues for animals (at individual level) included inappropriate home environment, behavioural needs not being met, consequences from breeding decisions, lack of socialisation and handling, delayed euthanasia and lack of basic care, including neglect, lethal wildlife management and inappropriate nutrition.

The experts were also asked to consider if they could identify any broad, overarching themes that cut across all species. They reached consensus on a list of issues which included lack of knowledge of the animal’s requirements and behaviour, social behaviour issues, delayed euthanasia, inappropriate breeding decisions and inappropriate diets and environments.

The most recurring issue that came up in many discussions was “lack of knowledge”. Specifically, owners or caretakers not being aware of the welfare needs of these species and a lack of species-specific behavioural knowledge (e.g., behaviours often wrongly interpreted). For some species, particularly farmed species, there may also be a lack of veterinary knowledge, as there is not as much time spent learning about behaviour in these animals in the student curriculum compared to companion animals.

The theme of “lack of knowledge” can have a number of different causes. For example, in some instances, the knowledge is known, by researchers or veterinarians, but is not widely understood by animal owners or caretakers. Or, the knowledge is not available and more research is required (particularly true for non-traditional companion animals). In some instances, professionals and caretakers know what the “gold standard” of care should be; however, a range of limitations may prevent caretakers from implementing the advice (e.g., financial, time, access restrictions). These are all important considerations when looking to apply strategies to improve some of these welfare issues.

For all species, many welfare issues are multifactorial, and it can be difficult to untangle them. However, during this study, the experts from each group were successfully able to reach consensus. The final priority welfare issues contained a mix of animal-, resource- and management-based factors, and can help to guide future research, funding and education priority decisions.

**Implications for vets**

For many animal owners and caretakers, veterinarians are the main contact for animal welfare advice. One of the major cross-species welfare issues that came out of this study was “lack of knowledge”, often around understanding animal needs and animal behaviour. The amount of animal behaviour in the veterinary curriculum varies but if this has been insufficient, may indicate an area where some vets and other veterinary professionals require further training. Improved ways to communicate animal behaviour and welfare knowledge to animal owners, particularly pre-purchase, may also improve animal welfare.

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Is it time for vets to adopt a bigger role in sustainability?

Simon Doherty, President of the BVA, talks about the motives behind the new sustainability position statement and how the profession can get involved

With the release of the BVA position statement on UK sustainable animal agriculture, we interviewed Simon Doherty, President of the BVA and advocate of sustainable agriculture, on the drive for change.

How has the attitude to sustainability changed in the profession?

When I qualified, there was still very much a feeling within the veterinary profession that we were an animal health profession. Welfare was often seen as a by-product of health. If you had good health, you probably had good welfare. But we know now that welfare is much more than just good health, so there has been a momentum shift that has brought welfare much higher up the agenda.

On top of that, there was a lot of talk about One Health and the idea that if you brought multidisciplinary teams together, you could find solutions to problems. Vets already embrace One Health in their day-to-day work. If you’re looking after a cow, there’s a relationship between that cow and the farmer, there’s a relationship between the cow and the vet, and there’s a relationship between the farmer and the vet. But there’s also a relationship between them and the environment.

If you have a cow that’s not quite right, and she’s not working at her full potential, then she’s having more of an environmental impact in terms of methane and carbon dioxide production and slurry production, etc. She may need antibiotics, and the antibiotics are going to make their way into the slurry, and back onto the land when the slurry is spread, and so on.

The sustainability position is about looking at that bigger picture instead of focusing on purely, “let’s ramp up productivity!” Yes, we want to ramp up productivity, but not if we’re going to have an impact on welfare and the volume of antibiotics we use. And not where it’s economically unviable.

What’s prompted the release of the BVA sustainability position statement now?

There is an EU One Health Platform which works at high-level policy, but with the UK’s One Health Coordination Group, established and currently chaired by BVA, we wanted to focus on relevant stakeholders in the UK and look at where One Health and sustainability are combined.

At the BVA, we will often refer back to our policy positions and we didn’t have policy positions on these areas. We had some policy positions on the welfare aspects, but we didn’t have something that would embrace the whole sustainability agenda. We put the working group together and developed the sustainability position to look at actions at several levels: the association, the practice and the individual.

What are the key messages for vets?

At the simplest level, it’s back-to-basics animal husbandry. Look after these animals well and they will be more productive. The knock-on effect of that is that you will probably use less antibiotics and improve animal welfare. Cow Signals [dairy cow management training] is one way for vets to better communicate information to farmers but looking at herd health planning and novel ways to increase the all-important touch points between vet and farmer is important. Getting vets and farmers to understand the value of that relationship can really make a difference. It’s not just about the money, it also has to be about the welfare. If you can deal with a problem before it happens, you’re thinking much more about preventative herd health management rather than reactive management when things go wrong.

It’s also about getting the right kind of information out there, and sometimes it is necessary to get vets to sit down
and think about how they’re communicating with their farmers. Because otherwise, the information is coming from the farming press, or the person who lives on the next farm, and it is less trusted information.

**Will the statement help the campaign to improve welfare at slaughter in the UK?**
Part of the drive for creating this statement has been the activity – particularly on social media – of “more extreme” parts of the vegan community who are pushing a zero-animal diet. It’s not about vets keeping themselves in jobs; it’s about making sure that we’re addressing some of the anti-livestock claims in an evidence-based, well-researched fashion. An example of this is non-stun slaughter.

The Farm Quality Assured and the Choose Assured campaign was partly to make people more aware about our position around non-stunned slaughter. Michael Gove has told us categorically that there’s no chance he’ll be able to ban non-stunned slaughter. But in the absence of labelling and a complete ban, by buying food that is Farm Quality Assured, we can be sure that we are getting produce from animals that have been stunned before slaughter.

*By buying food that is Farm Quality Assured, we can be sure that we are getting produce from animals that have been stunned before slaughter*

**How can the sustainability agenda be embraced at a practice level?**
The BVA is looking at sustainability in practice and this originated from a conversation we had with a veterinary anaesthetist. She was conscious that a lot of small animal practices were pumping out not insignificant amounts of chlorinated hydrocarbons, in the form of anaesthetic by-products, and they were leaving the practice building and going into the atmosphere. She was keen to look at ways to better utilise anaesthetic circuits that reduce the amount of these gases that are going out into the environment. Then she was looking at other elements in the practice like bottles of drugs: what you can recycle, what you can’t – proper waste segregation.

We are looking at the green initiative in companion animal practices as well. It’s that One Health relationship and just recognising what vets and vet nurses can do with clients, animals and the environment that they’re in. We have some interest in social prescribing, which is a concept of putting people out into green spaces and improving their well-being; a pet can be great companionship, but also there’s a driver there to get the owner out into the environment for a dog walk.

I think a lot of the environmental push has been seen in the wildlife sector. For a lot of areas, like plastics ending up in the environment, it shouldn’t just be the environmentalists that are talking about the issues. We’ve got a role to play in advising people about that. At the end of the day, veterinary practices will have injured hedgehogs brought in that have been caught up in bits of plastic from the environment.

We’re also encouraging practices to think: can we convince members of practice staff to take public transport to work? Can we make ourselves more accessible through public transport routes to our clients? And even starting to think about food procurement policy within the practice.

**How can vets push the “less and better” approach?**
If they’re doing any kinds of catering within the practice, it would be locally sourcing good, high welfare products. Right down to the individual level where we’re getting vets to think about, “how much meat am I eating in my diet?” Instead of importing cheap meat from other countries, we should be focused on locally produced, high quality, high welfare products that we champion in the UK. In terms of promoting that approach to others, it’s a tough one, and to be honest, I think we’re at the start of that journey. We’re at the point of encouraging vets to think about it themselves as opposed to being huge advocates right now.

**Will new technology and innovation help boost agricultural sustainability in the UK?**
It’s about embracing innovation in the right way. I think that vets need to think about how they can embrace innovation more; otherwise, our profession is going to get left behind.

One of the reasons robots have taken off is that economic drivers have changed herd dynamics. But a second aspect is connectivity. A farmer can use their smartphone and look up how much milk is in the milking tank in the parlour; they can see which cow has gone through; they can even see which cow needs to be held at the selection gate for pregnancy diagnosis or artificial insemination. But how much engagement do vets have? Not a huge amount. A lot of this technology is being sold directly to the farmer. There’s a huge number of wearable devices becoming available for cattle. Those are generating huge amounts of data and, at the minute, are only made useful to the farmer. There’s a lot of really valuable information in there which could be of use to the vet to help the farmer and in turn, make farming more efficient and sustainable.

Just installing the technology by itself is not going to be a panacea. You need to be able to work the other elements into it. And that will apply to vaccines, genetics, diagnostic tests, etc. If they can be used appropriately, they can have a massive impact. If they are used inappropriately, then they will be a waste of money.
The frustrations of feline lower urinary tract disease

Treatment of the condition will depend on the underlying cause and should be targeted accordingly

Feline lower urinary tract disease (FLUTD) is not a single disease process but a term used to describe a group of different diseases involving the feline urinary bladder and urethra. International Cat Care has stated that FLUTD typically affects 1 to 3 percent of cats each year. Due to the diverse nature of the underlying causes, it can affect cats of any age, gender and breed. However, risk factors predisposing cats to FLUTD have been identified and include: being middle-aged, neutering, being overweight, having a predominately dry diet, taking little exercise or having restricted outside access and having a nervous disposition (Gunn-Moore and Cameron, 2004).

Feline idiopathic cystitis (FIC) is the most frequent cause, accounting for approximately two-thirds of FLUTD cases (Gerber et al., 2005) and is diagnosed by a process of exclusion, where no specific underlying cause can be identified. FIC is a complex condition and the primary cause is still not yet known. Several studies have identified anomalies at the level of the urinary bladder, sympathetic nervous system and cortical adrenal function (Buffington, 2011). Stress is also believed to have an important role in triggering or exacerbating the condition with a link identified between cats that display fearful, nervous and aggressive behaviour and FIC (Bowen and Heath, 2005; Buffington et al., 2006a). Other important causes of FLUTD are listed in Table 1.

These disorders can be split into two categories: obstructive and non-obstructive (Caney and Gunn-Moore, 2014). Cats with obstructive disease are unable to pass urine and are often referred to as “blocked” cats. Urethral obstruction is a veterinary emergency and cats with this condition may die within a couple of days if they are left without appropriate treatment.

Cats with non-obstructive disease are able to pass urine and usually present with one or more of a range of clinical signs listed in Table 2.

| **Bacterial urinary tract infections** | One of the most common causes of lower urinary tract disease in many animals, but relatively uncommon in cats. It accounts for around 5 to 15 percent of all cases of FLUTD (Gerber et al., 2005). Tends to be seen in older cats, particularly if they have an underlying disease, such as chronic kidney disease, hyperthyroidism or diabetes mellitus. |
| **Urolithiasis** | The two most common types of stone reported are magnesium ammonium phosphate (struvite) and calcium oxalate. These two types of stone account for 80 to 90 percent of cases of urolithiasis, but others may also be seen. Urolithiasis generally accounts for around 15 to 23 percent of cases of FLUTD (Gerber et al., 2005). |
| **Urethral plugs** | Account for about 20 percent of FLUTD cases in cats less than 10 years of age (Caney and Gunn-Moore, 2014). Caused by an accumulation of proteins, cells, crystals (usually struvite) and debris in urine that combine to form a plug that cannot be passed. Urethral plugs are often associated with FIC and most clinicians believe this is a subset of FIC. Urethral obstruction may be caused by the plug itself, but in the case of FIC can also be caused by urethral spasm associated with pain. |
| **Bladder neoplasia** | Transitional cell carcinoma (TCC), leiomyoma and adenocarcinoma have been reported in the bladders of cats. TCCs are most frequently reported either as an isolated tumour or arising secondary to chronic inflammation. Although uncommon, the possibility needs to be considered – particularly in older cats. |
| **Anatomical defects** | If the urethra becomes damaged, fibrous tissue may develop during the healing process, which can significantly restrict the diameter of the urethra. |

**Table 1** Other causes of FLUTD
Clinical signs for these disorders are all so similar that it is often difficult to determine the underlying cause. Diagnosis may require a full behavioural and clinical history, physical examination, blood and urinalysis, imaging and potentially biopsy of the urinary tract. Diagnosing the cause of FLUTD is of particular importance in cats that show repeated episodes or where the clinical signs are persistent.

Managing the disease
Treatment of FLUTD will depend on the underlying cause. Successful management depends on a long-term commitment and a joint approach with the cat’s care provider and the veterinary team but will generally require a multimodal strategy. Important objectives in all cases are increasing water intake, reducing stress and dietary management.

Increasing water intake is important to aid urine dilution and increase urination frequency (Eisenberg et al., 2013). Different methods of increasing water intake include: increasing the number of bowls, changing the type of bowl, changing diets, changing the location of bowls and changing the type of water (eg to room temperature tap water, mineral water, rainwater or flavoured broths).

Given the role stress has been proven to play in FLUTD, particularly in cases of FIC, efforts should be focused on identifying and addressing potential causes of stress in the home and owners should be educated on how to keep stress to a minimum (Caney and Gunn-Moore, 2014).

One of the most common causes of stress for cats is being in a multi-cat household. To address this, care needs to be taken to understand the number of social groups within the home and determine whether adequate resources are available for each group. Other common stressors include the addition of new pets or people into the home or neighbourhood and sudden changes in routine. In severe cases, referral to a veterinary behaviourist may be required.

Adjunctive approaches to reducing stress should also be considered. Enrichment of the cat’s environment through the provision of climbing frames with resting areas and playing games that stimulate natural behaviour can be beneficial. However, any alteration to the cat’s environment should not be made suddenly; drastic changes may elicit new episodes of FLUTD (Buffington et al., 2006b).

Further methods of reducing stress include synthetic pheromone preparations, such as facial pheromone and cat appeasing pheromone (Gunn-Moore and Cameron, 2004). Nutraceuticals such as alpha-casozepine, a milk protein hydrolysate thought to have an anxiolytic effect, and tryptophan, an essential amino acid and precursor for serotonin synthesis, are believed to contribute to feelings of well-being (Meyer and Becvarova, 2016).

Dietary management is useful for combating the physical aspects of FLUTD by reducing the likelihood of urolith formation, increasing water turnover through the bladder of affected cats and modulating inflammatory mediators. The type of diet will depend on the urinalysis results and cat’s body condition; there are commercially available options.

Summary
FLUTD is an important cause of illness in cats and can be a distressing condition for both the cat and its carer. The best success rates are achieved by making an accurate diagnosis, so the most appropriate treatment can be prescribed. Management must be multimodal, including identifying and controlling underlying medical disorders, using dietary management, identifying and alleviating stressors in the cat’s environment and modifying where appropriate.

A full reference list is available on request.
Assessing hypertensive cats

What are the current recommendations for identifying and managing feline hypertension?

Systolic hypertension (SH) – a persistent increase in the systemic blood pressure – is now commonly recognised in clinics. Older cats are at an increased risk of developing SH (Bijsmans et al., 2015) and a recent study found the estimated incidence risk of hypertension for cats aged nine and above to be 23.7 percent (Conroy et al., 2018).

Types of hypertension
Secondary SH is most commonly diagnosed in cats with underlying medical conditions – in particular, CKD and hyperthyroidism – while idiopathic (primary) SH accounts for less than 20 percent of cases. Situational (white coat) hypertension is when “false positive” high blood pressure readings occur due to stress. On average, the “white coat” effect increases systolic blood pressure (SBP) by 15 to 20mmHg, but one study showed this effect is highly variable, with SBP decreasing in some cats and increasing as much as 75mmHg in others (Belew et al., 1999).

Given the potentially life-threatening consequences of genuine hypertension, attention should be given to looking for target organ damage (TOD) alongside high readings to confirm genuine hypertension and for high readings not to be assumed to be due to situational hypertension. The target organs most vulnerable to hypertensive damage are the eyes, brain, kidneys and heart.

Recently, the American College of Veterinary Internal Medicine published a classification system based on blood pressure and the associated risk of TOD (Table 1).

Screening recommendations
The author follows icatcare’s guidelines for preventative healthcare, which recommend 6- to 12-monthly SBP assessment in healthy cats from the age of seven years (catcare4life.org). Blood pressure should also be assessed in cats that present with:

- Ocular disease (blindness, hyphaema, retinal detachment/oedema)
- Associated diseases – particularly CKD and hyperthyroidism; unexplained proteinuria
- Cardiac abnormalities (murmur, gallop, left ventricular hypertrophy)
- Behavioural or neurological signs – especially in older cats

Assessing SBP
The author recommends Doppler measurement of blood pressure where possible, in conscious cats. Oscillometric machines tend to overestimate low blood pressure and underestimate high blood pressure in cats. If choosing an oscillometric machine, an HDO (high definition oscillometry) machine is recommended. A full ocular examination is essential to look for evidence of TOD (Figures 1 and 2).

Using a Doppler machine in conscious cats
Sites to measure SBP include the common digital artery (forelimb) and coccygeal artery (tail). An inflatable cuff (30 to 40 percent of the limb/tail circumference) is placed. Clipping is not required. Prepare the area by wiping with surgical alcohol and then apply a liberal quantity of ultrasound coupling gel to the area and to the Doppler probe. Place the probe over the prepared area, turn the machine on and gently move the probe.

<table>
<thead>
<tr>
<th>SARAH CANEY</th>
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<tr>
<td>Sarah Caney, BVSc, PhD, DSAM (Feline), MRCVS, is an internationally recognised specialist in feline medicine who has worked as a feline-only vet for more than 20 years. She trained as a specialist at the University of Bristol and is one of 12 recognised specialists in feline medicine working in the UK.</td>
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**TIPS FOR MINIMISING SITUATIONAL HYPERTENSION AND FOR OBTAINING RELIABLE READINGS (APPLICABLE TO ALL BLOOD PRESSURE MEASUREMENT METHODOLOGIES)**

- Use a quiet room for blood pressure measurement: away from barking dogs, telephones and human traffic
- Allow the cat 5 to 10 minutes to acclimatise to you and the surroundings before starting the procedure
- Always measure blood pressure before performing any other assessments in the cat – otherwise add 30 minutes rest period after procedures before collecting blood pressure readings
- It can be helpful having the owner present to gently restrain their cat
- Use minimal restraint
- Don’t rush!
- Wear headphones so that the cat is not aware of any noise associated with the procedure
A high SBP (greater than 160mmHg) in addition to evidence of TOD is diagnostic for SH; treatment should commence immediately. Persistently high SBP (greater than 160mmHg on three occasions over a two- to four-week period) is also consistent with a diagnosis of SH and treatment is justified, especially if the cat is known to have underlying diseases which increase the risk of SH. SBP readings above 180mmHg are especially worrying with respect to risk of future TOD. Anti-hypertensive agents used include:

**Calcium channel blocker**
- Amlodipine 0.625 to 1.25mg/cat q24h
- Typically reduces SBP by 30 to 70mmHg (Taylor et al., 2017)
- Considered first choice treatment (Acierno et al., 2018)

**Angiotension receptor blocker**
- Telmisartan 2 to 3mg/kg q24h as sole therapy
- Typically reduces SBP by 20mmHg (Glaus et al., 2018)
- Can be used in combination with amlodipine (1mg/kg/day telmisartan plus standard dose of amlodipine)

The aim of management is to reduce SBP readings to an “ideal” reference range (120 to 140mmHg) and to identify and treat potential underlying/associated conditions (such as CKD). Earlier diagnosis helps to reduce the incidence of life-limiting and life-threatening TOD. Amlodipine is the current treatment of choice for severe hypertension and many cats can be successfully managed on a once-a-day dose of this medication.

A recently published retrospective study found 57.6 percent of cats blind at presentation regained some vision following treatment (Young et al., 2018) and even in those cats with blindness and other significant hypertensive TOD, clinical improvement is often reported as an improved quality of life.

**TABLE 1** ACVIM classification for severity of SH and risk of future TOD

<table>
<thead>
<tr>
<th>Category</th>
<th>SBP (mmHg)</th>
<th>Risk of future TOD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normotensive</td>
<td>&lt;140</td>
<td>Minimal</td>
</tr>
<tr>
<td>Pre-hypertensive</td>
<td>140 to 159</td>
<td>Mild</td>
</tr>
<tr>
<td>Hypertension</td>
<td>160 to 179</td>
<td>Moderate</td>
</tr>
<tr>
<td>Severe hypertension</td>
<td>≥180</td>
<td>Severe</td>
</tr>
</tbody>
</table>

**Figure (1)** Distant indirect ophthalmoscopy is a helpful technique for examining the fundus for evidence of hypertensive damage. A light source is held by the side of the head and directed towards the eye in a completely dark room. The operator alters the angle of the light beam until a tapetal reflection has been obtained. A 20 to 30 dioptre hand lens is then inserted just in front of the eye, perpendicular to the light beam probe over the skin until a signal is detected. Do not apply excessive pressure as this could impede blood flow. Once regular pulsatile blood flow is heard, inflate the cuff to 20 to 30mmHg above the point where the sound of blood flow is obliterated. Deflate the cuff slowly. The point at which blood flow can first be detected clearly and consistently again is the SBP. Deflate the cuff completely and repeat five times over two to three minutes; calculate the average SBP.

**Figure (2)** Retinal detachment is clearly evident in this blind patient upon shining a light source into the eye. SBP readings were greater than 200mmHg and the patient was treated with amlodipine which successfully returned SBP to the reference range. Vision improved following treatment although it remained impaired.

**References**


Demodicosis in the hamster

What clinical signs are caused by *Demodex aurati* and how can the demodicosis be treated?

---

**DAVID GRANT**

David Grant, MBE, BVetMed, CertSAD, FRCVS, graduated from the RVC in 1968 and received his FRCVS in 1978. David was hospital director at RSPCA Harmsworth for 25 years and now writes and lectures internationally, mainly in dermatology.

There are two species of *Demodex* that inhabit the skin of hamsters – *D. aurati* (Figure 1) and *D. criceti* (Figure 2). These mites may be present in hamsters with no signs of skin disease. *D. aurati* (long-bodied) inhabits the hair follicles and *D. criceti* (short-bodied) inhabits keratin of the epidermal surface. Transmission from the mother occurs during suckling.

Most problems are caused by *D. aurati*, invariably occurring secondarily to an underlying problem associated with a diminished immune system. A diagnosis of underlying factors is therefore advisable, if possible, prior to attempting treatment.

**Underlying factors**

For demodicosis in hamsters, underlying factors (Miller *et al.*, 2013) include:

- Concurrent neoplasia
- Hyperadrenocorticism
- Chronic renal disease
- Inadequate nutrition
- Stress
- Immune system decline due to old age

A retrospective study of 102 hamsters with dermatological lesions in two academic settings (White *et al.*, 2019) is the most recent substantial study of hamster skin diseases to be published. Of 65 hamsters seen in California, 54 percent had skin disease; and in Nantes, France, 67 of 164 hamsters (41 percent) had skin lesions. Demodicosis due to *D. aurati*, abscesses and neoplasia were the most common skin diseases. In California, six hamsters (18 percent) had neoplastic conditions, of which five were cutaneous lymphoma.

In this study it was noted that some rare diseases were diagnosed, such as hyperadrenocorticism and paraneoplastic alopecia. Underlying causes of demodicosis were not established in many cases.

Deciding what constitutes old age may prove to be a problem. If breeders of a line of hamster are known, they may be able to indicate the usual lifespan for their stock. It is useful to bear in mind average lifespans, especially when dealing with children’s pets. It is not uncommon to be presented with a demodectic hamster at the end of its normal lifespan, and treatment in these cases will be unrewarding and potentially upsetting to the owner if a poor prognosis has not been discussed.

Syrian hamsters, commonly kept as pets in the UK, will live on average between 2 to 2.5 years, with shorter or longer lifespans possible. The average lifespans of other species of hamster are:

- Roborovski hamster: 3 to 3.5 years
- Campbell’s dwarf hamster: 2 years
- Chinese hamster: 1.5 to 2 years
- Winter white Russian dwarf hamster: 1.5 to 2 years

Species and genetics as above, diet, exercise, husbandry, environment, quality of care and treatment of illness will likely affect a hamster’s lifespan.

**Clinical signs**

Clinical signs of demodicosis are patchy alopecia, scaling and crusting (Figure 3). Lesions can be anywhere on the body.
body but tend to be on the neck and dorsally in the initial stages, and more generalised late in the course of the disease. In early cases presenting with alopecia, the flank scent glands may become visible. Secondary infection can occur and an affected hamster may be systemically ill due to an underlying systemic problem.

Diagnosis

- History and physical examination
- Trichoscopy
- Tape preparations
- Skin scrapings
- Biopsy (the mites are not normally difficult to find; biopsy is rarely required and may not be permitted by the owner on cost grounds)

Treatment

Ivermectin has been reported to be beneficial in many cases with variable dosage regimes. In one study (Tani et al., 2001), 56 hamsters with demodicosis were treated with ivermectin orally daily at a dose of 0.3mg/kg by mouth. Overall, 87.5 percent improved clinically, but in those cases with concurrent disease, the prognosis was poor.

Amitraz has been used to treat hamster demodicosis, with most authorities recommending a dilution of 100 ppm once weekly (Paterson, 2006).

A single report of demodicosis in a Syrian hamster treated with between 0.4 and 0.6mg/kg of doramectin subcutaneously for six weeks resulted in a dramatic improvement in skin lesions with negative skin scrapings. Initially, both D. aurati and D. criceti were identified. The hamster relapsed at 28 months of age with abdominal alopecia and pruritus. On this occasion, skin scrapings were positive for D. criceti alone. There was a response to a further eight injections of doramectin weekly at 0.6mg/kg, although at the end of this time (with the hamster now aged two years and six months) mites were detected (Sato, 2009).

In the largest study to date (White et al., 2019), several treatments were described with variable results. These included: topical amitraz; topical amitraz with metaflumizone; ivermectin subcutaneously and by mouth; topical selamectin; and moxidectin by mouth. A limitation of the study as emphasised by the authors is that not all treatment details and follow-ups were available on clinical records. The inclination not to spend money on a small rodent with a short lifespan often was a determining factor in the decision not to pursue diagnostic investigations or treatment. Nevertheless, a useful conclusion is that cutaneous conditions in hamsters are common with the three main ones being demodicosis (described here), abscesses and cutaneous lymphoma. The latter could be considered as a possible underlying cause of demodicosis in some cases.

A full list of references is available on request.

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Pharmacogenetics for pain

Does pharmacogenetics play a role in the management of pain in companion animal species?

Rachel Bennett, MA VetMB, CertVA, DACVAA, PhD, is a Diplomate of the American College of Veterinary Anaesthesia and Analgesia and completed a PhD in the clinical pharmacology of the peripheral α2-adrenoceptor antagonist vatinoxan in 2017. She works as a freelance anaesthetist and is co-editor-in-chief of Veterinary Anaesthesia and Analgesia.

Pharmacogenetics is the study of genetics as it relates to individual variation in the response to drugs. Alterations in the genes coding for drug receptors, drug transporters and drug metabolising enzymes may cause clinical manifestations such as: altered drug efficacy; duration of action; or drug-drug interactions.

Although pharmacogenetics and personalised medicine are well established in clinical human medicine, they remain an area of emerging interest and ongoing research in veterinary science. Currently there are few studies describing how genetic polymorphisms may affect the efficacy of analgesic drugs used in companion animal species; or conversely, the occurrence of adverse drug reactions. This article aims to review some of the recent literature describing pharmacogenetic differences in dogs and cats.

**Drug metabolising enzymes**

Cytochrome P450 isoenzymes (CYPs) are a superfamily of hepatic enzymes. They are involved in the metabolism of a wide range of endogenous (eg steroids and fatty acids) and xenobiotic compounds. CYP enzymes are divided into families identified by numbers: CYP1, 2 and 3 and subfamilies designated by capital letters (eg CYP2B). Individual members of a subfamily (ie represented by a single gene) are identified by a further number (CYP2B11). CYP enzymes are responsible for the metabolism of many anaesthetic and analgesic drugs.

**CYP2B11 (human equivalent CYP2B6)**

In dogs, the CYP2B11 enzyme metabolises several sedative and anaesthetic drugs *in vitro*, ie: medetomidine, midazolam, ketamine, propofol and atipamezole. Whilst midazolam and ketamine are substrates for this enzyme, medetomidine and atipamezole are inhibitors. Although breed-related differences in CYP enzyme expression have been described, detailed information about the activity of the enzymes is lacking. Previously, CYP2B11 was identified as the enzyme responsible for the metabolism of propofol in Greyhounds; genetic polymorphisms have not been reported in this breed but pharmacokinetic differences exist.

A preliminary study describing polymorphisms in the canine CYP2B11 gene identified breed-specific abnormalities in: Collies, Labrador Retrievers and German Shepherd Dogs. In an unrelated study, the Border Collie, Labrador Retriever and German Shepherd were found to exhibit genetic polymorphisms within the CYP1A2 and CYP2B11 genes. The authors assert that alterations in drug sensitivity may result from these genetic changes.

In dogs, methadone is reported to be a CYP substrate and may be metabolised primarily by CYP2B11, which contrasts with humans. It remains unclear whether genetic polymorphisms in this enzyme affect the efficacy of methadone in dogs.

**CYP2D15 (human equivalent CYP2D6)**

In dogs, tramadol has little reported analgesic efficacy. This is thought to result from its metabolism and rapid conjugation and elimination in the urine. In humans, CYP2D6 is responsible for the metabolism of tramadol to the active metabolite M1, which is attributed with the major analgesic effect of the drug. Thus far no studies have determined whether genetic polymorphisms could affect the efficacy of tramadol in the dog.

A study performed in Beagle dogs identified differences in the duration of action of the non-steroidal anti-inflammatory drug cimicoxib (Figure 1). Dogs were designated arbitrarily as: extensive metabolisers (EM) and poor metabolisers (PM) on the basis that differences in pharmacodynamic effects were attributable to alterations in CYP2D15 enzyme activity.

![Figure 1](image-url)
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This terminology was based on an *in vitro* study in which CYP2D15 was purported to metabolise celecoxib. Dogs with the PM phenotype showed a significantly longer duration of effect compared with the EM group.

**Opioid receptor studies**

Opioid analgesics form the mainstay of acute pain management in dogs and cats. Genetic polymorphisms within the mu-opioid receptor coding have been described in the dog and cat. Alterations in the canine receptor suggest a greater likelihood of opioid-related dysphoria in the Labrador Retriever, Alaskan Malamute and Siberian Husky.

In a feline study, two groups of cats (groups A and B) were genetically distinct from one another. When pharmacodynamic data were assessed, differences existed in the efficacy of fentanyl and butorphanol, with group A cats showing a greater responsiveness to fentanyl while group B had a longer time to maximal effect. Conversely, group A cats showed a lower peak analgesic effect and more variability in response to butorphanol when compared with group B. This work suggests that genetic polymorphisms may alter analgesic drug efficacy in individual cats, although more work is required to determine the significance of these findings in the feline population of the UK.

**Drug transporter proteins**

P-glycoprotein (P-gp) is an efflux transporter, which functions to exclude xenobiotic substances from the brain among other tissues. A deletion mutation in the gene coding for P-gp exists in several dog breeds, most commonly the Rough Collie, but also in several other herding dog breeds (see Neff et al., 2004).

A study comparing the magnitude and duration of sedation following acepromazine administration described a greater area-under-the-curve in homozygous negative animals when compared with heterozygotes and homozygous positive dogs. Although acepromazine has no analgesic properties, it is often used in combination with opioid analgesics. Caution may be warranted in dogs with this mutation when known P-gp substrates are used clinically. Feline P-glycoprotein genetic polymorphisms have been reported. Affected cats may behave in a similar manner to dogs which carry the P-glycoprotein mutation.

There is limited evidence available for the role of pharmacogenetics in the pain management of dogs and cats. Further studies would allow a more informed approach to the management of acute and chronic pain in these species. Notwithstanding the need for further work in this field, clinicians should consider genetic polymorphisms if lack of efficacy is suspected when analgesic drugs are used.

**References**


Could pain management be the missing piece for pig productivity?

How pain identification and management will feature in the future of pig production

In the United States alone, over 34 million male piglets were castrated without pain management in 2018 (USDA, 2018). Pain experienced by pigs as a result of production procedures such as castration and tail docking has become a controversial area of debate among consumers, legislators and producers.

Identifying, assessing and managing pain in a timely manner to prevent extensive animal pain and suffering is an ethical obligation for all that work in the swine industry, including producers and veterinary surgeons. This article will define pain and how we identify and manage it, and will address what the future implications for pain management are for commercial swine industries.

What is pain?
Pain in animals has been defined as an aversive sensory experience that changes the animal’s physiology and behaviour (Molony and Kent, 1997). Pain is an important condition that adversely affects an animal’s quality of life and when left unmitigated, can result in distress and detrimental effects to the animal’s physical health (Hellebrekers, 2000).

Identifying and diagnosing pain
The main goal is to accurately and effectively identify pain in pigs, diagnose what is causing the pain and ultimately control pain. Pain diagnosis is a difficult process due to unique individual pain experiences (Gaynor and Muir, 2009). However, assessing the presence and experience of pain in animals is paramount in reaching solutions to mitigate or eliminate pain altogether (Rutherford, 2002).

Research to date has employed three approaches for assessing pain on-farm:
1. General body function and maintenance (ie food or water intake, growth and production)
2. Physiological indicators of pain (ie cortisol, heart rate or blood pressure)
3. Behavioural changes at the pig level. Behaviours to evaluate pain sensitivity can be categorised as either pain-specific behaviours (ie tail wagging, prostrating, rump scratching) or deviations in normal behaviour (ie increased nursing, inactivity and aggression among littermates). Piglets undergoing castration demonstrate increased pain-specific behaviours and alter normal maintenance behaviours up to five to seven days post-procedure.

Castration
Surgical castration is a routine procedure practised around the globe that involves physically removing the testicles from male piglets. This procedure is primarily conducted on commercial swine facilities as a means to eliminate unwanted breeding, decrease aggressive behaviour (Bjorklund and Boyle, 2006) and improve meat quality by eliminating boar taint (Griffiths and Patterson, 1970).

Literature dating back to the early 1990s has consistently demonstrated that surgical castration is painful based on observed physiological and behavioural deviations of the piglet (White et al., 1995).

In an attempt to eliminate this pain, alternative methods to castration have been evaluated. These include raising intact boars, immunocastration, sexed semen and genetic modifications (AVMA, 2013). Australia currently utilises immunocastration (a vaccine that chemically castrates the male pig), while many countries in Europe raise intact boars, eliminating the need for castration altogether.
However, many countries, including the United States, China, Denmark, Mexico and Brazil, still primarily castrate piglets without the use of pain management. Given the known welfare implications associated with castration, identifying techniques to mitigate pain associated with this procedure in today’s industry is critical.

Options for pain management

Pain can be managed on-farm through the use of pharmacological interventions which involve administration of drugs to mitigate or alleviate the pain response. For a drug to be utilised in a commercial setting, it must be readily and safely accessible to producers and efficient in terms of labour and cost. The two most promising options for on-farm pain management are local anaesthetics and analgesics.

A common local anaesthetic currently implemented in livestock systems is lidocaine. In pigs, lidocaine can be injected or applied topically to an area and can begin functioning within 10 minutes of application (Haga and Ranheim, 2005).

Non-steroidal anti-inflammatory drugs (NSAIDs) including meloxicam, flunixin meglumine and ketoprofen do not block sensation, but rather alleviate pain by reducing inflammation of injured tissue. Implementing administration of either local anaesthetics or analgesics in a pre-emptive manner can provide pain relief at the time of and several hours following castration. Implementing this pharmaceutical approach can minimise pain sensitivity, although pain experienced by the pig cannot be eliminated.

The future of pain management in livestock

In 2010, the European Commission set the goal to phase out surgical castration in all countries in the European Union by 2018. In the United States in 2014, Tyson Foods, the third largest US pork packer (National Pork Board, 2018), released a statement to its pork producers identifying “supporting the use of pain mitigation (such as anaesthetics or analgesic) for tail docking and castration of piglets” as one of its goals.

According to Canadian Codes of Practice, as of 2016, any piglet castrated must be administered analgesics to control post-procedural pain. These events highlight a change in the livestock industry. As consumers around the world become increasingly concerned with animal welfare, pressure is placed on producers to manage pain.

It is critical that both veterinary surgeons and others involved in livestock production understand the challenges faced in identifying and alleviating pain in animals and implement solutions that can realistically and effectively manage pain on-farm.

A full reference list is available on request

This article was first published on *The Pig Site* ([thepigsite.com](http://thepigsite.com))
A look through the latest literature

Comparison of NSAID prescribing habits of equine practitioners in three countries
Marco Duz and others, University of Glasgow

Little information has been published on the choices made by equine practitioners when prescribing non-steroidal anti-inflammatory drugs. Current practice usually involves the use of phenylbutazone in treating orthopaedic pain and flunixin meglumine for soft tissue injury, although the mode of action of these two drugs is very similar. The authors investigated the prescription choices of 10 UK equine practices, seven in the United States and two in Canada. Their results indicate a higher proportion of patients receive NSAIDs in the US and Canada than in the UK. Practitioners in the UK are also less likely to offer alternative analgesics such as meloxicam, ketoprofen or firocoxib.


Comparison of two brachial plexus block techniques for canine forelimb surgery
Livia Benigni and others, Royal Veterinary College, Hertfordshire

Orthopaedic surgery will generally require the administration of systemic analgesics to control pain but each of the commonly used drug groups may have undesirable side effects. Brachial plexus blocks are an alternative option for pain control during forelimb surgery and several techniques have been described. The authors compare the efficacy of two different methods, an ultrasound-guided brachial plexus block at the level of the first rib (US), and a neurostimulation-guided paravertebral brachial plexus block (N). Successful blocks were achieved in 14 out of 16 dogs (87 percent) in the US group and 12 out of 16 (75 percent) in the N group. The complications recorded consisted of three cases of hypotension (one in the US, two in the N group) and three incidents of Horner’s syndrome (again, one in the US and two in the N group). Both methods provided a good level of pain control without the need for further analgesic treatment.

The Veterinary Journal, 244, 23-27.

Use of transdermal lidocaine patches in dogs undergoing hemilaminectomy
Veronica Re Bravo and others, Dick White Referrals, Cambridgeshire

Lidocaine patches are used widely in human medicine to provide local analgesia in patients with neuropathic pain or when undergoing various surgical procedures. There is however limited evidence on the value of this approach in veterinary patients. The authors described the use of 5 percent lidocaine patches in providing post-operative pain relief in 39 client-owned dogs undergoing hemilaminectomy. However, the number of dogs requiring post-operative methadone and the number of methadone doses were not statistically different in the treatment and control groups.

Journal of Small Animal Practice, 60, 161-166.

Analgesic efficacy of meloxicam in a pain model in sheep
Ian Colditz and others, CSIRO McMaster Laboratory, Armidale, New South Wales

Standard sheep husbandry methods may involve a number of painful procedures such as castration, mulesing and tail docking but the analgesic options available for this species have lagged behind developments in other livestock. The authors investigated the efficacy of different doses of meloxicam in sheep undergoing an experimental procedure intended to elicit a pain response, namely a subcutaneous turpentine injection. Their findings showed that meloxicam was effective in ameliorating various pain-related variables including weight bearing, lameness score and tolerance of a noxious mechanical stimulus.

Australian Veterinary Journal, 97, 23-32.

Pharmacokinetics of meloxicam in African grey parrots
Andres Montesinos and others, Complutense University of Madrid, Spain

Meloxicam is the most widely used anti-inflammatory agent in exotic animal practice and the drug of choice when treating avian patients. However, single dose studies in different bird species have demonstrated wide differences in elimination half-lives. The authors investigated the pharmacokinetics of meloxicam given at daily oral or intramuscular doses of 1mg/kg and 1.6mg/kg for up to 12 days in African grey parrots (Psittacus erithacus). The oral and intramuscular doses were considered to provide clinically equivalent plasma concentrations and were not associated with detectable adverse events.

American Journal of Veterinary Research, 80, 201-207.
Building sustainability into practice

What does it mean to be a sustainable large animal practice?

Whatever the large animal veterinary surgeon does today can be interpreted as being related to sustainability; but, looking through the titles for ongoing work and research, the term “sustainability” appears infrequently. Sophie Tapp is an environmental analyst with Promar International and is looking to apply her understanding from university and research to help develop practical solutions. She uses a working definition of sustainability: “ensuring that the practices of today’s generation do not compromise the ability of the next generation to meet their needs”.

Such a definition lays down a significant amount of responsibility. If a generation is some 25 years, then what could, or should, a veterinary practice have done in the late 1990s that would have benefitted colleagues and clients today? Is it reasonable to go back to the time when Tony Blair was prime minister and consider decisions taken at that time for long-term influence? Bovine spongiform encephalitis was still limiting the sale of beef; the Salmonella in eggs alarm had run its course; antibiotic-resistant coliforms had killed elderly wedding guests; and practices were not expecting to handle foot and mouth disease. Without a crystal ball, how is it possible to ensure that the way we manage matters today has beneficial, rather than harmful, outcomes?

What factors should we be considering?

Sophie points out that sustainability can be usefully broken down into three sections: environmental, social and economic. The environmental focus is probably easiest to appreciate with regard to the next generation. For businesses, the cost or additional effort required to become more environmentally responsible needs to be balanced by the benefits.

Promar International is part of the animal genetics company Genus and works within the supply chain (usually with packers and processors of food), where balancing the needs of farmers and retailers allows each part of a chain to thrive. Those in the middle of the supply chain are able to influence and drive sustainable practices, but are also affected by risks associated with sustainability.

Veterinary practices today would also appear to act in the middle of the responsibility chain, having direct influences on animal management and the attitudes of buyers, processors and retailers. Promar is guided by a “4R” business approach to sustainability:

- Mitigate risk
- Build resilience
- Source responsibly
- Unlock revenue

There is a tool to enable a business to address any issues and feel more confident about their sustainability position. The Promar Sustainability Assessment aims to identify, rate and assess risk to companies in order to understand the impact that these risks could have. Performance criteria are used to measure and track so that improvement can be assessed and actions identified to reduce risk and improve sustainability. The application of key performance indicators is well understood by veterinary surgeons assisting their clients to meet the demands of modern animal production.

There are many examples where a farmer has a clinical and subclinical problem that is preventing the animals from thriving, such as when the risk of further disease is identified, and a programme of control put in place. A straightforward example would be vaccination of calves. Time goes by and the programme reduces the disease to negligible or manageable levels and then a similar problem arises and it is found that the disease programme has not been implemented in full. A risk that was of great concern some time ago has been overtaken by other management issues.

Was the programme not sustainable because of effort or cost, or was the risk not fully appreciated long term? Overcoming this programme slippage is a regular veterinary activity and it is possible to foresee interesting conversations between sustainability specialists and veterinary surgeons in this area.

Learning from others

A recent AHDB Farm Excellence event emphasised the professionalism of the modern dairy herd manager and...
their veterinary practice. At these events, the farmer opens up not only their herd but also the business data, including key performance indicators, for discussion and interrogation by other farmers.

On this occasion, the group learned that the farm has average performance for calving management, milk solids production, herd replacement rate, milk yield from forage and overheads as a proportion of income and better than average data for genetic merit of the herd. From the discussion, it is possible to conclude that the future of the herd is sustainable but that day-to-day aspects, like availability and quality of feedstuffs at an effective cost, are unpredictable.

The meeting addressed lameness – or rather, how to achieve low lameness incidence year on year. Fundamentally, the lesson was: good feet, good food consumption, good milk production, good business. Or, sustainable hooves, sustainable herd.

Sophie emphasises that there are many aspects that any sustainability assessment can and does cover. These include: waste management, animal welfare, responsible sourcing, political risk, energy efficiency, packaging and the use of plastics, carbon footprint, water use and efficiency, labour, environmental practices and land management. It is interesting to consider how the large animal veterinary surgeon supports these factors.

Much is made today about the responsible sourcing of animals and there are various tools that reduce the risk of introducing disease or future poor performance. Maybe this aspect is not obvious to those who are not directly involved, but long-term benefits can be foreseen, and lack of viability realised where mistakes are made or risk avoidance ignored.

It is clear that keeping the food chain free of risk from infection or contamination is a major veterinary role, and it has been argued that this is being undermined by current political inactivity.

The Promar approach is to initiate an initial scoping of the aspects relative to a business and then to develop a bespoke assessment tool. Once the sustainability assessment has been applied, interviews are conducted throughout the supply chain to clarify details, including farmer assessments. Following an analysis and interpretation of the results, recommendations follow with presentations of the findings and discussion workshops.

It seems clear that veterinary practices have a direct contribution to make towards the wide field of sustainability. It would be interesting to hear the outcomes from veterinary surgeons who have been involved in workshops or assessments and any practices that have undertaken a sustainability assessment of their business.

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“Find a colleague and remind them just how much good they are doing”

Summer must be nearly here; though as I write, it’s still mid-April, on my regular walk this weekend, I heard the sheer glory of a skylark’s song and saw one hovering high above me. If you have a device close by, why not call up YouTube and listen to Ralph Vaughan Williams’s amazing piece “The Lark Ascending” as you read this? The Nicola Benedetti Decca recording is my favourite.

Vaughan Williams took the title from George Meredith’s poem, written in 1881, and while the entire piece is over 120 lines long, Vaughan Williams inscribed the beginning and end of the poem on the flyleaf of his composition as follows:

He rises and begins to round,  
He drops the silver chain of sound,  
Of many links without a break,  
In chirrup, whistle, slur and shake.

For singing till his heaven fills,  
’Tis love of earth that he instils,  
And ever winging up and up,  
Our valley is his golden cup  
And he the wine which overflows,  
to lift us with him as he goes.  
Till lost on his aerial rings  
In light, and then the fancy sings.

Isn’t that amazing – “He the wine which overflows, to lift us with him as he goes” – and that’s exactly how listening to the bird high above makes me feel: lifted up. I wonder what lifts you up?

I was going to write this column about exactly what the skylark is doing as he sings – is it mate attraction, signalling to the female that he is a good choice? Singing takes so much energy that a minute’s worth of song shows a really fit individual. Maybe it is showing a predator hawk that he is fit enough to escape easily. Or perhaps it is a territorial display to show neighbouring larks that this is his area.

From a scientific perspective, the skylark song seems too long to be explained by any of these hypotheses. None of the papers proposed that the bird may just enjoy making such a glorious sound. None, of course, suggested that he might be singing his heart out to his creator.

If Nicola has finished her rendition of “The Lark Ascending”, perhaps you would turn on to Robert Glasper playing “So Beautiful” live at Capitol Studios – typing “beautiful Glasper” into any search engine will get you there. Listen through to Glasper’s comments at the end of the piece. He asks people to see themselves as his title has it, “so beautiful”. Do you see yourself that way? It’s just not something we’d ever call ourselves, is it? Yet look back to the skylark. He’s hardly beautiful – what ornithologists might call an LBJ – a little brown job. Yet what he produces is heavenly.

Maybe we need to reflect on what we have done today – the young couple so relieved after you have extracted the sock from their spaniel’s stomach. Or the children happy that you’ve cured their guinea pig’s mange. Or the elderly widow who leaves sad but comforted as you helped her say a last goodbye to her equally elderly Labrador.

Those things are beautiful, quite as much as the birdsong that Vaughan Williams so magically portrays in his music. But somehow in the business of the day and the weight of the things that maybe don’t go so well, we fail to see that what we do is so beautiful. Even if you still can’t quite see it in yourself, find a colleague and remind them just how much good they are doing!  

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David Williams
Associate Lecturer, Veterinary Ophthalmology

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find a colleague and remind them just how much good they are doing”

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My eye was drawn to an excellent paper recently published in the *Veterinary Record* by one of my colleagues at the Veterinary Defence Society (VDS), Catherine Oxtoby, and co-authored by Liz Mossop. Catherine is the Veterinary Risk Manager at the VDS so is extremely well qualified to write a paper titled “Blame and shame in the veterinary profession: barriers and facilitators to reporting significant events”.

We are all aware that safety-critical industries, perhaps most notably the aviation industry, have institutionalised error reporting systems. One could argue that healthcare professions have somewhat lagged.

**Learning from the medical profession**

As part of an effort to improve patient safety, the medical profession has relatively recently made a drive to make reporting adverse events or medical errors central to developing a learning culture. In the medical field, a significant event (also known as an untoward or critical incident) is any unintended or unexpected event, which could or did lead to harm of one or more patients. This includes incidents which did not cause harm but could have done, or where the event should have been prevented. As one may imagine, under-reporting of adverse events in medicine is a major problem, with estimates of under-reporting rates as high as 90 percent.

The reasons for under-reporting among medical doctors would doubtless resonate with veterinary surgeons. The most frequent reasons were professional repercussions, including legal liability, along with blame and guilt, which would presumably be important considerations for veterinary surgeons. However, the fact of the matter is that we simply did not know.

We are now much better informed about the position in our own profession because the paper by Catherine and Liz looked in depth at the factors that influence the discussion and reporting of significant events among veterinary surgeons and nurses.

**Key themes in the veterinary profession**

Three main themes were found to be considered most important among the colleagues who took part in the study. These were: the effect of culture (both at a broad professional level and a more local practice level); the influence of organisational systems; and the emotional effect of error. The study found that fear, lack of time or understanding and organisational concerns were barriers, whereas the effect of feedback, opportunity for learning and structure of a reporting system facilitated error reporting.

Interestingly, professional attitude and culture were found to have both a positive and negative influence on the discussion of error. As ever with studies of this sort, the nature of the questions may mean they are answered in a way that will be acceptable to others. In addition, the numbers sampled were relatively small.

Nonetheless, the study provides very important information of direct relevance to the veterinary profession about the reporting of errors. The study and its findings are too complicated to be done justice in this short piece and I would encourage everybody to read the paper in full.

There is no doubt that there are common concerns with reporting errors within both the veterinary and medical professions. One of the significant findings of the study was a strong acknowledgement that reporting and learning from mistakes is beneficial for individuals, organisations and the profession. As a speaker over many years, I have always felt it was extremely useful to present cases which have not gone to plan. Of course, you need a certain confidence to do that, but there is no doubt we all learn from mistakes.

It would seem that one of the main drivers to this study was to inform the development of a web-based central error reporting system for the veterinary profession. The system is being developed by VDS and must surely be a good thing.

The system has been termed “VetSafe” and we should all be learning more about and using this system because it will benefit both us and our patients for the future, as long as the system is robust and well designed with due deference to client confidentiality and freedom to report without facing unfair consequences. This is a tall order, and I wish Catherine and her colleagues well.

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**Jonathan Pycock**

**Immediate Past President, BEVA**

Jonathan Pycock is an equine claims consultant for the Veterinary Defence Society and an equine reproduction expert. He is the immediate past president of the British Equine Veterinary Association.
What are the best options for pain management?

Analysing the pros and cons of the most commonly used medications and methods for managing pain in horses

Pain management is an essential component of veterinary practice but is often overlooked and underutilised in the equine industry. Defining the cause of the pain is integral to being able to treat the immediate pain and resolve the ongoing disease. Deep pain is frequently more difficult to control than superficial pain, whilst pain, broadly, can be caused by trauma, infection or inflammation, whether musculoskeletal or visceral in origin. Neurological pain is often the hardest to diagnose and treat, requiring long-term analgesics and a multimodal approach.

Critical assessment of orthopaedic pain is more routinely carried out, with various grading systems available, as well as recent advances in computer-generated assessments of lameness. The inherent problem in assessing pain is the non-verbal nature of horses as well as their often-inconsistent demonstration of pain.

Attempts have been made to formulate a pain recognition system via facial expressions. One study demonstrated changes in facial expression that were consistent throughout different noxious stimuli, including: low and/or asymmetrical ears, angled appearance of the eyes, withdrawn stare, mediolaterally dilated nostrils and tension of the facial muscles. The frustrating aspect is that these are all very subjective and have not been fully validated (Gleerup et al., 2014). That said, use of these pain score scales could help diagnose pain earlier than if not attempted.

Following recognition of pain in a patient, a treatment plan can be designed and built around the source of the pain, the animal involved and owner compliance. When designing the treatment plan for an equine patient, it is important to ascertain the severity of the pain as well as the type of pain, as this should alter treatment undertaken.

Multimodal analgesia is the most efficacious way to treat pain, but treatment should, ideally, follow the cascade with first-line treatment consisting of licensed equine products via the appropriate route. Due to a paucity of medication, there is often a need to utilise the cascade and use a product not licensed for equine patients. In these situations, consent should be gained from the owner prior to administration and risk of administration discussed.

Non-steroidal anti-inflammatory drugs

Non-steroidal anti-inflammatory drugs (NSAIDs) are the first-line therapy in the vast majority of equine cases, with a number of products and active ingredients licensed in the UK (Table 1). NSAIDs work by inhibiting cyclo-oxygenase (COX) with different active ingredients affecting COX-1 and COX-2 differentially, with a higher inhibition of COX-2 theoretically being beneficial with fewer side effects. By inhibiting COX enzymes, there will be an alteration in the arachidonic acid cascade, leading to a reduced production of inflammatory mediators. As the clear majority of pain dealt with daily is associated with inflammation, the use of NSAIDs should play a pivotal role in its treatment.

NSAIDs are not without their risk though, and chronic use should also involve ongoing monitoring for signs of toxicity. Gastrointestinal ulceration and right dorsal colitis are the

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE</th>
<th>ROUTE</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flunixin</td>
<td>1.1mg/kg</td>
<td>PO and IV</td>
<td>Licensed for q24h but frequently used q12h. Can be used at a lower dose q8h as an anti-endotoxic</td>
</tr>
<tr>
<td>Phenylbutazone</td>
<td>2.2 to 4.4mg/kg</td>
<td>PO and IV</td>
<td>Licensed for q24h but frequently used q12h</td>
</tr>
<tr>
<td>Meloxicam</td>
<td>0.6mg/kg</td>
<td>PO and IV</td>
<td>q24h, although q12h has been documented for foals</td>
</tr>
<tr>
<td>Firocoxib</td>
<td>0.09mg/kg</td>
<td>PO and IV</td>
<td>q24h for up to 14 days</td>
</tr>
<tr>
<td>Ketoprofen</td>
<td>2.2mg/kg</td>
<td>IV</td>
<td>q24h for 1 to 5 days</td>
</tr>
</tbody>
</table>

TABLE 1 The licensed NSAIDs, their routes and frequency of administration for equid patients
most frequently discussed side effects; albumin should therefore be monitored and any changes in faecal consist-
ency should alert the owner and the veterinary surgeon to a potential toxicity. Renal papillary necrosis is another, albeit uncommon, side effect due to reduction in prosta-
glandin production leading to a decreased blood flow within the kidneys. Regular evaluation of creatinine is useful, although a large percentage of the kidney must be affected to lead to aberrant results. Urination can also be useful if concerned, as can a urine GGT:creatinine ratio. Care should be taken when giving NSAIDs concurrently with other nephrotoxic drugs, such as gentamicin.

There is no indication to use different NSAIDs at the same time, and in fact this would probably be contraindicated due to the inability to dose correctly (and so a higher risk of toxicity). That said, it appears that some pain and some horses will respond better to different NSAIDs. If a change is required, a 24-hour washout should be allowed prior to the administration of the second medication.

Paracetamol

The exact mechanism of action of paracetamol is not fully known. There is an inhibitory effect on both COX-1 and COX-2, with an increased selectivity for COX-2 in humans, which likely leads to the anti-inflammatory effects of paracetamol. There is also a central action, thought to be due to activation of descending serotonergic pathways, but it may also act on opioid receptors.

Although not a potent analgesic on its own, it clinically appears to have an excellent adjunctive effect in most painful cases, particularly laminitic cases. With limited side effects (liver function should be monitored when chronic use is planned), it can be given in cases where NSAIDs cannot be administered (colitis, gastric ulceration, renal compromise, etc).

It should be given at 20mg/kg orally twice daily. No licensed product is available for horses, but formulations are available for dogs and pigs with the latter as a liquid. The liquid for pigs anecdotally appears to cause oral ulceration and so the author washes the mouth out following administration.

Gabapentin

Gabapentin is a structural analogue of GABA, but it appears that the drug and its metabolites do not bind to the recep-
tors. Therefore, its action appears to be associated with a reduction in neurotransmitter release. Various doses have been trialled in horses with up to 20mg/kg PO given with no adverse side effects. Humans and small animals frequently show evidence of ataxia and sedation but thankfully this does not appear to occur in horses. The author generally starts treatment at 10mg/kg PO q12h and this can be increased to 20mg/kg PO q8h – although this is rarely realised due to financial constraints. The author generally uses gabapentin in cases that have been refractory to NSAID use (laminitics) or where NSAIDs are not appropriate (colitis). Just like paracetamol, it is more frequently used as an adjunct to other analgesics rather than a solitary treatment.

Local anaesthetic agents

Where possible, local anaesthetics applied topically, perineurally, systemically or epidurally can have a huge impact on pain control. The licensed products available in the UK include lidocaine, procaine and mepivacaine, but mepivacaine is the only product that can be preservative/adrenaline free, making it more useful for procedures such as epidurals. Lidocaine is available as solutions without adrenaline, but is not licensed in equids.

The most frequently used local anaesthetic is systemic lidocaine. It is frequently used as a continuous rate infusion (CRI) in post-op colic cases due to possible pro-motility/anti-inflammatory effects, but also in chronic colic or colitis due to the continuous pain relief provided. The author will often use this in cases such as severe colitis where a multimodal analgesia program is required. A load dose of 1.3mg/kg should be given followed by 0.05mg/kg/minute.

Care should be taken to not overdose as neurological side effects develop quite quickly. The therapeutic win-
dow is small so even slight changes in flow rate can lead to abnormalities. When a horse is treated with lidocaine, all personnel involved should be aware that if abnormal behaviour is noted, the lidocaine should be stopped and the patient reassessed after 20 minutes. In the author’s hospital, all lidocaine CRIs are run through a drip pump to reduce the risk of inadvertent overdose and this is the recommended administration method.

“With opioids, care should be taken to record all use and wastage appropriately due to their controlled substance status.”

Opioids

This class of medication offers several licensed medications that can be given through various routes (Table 2). Each drug has a different mode of action via different receptor activity and affinity. The exact effect of each drug is beyond the scope of this article, but the primary effect is central (although opioid receptors are also found outside the CNS). Extended use in horses can lead to decreased GI motility and a risk of impaction. This should be weighed up against the analgesic effects that will increase GI motility in equids. Licensed prod-
ucts for horses include pethidine, butorphanol and buprenor-
phine but morphine, fentanyl and tramadol are unlicensed opioids often used in equine patients (Table 3).

With opioids, care should be taken to record all use and wastage appropriately due to their controlled substance
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status. When applying fentanyl patches, the author recommends using Elastoplast over the patch with the vet or vet nurse’s name, the amount applied and when it was applied written perpendicularly across multiple stripes to ensure there is a reduced risk of abuse.

Pethidine is licensed as an analgesic for the symptomatic relief of pain in spasmodic colic in horses and has a very short duration of action (one to four hours); its use in chronic pain is therefore limited. It must be given intramuscularly as intravenous administration can cause seizure-like activity due to histamine release. If this occurs, the clinical signs can be controlled by diazepam or pentobarbitone injections. The author rarely uses this medication primarily due to its short half-life.

Buprenorphine is licensed for post-operative analgesia in combination with sedation, as well as causing potentiation of the sedative effects of centrally acting agents. Although potent and theoretically lasting 6 to 12 hours, the cost can be prohibitive as the multi-dose vials only come as 10ml. Its use via an oral-transmucosal route has been researched and a dose of 6µg/kg provides extended analgesia and so can play a role in cases that are refractory to injections.

Butorphanol is licensed for moderate to severe pain in horses and has been shown to alleviate abdominal pain associated with torsion, impaction, intussusception, parturition and colic. More frequently, it is used in conjunction with detomidine to induce profound sedation. The author does use butorphanol intramuscularly in cases where additional analgesia is needed between administration of NSAIDs or when a colic is refractory to routine analgesics.

The remainder of the opioids discussed are not licensed in equine patients. Morphine is frequently used as a preoperative analgesic given intramuscularly or intravenously (following sedation to reduce the risk of excitation). Frequent administration is required as the duration of action is around four hours with no evidence of morphine systemically at seven hours post-administration. Therefore, a dosing regimen of q4h is required in very painful horses. Morphine is also regularly used in epidural medication and can be used for intra-synovial medication. Again, this is frequently used for colic or laminitic patients.

Transcutaneous administration of fentanyl is an excellent extended use opioid for chronic pain

Corticosteroids
With profound effects on both COX and lipoxygenase

---

### TABLE 2 Licensed opioids for equine patients

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE</th>
<th>ROUTE</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pethidine</td>
<td>1 to 2mg/kg</td>
<td>IM (contraindicated IV)</td>
<td>One-off, duration of action is short (1 to 4 hours)</td>
</tr>
<tr>
<td>Buprenorphine</td>
<td>10µg/kg</td>
<td>IV</td>
<td>5 minutes after sedative administration. Repeat administration can be performed &gt;2 hours after first treatment, once</td>
</tr>
<tr>
<td>Butorphanol – analgesia</td>
<td>0.1mg/kg</td>
<td>IV</td>
<td>Repeated as required</td>
</tr>
<tr>
<td>Butorphanol – sedation</td>
<td>0.012mg/kg</td>
<td>IV</td>
<td>With detomidine hydrochloride</td>
</tr>
</tbody>
</table>

### TABLE 3 Unlicensed opioids for equine patients

<table>
<thead>
<tr>
<th>DRUG</th>
<th>DOSE</th>
<th>ROUTE</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morphine</td>
<td>0.1 to 0.2mg/kg</td>
<td>IM or IV</td>
<td>Variable</td>
</tr>
<tr>
<td>Fentanyl patch adult</td>
<td>3 x 100µg/h</td>
<td>Transdermal</td>
<td>Replace every 72h</td>
</tr>
<tr>
<td>Fentanyl patch foal</td>
<td>1 x 100µg/h</td>
<td>Transdermal</td>
<td>Replace every 72h</td>
</tr>
<tr>
<td>Tramadol</td>
<td>10mg/kg</td>
<td>PO</td>
<td>q6h</td>
</tr>
</tbody>
</table>
pathways, these products have an excellent effect on inflammation. Therefore, when there is a definitive inflammatory focus, steroids can be useful as an adjunctive therapy.

The risk of using NSAIDs in conjunction with steroids appears to be small in equine patients when compared with small animal patients. The owners should be warned of the theoretical risks of laminitis, although recent research shows that there is not an increased risk of laminitis in cases that have been given steroids (Jordan et al., 2017). It should be noted that, as a retrospective study, there is inherent bias and therefore the author still warns of the risks when the patient is high risk (pituitary pars-intermedia dysfunction or equine metabolic syndrome).

Systemic treatment options include dexamethasone at 0.1mg/kg IV/IM/PO q24h or prednisolone at 1mg/kg PO q24h. With equine licensed products available for both drugs, these should be used. Steroids can be administered intra-synovially if there is chronic pain such as osteoarthritis, with methylprednisolone and dexamethasone licensed for this, and triamcinolone frequently used off-label.

Epidural
Epidural-administered analgesia is an excellent technique in cases of severe hindlimb pain or surgeries including the perineum and tail. Various medications can be given including opioids, local anaesthetics, α-2 agonists and ketamine. Different combinations of these drugs will lead to variable analgesic levels as well as duration. This can be done as a one-off injection but in the more chronic cases, an epidural catheter can be placed. The latter requires hospitalisation due to the high risk of contamination and intensive nature of their maintenance. The exact methodology and drug doses/choices are beyond the scope of this article; these have been mentioned for reference.

Conclusions
Defining the painful patient, alongside the severity of the pain, can be difficult in horses, although common sense should apply following routine procedure. Most cases can be treated simply as long as medication is given in a timely manner (ideally prior to the painful stimulus during surgery) but in severe chronic pain cases, multimodal therapy will often be required. This can appear daunting, but with multiple analgesics available via multiple routes, a sensible plan can be created for most patients – although some of the medications will require hospitalisation.

Other complementary therapies should be considered, including hydrotherapy, ice, acupuncture or, if dealing with laminitis, appropriate bedding or farriery work. The exact treatment protocol for analgesia must be designed around the individual patient and disease and therefore will differ greatly between patients.

References
Hiring employees who may have criminal convictions

What is the law on criminal records and what information should you look for when screening job candidates?

A recent study, conducted for the Scottish Centre for Crime and Justice, found that 11 million people in the UK have a criminal record and that 75 percent of employers admit to rejecting a job applicant once a criminal conviction is disclosed.

And for some there is good reason to be that selective. As a search of the web for “staff dishonesty in the veterinary profession” shows, the problem of criminality isn’t a new one. In 2010, an RCVS disciplinary hearing led to the removal of James Lockyear from the register for dishonesty. And there are numerous reports of veterinary practice managers being jailed for theft, including one, Della Barbour, who according to a BBC news article from 2012, stole £290,000 over five years from the Elm Veterinary Surgery in Plymouth; she was sent to prison for two years and eight months.

With this in mind, what is the law surrounding employees with criminal records, and what can employers do to ensure they are asking the right questions at the right time?

It’s important to note that an employer can obtain information on a person’s criminal record. The law

According to Mark Stevens, a senior associate at law firm VWV, it’s important to note that an employer can obtain information on a person’s criminal record. “They can do so in one of two ways – either by asking the candidate or employee directly, or by requesting an official criminal record check by the Disclosure and Barring Service (DBS).”

The treatment of individuals with criminal records is set out in the Rehabilitation of Offenders Act 1974 (ROA 1974). This Act provides a system for the records of people with convictions to be cleared.

Subject to certain exemptions, a person whose conviction is spent is entitled to hold themselves out as having a clean record – only “unspent” convictions need to be disclosed. However, even with unspent convictions, it is worth bearing in mind that an applicant may not disclose this information.

Mark advises that if an individual has a spent conviction and they choose not to disclose it when questioned, subject to certain exemptions, “they cannot be subjected to any liability or prejudice for their failure to disclose, and this would include an employer not hiring them. Failure to disclose a spent conviction is not a lawful ground for dismissal”. An employee dismissed on these grounds may bring a claim for unfair dismissal.

The Rehabilitation of Offenders Act 1974 (Exceptions) Order 1975 identifies that in certain cases spent convictions should be disclosed. The Order sets out certain occupations, offices and professions where the disclosure of spent convictions can be required:

- Professions such as medicine, lawyers, accountants, vets, chemists and opticians
- Those employed to uphold the law, including judges and prison officers
- Certain regulated occupations, including the financial services
- Those who work with children and vulnerable adults
- Those whose work could pose a risk to national security

If an applicant fails to disclose a spent conviction in these circumstances, an employer will have a valid reason for withholding or withdrawing an offer of employment or dismissal.

Disclosure and Barring Service

As mentioned earlier, an alternative to asking an employee about their past is for an employer to obtain information on an individual’s criminal record via a DBS check, which will include all spent and unspent convictions and

ADAM BERNSTEIN
Adam Bernstein is a freelance writer and small business owner based in Oxfordshire. Adam writes on all matters of interest to small and medium-sized businesses.

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eliminates the need to rely solely on the voluntary disclosure of an individual. There are two main types of DBS check: standard disclosure and enhanced disclosure. Mark reminds employers that they “should remember when considering requesting a DBS check that this can only be requested if the individual in question is to undertake a role set out in the Exceptions Order”.

He explains that “if a DBS certificate discloses convictions, employers should be careful not to respond in a knee-jerk way when deciding if the individual is suitable for a role.”

His reasoning is based on a recent case where, in January 2019, the Supreme Court found that the way that criminal records were disclosed to employers infringed an individual’s right to private life: “It has been reported that the Supreme Court’s decision was that the criminal records disclosure scheme was disproportionate in certain respects – specifically in respect to the requirement that all previous convictions should be disclosed (regardless of how minor they might have been), where the person has more than one conviction, and also in respect to young offenders.

“The repercussions of this case remain to be seen – but it could lead to significant changes to the way that the DBS system works.”

Employers should always keep in mind that information on a person’s criminal record is personal data and cannot be processed unless there is a lawful basis for doing so. As well as having a lawful reason for processing the data, an employer should comply with the data protection principles, which include making sure the processing is adequate, relevant and not excessive.

An applicant has a criminal record

How should an employer react if a conviction, spent or unspent, is disclosed? Mark suggests that an employer’s response should depend on the individual circumstances – regardless of how the information is obtained.

“If the conviction is spent and the position applied for does not fall under the Exceptions Order, the employer may not refuse to employ the individual on the basis of the conviction. If the conviction is spent, but the position falls under the Exceptions Order, then an employer may refuse to employ the individual.

“When dealing with positions which fall within the Exceptions Order, due regard should be given to industry and sector specific guidance as this will often set out how an employer should proceed. If the conviction is not spent the employer may refuse to employ the individual, but again, appropriate regard should be given to any sector specific legislation.”

A current employee did not disclose

When looking at the issue from the perspective of an employee, Mark says that here too, “an employee is entitled to withhold a spent conviction, subject to the exceptions, and it is likely that if an employee with qualifying service is dismissed for this reason, the dismissal will be unfair”.

He adds that if a person has deceived their employer about a criminal record and they were not entitled to withhold the information, ie they have an unspent conviction or the exceptions to ROA 1974 apply, then the employer may terminate their employment contract for breaching the implied term of mutual trust and confidence.

But Mark offers a note of caution here: “Care should be taken where an employee has sufficient qualifying service to bring an unfair dismissal claim as an employer will need to show that dismissal was within the band of reasonable responses.” He says that in considering this, an employer will want to think about the employee’s performance record as well as whether or not the conviction was relevant or particularly serious.

In summary

As can be seen from the recent research published and the legal considerations when requiring criminal records be disclosed, it may not always be appropriate for an employer to ask applicants about criminal convictions.

If an employer chooses to continue to ask for criminal records information in their application form, it should consider writing a detailed recruitment policy with a section on the recruitment of ex-offenders that explains how the suitability of candidates with a criminal record is assessed. This could include the nature of the offence, the relevance to the role applied for, how old the offence is and whether an individual’s circumstances have changed since the offence was committed.

Employers can also continue to reject applications on the basis of a criminal record without taking these steps. However, giving more thought to the situation may open up a wider range of suitable candidates for a role.
What costs should you consider when pursuing debt recovery and unpaid fees?

Practices may have to use multiple strategies to collect unpaid fees from clients

When faced with a pet in need of emergency treatment, naturally the owner’s primary concern is for their pet. Often the means to pay comes secondary to an animal’s welfare and health, particularly in desperate and life-threatening conditions where treatment is required immediately.

For practices with customer payment delays there is reputational concern of the adverse effect debt chasing can have on vet–pet owner relationships. However, if practices are to operate profitably, there must be a real focus on the recovery of debts from those pet owners who do not pay at all.

Pursuing legal action

The need for legal action should not be the first response to any unpaid vet fees. Practices should make reasonable efforts to obtain payment prior to any alternative action.

Unfortunately, the exercise of sending repeat demands for payment does not always yield the desired result and it may be necessary for practices to have an alternative strategy in place.

Before practices are able to pursue any debt against a pet owner, it is crucial to consider the costs involved with instructing a solicitor to begin the process. This is in addition to any court fees that will be incurred if a practice decides to issue a claim against the debtor.

Pursuant to court action, the debtor will need to be sent a pre-action letter to allow them the opportunity to make full payment of the debt (or propose a repayment plan) within 30 days. This letter is to be sent in accordance with the Pre-Action Protocol for Debt Claims which applies to any business claiming a debt from an individual or sole trader.

The primary aim of this protocol is to avoid court proceedings where possible and allow the parties to come to a resolution without interference from the court, though this is not always the outcome reached.

The costs associated with issuing the pre-action letter can vary depending on the nature and complexity of the claim. In cases where the debtor is simply ignoring the obligation to pay, a letter containing the threat of court action can prove to be a cost-efficient way of prompting payment or agreeing a repayment plan.

Thinking strategically

Practices need to bear in mind that it is sometimes simply not cost effective to pursue smaller debts.

For further information, please contact Dan at:
dgodfrey@hcrlaw.com
I am feeling reasonably optimistic that the anti-vaccine movement may finally be being brought to task in the public eye. I know I am preaching to the converted, but I thought a quick review of recent stories in the public domain would be useful to have handy for your next discussion with a client about the pros and cons of vaccination.

There have been a few headlines recently that have brought to light two important points: vaccination works and saves lives, and not vaccinating a population makes them vulnerable to disease. Yes, all medical interventions have some risks, but these are small, and Andrew Wakefield has been struck off.

If I have a client unduly fretting over possible adverse reactions of any medicine, I like to do a “guess the medicine” quiz with this list of nasty side effects: “Stop taking this medicine and go to hospital straight away if you notice... allergic reaction... rash, blistering or peeling of the skin, swelling of face, lips, tongue or throat... sudden wheezing or collapse... bruising, bleeding, breathing problems... abdominal discomfort, dark urine... changes to your liver.” What is this evil potion? Is it the MMR vaccine? Is it some sort of chemotherapy agent? An immunosuppressant? No. That is from off-the-shelf supermarket 500mg paracetamol. Who’d take something with that list of side effects?

**Point 1: Vaccines work**

A good news story buried in all the Brexit chaos explained that the human HPV vaccine is working to reduce cervical cancer in women. From the ITV news service this week: “The team, led by Tim Palmer at the University of Edinburgh, analysed vaccination and screening records for 138,692 women born between 1988 and 1996 who had a screening test result recorded at age 20... They found that compared with unvaccinated women born in 1988, vaccinated women born in 1995 and 1996 showed an 89 percent reduction in CIN grade 3 or worse, an 88 percent reduction in CIN grade 2 or worse, and a 79 percent reduction in CIN grade 1... Unvaccinated women also showed a reduction in disease, suggesting that interruption of HPV transmission in Scotland has created substantial ‘herd protection’, researchers said.” The Cancer Research website shows a 24 percent reduction since the 1990s. And as a bonus, the HPV vaccine in our area is provided by Virgin Healthcare. There’s an aptronym for you!

**Point 2: Not vaccinating exposes people and animals to disease**

This came in the unusual case of Rockland County, New York. They have banned all unvaccinated people under the age of 18 from public places for a month due to a measles outbreak. This includes schools, playgrounds and shopping centres. Those breaking the rule could face a $500 fine or six months in prison. We have had measles outbreaks in the UK following reduced vaccine uptake, including some deaths.

The WHO cites vaccine hesitancy as one of the top 10 threats to global health. A recent study in *Vaccine* showed that anti-vaxxers fall into different subgroups, with some not trusting the medical profession, some believing in alternatives and some not believing the diseases exist. Most vets will have seen some of the diseases we vaccinate for, be it clostridial disease in sheep, parvovirus in dogs or cat flu in cats. I think vaccination is so successful that once you get a generation that has not experienced the diseases, all they hear about are the rare side effects, and the hoaxes.

Side effects from one vaccine are often lumped together by anti-vaxxers into generic vaccine adverse side effects for all vaccines. It is also not just an issue in the UK and USA. The following is a report on a new vaccine (2017) for dengue fever in the Philippines, which did have some genuine adverse effects: “The result was broken public trust around the dengue vaccine as well [as] heightened anxiety around vaccines in general. The Vaccine Confidence Project measured the impact of this crisis, comparing confidence levels in 2015, before the incident, with levels in 2018. The findings reflect a dramatic drop in vaccine confidence from 93 percent ‘strongly agreeing’ that vaccines are important in 2015 to 32 percent in 2018. There was a drop in confidence in those strongly agreeing that vaccines are safe from 82 percent in 2015 to only 21 percent in 2018.”

Things are starting to shift though, with the major social media platforms coming under pressure to stop anti-vaxxer misinformation being spread. The fundraising platform GoFundMe has banned anti-vaxxers from using its site.

If all else fails to convince your anti-vaxxer client, there is always the ultimate test. Probably best left as a thought experiment, but if anyone ever does it for real, let me know! Take one fully vaccinated vet with post-exposure vaccine protocol ready. Take one anti-vaxxer client. Take one rabid dog. Shut all three in a room for three hours. See which one (and there will be only one) is still alive in six months. ☹️
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