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With this new issue, I’d like to take the opportunity to introduce myself as the new editor of Veterinary Practice magazine. I recently finished my MSci at the Royal Veterinary College in Applied Biological Research and I have a keen interest in animal health and infectious diseases – notably virology.

I wanted an editorial position in a field related to veterinary medicine, so I’m very excited to be working on the magazine! I’m looking forward to meeting some of you at various conferences and events in the time to come, and I hope to continue the great work Jennifer has been doing over the last few years.

September sees the return of the Official Vet section, where you will find general news and updates, as well as information about the upcoming Official Vet conference. John Flannery and Carrie Batten reveal their team’s efforts to develop a response to the looming threat of a BTV outbreak. We also spoke to Sarah Smith, part of the Equine Disease Surveillance Programme, about the equine challenges encountered in the UK today.

Equine diseases are “In focus” this issue, be sure to read about Nicola Menzies-Gow’s experiences with equine endocrinopathies and Melanie Perrier’s cases of guttural pouch mycosis.

In the equine section, you will learn about challenging dermatology cases with Janet Littlewood and Tim Nuttall in their interview with Kieran O’Brien, where they share diagnostic and therapeutic approaches to common equine skin issues. With the upcoming BEVA congress later this month, discover the programme, both academic and social, and read our Q&A with the new BEVA president, Tim Mair.

The first article in a new exotic-focused series by Ashton Hollwarth highlights the importance of correct positioning and anaesthesia when radiographing birds. In the innovation column, read about a new approach to tailored microbiome supplementation.

Rachael Bufton discusses hydrolysed diets in the context of diagnosing cutaneous adverse food reactions in the small animal section this month, where you’ll also learn about zinc-responsive dermatitis in an article written by dermatology specialist Anita Patel.

“September sees the return of the Official Vet section”
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Dermatology
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Importance of veterinary wellness highlighted following WSAVA survey

Over 4,000 veterinary professionals worldwide have reported experiencing stress and diminished well-being in an online survey conducted by the Professional Wellness Group (PWG) of the World Small Animal Veterinary Association (WSAVA). The results were presented by Nienke Endenburg, a psychologist and co-chair of the PWG during WSAVA Congress in Toronto on 17 July 2019.

All members of the veterinary team and all areas of the world are affected, with females, younger professionals and veterinary nurses most seriously impacted. The results indicate that professionals in Africa and Asia are the least likely to discuss mental health, causing concern due to the rapid development of the profession in these continents.

During the subsequent panel discussion, veterinary professionals were encouraged to take control of their well-being by making smart career choices, supporting their colleagues and committing to "self-care".

Panelist Jen Brandt, the American Veterinary Medical Association’s Director of Member Well-being and Diversity Initiatives, said that: “Well-being is the outcome of individual choices, organisational culture and potentially a host of other factors.

“When we refer to self-care, we aren’t just talking about behaviours and choices that are comfortable or easy... [but rather] the intentional, consistent practice of taking an active role in protecting one’s own well-being, recognising when needs exist and... addressing them.

“Sometimes, this requires making difficult choices, including leaving [unhealthy] relationships or environments. I often tell folks that we cannot give away what we do not have. If we want our environment to be healthy, a key starting point is prioritising our own emotional and physical well-being.”

Nienke said: “Our research... confirms a probable correlation between a career in veterinary medicine and an elevated risk of mental health issues... likely... caused by a combination of factors including working environment, personal characteristics and client pressures. We are very concerned at the impact this is having on thousands of veterinary professionals worldwide and believe it must be addressed without delay.

“The study has provided us with some very important data which we are now analysing in more detail... We will then develop an urgent action plan. We will share the helpful resources already created by some veterinary associations... [and] will develop additional tools to ensure all veterinary healthcare team members can access help when they have – or ideally before they have – a mental health problem. We hope our efforts will be another important step towards bringing about positive change and enhancing the well-being of all veterinarians globally.”

Toxic blue-green algae cases on the rise

A recent increase in reports of toxic blue-green algae across the UK is prompting the BVA to urge people to take extra precautions while walking pets near affected water bodies.

Blue-green algal blooms may appear as green or greenish-brown scum on the surface of water and can contain toxins that can be harmful for animals if ingested, even in small quantities. Dogs can swallow this algae by drinking affected water or while licking their fur after swimming.

Exposure symptoms, including vomiting, diarrhoea, drooling, disorientation, trouble breathing, seizures and blood in faeces, can appear within minutes or hours depending on the type of toxin ingested. If left untreated, it can cause liver damage and ultimately be rapidly fatal.

BVA Junior Vice President Daniella Dos Santos said: "We know that some dogs enjoy nothing better than a paddle in a cool lake while on a walk during summer months, but my advice to pet owners would be to keep your dog on a lead during walks near water confirmed to have toxic algal blooms. While not all blue-green algae are poisonous, it is impossible to tell the difference visually, so it is better to be safe than sorry.

"There is currently no known antidote for the toxins, so prompt veterinary treatment is essential to tackle their effects and ensure a good chance of recovery.”

BVA addresses new inquiry into puppy smuggling

The BVA has welcomed the launch of the Environment, Food and Rural Affairs (EFRA) committee inquiry into puppy smuggling, which will consult on tougher pet import controls, the impact of Lucy’s Law and whether the UK’s demand for puppies can be met through domestic breeding.

BVA Junior Vice President Daniella Dos Santos stated: “We are very pleased to see the EFRA committee... launch an inquiry to combat the illegal trade in puppies.

“Whilst the [EU] Pet Travel Scheme has made the transport of pets between the UK and mainland Europe easier and more cost effective, the circumvention of legislation by unscrupulous breeders raises serious health and welfare concerns.

“That is why BVA issued 15 recommendations... to strengthen... [all] pet movement legislation, such as extending the waiting time post-rabies vaccination to 12 weeks, better enforcement and clearer routes for reporting concerns.”

BVA will consult members and respond to the EFRA committee inquiry by the 23 September 2019 deadline.
High Quality Dental instruments designed for Veterinarians.

The new range of Ergo dental instruments feature an innovative handle design providing comfort coupled with soft silicon inserts to provide added grip during use.

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Discussions about electric containment fences needed to improve animal welfare

The BVA is encouraging vets to speak to clients about containment fences, helping them to ensure they are always used responsibly and safely. The BVA position on the use of electric containment fences in livestock and horses recognises that containment fences are a necessary option for many clients but makes recommendations on how to limit their potential harm to animals and humans.

BVA President Simon Doherty said: “As vets, we know that electric containment fences are often a necessary part of rural life to allow animals to graze safely and efficiently. But we also recognise that they can harm or injure animals, especially if not correctly designed, installed or maintained. “We’re encouraging further research into alternative, non-harmful ways to contain livestock and horses. Until then, we’re supporting the responsible use of electric containment fences by providing vets with some top tips and references to kickstart conversations with their clients.”

- Signpost to best-practice guidance such as: National Equine Welfare Council Equine Industry Welfare Guidelines Compendium for Horses, Ponies and Donkeys and AHDB Electric fencing for livestock guidance
- Make sure the strength of current is appropriate for the species to avoid severe shocks
- Carefully maintain batteries used to power electric fences to avoid any damage that could cause leakage, environmental hazards or potential toxicity in livestock
- Attach flags to fencing or other visual markers to make sure that the fence is visible to livestock and horses
- Use highly visible tape or rope-like fencing for horses
- Train livestock and horses so that they can get used to fencing in a controlled environment
- Quickly identify, monitor and remove animals that do not respond to training

2020 RCVS Knowledge Awards

The 2020 RCVS Knowledge Awards are now open for recognising examples of continuous quality improvement (QI) in practice. The competition rewards veterinary teams and individuals who have achieved better outcomes through QI initiatives. Individual winners will be crowned “Knowledge Champions” and one team will become RCVS Knowledge’s “Champion Practice”. Each winner will also receive a £250 reward, tickets to the awards ceremony and the opportunity to work with RCVS Knowledge to further promote their QI work. The deadline for nominations is 17 October 2019. The deadline to apply on your own behalf or that of your team/practice is 29 November 2019.
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New diagnostic blood test for cyathostomobiosis in horses set to launch

A new blood test for diagnosing small redworm (cyathostomin) infections in horses is to be launched by Austin Davis Biologics (ADB), the providers of EquiSal tapeworm saliva testing service, in autumn 2019.

The new test, developed at Moredun Research Institute (MRI), enables detection of all stages of the small redworm life cycle, including the all-important encysted larval phase. Until now, it has not been possible to test for encysted small redworm as faecal egg counts (FEC) only detect the presence of egg-laying adult worms. This has meant that a routine winter treatment to target this life cycle phase has become the recommended practice.

Small redworms are the most common gastrointestinal parasites to infect horses. When horses harbour a large burden of encysted larvae that emerge en masse from the intestinal wall, clinical symptoms develop, such as diarrhoea and colic, which can be fatal (larval cyathostominosis). Moxidectin is the only anthelmintic capable of eliminating these encysted stages for which worm resistance is not known to be widespread. To protect the effectiveness of this anthelmintic, targeted treatment programmes are required to ensure that the drug is only administered when it is really needed. The availability of a diagnostic test to detect all intra-host stages of small redworm will be of great value to equine vets, enabling them to make a differential diagnosis as well as informed treatment decisions.

The blood test has been developed by Jacqui Matthews’s group at MRI, the main funder being The Horse Trust. In recent years, ADB has worked with the Matthews group to develop the blood test for commercialisation and the new service provision represents the first phase. Corrine Austin of ADB said: “We are thrilled to be making this test available to horse owners after extensive research has been conducted to achieve high accuracy. ADB are now developing laboratory ELISA kits to enable independent veterinary laboratories to conduct blood testing; these kits are expected to reach market during 2020.”

Jacqui commented: “It is great to see the commercialisation of this much-needed test to support sustainable worm control in horses. The test fills an important gap in our diagnostic toolbox and will enable horse owners to work with their veterinarians in targeting anthelmintic treatments against cyathostomin infections and hence help protect these important medicines for the future.”

Veterinary practices can contact ADB at info@austindavis.co.uk to register interest in the diagnostic test service

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UK organisations team up for consistent farm medicine stewardship

Hybu Cig Cymru – Meat Promotion Wales (HCC) and Quality Meat Scotland (QMS) are the latest organisations to join the Responsible Use of Medicines in Agriculture (RUMA) Alliance, strengthening the farming industry’s ability to apply clear, consistent standards of farm medicine stewardship, particularly antibiotics, across the UK.

RUMA chairman Gwyn Jones says the involvement in RUMA of the two organisations strengthens the UK’s approach to antibiotic stewardship which has helped to reduce farm antibiotic sales by 40 percent so far.

Gwyn explained: “RUMA now has deep representation in all parts of the UK, at all stages of the supply chain and in every main livestock sector, which will be essential in delivering the RUMA Targets Task Force 2020 targets for antibiotic use... Meeting these will help towards achieving the UK Government’s 5-year action plan on antimicrobial resistance and the supporting measures already in place in Scotland and recently announced in both Wales and Northern Ireland.

“The voluntary approach... is making progress sustainable and cost-effective. We must stay focused to ensure that we deliver what has been promised and reduce any impact UK food and farming might have on the overall burden of antimicrobial resistance now and in the future.”

Stem cell treatment for equine lameness receives marketing authorisation

Arti-Cell Forte, the first stem cell-based veterinary medicine to receive marketing authorisation for the treatment of equine lameness, is being hailed as a breakthrough medicine for degenerative joint disease in horses, says Boehringer Ingelheim Animal Health.

Amy Scott, Boehringer Ingelheim’s performance horse portfolio manager, explains why the treatment is such a significant step for equine lameness: “Arti-Cell Forte is the first ‘ready-to-use’ stem cell-based product to be licensed in any veterinary species, and the only stem cell treatment to contain induced cells, representing a significant leap forward in both stem cell therapies and medicine as a whole.

“Arti-Cell Forte contains stem cells that have been chondrogenically induced and therefore primed to develop into the cartilage cell lineage. Studies have shown that chondrogenically induced stem cells demonstrate an enhanced clinical outcome compared to un-induced stem cells in the treatment of joint disease in horses. This makes Arti-Cell Forte a highly targeted and effective treatment for cartilage damage associated with degenerative joint disease.”

CVS to launch network of peripatetic practitioners across the UK

CVS has announced that it is to become the first large veterinary group to formally develop a network of peripatetic Advanced Practitioners, aiming to improve the breadth and depth of their clinical service offering and offer an attractive clinical career pathway for experienced vets.

Ben Walton, CVS’s director of the Advanced Clinical Services Network, commented: “The peripatetic model is an attractive proposition from a number of perspectives. For the host practices, it allows cases to be managed to a greater depth in-house... and increasing opportunities for development of the practice team. It also allows the retention of revenue from these cases, which in turn justifies investment in facilities. For the client and patient, it improves the level of care that they receive at their home practice.”

One of the main advantages, Ben believes, is clinical career progression for experienced vets: “Many vets are well supported to gain certificates and Advanced Practitioner status, but often there isn’t a satisfying caseload at the end of it. Within the new network, experienced vets will have a caseload that is predominantly or exclusively within their preferred discipline, and as they will be performing higher-value work than they would in a GP position, better remuneration packages will be justifiable.”
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When things go wrong, the experiences of pet owners and vets may be strikingly similar and yet damagingly divisive.

Involvement in errors often results in serious health effects and emotional distress, as well as performance and work-related consequences in staff members. We've all been there: the sickening feeling in the pit of your stomach when you see that you have failed. The fear of the inability to now manage the case can prevent us from being able to help this patient at all. And the loneliness of knowing this is all your fault is very isolating. Sometimes, our distress prevents us from reaching out to the very people who are feeling similar emotions at that time: the owners.

Guilt

We know that vets feel guilty after making mistakes, and owners often have similar or even stronger feelings of guilt. Owners often berate themselves and feel guilty about not keeping close enough watch. “Maybe I shouldn’t have consented to surgery.” “My dog trusted me, and I let her down.”

Although full disclosure of errors is increasingly recognised as an ethical imperative, vets often shy away from taking personal responsibility for an error and believe they must “choose words carefully” or present a positive “spin”. Most practices won’t perform revision surgery for free because it’s an “admission of guilt”. Maybe a healthier approach is to admit to the fault and still charge for the surgery. Otherwise, the result can be an impersonal demeanour that leads patients to view the practice as uncaring.

The last thing we need when feeling guilty is the added stress of hiding the guilt from the client. In the medical profession, approximately 30 US states have adopted “I’m sorry” laws, which, to varying degrees, render comments that doctors make to patients after an error inadmissible as evidence for proving liability. Until such statutes become universal, frightened clinicians are left to struggle with conflicting personal moral principles, professional ethics and institutional policies.

Fear

Owners often fear that if they question the expertise or skill of the vet, especially after an error, their pet may experience further harm or neglect. Fear of retribution or of future poor treatment because of asking questions about mistakes perceived must be unbearable for a pet owner at a time when they are at their most vulnerable. And yet we, consumed by our own guilt and fear, may be too self-obsessed to empathise with this client.

Vets who feel guilty after a medical error may have parallel feelings of fear – fear for their reputation, their job and their own future as well as that of their patient.

Isolation

Feelings of isolation can be harmful. Owners say that at times like this, they need someone involved in the case to reach out to them, no matter how painful. The vet at the same time is suffering alone, agonising over the harm they have caused, the loss of the pet owner’s trust, the loss of their colleagues’ respect, their diminished self-confidence and the potential effects of the error on their career.

When vets and nurses back away from patients and their owners, it may be because of their own feelings of guilt, fear and isolation, compounded by legal or institutional advice. Paralysed by shame or lacking their own understanding of why the error occurred, vets may find a truthful conversation too awkward. They may also be unwilling or unable to talk to anyone about the event, inhibiting both their learning and the likelihood of achieving resolution. Many owners want more communication, not less; by putting our feelings aside for a moment, at least we can make them feel less alone in these feelings.

So how can we accept that complications can and do occur and remain professional, caring and mentally strong when it happens? Surely honest and direct communication is the most important antidote to guilt, fear and isolation. Owners want compassion; they want to understand their situation fully and to know what the event has taught the practice. They want as much communication as possible.

An organised structure restores communication and supports emotional needs. Such a structure could include:

1. Morbidity and mortality rounds on a monthly basis to help to remove the stigma from making errors; these are paramount if we are to prevent further similar errors.
2. Deploying “first responders” in a practice (usually staff members with a cursory training in mental health first aid) when an error occurs to guide the vets, nurses and pet owners through the plethora of ensuing emotions and keep communication open, honest and plentiful.
3. Regular mental well-being seminars for the whole practice to help build emotional intelligence and resilience in a profession where to err is human.
4. One-to-one counselling for individuals who are struggling to cope or even just “not thriving”.
Quality improvement in equine practice

A new roadshow will delve into the daunting process of developing practice frameworks for constant improvement

BEVA Congress isn’t the only equine event just around the corner; an RCVS Knowledge roadshow, approved by BEVA, will provide insight, examples and advice on implementing quality improvement (QI) in the specialism.

Beginning next month, the roadshow, sponsored by the Horserace Betting Levy Board (HBLB), will take place on two dates in 2019: 22 October at Rossdales Equine Hospital and 5 December at Ashbrook Equine Hospital.

The roadshow will draw on real-life examples and available support – specific to equine practice – to enable practitioners to get the most from methods such as clinical audits, benchmarking, checklists, significant event audits and guidelines. These are all practical techniques to ensure care provision is continuously improving. Care should be based on the best available evidence, combining clinical expertise, the most relevant and best available scientific evidence, patient circumstances and owners’ values.

Several sessions, outlined below, will delve into areas and scenarios within practice in which quality improvement techniques can be applied, as well as the impact they have already had in equine clinics.

A pathway to improvement
Quality improvement can provide a framework and structure for turning mistakes into learnings and opportunities to improve care. The session will take cues from Rossdales Equine Hospital, which has emphasised the implementation of a clinical governance policy, and practical advice on making improvement while maintaining a no-blame culture will be provided.

Going from very little focus on continuous improvement to implementing widespread QI in practice can be daunting but, as demonstrated by VetPartners’ clinical excellence strategy, there is a pathway to making it a reality. The group’s achievements across local and national settings prove that such a change is possible, whether at an individual equine practice, a large hospital or a corporation.

Reducing errors and increasing patient safety
Demonstrated by a real clinical incident – an anaesthetic complication – in an equine practice, the multifaceted nature of what may sometimes appear to be obvious mistakes will be explored in this session.

A lot can be learnt from a significant event, with proper auditing not only vastly decreasing the chances of the incident happening again, but also positively impacting other areas.

Another method of reducing the chances of significant events occurring is through checklists. Originally stemming from the aviation industry, checklists have been adopted by a number of other professions, including human healthcare. A cornerstone of QI, checklists are simple but very effective ways of reducing human errors and improving patient safety.

Forming guidelines and benchmarking
A major limitation to developing evidence-based guidelines in equine practice is the frequent absence of available evidence. However, this does not prevent practice guidelines from being developed. Evidence can be collated from less obvious sources and supplemented by expert opinion and clinical experience. With a particular focus on colics, castrations and antimicrobials, seven steps to creating a guideline will be presented in this session.

Benchmarking allows individual practices to compare their statistics against set standards, but collecting data in a busy equine practice can be challenging. A new app and website that obtains data to ascertain rates of morbidities and mortality in horses undergoing surgery for colic offers clinics a technological solution and the capability to analyse their performance against national and international averages.
Will microbiome-based solutions replace antibiotics?

Co-founder of AnimalBiome, Holly Ganz, explains how microbiome supplementation can improve pet health

What motivated you to establish AnimalBiome?
I am a microbial ecologist who left academia to become an entrepreneur when I founded AnimalBiome in the fall of 2016. My efforts to translate academic research into solutions for animal lovers began when I launched KittyBiome, a citizen science project, while working at UC Davis in 2015. From the KittyBiome project, I found that imbalances in the gut microbiome are common in pets and that there is a pressing need for better approaches to maintain gut health and prevent the development of chronic health conditions. I realised that people are more interested in solutions than diagnostics. And so we developed a “test and treat” approach, where we use microbiome testing to identify whether dietary interventions and/or faecal microbiota transplantation (FMT) would be beneficial for an individual. Can microbiome-based solutions be used for treatment as well as prevention?
We perform assessments of the bacterial composition of the digestive tract of dogs and cats. This allows us to detect imbalances in the gut microbiome and identifies which bacteria are contributing to this imbalance. By looking at the composition of bacteria in a faecal sample, we can identify whether a digestive condition stems from an issue in the stomach, small intestine or colon. Small imbalances in the microbiome can be improved through dietary interventions, such as adding fibre, reducing carbohydrates and increasing protein content. Personalised nutrition based on microbiome testing has great potential for the prevention of chronic illness. For large imbalances, particularly those that arise as a result of antibiotic exposure and infections by pathogens, an FMT can be used to reintroduce these organisms. What is the next step in the development of these techniques?
We are developing a lab-fermented version of an FMT that can be grown in industrial fermenters. This will allow us to provide a safer, more cost-effective alternative to FMT for the veterinary channel. Can the techniques be targeted at specific diseases?
Microbial cocktails can be developed to target various health conditions, ranging from chronic gastrointestinal illness to chronic kidney disease (through supporting renal function) to skin conditions like atopic dermatitis. How does the microbiota transplant capsule work?
A faecal microbiota transplant works primarily by the principle of competitive exclusion, where more competitive bacterial species take resources – typically food and space – away from less competitive, opportunistic pathogens that have become over-represented due to a lack of competition. How long does the process take?
We recommend microbiome testing to determine if the dog or cat would benefit from an FMT. Once we receive the sample, we process it and send a report in about seven business days. In many cases, we recommend dietary shifts that can help to better balance the microbiome. If the capsules are ordered, these are typically shipped within two days. Will the technique save owners money in terms of treatments for digestive and dermatological conditions?
While it may be cost saving, we prefer to focus on improved well-being, and hopefully preventing and reducing chronic ailments like diarrhoea, vomiting and itchy, inflamed skin. For those with pets that are missing these organisms, many pet parents are able to reduce medication use and increase the different types of foods that they can tolerate. Could microbiome-based solutions treat conditions that require antibiotics, like respiratory conditions?
We are currently studying whether the FMT capsules can be used to reduce the duration of antibiotic usage. Microbiome-based solutions are also useful for oral health, which has the potential to improve both respiratory conditions and digestive conditions. Do you think microbiome-based solutions will be able to entirely replace antibiotics in the future?
Microbiome-based solutions such as FMT have great promise to reduce the amount of antibiotic usage. In the future, therapies such as bacteriophages that target specific organisms are very promising for antibiotic replacement.
Life as Agria’s Vet Lead

Agria’s Vet Lead, Robin Hargreaves, talks about his role with the pet insurer

Robin Hargreaves, MRCVS, began working with Agria Pet Insurance in an advisory role back in 2017. Having been with the specialist pet insurance provider for almost two years, how does he find working as Agria’s Vet Lead alongside his busy full-time role as vet and director of Stanley House Veterinary Group in Lancashire? And what does he think of Agria’s Age Amnesty campaign coming up next month?

Tell us about yourself
I was born into the farming community in the Yorkshire Dales. I spent a lot of time with farm animals growing up, which led me to qualify as a vet in 1985. After working at two smaller practices, I then joined my current practice, based in Colne, Lancashire. We have 18 vets and a large, varied client base with everything from small animals to equine and farm stock.

In 2013 to 2014 I was President of the British Veterinary Association. I’m also a past president of the Lancashire Veterinary Association and have previously represented Mind Matters, an RCVS initiative developed to improve the mental health and well-being of those working in the veterinary sector.

Why did you choose to work with Agria?
Agria wanted me to join them so they could expand their learning about the profession, with me – and my frank opinions and honest advice – acting as a bridge between vet and insurer. This was a good fit; I always want the ability to speak freely on veterinary issues, even if what I’m saying isn’t what people want to hear.

Agria is also known for being open, clear and honest, and prepared to ask the tough questions needed to really “get” the vet industry. They operate in the same way that I operate my practice, so I was, and am, confident that the senior management team shares my values.

Do you enjoy your role with Agria?
I really love it. The enthusiasm of the staff is incredible, and so one of the best aspects for me is going in to train teams and teach them even more about what goes on in practice. Then attending vet events gives me the chance to help the veterinary profession understand what’s happening with insurance, talking candidly and openly, with no agenda.

Our relationship isn’t about maximising profits; Agria is an animal-welfare focused business with an accessible and affordable product. Like mine, their focus is how they can achieve the very best for the animal and their owner. Of course, most of my time is still spent up at my practice, but advising Agria gives me the unique opportunity to use my knowledge to do something hugely positive for both vets and pet insurance.

Your team also works with Agria as a practice partner – how do they find that?
When the regulatory changes came in, Agria’s approach to this new environment was very clear and made it the easiest to stay within the rules. What’s crucial for us is that giving our clients 5 Weeks Free insurance is straightforward and doesn’t cause any extra work. It’s just simple and it works.

The fact that all insurance from Agria is lifetime is essential to us. Too many times we’ve had clients in who thought they were insured but their limits had been reached – and that’s a very hard realisation for an owner that doesn’t have the money to pay for the treatment their pet needs.

October sees the return of Agria’s Age Amnesty campaign. What are your thoughts on this?
Insuring older animals is really helpful in encouraging people to adopt older animals, and think about those pets that have never had a policy before. People taking on a mature animal need the same reassurance as owners that have had their pets since puppies or kittens. This opportunity to give them the same type of lifetime cover is very valuable.

We all know that it’s later in life when things start to go wrong, so it’s great to be able to let clients know that they can insure against the cost of treating age-related issues.

Age Amnesty runs from 1 October to 30 November 2019. Find out how Agria Pet Insurance supports veterinary practices at agriapet.co.uk/vets or call 03330 30 83 90

/agriapet.co.uk/vets/
Do farm assurance schemes provide a life worth living?

Schemes in the UK are falling short of citizen expectations and the ambition to provide a “good life” for farm animals

It is often said that UK farming has the highest animal welfare standards in the world, and yet animal welfare is the top concern among many UK shoppers. Why are citizens concerned if British legislation on farm animal welfare is considered world class? And do assurance schemes guarantee that animal welfare principles are implemented on farms?

As it stands today, the ability to perform normal behaviours is considered a luxury for farm animals, featuring only in systems certified by premium schemes. Is this in line with our understanding of animal welfare science and emerging citizen expectations?

The term “consumer” is a very familiar word in food business. It describes shoppers as people with similar behaviours and drivers in their selection of supermarket produce, who are primarily interested in product consistency and price points.

But things are changing – through a growing contingent of conscientious consumers who are wishing to create a more positive society by utilising their spending power to drive ethical food supply chains. As citizens, we don’t just want choice, we want roles in the reinvention and reshaping of our food system, and we are increasingly interested in the animal welfare standards behind the meat, milk and egg products that we buy.

Animal welfare is an increasingly important factor in purchasing decisions by citizens globally. According to surveys, around 70 percent of respondents in the UK, USA and Australia are concerned about farm animal welfare. We can see from results of surveys by the Ethical Consumer and The Grocer that there is robust growth in ethical markets and that animal welfare is the top concern among many UK shoppers (see Table 1 and Figure 1). Another survey suggested that 72 percent of respondents in China considered farm animal welfare important, with 75 percent willing to pay more for higher welfare pork.

This “citizen shift” is translating in to purchasing decisions, evidenced by the cage-free egg movement seen in many countries across the world and an increase in the trend for less-but-better “flexitarian” diets.

Veterinary influence

Veterinary surgeons are key stakeholders in the world food system (Bonnet et al., 2011). We are trusted advisors of our farming clients and largely considered by the public to be custodians of animal welfare. The BVA recognised that in order to fulfil these roles, we should be supporting citizens to make informed choices regarding farm animal welfare, but that few members of the public fully understand the food assurance labels that are designed to help them (Duffy et al., 2009). Therefore, the BVA devised an infographic to compare a number of UK assurance schemes in a simple-to-understand format, in terms of the BVA’s seven priority areas, including welfare at slaughter, use of antibiotics and measures to protect the environment.

The result is the chart in Figure 2, explaining the differences between the selected schemes. Most notably, this chart highlights the fact that all but two assurance schemes allow the confinement systems that prevent sows and laying hens from performing “normal behaviour”. In fact, the schemes that certify the majority of British animal produce allow confinement.

The five freedoms were formulated by the Farm Animal Welfare Council (FAWC) in the 1970s, and are now well recognised internationally. In accordance, UK legislation and farm assurance schemes have traditionally focused on limiting some of the negative aspects of welfare featured in the five freedoms. However, over time, our aims have shifted

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**Ethical Food and Drink**

<table>
<thead>
<tr>
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<th>2010 £m</th>
<th>2016 £m</th>
<th>2017 £m</th>
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<td><strong>9,466</strong></td>
<td><strong>11,008</strong></td>
<td><strong>16.3%</strong></td>
</tr>
</tbody>
</table>

**TABLE 1** Spending on “ethical” food and drink in the UK between 2010 and 2017 (Ethical Consumer, 2018)
Do farm assurance schemes provide a life worth living?

Opponents of free-range production argue that keel bone fractures and infectious diseases are often less prevalent in cage systems compared to cage-free environments. This argument supports the confinement of laying hens based on a limited repertoire of health outcomes. However, selecting robust laying hen genetics suitable for cage-free environments to reduce osteoporosis, and reviewing the design of house furniture to reduce keel bone fractures offer more sustainable solutions that tackle the root causes of the problems and optimise all welfare outcomes.

In summary, I believe that all assurance schemes with an animal welfare component should be putting into practice our long-held scientific understanding of animal welfare, embodied in the frameworks of the five freedoms and the “good life” – and should phase-out all confinement systems to enable species-specific behavioural opportunities as a necessity, not a luxury. As vets, I believe it is time for us to be constructively critical about the systems deployed to farm the animals under our care, and support a shift towards those that generate balanced outcomes for all aspects of animal welfare, including physical health and psychological well-being. Because – as highlighted by the #ChooseAssured campaign – when it comes to facilitating normal, species-specific behaviours, the most prevalent problems and optimise all welfare outcomes.

A full reference list is available on request

(Andersen et al., 2005) and slightly smaller litter sizes of larger piglets can improve survivability of piglets in free-farrowing systems and can facilitate normal behaviours in commercial production.
Is life in the wild governed by a scheme of incidental compassion?

Having isolated ourselves from the natural world, do humans have misconceptions of welfare in the wild?

A common perception is that life in nature is “cruel”. Environmentally related attrition is beset by hardship, and predator–prey encounters are bloody and brutal – “nature red in tooth and claw”. Case closed! Not necessarily. Modern research and concepts could start challenging some old presumptions about suffering in the natural world and point to human “nature” as the real cruelty culprit.

Physiological pharmacy
An organism’s natural pharmacological abilities are nothing less than astounding. Increasingly emerging is that an organism’s chemistry set typically, diversely and dynamically acts for the individual’s benefit. Sensitisation and desensitisation to environment and stimuli are largely controlled by dopamine, serotonin, oxytocin, endorphin, adrenaline and cortisol (among others) in ways that are still unfolding. Shut a finger in a door and find it hurts something rotten – it’s supposed to. Get attacked by a shark, crocodile or lion and not realise the missing limb until back on the boat or truck. Severe pain that would be crippling in another situation may be redundant and counter-productive during such life-threatening attacks (Figure 1). To envisage that all this protective stuff should fail in nature while animals are being torn apart is nonsensical.

Psycho-behavioural systems
Facing cyclic environmental adversity such as climatic extremes or water and food shortages, along with disease, is a well-known part of the natural world. Doubtless, for many, stressors of deprivation and disease become aversively occupying features of life in the wild. But are they “all mind- and body-occupying” or compartmentalised and contextualised by harmonious physiological and psycho-behavioural mechanisms?

During adverse challenges, priorities, bodies and even mindsets may adapt in relation to drained and debilitated states. Psychological drive states associated with foraging and survival optimism, again strongly moderated by certain physiological incentives, may imbue desperate animals with “positive mental attitudes” (Figure 2).

In a sick animal, or person, biological strategies associated with infection, fever and other factors operate to induce behavioural depression and lethargy. These sacrifices manifest in loss of outward body condition while energy is redirected from less immediately important functions such as appearance to fundamental, life-saving, healing and recovery (Figure 3).
Energy dynamics

Energy makes the world go round and runs everything about it. Finding energy, and absorbing, retaining and conserving it, is do or die – it is the stuff of the harmony of life. Energy efficiency is essential for survival and any surplus is precious. There’s plenty around, but it is somewhat “locked-up” and competition is fierce. Why would energy conservatism dynamics allow needless and expensive – energy draining – suffering? How can pain and “misery” meet entropic targets and constitute efficient use of nature’s resources?

Nature versus nasty

When an individual’s welfare is on target, pretty much all else is too. In nature, environmental hardship, predation, stress, injury and disease are all very real. Equally sure is the science revealing how body- and mind-numbing biochemistry has evolved alongside all natural stressors and is on tap when needed most. Might the raft of biological strategies act to an individual’s protection to filter out “misery” among stressful and traumatic effrontery, and in doing so provide living things with a scheme of “incidental compassion”? The notion that nature somehow conspires to make life in the wild an existence of suffering is absurd.

Features have been created to serve, at the very worst of times and when an individual is at its most vulnerable.

Within the testing forces and deficiencies in the wild, many dynamics and stabilities of normal life remain at work to create a “life worth living”. But this is arguably not the case where an animal is trapped in deprived conditions of captivity (Figures 4 and 5). Evolved holistic normalities and welfare provisions are commonly eroded by society’s practices, as one or another battered broiler or vivarium victim genuinely suffers the abnormalities of an unnatural life at the hands of human nature.

Humans have all but isolated themselves from the substance of the natural world, whilst recognising that the best of answers continue to reside within. Appreciating nature’s kindnesses and understanding our own misinterpretations may help make animal abuse a thing of the past, and humane practices a universal thing of the future.
How to take and interpret avian radiographs

The right positioning and anaesthesia can vastly improve the diagnostic outcomes when radiographing birds

Radiographs can be an excellent tool to assess avian patients, given their non-invasive nature and ease of acquisition. A basic knowledge of avian anatomy can result in radiographs becoming incredibly useful and easy-to-interpret diagnostic tools. Radiographs can be helpful for diagnosis of conditions in captive birds such as lameness, regurgitation, coelomic distension, dyspnoea, general malaise and countless other clinical presentations. They can also be used to assess for fractures or other trauma in wild birds, which are commonly presented to clinical practice. Radiographs can be taken with any standard small animal radiography set up, ideally with a high frequency unit and digital radiography.

Sedation and general anaesthesia

Radiographs should be taken with appropriate restraint and positioning. The author recommends the use of general anaesthesia or sedation to allow for appropriate positioning. It is never appropriate to hold the patient down to the plate, straddle the X-ray beam or have the handler’s own hands within the radiographic view.

Conscious radiographs usually result in superimposed anatomy and non-diagnostic radiographs. There are times in which conscious radiographs can be indicated, such as in collapsed and debilitated patients when trying to rule in or out certain diagnoses, for example egg binding (Figure 1) or the presence of heavy metals. Routine or planned radiographs should be performed after a small period of starvation – enough to allow the crop to empty and decrease the risk of regurgitation and subsequent aspiration.

Isoflurane inhalational anaesthesia provides quick anaesthetic induction and recovery, due to the efficiency of avian respiratory systems. Mask induction of birds can take as little as 30 seconds and patients can be maintained either with the face mask left in place or by intubating. Birds have a large glottis, located at the base of their tongue, which makes them simpler than most exotic and mammalian species to intubate. Birds placed in dorsal or sternal recumbency for prolonged periods of time can develop apnoea, and so intubation is ideal to allow for intermittent positive pressure ventilation.

Inspiration and expiration are active processes in birds, by which their ribs and keel bone expand cranially and ventrally on inspiration. This increases the volume of their air sacs and allows air to pass through the respiratory system. If the patient is placed in sternal recumbency, they need to lift their dorsal body in order to inspire, which can be difficult in larger, heavier birds. If an avian patient is placed in dorsal recumbency, some of the more dorsal air sacs are compressed by internal organs, resulting in reduced air flow. This is one of the reasons that the author prefers ventrodorsal views to dorsoventral views, and ideally, once this image has been taken, the patient is moved to lateral recumbency in order to allow for more efficient ventilation.

**FIGURE (1)** A conscious radiograph taken to assess for the presence of an egg. The remainder of this radiograph is non-diagnostic due to superimposition of structures
Positioning for radiographs

It is important to consider the area for interpretation when taking a radiograph. Similar to a canine or feline patient, if a bird is lame then the field of view should be focused on the limb of interest. Whole-body radiographs are used more frequently in exotics practice, due to the small size of the patients and the ease of acquisition; however, collimation should be considered. In avian patients, adequately positioned contralateral radiographs can yield a myriad of diagnostic findings and can help narrow down diagnosis and point the practitioner in the direction of the next diagnostic step.

Limbs can be restrained with tape, light sandbags or ties. Ventrodorsal views are taken with the bird in dorsal recumbency, with the wings extended laterally and the legs extended caudally (Figure 2). It is not necessary for the wings to be fully extended, as long as they do not superimpose the coelomic cavity. The keel should be superimposed over the spine and the two sides of the pelvis should be symmetrical. Lateral views are taken with the patient in left or right lateral recumbency with both wings extended dorsally (Figure 3). Care must be taken when restraining the wings as too much pressure on the humeri can result in an iatrogenic fracture. The legs should be pulled ventrally and caudally to reduce superimposition on the coelomic cavity.

Orthopaedic radiographs should also consist of orthogon al views, in a similar fashion to those taken for canine or feline patients. This is especially important when investigating fractures, dislocations or osteomyelitic lesions.

Interpreting avian radiographs

The normal anatomy of birds varies greatly depending on the species, age and sex of the patient; however, a general interpretation should follow the same pattern every time to ensure nothing has been overlooked when assessing the images (Figures 4 and 5).

Axial skeleton and appendicular skeleton

All bones should be assessed for any abnormalities in lucency, obvious fractures, arthritic changes or abnormalities. Flighted birds have a number of pneumatised bones which, depending on the species, can include the humerus, coracoid, ribs, pelvic girdle and femur. Pneumatised bones have thin, radiopaque cortices with fine bony trabeculae within the medulla. More distal bones are not pneumatised and are often more radiopaque in appearance.

During times of increased reproductive stimulation, an increase in circulating oestrogen leads to an increase in radiopacity of the long bones of females, due to the deposition of calcium within the medullary cavity. The pectoral girdle of birds consists of the scapula, clavicle and coracoid. Fractures of the coracoid can be common in wildlife cases,
and sometimes evaluation of this requires a 45 degree caudoventral-craniodorsal oblique radiographic view to assess, as described by Visser et al. (2015).

**Cardiovascular system**

The heart can be visualised in the cranial coelomic cavity on ventrodorsal and lateral views. In captive psittacines, the heart base should be within 51 to 61 percent of the maximum width of the thorax on ventrodorsal view (Crosta et al., 2018). However, species-specific values should be referenced when assessing for cardiomegaly. In the VD view, the cardiac silhouette contributes to the “hourglass figure” described by many resources. The great vessels can be identified on both views as soft tissue opacities, as round “dots” on the ventrodorsal view and as more recognisable longitudinal structures on the lateral views.

**Respiratory system**

Birds have fixed, dorsal lungs, which are best evaluated on a lateral view. These sit dorsal to the heart and have a characteristic honeycomb appearance, due to the presence of parabronchi. The trachea can be easily traced from the skull down to where it bifurcates at the syrinx. The syrinx is a common place for fungal lesions to form in captive psittacines, so the area should be assessed for any abnormal soft tissue opacities. Air sacs are thin and should be empty of anything other than air, and so are best evaluated by their borders with other organs. They are visible on the ventrodorsal views lateral to the hepatic silhouette. The walls of air sacs should not be identifiable, so increase in wall thickness should rouse suspicion of air sacculitis.

**Digestive system**

The avian digestive system consists of the crop (with the exception of some species), proventriculus, ventriculus or gizzard, intestines, caecum and cloaca. It is best examined by use of contrast media, due to superimposition of the caudal coelomic contents. Ideally, patients are starved long enough before general anaesthesia to allow food to move distally from the crop; however, sometimes food can be visualised inside. The proventriculus sits dorsally and caudal to the heart on the lateral view. Abnormal distension of the proventriculus can be an indication of proventricular dilatation disease (PDD) and should be followed up with contrast radiographs.

The ventriculus or gizzard normally contains some grit with opacity similar to that of bone. Metal opacity particles within the ventriculus should not be present and should result in a suspicion of metal ingestion (Figure 6). The ventriculus sits caudoventrally to the proventriculus on the lateral view and slightly to the left of midline on a ventrodorsal projection. The intestines, caecum and cloaca are superimposed on other coelomic organs and so can only be fully evaluated with contrast media.

**Other coelomic viscera**

The liver is best assessed on the ventrodorsal view, where it should form a rough hourglass shape when viewed in conjunction with the heart. As a general rule, the edges of the hepatic silhouette should not extend laterally past an imaginary line between the shoulder joints and the acetabulae of the hips.

The spleen is best visualised on a lateral view, where it is seen as a round, soft tissue opacity dorsal to the liver and proventriculus. The kidneys are also best visualised on the lateral view, sitting dorsally within the pelvis. They are often only seen as soft tissue opacities, so any increase in radiopacity should be further investigated.

The gonads of birds are internal and superimpose upon the cranial pole of the kidneys. Their size depends on the reproductive status of the patient at the time. Males have bilateral testes and in females only the left ovary is functional.

Appropriate positioning and adequate anaesthesia can vastly increase the diagnostic capacity of avian radiographs. These techniques can be utilised to improve patient outcomes and help direct further testing if required.

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A full reference list is available on request.
The benefits of in-house diagnostics

How performing diagnostic tests in-house can change the way vets work

“W”hen will the results be back?” is a question heard daily in any veterinary practice. In a world where most things are available very quickly, client expectations have changed. Diagnostic testing has certainly evolved in recent years too, for humans and animals, with cutting-edge tests now available pretty much instantly in-house.

The animal diagnostic market is a major and flourishing sector: it accounts for 22 percent of the entire veterinary market and is worth US$4.2 billion (£3.2 billion) globally (Brakke Consulting, 2017). The biggest market is by far the United States of America, representing more than half of the global value, despite only having 25 percent of the estimated cat and dog population. Delegates at the Idexx Investor Day (2016 and 2018) were told that whilst practices across the rest of the world achieve around 5 to 10 percent of their revenue from diagnostics, in America this reaches 15 percent.

Interestingly, the percentage of practices equipped with blood laboratory machines in the UK and US is very similar. So availability of the equipment does not explain the difference; it is only down to their usage. At the Idexx Investor Day, it was said that 70 percent of sick pets are blood tested in America, while the figure is around 30 percent for the UK. Prevention screening is also very well developed in the US, where 50 percent of pets presented for a routine/wellness visit are blood tested (only 10 percent in the UK).

Point-of-care diagnostic testing is a growing sector: more affordable machines with excellent accuracy have made in-house testing very common and business friendly. Furthermore, the benefits of keeping tests in-house are numerous:

- For the patient: a quick result can save the animal’s life in an emergency situation, or improve anaesthetic safety
- For the client: satisfaction can be vastly improved with a short waiting time and more convenience. The perceived value of a test is also known to be higher if the results are instant
- For the practice: increased client satisfaction means more business, as customers are more likely to return and recommend a practice perceived as being well equipped. Profitability can also be increased

Tests such as biochemistry or haematology are well integrated in modern equipment, but newer tests are set to change the way vets practise. Canine C-reactive protein (cCRP) is a perfect example of how an in-house test can greatly improve the standard of practice. CRP testing comes from human medicine where it is performed widely and routinely for: post-operative follow up, clinical response evaluation, routine screening in toddlers, etc.

cCRP is a biomarker of inflammation which has three main advantages: it changes quickly (about four hours), it is positively correlated to the severity of inflammation and it is not influenced by stress or other drugs. Therefore, it may be used in numerous situations: monitoring recovery after surgery, assessing whether the animal is responding to the treatment initiated, or even for screening when the history is very vague. cCRP is usually more relevant if measured several times in order to compare and provide real-time assessment of the inflammatory process. Therefore, sending cCRP for external testing defeats the object slightly, but testing in-house gives the vet a very powerful tool and the client some instant quantifiable reassurance that their beloved pet is being looked after to a very high standard.

cCRP is only one example, but no doubt more and more tests will be made available in-house in the future, as the market keeps growing and companies continue to invest. This can only be a win–win situation for the vets.

References
Diagnosing cutaneous adverse food reactions

Are hydrolysed diets a gold standard approach to diagnosing cutaneous adverse food reactions?

Dermatological cases are common in small animal practice, accounting for around 20 percent of all consultations (Hill et al., 2006). Cutaneous adverse food reaction (CAFR) is recognised as a potential cause of dermatological signs, affecting around 5 percent of cats and dogs with skin disease (Olivry and Mueller, 2017). CAFR is an important differential in any pruritic patient that is free of parasites and infection.

Mueller et al. (2016) evaluated food allergen sources in cats and dogs. In cats with CAFR, the most common allergens are beef, fish and chicken. For dogs, beef, dairy and chicken are the most frequently reported allergens. Olivry and Bexley (2018) recognised that cats and dogs with CAFR are likely to be suffering from true food allergies with an immunologic basis as opposed to food intolerances.

Diagnosing CAFR

There are a number of tests available for diagnosing CAFR. These include serum testing for food antigen-specific IgE and IgG, intradermal testing with food antigens and hair and saliva testing. It is widely recognised in the literature that no commercially available laboratory test can reliably diagnose CAFR in cats and dogs.

Patch testing, whilst not suitable for diagnosing CAFR, can be a useful tool in identifying suitable ingredients for an elimination diet trial (Bethlehem et al., 2012). However, keeping patch test chambers securely in place can be difficult and so is not commonly done in small animal practice.

Mueller and Olivry (2017) have identified lymphocyte proliferation tests as having a higher accuracy in diagnosing CAFR compared with other in vitro tests. Due to the difficulty of conducting this test, it is usually performed in highly specialised research laboratories and is therefore not commercially available.

Given the unreliability of laboratory tests, the gold standard approach for diagnosing CAFR in pets is to perform an elimination diet trial (Ricci et al., 2013; Mueller and Olivry, 2017).

Choosing a diet

The selected diet for an elimination diet trial can be either home prepared or one that is commercially available. Choosing suitable ingredients can be challenging because of the complexity of today’s pet food market and the difficulties in obtaining a complete feeding history from the pet owner.

Home-prepared novel protein diets

For feeding a novel protein diet, a single protein source that the animal has not previously been exposed to should be selected. A home-prepared diet allows the owner to become very involved in this process, but these diets can be time consuming, expensive and, importantly, are not nutritionally complete and balanced unless formulated under the direction of a board-certified nutritionist (Verlinde et al., 2006). Chandler (2018) notes that some nutrients that are especially important for skin health, such as zinc and essential fatty acids, are often deficient in home-prepared diets.

Commercial novel protein diets

When choosing a commercially available novel protein diet for the patient, the veterinary surgeon and pet owner are likely to rely on the pet food label to identify and avoid any potential allergens. Unfortunately, the mislabelling of pet foods is common, even in products proposed for elimination diet trials.

Olivry and Mueller (2018) found that up to 83 percent of tested pet foods were mislabelled, with unexpected additional ingredients occurring more frequently than missing ingredients. With the exception of one instance, diets containing hydrolysed proteins were not found to contain any additional unexpected protein sources.

A potential concern with a novel protein diet – whether homemade or commercial – is cross-reaction among food allergens. Bexley et al. (2018) demonstrated IgE cross-reactivity between chicken and fish meats in dogs, and points out that CAFR could be mistakenly ruled out if a patient fails to respond to a diet containing cross-reacting allergens.
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Hydrolysed protein diets

Diet containing hydrolysed proteins allow veterinary surgeons to offer a complete and balanced diet whilst alleviating the need to find novel proteins and also reducing problems associated with cross-reacting allergens (Olivry et al., 2017).

Clinical signs of AFR result from mast cell degranulation that occurs in response to the cross-linking of two IgE receptors at the cell surface (Figure 1). The purpose of hydrolysis is to disrupt the protein structure, thereby reducing the molecular weight of the original protein. The degree of hydrolysis is important because the molecules created should be too small to allow for cross-linking (Figure 2).

The most common allergens are sized from 15 to 40kDa, although smaller molecules can cause a reaction (Lesponne et al., 2018). Reducing the size of the peptides to smaller than 1kDa would give the best chance of eliminating any allergic response.

Just 13 years ago, it was believed that this degree of hydrolysis was unrealistic for pet food manufacturers due to the expense. However, recently pet food manufacturers have successfully produced such products. Extensively hydrolysed poultry feather protein is not recognised as an allergen by cats and dogs with a known sensitivity to poultry (Bizikova and Olivry, 2016; Olivry et al., 2017).

The digestibility of a hydrolysed protein is considered to be better than that of the original intact protein (Cave, 2006). These hydrolysed protein diets are also manufactured under strict quality control measures to prevent any contamination by unexpected ingredients. The palatability is generally good and they will often contain added support for a healthy skin barrier, making hydrolysed protein diets the gold standard choice for elimination diet trials.

Elimination diet trial

In order to perform a successful elimination diet trial, full dedication from the pet owner is required: the chosen diet must be fed exclusively for the duration of the trial. To make a diagnosis of CAFR in more than 90 percent of cats and dogs, diet trials should last eight weeks (Olivry et al., 2015). A food transition period of five to seven days is recommended at the start of the trial for optimal palatability and digestibility.

It is important to maintain regular contact with the owner to monitor patient progress and owner compliance. Consideration should be given to treats, food given with medication, dropped human food, toothpaste and flavoured medications as these could disrupt the trial (Chandler, 2018).

If clinical signs do not improve during the elimination diet trial, CAFR can be ruled out and other causes such as atopic dermatitis can be suspected (Ricci et al., 2013).

Provocation tests

Following resolution of clinical signs during the elimination diet trial, the reintroduction of the pet’s original diet will result in the return of symptoms in animals with CAFR. Owners may be unwilling to perform this challenge test after a reduction in clinical signs but it is an important step in confirming the diagnosis.

To identify the ingredients responsible for the pet’s clinical signs, individual protein sources can be added to the elimination diet. It is important that the cat or dog is stable on the diet with maximum reduction of clinical signs prior to this. One ingredient can be added for a period of one to two weeks and if no clinical signs are detected, this can be changed for a second ingredient with the cycle repeating until all possible sources from the previous diet have been tested (Verlinden et al., 2006).

Summary

In any pruritic cat or dog that is free of parasites and infection, CAFR should be an important differential. The only reliable method of diagnosis is to perform an elimination diet trial with subsequent provocation tests. The choice of diet is extremely important with extensively hydrolysed protein diets being gold standard.

The principle of managing these patients long term is strict avoidance of any offending food allergens. Hydrolysed protein diets are a convenient and balanced option not just for the elimination diet trial but also for long-term feeding.
Could it be zinc-responsive dermatosis?

Treatment can be targeted to cases of syndrome I and syndrome II zinc-responsive dermatosis

Zinc is an essential nutrient because it is an important cofactor of many metalloenzymes involved in cell functions and is closely linked with essential fatty acids. This function is particularly important in the maintenance of epidermal integrity where the cells undergo rapid proliferation to replace those that are shed through desquamation. Zinc is also associated with immunity and neurological and intestinal functions.

Zinc-responsive dermatoses are clinical syndromes recognised in dogs, which respond to zinc supplementation. They are associated with either a metabolic abnormality (syndrome I), or a nutritional deficiency (syndrome II).

Syndrome I zinc-responsive dermatosis

This form of dermatosis has been associated with defective intestinal absorption and is breed associated – primarily in the Siberian Husky and Alaskan Malamute.

A syndrome associated with an autosomal recessive genetic defect that inhibits the absorption and utilisation of zinc is recognised in Bull Terriers with lethal acrodermatitis. Affected individuals develop signs as puppies and they fail to thrive; they normally don’t live beyond 18 months of age. Affected puppies were seen in the 1990s, but this genetic defect may now have been bred out in the UK. The author hasn’t seen any cases for over 15 years.

Syndrome II zinc-responsive dermatosis

Syndrome II is associated with a reduced availability in food; however, not all cases are linked with a dietary deficiency of zinc per se. Other nutritional factors that can reduce the availability of zinc include diets containing high levels of phytates, low levels of essential fatty acids, high levels of minerals such as calcium, phosphorus and magnesium and certain dairy products. Rapidly growing pups of certain large and giant breeds such as the Great Dane are also at risk if sufficient levels of zinc are not present in the diet.

Clinical signs

Cutaneous signs associated with syndrome I in the early stages include erythema, which is followed by alopecia, crusting and scaling around the mouth, eyes and ears (Figure 1). Other mucocutaneous areas such as the vulva, scrotum and anal areas may also be affected. Hyperkeratosis at pressure points such as the elbows, tarsi and footpads may be evident. Secondary infections are commonly seen.

Breeds more likely to be affected with syndrome II inc-
clude: Great Danes, Dobermann Pinschers, German Shepherd Dogs, German Shorthaired Pointers, Labrador Retrievers and Standard Poodles. The signs associated with this syndrome vary between individuals. They may just present with recurrent bacterial or Malassezia infections, or may have hyperkeratotic plaques on areas of friction such as the pads. Severely affected individuals may have growth retardation, fever and depression.

**Diagnosis**

Diagnosis is based on history and clinical signs and supported by findings on skin biopsies. Histopathology generally reveals a marked epidermal and follicular parakeratosis and superficial perivascular dermatitis. Evidence of parakeratosis can be obtained by cytological examination of lesions. When large numbers of parakeratotic cells (nucleated keratinocytes) (Figure 2) are found on cytology, it may indicate a metabolic abnormality in the epidermal function. The laboratory analyses for zinc levels in the serum or hair are unreliable for several reasons. Serum zinc concentrations can vary with age, season and breed and, unless matched with appropriate controls, the test results are difficult to interpret. Other reasons for inaccurate results include the presence of zinc in laboratory glassware and in the rubber stoppers of sample containers.

**Treatment**

The treatment depends on the syndrome. Dogs with syndrome I require oral supplementation of 2 to 3mg/kg of elemental zinc daily. The actual dosage will depend on the formulation of the supplement. For example, zinc sulphate is given at a dose of 10mg/kg once daily (Figure 3).

Some dogs that fail to respond to zinc supplementation alone benefit when also given a low dose prednisolone (0.1 to 0.5mg/kg q24 to 48h). The improvement in zinc availability may be due to increased absorption in the gut as the corticosteroids induce the production of metallothionein, a low molecular weight protein involved in zinc regulation. Omega-3 and omega-6 supplementation may also be beneficial to some dogs. Dogs with syndrome I require life-long supplementation.

Most dogs with syndrome II respond to a change in diet. In cases where a change in diet alone is not sufficient to reverse the clinical signs a short period of zinc supplementation may be required. If secondary bacterial and Malassezia infections are identified, they must be treated accordingly to achieve a successful outcome.

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**FURTHER READING**


A joined-up approach to dermatology

What were the takeaway messages from the Veterinary Nursing Dermatology Group’s first meeting?

As a veterinary nurse passionate about all things to do with nurse consultations, I am currently trying to set up more clinics in my practice by writing protocols and speaking to the vet team about what they would like nurses to be able to help them with. Dermatology is also a subject I love learning about, so when I stumbled upon the Veterinary Nursing Dermatology Group (VNDG), I joined straight away. As a member of this group, I have been learning how we as veterinary nurses can assist the vets in the work-up and treatment of cases in clinic and how to support clients in the management of skin conditions at home.

When I saw the post on the group’s Facebook page about their first seminar being held prior to the BSAVA Congress, I knew I had to attend. My head nurse allowed me to leave work early so I could make my way to Birmingham for what I was hoping to be a packed full day of amazing topics and to learn more about what I can do in practice, and it didn’t disappoint.

Dermatology nursing in general practice

John Redbond discussed what you need to be prepared for to perform a nurse-led skin clinic, what equipment is required, how to perform a skin work-up and how to report the results to the veterinary surgeon. As nurses, we can do much of this work for the vet and gain that vital owner compliance. We all know skin is hard to manage and without owner compliance it can be frustrating for them and the vet, so by being more hands-on, gaining that all-important history and performing the skin work-up, we can help the vet to make a diagnosis and provide the right treatment.

Bosses! What is it they don’t get?

I was really looking forward to this talk because this, as I am sure it is for most nurses, is one of my biggest challenges in practice, and hearing this from a vet’s point of view was really useful. Nick Tremlett started his talk by asking the nurses a series of questions. For example, “Raise your hands if your vet allows you to perform blood tests and place IV cannulas.” We all raised our hands – good start. He then went on, “Raise your hands if you perform post-operative checks, admits and discharges.” Again, we raised our hands. It went on like this until he finally said, “Raise your hands if you’re allowed to perform skin work-ups.” Very few of us raised our hands; he said he cannot understand why we can do something more technical, like take a blood sample, and yet are not asked to perform a skin work-up, which is far easier. Food for thought, and something I think we all need to change in practice.

How to manage adverse food reactions in cats and dogs

This topic was presented by Clare Jones from Avacta, who covered allergy testing and food trials. Food trials are another thing nurses can discuss with owners, and yet many of us don’t. Vets are given only a 10- or 15-minute appointment with the pet owner and this is just not enough time to discuss a food trial with them. The vet should straight away get a vet nurse to go through this with the owner and ensure they receive the support they need and the right information and, again, get that all-important compliance from the owners, without which it just will not work.

A day in the life of a dermatology nurse

I had to laugh because the first thing Nicola Swales said when being asked to do a lecture on this subject was that she thought it would be boring. Absolutely not. It was so fascinating. What I found most interesting from Nicola was how knowledgeable she was – so much so that she trains vet students in how to perform the consultation and diagnostic testing. She can second guess what the vet will prescribe before they have even asked what they want. It just shows that having an experienced RVN by your side really can help.

The day was finished with a question and answer session. We had some amazing questions for the panel and it was great listening to how they all have different tips for us, so we can pick what works best for us. John concluded the day and presented us with an amazing dermatology tool box provided by Vetruus and full of everything we need for skin clinics – something I will be very protective of in practice.
Profit is a necessity and an admirable goal of all practices, so why does it often make us feel uncomfortable? Talking about money opens a can of worms when we consider balancing a caring public service with living off the profits. It is the lifeblood of a functional business, and yet can be a stumbling block when it comes to client relations and caring for our animal patients. Monetary issues we have to address in practice include the constraints it can place on treatment options, the cynicism of clients regarding our motives and the consequent guilt we may feel. So how do we square the circle of providing care while running sustainable, thriving businesses?

There are two main problems with a simple economic equation of practice profits: firstly, the fact that the animals we’re treating often do not have a measurable monetary value. In food production practice the value of the service may be quantifiable against the monetary value of the animal and the business and decisions may reflect this.

Small animal practice grew out of farm practice, but with the increasing humanisation of pets, we are now faced with animals with little or no economic value, yet who are worth everything to their owners. Sound economics are now hit with an ethical dimension, which jars with the equation. Cue the backyard chicken coming in for life-saving treatments in comparison with the food production chicken where decisions are flock based rather than individual.

Secondly, we are a caring profession, trained and motivated by providing the best care aside from monetary constraints. As Rollin (1999) pointed out, “veterinarians find themselves enmeshed in a web of moral duties and obligations that can and often do conflict”.

And the financial pressures only build as our responsibilities grow to our families, employees and clients to run thriving profitable practices. Figures from the SPVS Profitability Survey 2018 showed a total of 56.7 percent of practices scored “below average” or “poor” on its profitability scale (up from 54.5 percent in 2016), with 15.9 percent reporting a loss (up from 15 percent). Veterinary surgeon salaries had also reduced. One of the BVA Vet Futures’ ambitions is for “thriving, innovative, user-focused businesses” and it is vital veterinary practices have a sustainable, profitable future so vets can continue to care for and protect the health and welfare of animals.

So how can we turn profit making into an admirable pursuit? Firstly, weigh up the pros and cons of profitability. This is a useful exercise as it reminds us how far the pros outweigh the cons. Positives include: the provision of secure, well-paid jobs; the option to invest and improve in facilities for staff, patients and clients; expansion of services; financial security; and contributing to the economy. The negatives are fairly limited to public perception and financial restriction of some services to clients unable to afford them, both of which can be ameliorated.

Develop self-awareness – what is the root of guilt? If we are clinically confident and convinced that we are providing a valuable service we can start to rationalise being appropriately remunerated for it. Absolution from the guilt of receiving money for expertise is crucial for professional peace of mind.

Put in place a clear practice policy on profit generation and communicate this with staff. Too often this is a grey area, with the boss giving discounts to favoured clients, yet complaining about employees undercharging. Closed door discounting is harder to measure and ensure parity for clients. There needs to be equality and clarity of charging, and defined professional, personal and business goals for members of the practice.

Giving back, such as having charitable causes, money set aside in a pet support kitty or doing a certain amount of budgeted pro bono work, helps with both personal guilt and public perception of us as a caring profession. With money comes power, and with power comes responsibility. Being successful in business means we have more to give back financially, but also equips us with non-clinical skills and time to contribute to veterinary politics and animal welfare beyond the practice walls.

Finally, embrace the opportunities profits can bring. Profits make a wider contribution to the economy and society. If we have a failing business, everyone ultimately loses – including the clients. Generating profits enables us to remunerate staff well and give additional perks, improving retention and motivation, performance and well-being. Happier staff ultimately leads to better care.

About Gudrun
Gudrun Ravetz is Chief Veterinary Officer for Simply Health Professionals and a BVA past president. Gudrun has worked in companion animal practice as well as in industry and management. Gudrun joined the Society of Practising Veterinary Surgeons and went on to be their President in 2012.
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New border campaign to tackle African swine fever threat

A new campaign was launched on 31 July 2019 at the UK’s border to help keep the damaging disease African swine fever (ASF) out of the country.

The disease, which poses no threat to human health but is fatal for pigs, has already spread widely across Asia – including China and Vietnam – and parts of Central and Eastern Europe. Cases have also been reported throughout sub-Saharan Africa.

This has led to the deaths of over 800,000 pigs and wild boar in Europe and an estimated 4 million pigs in Asia, causing global pork prices to rise. If the disease was found in this country, it could have a devastating impact on the UK’s commercial pig stock of 5 million pigs, as well as the trade of pork products.

The campaign aims to safeguard the UK’s pork and pig industries by targeting anyone who has the potential to introduce African swine fever to the UK. It includes a poster campaign, introduced to UK airports and ports, to raise awareness of the disease and the risks of bringing back contaminated products. Border Force officers will enforce controls at the border on illegal meat by searching freight, passengers and luggage and will seize and destroy illegally imported meat products.

APHA issues update on exporting animals and animal products in a no-deal Brexit

The APHA has updated its guidance on exporting animals and animal products in the event of a no-deal Brexit.

Importers will need to complete an export health certificate (EHC) to export to the EU in the event of a no-deal Brexit. EHCs will need to be applied for and completed in advance of export, and all documents must be authorised after consignments have been inspected.

Exporters must ensure that goods follow a trade route that allows the consignment to be checked at a border inspection post (BIP) at the first EU country entered. Exporters must also make sure that EU-based import agents have notified the BIP that the consignment is arriving 24 hours in advance. All of these rules are applicable to exporters who are transferring animals, products of animal origin, food for animals and germplasm.

Read the full updated guidance at: gov.uk/guidance/exporting-animals-animal-products-fish-and-fishery-products-if-the-uk-leaves-the-eu-with-no-deal

Shropshire horse diagnosed with equine viral arteritis

The UK’s Chief Veterinary Officer confirmed a new case of equine viral arteritis in a non-thoroughbred stallion in Shropshire on 31 July 2019. Equine viral arteritis is a notifiable disease in all stallions, and in mares that have been mated or inseminated in the last 14 days. Investigations are ongoing but at present it appears to be unrelated to the cases in Devon and Dorset earlier in the year.

Deputy Chief Veterinary Officer, Graeme Cooke, said: “We are taking action to limit the risk of the disease spreading by placing breeding and movement restrictions on the animal. A full investigation is continuing to consider the source and possible spread of the infection.”

To report the disease in England, call 03000 200 301. In Wales, contact 0300 303 8268. In Scotland, contact your local Field Services Office

OV briefing

24 MAY

Consider bluetongue virus serotype 8 with malformed calves and abortion

Bluetongue virus (BTV), specifically BTV serotype 8 (BTV-8), is re-emerging in northern Europe. BTV-8 should be considered as a possible cause of malformed calves or abortion, in addition to Schmallenberg virus (SBV).

Since December 2018, there have been reports from France of calves born small and blind and dying at a few days of age. The number reported has increased considerably since January 2019. These animals have been positive by PCR on blood and spleen for BTV-8 and negative for SBV. Detection in calves during the Culicoides vector-free period suggests transplacental BTV-8 infection.

The 2006 to 2009 BTV-8 strain also showed some transplacental transmission, but these were more associated with abortions and dummy calves. Transplacental transmission in the re-emerging strain in France appears to be at a much higher prevalence.

Since the first reports of cases, 418 samples from such calves have been reported as testing positive by PCR for BTV-8. Between 2 and 15 percent of newborn calves have been infected on some farms. This observation, and further studies using experimental midge infection, suggest that the current BTV-8 strain in France has a reduced Culicoides vector competence, which reflects phenotypic changes in the re-emerging strain with far less obvious clinical signs appearing in susceptible animals. Transplacental transmission is of interest as a possible mechanism of over-wintering of the virus in the absence of midges in northern Europe.

BTV-8 should therefore be considered by OVs as a possible cause of malformed calves or abortion, in addition to SBV. The weaker pathogenicity of the re-emerging strain of BTV-8 in adult sheep and cattle may result in fewer clinical signs (compared to the UK 2007 strain), so an increase in awareness is required to avoid the suspicion of infection being missed.
25 - 26 September, Alexandra House, Swindon

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The latest on disease risks and animal health policies

Get up to date with the UK’s notifiable disease risks and policy changes at the 2019 Official Veterinarian Conference

The Official Veterinarian Conference provides an annual opportunity for OVs to gather and hear from APHA representatives and industry specialists regarding the latest updates on issues that will affect the profession. The 2019 OV Conference is scheduled for the 25 and 26 September, and will once again be held at Alexandra House in Swindon.

As usual, the conference programme will cover a diverse and fascinating range of subjects across three separate lecture streams (small animal, farm animal and equine), alongside a series of specialist workshops and an exhibition. OVs are able to view the programme ahead of time on the OV Conference website, so they can plan which sessions would be most beneficial for them to attend.

Monitoring notifiable diseases

With notifiable diseases such as African swine fever, avian influenza and equine viral arteritis presenting an increased threat to the UK, it is important to stay informed about the risks and how to monitor them. There will be a number of talks aimed at keeping OVs up to date in this area, including presentations by: Rowena Hansen, an expert on avian diseases; Alistair George, whose insight into how to recognise African swine fever is of particular relevance given the outbreaks in western Europe; and Fleur Whitlock and Andy Paterson, who will take a closer look at equine viral arteritis in light of the recent cases confirmed in Dorset and Devon.

Other talks on the subject of notifiable disease include: “Raw diets: Mycobacterium bovis outbreaks in companion animals” – a report given by Conor O’Halloran on his recent study of TB in cats – and “Bat lyssavirus – what are the risks in GB?” presented by Samantha Holland, APHA Veterinary Advisor at the Veterinary Exotic Notifiable Diseases Unit.

Across the two days, OVs will also hear from speakers in all three lecture streams about various forms of disease control. The small and farm animal streams will include talks that aim to challenge pre-existing ideas on biosecurity and raise awareness of different surveillance techniques. The equine lecture stream on the Wednesday will introduce David Bartram from the Newmarket Equine Hospital, who will speak about the supervision of pre-export quarantine units, while Allison Williment and Alana Chapman from World Horse Welfare will give guidance on key advice to share with clients to reduce the risk from equine infectious diseases.

Policy updates

In addition to these disease-focused talks, the conference will host a number of APHA Veterinary Advisors, who will give updates on various topics, including TB policy in England, Scotland and Wales; the role of animal health para-professionals (ATTs and CSOs); and the latest information relating to Brexit.

Although Brexit will no doubt be a subject that is touched upon in many talks and questions during the conference, it is wise for OVs to remain up to date on other issues that may

Get up to date with the UK’s notifiable disease risks and policy changes at the 2019 Official Veterinarian Conference
affect imports and exports as well. Talks focusing on illegal imports, microchipping, long distance transport of pets and quarantine/disease testing will give OVs extra knowledge and confidence when carrying out imports and exports, no matter what happens with Great Britain’s exit from the EU.

Networking and CPD opportunities
Held once a year, the Official Veterinarian Conference is the only event allowing OVs to meet with colleagues from across the industry to forge new connections and focus their attention on current issues. The flexible programme allows OVs to gain relevant CPD and update their knowledge in their respective areas of expertise, whilst also providing the opportunity to explore other areas that may be of interest. OVs will have plenty of opportunities to engage with a wide range of thought leaders and key decision makers from across the industry to hear about individual cases, discuss unique issues and share personal experiences. The conference has been designed to ensure that OVs are made aware of the key developments relating to their role that have taken place throughout the year.

Running alongside the conference programme will be a commercial exhibition of leading veterinary companies showcasing the latest equipment available to the industry. With plenty of time between lectures, OVs will have the chance to get hands-on and have face-to-face discussions with the experts when testing out equipment of interest to them.

To end the first day, there is an informal dinner, which gives delegates a further chance to network with other attendees and speakers outside of the scheduled conference programme. OVs can book a seat at the dinner by selecting the hospitality package when purchasing their ticket, which also includes accommodation and breakfast. The evening is an ideal opportunity for OVs to socialise and catch up with colleagues in a relaxed setting after the first day of the conference.

If you haven’t already booked your place at the Official Veterinarian Conference, go to: [officialvet.com/shop](http://officialvet.com/shop)

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Bluetongue is a haemorrhagic disease of ruminants caused by the bluetongue virus (BTV) and spread by biting midges. It is a notifiable disease and suspicion of disease must be reported to veterinary authorities.

Although bluetongue is mainly a disease of sheep, some strains have been shown to cause clinical disease in cattle. Symptoms include fever, haemorrhage, respiratory distress, lameness, in some instances a cyanotic tongue (from which the disease derives the name bluetongue; Figure 1) and even death. Animals that survive infection may show reduced milk yield, reduced weight gain and wool break.

Bluetongue was considered an exotic disease prior to the massive outbreak during 2006 to 2009, which represented the first incursion of the virus in northern latitudes. The unprecedented spread of BTV serotype 8 (BTV-8) through the naïve ruminant population placed considerable strain on veterinary services and financial losses on farmers within the EU. A widespread vaccination strategy brought the outbreak under control and since 2009, the UK has been BTV-free. Estimates of costs to affected countries during the 2006 outbreak are around £800 million, so it is unsurprising that BTV remains high on the agenda of veterinary authorities throughout Europe.

Challenges to disease control

The enormous diversity of BTV (29 serotypes) means that a vaccine for one serotype will not protect against another. This is a problem since a number of different serotypes are currently circulating in Europe. Inactivated vaccines (containing killed virus) are only readily available for two serotypes (BTV-4 and BTV-8) so considering the current situation, demand is high. The recent emergence of additional BTV serotypes, for which the BTV-4 and BTV-8 vaccine will not offer protection, further complicates the situation.

The nature by which BTV is transmitted poses a major difficulty in the control of disease. The primary vector for spread of BTV is Culicoides biting midges, which breed in semi-aquatic environments with farms providing an excellent breeding ground. The midges are most active during the warmer months, with May to October considered the main vector period and offering the highest chance of transmission and spread of disease. Apart from midges transmitting BTV over great distances, animal trade in the absence of control measures is a significant driver of disease spread.

Over the past two years, The Pirbright Institute, along with colleagues from the APHA and Defra, has detected BTV in a number of imported animals through its testing programmes. In all instances, each importation has occurred in periods of low-vector activity and so no onward transmission occurred. For an outbreak of bluetongue to be confirmed, there must be evidence of virus transmission; thus, no trade implications have been incurred by the UK due to these cases. However, the importation of animals without sufficient proof of successful vaccination poses a major risk, particularly as we are now in the vector-active period.

Monitoring the risk

Vaccination provides the only robust defence against BTV since midges can only be controlled to a very limited extent and animal trade is economically vital. An inactivated BTV-8 vaccine brought the 2006 to 2009 outbreak under control. Rather inexplicably, the same BTV serotype (BTV-8) re-emerged in France in 2015 and has recently spread into parts of Germany and Switzerland. However, the pathogenicity of this BTV-8 has, until recently, caused few clinical cases – unlike the previous BTV-8 strain from 2006. The lack of clinical signs reported has led to a reduced appetite for vaccination and has allowed the virus to spread, albeit slowly, since that time. Experimentally, we have observed a similar pathogenicity to what has been seen in the field.

The reasons behind the re-emergence of the virus in central France are unclear, as are the reasons behind the reduced pathogenicity, both of which warrant further study. However, since December 2018, a number of calves with congenital deformities have been born in France and Germany. These have been attributed to transplacental transmission, which was a unique feature of the 2006 to 2009 BTV-8 outbreak. Over the coming months, we may revisit familiar scenes of BTV-induced congenitally malformed foetuses

Teams are working to devise the best response to a new strain of BTV-8 arriving in the UK

John Flannery, BSc, MSc, PhD, is Technical Manager of Non-Vesicular Reference Laboratories at The Pirbright Institute. John has a background in molecular diagnostics and the validation of methods to ISO/IEC 17025 for the diagnosis of viral pathogens. John leads the evaluation and validation of new diagnostic assays within the NVRL.

CARRIE BATTEN
Carrie Batten, BSc, PhD, is Head of Non-Vesicular Reference Laboratories at The Pirbright Institute and leads the OIE Reference Laboratories for bluetongue, African horse sickness, African swine fever, morbilliviruses and capripoxviruses. Carrie’s research interests include improving diagnostics and the control of transboundary veterinary diseases.
should this BTV-8 strain continue its spread throughout Europe and possibly to the UK.

The risk of BTV is monitored and involves both passive and active surveillance, in addition to meteorological assessments. From a testing perspective, the situation in Europe is different now to what it was in 2006. Since that time, proficiency tests (where a mix of known-positive and negative samples are tested by different laboratories) have highlighted the most sensitive tests for BTV. The BTV ELISA detects BTV antibodies, which can be detected from five to seven days post-infection and can persist for many years.

For animals imported to the UK from areas within the EU restriction zones, testing blood samples using molecular assays (such as real-time RT-PCR) provides the most appropriate means to detect BTV and gives excellent assurance of the results. The assays used at Pirbright are accredited to the highest standard for testing laboratories (ISO/IEC 17025) by the United Kingdom Accreditation Service. Two different molecular tests (detecting different parts of the BTV genome) are used to negate or confirm infection. It is now possible to detect BTV in blood samples taken one day post-infection and, in some instances, for a number of months post-infection. Serotyping and additional molecular characterisation can also be performed, which is crucial for vaccine selection. Given the high sensitivity of the tests coupled with the prolonged viraemia, this testing regime gives us confidence to detect BTV either in imported animals or in the UK herd should natural infection occur.

The Pirbright Institute hosts the World Organisation for Animal Health (OIE) Reference Laboratory for bluetongue and has the expertise to inform policy teams within Defra. Being part of an international network of testing laboratories gives advanced warning of the situation in the field. Going forward, in spite of the uncertainties surrounding the UK EU exit, there will remain a commitment to advancing understanding of BTV for the protection of animal health. Building on expertise and working closely with international colleagues will underpin the response to the seemingly inevitable incursion of BTV to the UK.
Monitoring equine disease in the UK

How has equine disease surveillance evolved in the UK and what challenges do we still need to overcome?

The Equine Disease Surveillance programme is a collaboration between the Animal Health Trust, Defra and BEVA, and is celebrating its 15th anniversary this year. The surveillance programme ensures that diseases of horses, ponies and donkeys are monitored to the same degree as farmed livestock and wildlife are in the UK. As well as providing important data on disease spread, the programme has facilitated discussions around equine disease and welfare risks facing the country.

In light of the anniversary, Veterinary Practice magazine interviews Sarah Smith, who, on behalf of BEVA, has an active part in the reports from the surveillance group. Sarah works at Langford Vets, University of Bristol, as an equine medicine specialist.

How did you get involved in the disease surveillance programme?
I go to the meetings of the disease surveillance group as a representative of BEVA Council, which I joined two years ago. Since the disease surveillance group was set up, there has always been at least one representative from BEVA Council there. It provides a fascinating insight into infectious disease surveillance in the UK and a very interesting complement to my day job.

The equine disease surveillance group started in 2005. It was set up in response to a government investigation into whether we should have better monitoring of animal diseases. They were already undertaking surveillance with cattle; the question was whether it should be extended to horses. And so this collaboration between Defra, the Animal Health Trust and BEVA was set up.

Scientists from the Animal Health Trust undertake the collation of data provided by clinical laboratories throughout the UK. They create a quarterly report which is then reviewed by a group including representatives from the Animal Health Trust, Defra and BEVA. The purpose of the report is primarily communication of information to vets, then vets are able to disseminate information to owners.

Is there evidence that the surveillance programme has been a success?
The most pertinent example is the recent influenza crisis. The group at the Animal Health Trust have been at the forefront of providing up-to-date information about the extent of the outbreak and guidance for vets and owners about appropriate action. The latest copy of the disease surveillance report (Volume 15, number 2, April to June 2019) includes a summary of the latest information about the disease outbreaks and a guide for vets about how to best manage the situation, how to cope with horses going to events and how to limit disease spread in those situations.

What was the process for dealing with the influenza outbreak?
After the initial outbreak was identified and following discussion among the major stakeholders in the UK equine industry, there was a brief halt on the movement of racehorses and suspension of racing. There was quick implementation of screening of horses that had been exposed to those original index cases and implementation of booster vaccinations.

It seems to have had a good impact on controlling what might have been a much bigger explosion of infection, but due to the nature of equine competition and the equine industry in the UK, equine influenza has continued to spread around the UK during 2019.
Was there anything more that could have been done to prevent the influenza outbreak?
This outbreak has highlighted the importance of vaccinating all horses regardless of their use. Thoroughbreds in racing and competition horses are routinely vaccinated but some owners of pleasure horses have in the past not vaccinated because they perceived the risk to their horse to be very low. The current outbreak has highlighted that all horses are at risk of infection, that infection can have very serious consequences and that widespread vaccination combined with robust biosecurity is very effective at limiting spread of infection.

What do you think are the biggest threats to UK horses at the moment?
Currently, equine influenza poses a big threat. There is also a significant threat from infectious diseases which might encroach into the UK as a consequence of climate change, such as African horse sickness or West Nile virus, which may one day be present in the UK. Obviously outside of infectious disease there are a multitude of risks, the most widespread of which is equine obesity.

Will Brexit have an impact on equine health?
Everyone is thinking about the possible impacts of Brexit on veterinary medicine. BEVA and Defra have been working to try to limit the potential impact it might have. From my point of view as a hospital clinician, we worry about supply of medication, but stockpiling medication and fluids has big financial implications on businesses. The other concern is around movement of horses: how that will happen after Brexit and whether it will have any positive or negative effects as currently the tripartite agreement with France and Ireland enables very easy movement of horses.

Could it impact disease risk as well as welfare?
I would hope it would not have a long-term impact on disease risk. Defra will be responsible for putting in place import controls that would limit any risk of disease transmission to something similar to the current situation.

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Are we doing enough for the welfare of cows with mastitis?

Recent steps forward in pain recognition and mastitis were discussed at the 2019 Total Dairy Seminar

Some 450 delegates attended a programme of 36 presentations over two days at the Total Dairy Seminar on 19 and 20 June 2019. The various parts of the dairy industry attended with an active exhibition area and posters covering a wide range of research and analysis. Veterinary surgeons were able to discuss aspects of cow management and nutrition beyond the obvious areas of veterinary involvement and there was a positive buzz of activity throughout the event.

Recognising pain
Chris Hudson, Clinical Associate Professor in Dairy Health and Production at the University of Nottingham, reviewed the changes that have taken place in the recognition of pain with cattle herds. There was interaction with the audience throughout, with responses to key questions recorded on screen and compared to other group observations. In general, the groups of veterinary surgeons, farmers, industry representatives and mixed workshops demonstrated a level of agreement. Fundamentally, cows and calves do feel pain; pain does increase the period of recovery; and reducing pain speeds up recovery. However, it is difficult to demonstrate the benefits of pain relief in commercial terms.

With calf disbudding, it is accepted that the farmer now feels better after using non-steroidal anti-inflammatories (NSAIDs) and sees their use as an improvement in animal welfare. This approach has changed considerably over the years and administering NSAIDs before disbudding is now considered common practice.

Studies with clinical mastitis indicate that controlling pain, together with antibiotics, has not only led to a more rapid recovery but tangible benefits including reduced cell count, less culling and improved conception rate. It has been shown that using NSAIDs in cows with mastitis can lead to the cow behaving subsequently as though she never had the disease.

It was also mentioned that NSAIDs have a short duration of activity and cases of lameness often persist for weeks. The combination of hoof trim, hoof block and pain relief has been shown to be more beneficial than any one procedure alone.

Considering welfare with mastitis
Jim Reynolds, a professor in large animal medicine at Western University California, explained the factors related to the welfare aspects of bovine mastitis. When using NSAIDs, tissue damage releases prostaglandins, which are potent activators of inflammation and lead to lower pain receptor thresholds. NSAIDs block prostaglandin production in tissues; inflammation is reduced and blood flow activity is normalised; white blood cell activity is maintained; and pain receptor thresholds return to normal.

With experimental E. coli infections, NSAIDs have been shown to reduce fever, reduce heart and respiratory rates and improve rumen function. Lipopolysaccharides in the cell walls of Gram-negative bacteria are extremely immunogenic and stimulate a strong immune response in local tissues, with a reaction from the cow delivering a massive white blood cell release into the mammary gland. The white blood cells release immunochemicals that damage tissue and affect blood flow. The amount of lipopolysaccharide released from the bacteria determines the severity of toxic shock that is experienced, from mild to fatal. Vaccinated cows have been shown to react to Gram-negative infections more rapidly and the bacteria are killed before effective volumes of endotoxin are produced, but can be overwhelmed by a large infectious dose.

Jim emphasised the benefits of handling cows so as to reduce stress. Cows need to be calm. Noise or quick movements can scare cows and stop the production of oxytocin, due to the release of epinephrine when a cow is nervous. Blocking the production of oxytocin decreases the immune system, inhibits milk let-down and increases the risk of mastitis.

Behavioural changes are noted with cattle in pain, including: inappetence, decreased water consumption, decreased milk production, depression with increased lying and vocalisation. Cattle are stoic and do not show the impact of pain readily, so when signs are noted, action needs to be taken to reduce the pain at the earliest opportunity.
Non-aureus staphylococci mastitis

Sarne De Vliegher, a professor at Ghent University, is editor of M² magazine (Rekad Publishing) and, in introducing his involvement with non-aureus staphylococci mastitis, referred to the identification of a new Streptococcus species highlighted in 2018. Streptococcus bovimastitidis was identified from a milk sample by genome sequencing from one farm in New Zealand. Unfortunately, the organism has not been identified again, even from samples taken on the same farm. If anyone can contribute to the hunt for the new species, which has a similar presentation to Streptococcus uberis, please contact the university.

Non-aureus staphylococci (NAS) are the principal cause of culture-positive milk samples around the world. There are 50 different species and sub-species of NAS, with five typically found in milk samples. Each herd has its own population of NAS and, as commensals, are considered to prevent clinical mastitis.

The organisms can be found surviving on the udder and in the environment as well as within the mammary gland and they can shift between habitats. Bacterial shedding takes place in faeces with colonisation of the teats and the udder. Teat apex colonisation stimulates higher neutrophils, which provide protection against other bacterial invasion. Cows infected with coagulase-negative staphylococci produce as much milk as non-infected cows, but with a raised cell count. Studies have shown that a pre-existing NAS infection after calving shows a reduced incidence of pathogens during lactation.

Antimicrobial resistance is prevalent with NAS but treatment with antibiotics is rarely indicated. One of the many research questions is whether NAS drug resistance is transferable to other bacteria. Other milk producers can also be affected and goats have been shown to have a higher somatic cell count and milk yield than non-infected animals. The speaker said it needs to be recognised that there are many differences between and within NAS species. The overall view is that NAS are not a problem for udder health, except in herds where major pathogens are minimal and more “virulent” NAS species are involved.

Sarne provided an update on heifer mastitis. Heifers can become infected at 9 to 10 months of age and up to calving. A herd is considered to be a heifer mastitis problem herd if more than 15 percent of heifers have mastitis around calving or if more than 15 percent of heifers have a first test day somatic cell count (between 10 and 35 days in milk) of over 150,000 cells per ml. Cleanliness, fly control, transition feeding, nutritional deficiency, optimal per partum feeding management and the avoidance of cross suckling are included in a management plan.

Antibiotics administered intramammarily before calving, in the face of an outbreak, have been shown to be effective. External teat sealants have traditionally been applied to reduce the effect of flies and the administration of internal teat sealants is under investigation. During the discussion, it was indicated that antibiotics can be administered to pre-calving heifers without inserting the syringe nozzle into the teat canal, but it was not known whether the same technique would work with teat sealant products.

In general, the heifers are an important economic resource and mastitis can be a considerable problem ranging from total loss of an animal to reduced yield in the first lactation. The location of heifers in distant pasture has been a problem with mastitis only being detected around calving. Managing the heifers as a valued resource is required to combat heifer mastitis. The administration of dry cow minerals has been shown to improve the quality and quantity of neutrophils in the milk of heifers.

Digital versions of the presentations are available from totaldairy.com/seminar2019-presentations. In 2020, the Total Dairy Seminar will be held on 1 and 2 July at the Crowne Plaza Hotel, Stratford-upon-Avon.
Investigating equine endocrinopathies

What are the options for treating pituitary pars intermedia dysfunction and equine metabolic syndrome?

Equine pituitary pars intermedia dysfunction (PPID) is a slowly progressive neurodegenerative disease with loss of dopaminergic (inhibitory) input to the melanotropes of the pituitary pars intermedia (McFarlane, 2014). It appears to be associated with localised oxidative stress and abnormal protein (α-synuclein) accumulation, but the exact cause remains unknown. The consequent dysfunction of the region results in hyperplasia of this area of the gland and overproduction of normal pars intermedia-derived hormones. Eventually the area undergoes adenomatous change.

The condition is seen in older animals; the average age in retrospective case series ranges from 18 to 23 years. There is no breed or sex predilection, but ponies appear to be more frequently affected than horses. The clinical signs can be roughly divided into those that are seen early in the disease and those that are associated with advanced disease.

Early signs include decreased athletic performance, change in attitude/lethargy, delayed hair coat shedding, regional hypertrichosis, change in body conformation, regional adiposity and laminitis. Late signs include lethargy, generalised hypertrichosis (Figure 1), skeletal muscle atrophy (Figure 2), hyperhidrosis, polyuria/polydipsia, recurrent infections, infertility and laminitis. There is no ideal further diagnostic test for equine PPID, but plasma basal adrenocorticotropic hormone (ACTH) concentrations and the ACTH response to TRH are currently thought to be the most appropriate tests available. In addition, since a subset of animals with PPID have insulin dysregulation (ID), tests to detect ID should be undertaken.

Equine metabolic syndrome (EMS) is a collection of risk factors for endocrinopathic laminitis (Durham et al., 2019). The central and consistent feature of EMS is insulin dysregulation which can manifest in three ways, namely: hyperinsulinaemia, an excessive insulin response to oral carbohydrate and peripheral (tissue) insulin resistance. Additional features of EMS include obesity (Figure 3), hypertriglyceridaemia and adipose dysregulation manifesting as abnormal plasma adipokine concentrations including hypoadiponectinaemia and hyperleptinaemia.

Laminitis is the primary clinical consequence of EMS (Figure 4). Horses with EMS might also be at risk of further problems including hyperlipaemia and critical care-associated metabolic derangements including hyperglycaemia and hypertriglyceridaemia. A diagnosis of EMS is based on demonstration of ID. Resting (basal) insulin concentrations can be measured to detect hyperinsulinaemia, but this is of low diagnostic sensitivity. Ideally, dynamic tests should be performed including an oral sugar test (OST) to detect an excessive insulin response to oral carbohydrate and an insulin tolerance test (ITT) to assess tissue insulin sensitivity.

Treatment of PPID

Seeing as PPID is a slowly progressive, lifelong condition, the aim of treatment is to improve the quality of life through reducing the clinical signs, rather than cure the condition. Whilst the benefits of treating an animal with PPID that has life-threatening clinical signs such as laminitis are clear, the decision to specifically treat the PPID in animals with clinical signs that are not life threatening is less clear-cut.

There is no published evidence demonstrating that pergolide prevents laminitis or the progression of PPID. It could be argued that pharmacological management in such cases is appropriate, as it should be considered to be prophylactic treatment of a condition that may threaten health in the future. Thus, this decision should be made following discussion with the owner taking into account the financial implications and potential adverse effects of life-long treatment.

Pharmacological treatment

There are two types of drug available: dopamine agonists and serotonin (5-hydroxytryptamine; 5-HT) antagonists. The former replace the lost dopaminergic inhibition to the pars intermedia, whilst the latter decrease the serotonin-induced stimulation to the pars intermedia. Both result in a reduction in the excessive hormone secretion and so an improvement in the clinical signs. It has not been determined whether treatment with these drugs also inhibits the development/progression of the pituitary hyperplasia or reduces the size of pituitary adenomas once they have developed.
Pergolide

Pergolide is a dopamine agonist that is available as a product licensed in the UK for the treatment of PPID in horses (Prascend, Boehringer Ingelheim). It is reported to be effective in 65 to 80 percent of cases. The initial dose is 2 µg/kg PO SID for four to six weeks (0.5mg for a 250kg pony and 1.0mg for a 500kg horse). Side effects include anorexia, diarrhoea, depression and colic; however, only anorexia and depression are reported with any frequency. If signs of dose intolerance develop, treatment should be stopped for two to three days and then reinstated at half of the previous dose for the first four days or by administering half the dose morning and evening. The total daily dose may then be gradually increased until the desired clinical effect is achieved, increasing in 0.5mg increments every two to four weeks. Contraindications to using pergolide include animals with a known hypersensitivity to pergolide or other ergot derivatives, animals less than two years of age and pregnant or lactating animals.

PPID is a slowly progressive disease and the amount of pergolide required to control the symptoms is likely to increase as the horse ages. In addition, there is a normal physiological increase in hormone production by the pituitary gland in the autumn. Some horses only seem to need pergolide during this seasonal rise in the early stages of the disease; alternatively, some horses appear to need an increased dose of pergolide during this seasonal rise.

Cyproheptadine

Cyproheptadine is a serotonin antagonist that was previously recommended for the treatment of PPID and was reported to be effective in 28 to 60 percent of cases. However, similar improvements can be achieved with improved nutrition, preventative care and management alone and pergolide has been shown to be more effective. Thus, cyproheptadine monotherapy is no longer advocated and instead it should only be used in addition to pergolide in refractory cases.

Non-pharmacological management

If an owner decides not to treat the PPID specifically, then the clinical signs can be managed individually. For example, excess hair can be clipped, the diet can be altered to promote weight gain or loss as appropriate and the laminitis can be treated with analgesia and foot support.

The only complementary or alternative therapy that has been investigated is the use of an aqueous extract of the herb Vitex agnus-castus (chasteberry), which is reported to contain compounds (diterpenoids) that stimulate dopamine receptor activity and inhibit different opioid receptors. However, it did not resolve the clinical signs or improve diagnostic test results in 14 horses with PPID.

Monitoring of PPID

There are three monitoring strategies that can be used:

1. Laboratory response
2. Clinical response
3. Combined laboratory and clinical response

If the laboratory response is monitored, the plasma ACTH concentration should be measured approximately 30 days after initiation of pergolide therapy. If it has not decreased to within the seasonally adjusted reference range, the dose of pergolide should be increased in increments of 1µg/kg/day with reassessment every four to six weeks to a maximum of 6µg/kg/day. Once a suitable pergolide dose has been found, plasma ACTH concentrations should be measured annually, or some suggest biannually in the autumn and spring, and the pergolide dose adjusted to maintain plasma ACTH concentrations within the reference range. Some horses have very high plasma ACTH concentrations and it may not be possible to return plasma ACTH...
concentrations to normal in these cases. Instead, an affordable pergolide dose that results in a significant decrease in plasma ACTH concentration, even if concentrations remain above the reference range, should be used.

If the clinical response to treatment is being monitored, increased alertness and activity and decreased drinking and urination should be expected within 30 days of starting treatment. Other signs such as hypertrichosis and skeletal muscle atrophy may take up to 12 months to improve. The dose of pergolide can then be altered according to how well the clinical signs improve. Once the disease is controlled, clinical assessment should be performed every six months and the pergolide dose adjusted to maintain a clinical response.

Finally and ideally, the laboratory response can be assessed in conjunction with the clinical response.

**Treatment of equine metabolic syndrome**

EMS can also be managed rather than cured. Management consists of dietary modification, exercise and the use of pharmacological agents.

**Diet**

Dietary modification recommendations will depend on whether the individual animal is obese or lean.

Obese animals require energy restriction through limiting intake and feeding a diet based on grass hay (or hay substitute) with low (less than 10 percent) non-structural carbohydrate (NSC) content. A daily allowance of 1.25 to 1.5 percent of actual body mass (BM) as dry matter intake (DMI), or 1.4 to 1.7 percent of actual BM as fed is widely recommended in order to achieve a target weight loss of 0.5 to 1.0 percent BM weekly. The forage should be divided into three to four feeds per day and strategies to prolong feed intake time should be considered, such as use of haynets with multiple small holes.

In horses with weight loss resistance, a further restriction to 1.0 percent BM as DMI or 1.15 percent BM as fed may be considered if appropriately monitored. The nutrient composition of the forage should be determined where possible and hays with low NSC content (less than 10 percent) are recommended to limit postprandial insulin responses. Soaking is advised to reduce the NSC content of the hay if necessary, and as forages can be low in protein and mineral and vitamin leaching occurs after soaking, these nutrients must be balanced by low calorie supplements to cover requirements.

During the initial 6 to 12 weeks of dietary restriction, pasture access should be prevented; even partial access is very difficult to quantify. Successful long-term management of EMS cases can include some grazing provided that ID, especially assessed by the insulin response to oral carbohydrates or grazing, is under control and grazing is carefully controlled. Grains or cereal-based feeds should be excluded due to their high NSC content and high-fat feeds should be avoided due to their high energy content. Finally, the use of dietary supplements such as cinnamon, magnesium and chromium to facilitate weight loss or to improve ID is popular, but their efficacy remains questionable or unproven.

Lean animals should be fed a low glycaemic diet in order to minimise the postprandial insulin response. The diet should be based on forage with a low (ideally less than 10 percent) NSC content, and additional calories provided in the form of fat (e.g. vegetable oil) and high quality fibre such as beet pulp. A low calorie vitamin, mineral and protein ration balancer should be fed as required.

**Exercise**

Exercise has been shown to improve insulin sensitivity in horses; however, the exercise intensities required for this effect may be higher than are often undertaken. Animals should only be exercised if there is no current laminitis and all exercise should be increased gradually based on the baseline fitness level. In non-laminitic horses with ID, current minimum recommendations are low to moderate intensity exercise (canter to fast canter, ridden or unridden; or HR 150 to 170bpm) for more than 30 minutes, more than five times per week. In previously laminitic horses with recovered and stable hoof lamellae, minimum exercise recommendations are low intensity exercise on a soft surface (fast trot to canter unridden; or HR 130 to 150bpm) for more than 30 minutes, more than three times per week, whilst carefully monitoring for signs of lameness.

**Pharmacological agents**

If management changes are unsuccessful alone, then pharmacological interventions can be additionally used in the short term (three to six months). Metformin (15 to 30mg/kg two to three times daily PO) was initially advocated to improve insulin sensitivity; however, the bioavailability is very low and it does not have insulin sensitising effects in the horse. Instead metformin may reduce the glycaemic and insulinaemic responses to oral carbohydrate ingestion; thus it may be more useful in preventing post-prandial hyperinsulinaemia associated with pasture turn out or feed consumption.

Levothyroxine (0.1 to 0.15mg/kg PO SID) is advocated in animals with generalised or regional adiposity. Weight loss is promoted through an increase in the metabolic rate; however, the diet has to be strictly controlled because polyphagia may be a consequence of medication.

**Monitoring of EMS**

Initial veterinary re-examinations should be performed monthly after starting dietary restriction and then less frequently (6 to 12 monthly intervals) once good progress is made. The minimum database for each visit includes an updated diet and exercise history, physical examination, body weight (using a weighbridge or weigh tape), body condition score, visual inspection of hooves for signs of laminitis and dynamic endocrine tests (e.g. OST, ITT). The dietary and exercise recommendations can then be altered according to the response of the ID and weight loss.

A full reference list is available on request.
Approaching cases of guttural pouch mycosis

What are the best treatment options for the rare but potentially fatal disease?

Guttural pouches are a paired extension of the eustachian tubes that can be found in perissodactyls (ungulate mammals). Several functions have been proposed for guttural pouches, including: pressure equilibration across the tympanic membrane; brain cooling; and acting as a resonating chamber for vocalisation. They are separated into two compartments – medial and lateral – by the stylohyoid bone. The medial compartment is three times bigger than the lateral compartment.

Most cranial nerves (vagus, glossopharyngeal, hypoglossal, spinal accessory, cranial laryngeal nerves, pharyngeal branch of the vagus and facial nerve) are located within the guttural pouch itself or closely connected with its walls, which relates to some of the clinical signs encountered with guttural pouch mycosis.

The vestibulocochlear nerve (CN VIII) does not enter the guttural pouch directly but may be involved in guttural pouch diseases that affect the middle ear, such as temporohyoid osteoarthropathy. Finally, the internal carotid artery lies within the caudal wall of the medial compartment, while the external carotid artery and maxillary artery are located within the lateral compartment of the guttural pouch.

Aspergillus fumigatus is the most common isolate identified in cases of guttural pouch mycosis. The fungal mycelia together with various bacteria, necrotic tissues and cell debris form what is called the diphtheric membrane, which is the typical lesion found in horses affected with guttural pouch mycosis (Figure 1).

Clinical signs are variable and closely related to the structures involved in the mycosis. Epistaxis (sometimes unilateral but more commonly bilateral) is probably one of the most common clinical signs seen in horses and varies from repeated episodes of mild epistaxis to severe haemorrhage, which can be fatal.

Other common signs encountered in cases of guttural pouch mycosis include dysphagia, secondary aspiration pneumonia, pharyngeal paresis/laryngeal hemiplegia and Horner’s syndrome. Less common clinical signs may be seen in some cases and include mucopurulent nasal discharge, corneal ulcers, head shyness, blindness, tongue paralysis and mycotic encephalitis.

Diagnosing the mycosis
Diagnosis is made on the basis of history and clinical signs and is confirmed using diagnostic imaging. Endoscopy is the most commonly used diagnostic tool for guttural pouch mycosis as it permits direct visualisation of the mycosis but also allows for complete evaluation of the affected structures (including the larynx region and the presence of dysphagia/laryngeal hemiplegia), which will guide treatment choices. Other diagnostic tools that have been used to diagnose guttural pouch mycosis include radiographs and computed tomography.

Treatment options
Both medical and surgical treatments have been described. It has been reported that up to 50 percent of horses presenting with signs of haemorrhage die from this complication, so preventing haemorrhage should be the first aim of treatment.
Medical treatment

Medical treatment includes daily lavage through the endoscope or through a Chambers/Foley catheter introduced within the affected guttural pouch under endoscopic guidance, detachment of the diphtheric membrane using biopsy forceps or cytology brushes under endoscopic guidance and anti-fungal therapy (systemic and/or topical). Itraconazole (5mg/kg PO or used as a topical infusion of 30ml of the 10mg/ml solution) and enilconazole (60ml of a 33mg/ml solution) are most commonly used. Supportive treatment should also be initiated depending on the clinical signs seen (such as fluid therapy, blood transfusion and nasogastric tubing, as indicated).

Medical treatment can be slow to resolve the mycosis and generally provides inconsistent results. In some cases, a spontaneous regression has been described over time and so the efficacy of treatment has been questioned when only assessing the regression of the mycotic plaque.

Medical treatment does not prevent fatal haemorrhage secondary to the erosion of one of the carotid arteries and may even dislodge blood clots that are occluding the defect; case selection should be made carefully. In addition, the length of treatment needed to completely resolve the lesion should be taken into consideration when discussing prognosis (especially for horses showing neurological signs) and finances with the owners (Dobesova et al., 2012).

Surgical treatment

Various surgical treatments have been proposed over the years and aim at occluding the affected vessel to prevent fatal haemorrhage (Freeman, 2015). It has also been suggested that it may hasten recovery, but this remains controversial. Recently, balloon catheterisation and coil embolisation seem to be the treatment of choice in most cases.

Both techniques rely on the exact knowledge of the structure affected (internal versus external carotid artery and location of the defect), as this will dictate the surgical approach. Occlusion using a balloon catheter (Fogarty venous thrombectomy catheter or Foley catheter) inserted through an arteriotomy in the appropriate vessel provides immediate occlusion of the affected vessel and prevents retrograde blood flow (Figure 2).

It is a simple, effective and inexpensive method to occlude the affected artery. It does, however, require general anaesthesia and removal is necessary two to three weeks after the initial procedure. One of the main disadvantages of this technique is the inability to directly visualise the vessels to be catheterised; aberrant branches may be occluded, which could lead to complications such as blindness. Infection of the surgical site and breakage of the catheter are also reported complications.

Occlusion of the affected vessels using coil embolisation has been described both as a procedure under general anaesthesia and also standing under sedation (Benredouane and Lepage, 2012). It relies on the use of stainless steel coils that selectively occlude arterial segments. The procedure is performed using the injection of contrast material under fluoroscopic guidance, allowing direct visualisation of the vessel occluded and limiting complications associated with occlusion of aberrant branches. Though this technique is less invasive than the balloon catheterisation technique, it is also associated with higher cost, concerns with radiation shielding, limited availability and coil migration.

Both techniques have a reported success rate of approximately 80 percent. Ligation of the ipsilateral common carotid artery has also been reported in the past. The use of this technique may be controversial today as some studies have shown that it could potentially increase the blood flow within the internal carotid artery; but it may be beneficial for haemorrhages originating from the external carotid artery. One study showed a 21 percent recurrence of epistaxis and 17 percent fatality using a combination of ligation of the ipsilateral common carotid artery and topical treatment (Cousty et al., 2016).

Conclusion

Guttural pouch mycosis is a rare but potentially fatal disease affecting horses. Although the diagnosis is often straightforward based on history, clinical signs and endoscopy, its treatment can be challenging. Risks and benefits should be explained to the owner and financial implications should also be taken into consideration when making a decision. Owners of horses that present with neurological signs (dysphagia and laryngeal hemiplegia) should be warned that these signs are likely to persist or have incomplete resolution, which may also have an effect on treatment selection.
Risk factors for surgical site infections following exploratory laparotomy in colic patients

Isabelle Kilcoyne and others, University of California, Davis

Survival rates of horses that have undergone exploratory laparotomies for colic have improved significantly over recent decades but the incidence of post-operative complications is still high. The use of sterile wound dressings is one factor that may reduce the risk of surgical site infections. The authors compare the outcomes when using three different types of protective dressing in a total of 85 horses with suspected colic undergoing exploratory surgery and standardised abdominal closure. The wound sites were covered with either a sterile cotton towel or a polyhexamethylene biguanide-impregnated dressing, both secured over the wound site with sutures, or with a sterile gauze secured with an iodine-impregnated adhesive drape. The risk of infections was lower in the first two groups in which the dressing was secured with sutures rather than an adhesive drape. *Journal of the American Veterinary Medical Association, 254*, 1441-1447.

Salivary alpha-amylase activity and concentration in horses with acute abdominal disease

Maria Contreras-Aguilar and others, Interlab-UMU, Murcia, Spain

Human salivary alpha-amylase (sAA) is a non-invasive biomarker for sympathetic nervous system activity and increases with psychological and physical stress. The authors investigate the potential use of this enzyme as an indicator of acute abdominal disease in horses. They measured sAA activity using a colorimetric commercial kit, and concentration with an immunofluorescence assay in 33 horses with acute disease. Their findings suggest that sAA activity, but not its concentration, is a potential biomarker of disease prognosis in horses. *Equine Veterinary Journal, 51*, 569-574.

CT imaging in planning the surgical removal of keratomas in horses

Scott Katzman and others, University of California, Davis

Keratomas are an aberrant growth of keratin within the hoof that are an uncommon cause of lameness in horses. The authors investigate the value of computed tomography imaging in accurately identifying the size and location of keratomas prior to their surgical removal. Their retrospective examination of the clinical records on 29 horses and three mules confirmed the usefulness of CT images in the diagnosis of, and the surgical planning for, this condition. *Journal of the American Veterinary Medical Association, 254*, 266-274.

Use of heart rate variability analysis to detect arrhythmias during treadmill exercise

Ladina Frick and others, University of Zurich, Switzerland

Heart rate variability (HRV) has been well described in horses at rest but there is little published information on any changes in healthy horses undergoing vigorous exercise. Thus it may be difficult to differentiate between truly premature beats and normal beat-to-beat variation at higher heart rates. The authors compared HRV in healthy horses and those with known arrhythmias. They found that healthy horses had little instantaneous beat-to-beat cycle length variation during treadmill exercise. If a cardiac cycle shortens by more than 6 percent from the previous cycle during the recovery phase, they suggest this is likely to represent an arrhythmic event. *Journal of Veterinary Internal Medicine, 33*, 212-224.

Effects of body condition on intestinal permeability in horses

Jamie Kopper and others, Michigan State University, East Lansing

Obesity is a risk factor for higher morbidity and mortality in a range of mammalian species, including horses. In humans and mice, obesity is associated with greater permeability of the gastric mucosa which may affect the absorption of bacteria and bacterial toxins. The authors describe an experimental study showing that the jejunal mucosa of obese horses has greater permeability to bacterial-derived lipopolysaccharide than that of lean animals. *American Journal of Veterinary Research, 80*, 792-798.
Is obesity the most serious threat to equine welfare in the UK?

Equine vets must take a united approach to the growing obesity problem

Jonathan Pycock
IMMEDIATE PAST PRESIDENT, BEVA

Anyone concerned about climate change must be saddened by the vitriolic tirades masquerading as public debate over that issue. According to a recent poll, only 63 percent of Americans believe global warming is happening. There is an excellent book which accounts for the discrepancy between what is written by the scientific community and what many of the population choose to believe. The book, written by George Marshall, is called Don’t Even Think About It: Why Our Brains Are Wired to Ignore Climate Change.

This situation is somewhat mirrored in the debate over the importance of equine obesity. There is a view that equine obesity is now so common that it has become accepted by many as the norm. This could be a contributory factor in why we are struggling to get the message across. Many excellent scientific papers have highlighted the issue over the last few years but for whatever reason, these scholarly articles at least partially failed to get the message across.

In 2018, an excellent initiative took place involving a round table forum and online discussion between eminent experts such as BEVA Council member David Rendle and past BEVA President Mark Bowen. This was one of the first initiatives to use the Delphi method – an expert consensus method. The theory behind this method is that the interaction of experts may lead to a reduction in individual bias. In an attempt to obtain veterinary expert consensus via the internet, both published and unpublished research was considered and where research evidence was conflicting or absent, collective expert opinion based on the clinical experience of the group was applied. The opinions expressed were the consensus of views expressed by the participants. Where agreement was not reached, opposing views were presented such that colleagues could understand the arguments fully. The resulting article can be found in UK-VET Equine and was published online on 11 September 2018. It provided excellent guidance to vets caring for equids, which they could pass on to their clients.

Accepting obesity as a serious health and welfare issue is easy for equine vets. It is important to communicate this to owners – something which has not been as successful thus far. To gain insight into how best to improve this communication, BEVA ran a survey in 2018 to understand how BEVA members perceive the issue and what they are already doing to tackle it. Much of the credit for this piece of work goes to Nicky Jarvis. Nicky identified that there are no studies out there to tell us how successful weight management programmes are in the equine world. The survey drilled down into what practices looked at in their weight management clinics and what this service entailed. Successful weight clinics involved much more than the use of a weighbridge or weigh taping of the horse. For the full results of the survey and further information, go to the BEVA website.

Meanwhile, the scientific work continues with a paper by David Rendle, Pat Harris and Nicola Menzies-Gow due to come out with BEVA Congress in September. The paper is titled “Equine obesity: the most common risk factor for laminitis in the UK?” and is essential reading for all involved in the veterinary care of equids. The paper concludes that "Obesity represents a significant threat to equine welfare as a factor in the multiple health problems and most notably laminitis. Education is required to alter perceptions of what constitutes a healthy body condition score and what should be fed in order to maintain a healthy body condition. Dietary restriction and management are central to reducing obesity but exercise, pharmaceuticals and reduced rugging may all be valuable adjuncts in certain cases.”

Informative as such papers are, there is still the problem of how to convey this message to all horse owners. Horse & Hound has made significant efforts to highlight the issue. In May 2019, one piece described the benefits of including awards for horses of the healthiest weight at an equine show. The concept was enthusiastically embraced and was very popular among entrants, showing that owners want to tackle the issue.

BEVA has continued to highlight the issue through various initiatives. It will be running a pilot project in autumn to encourage vets to make routine visual condition assessments at vaccination. This will hopefully be extremely easy to put into effect and have a large uptake. The categories have been deliberately kept simple: healthy condition; overweight; dangerously overweight. We can do better in conveying the dangers of obesity to our clients with the use of growing resources from BEVA and other organisations.
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Congress at a Glance

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Highlights

Keeping the sports horse on the road – practical advice on how to use farriery to your advantage for the sports and pleasure horse from the farriers’ and vets’ perspective.

World leading experts including Dean Richardson, Myra Barrett, Martin Waselau and Valeria Busoni come together to discuss diagnostic imaging.

Workshops focusing on Reproduction, Lameness, Ophthalmology and Medicine.

Not to be Missed

Speakers

Sue Dyson: globally renowned expert in equine clinical orthopaedics and poor performance.

Gunther Van Loon: Professor in large animal internal medicine at Ghent University and head of the equine internal medicine clinic and equine cardio team.

Nathan Slovis: director of McGee Medicine Department and partner at Hagyard Equine Medical Institute, Kentucky.
BEVA Congress is taking place at the International Convention Centre (ICC) in Birmingham from 11 to 14 September 2019. The congress is the equine veterinary event of the year and presents the perfect opportunity to get together with colleagues and top up on CPD. We have put together the top 10 highlights for the event this year.

1. **A packed scientific programme**
The 2019 scientific programme has been put together by the BEVA 2019 Scientific Committee, chaired by Jonathon Dixon, and covers almost every aspect of clinical practice. With discussions on the latest developments in equine medicine, updates on common clinical challenges and small group workshops, a wide variety of topics will be put under the spotlight throughout the congress.

2. **Keeping the sports horse on the road**
Advanced imaging has helped to increase our knowledge of the many different causes of equine lameness; however, the treatment and management of lameness syndromes still present problems for equine practitioners. Therefore, the BEVA 2019 programme will bring vets, farriers and physiotherapists together for a full day looking at keeping competition and leisure horses at the top of their game.

The sessions will involve discussions over how a collaborative approach can lead to better outcomes in patients and will be led by leading names including BEF team vet Andre Buthe and lameness expert Sue Dyson, as well as leading farriers Haydn Price and Pat Reilly.

3. **Scavenge around the exhibition**
Packed with more than 100 stands, the BEVA Congress exhibition hall is a favourite congress location for networking, socialising, eating and drinking. This year, with the chance to win a whopping £1,000 cash prize, it’s likely to be more popular than ever.

Using the BEVA Congress app, delegates simply have to follow the clues to find the answers to a series of clinical conundrums hidden round the exhibition hall. The highest ranked player at the end of the congress will win £1,000.

4. **Unrivalled socials**
The BEVA 2019 Welcome Reception has an Oktoberfest theme and will be held at the Bierkeller, Birmingham. Taking place on Wednesday evening, it offers delegates the

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opportunity to catch up with each other whilst joining in some fun with our live Oompah band. On the Friday, the infamous annual dinner and dance will be held at the ICC. With a delicious three-course meal followed by a lot of dancing, it is the social event not to be missed.

For the early morning risers, RunBEVA provides an opportunity to stretch your legs and get yourself ready for a day of lectures. And if you need a little more persuasion, for the first time, Bequestrian will be offering all runners a goody bag this year.

5. 15th birthday celebrations
The Animal Health Trust (AHT) is joining BEVA at congress for a big 15th birthday party this year. The two organisations are celebrating the longevity and success of their collaboration with Defra to produce the Equine Quarterly Disease Surveillance Reports.

The AHT will be joining BEVA in the members’ lounge for the duration of the congress, to showcase their work. In addition, BEVA will be presenting the AHT with a certificate of appreciation for all their hard work to keep the equine veterinary profession fully informed about disease status.

6. Meet BEVA Council
The BEVA members’ lounge will be back in the registration area this year, giving delegates the opportunity to catch up with the BEVA team to answer any membership queries and find out about BEVA CPD planned in 2020. Renate Weller, Tim Mair and Lucy Grieve will be in the members’ lounge on Thursday between 5pm and 5:30pm to chat with members and discuss the year ahead.

7. Recruitment and retention of vets
As part of the 2019 programme, there is an afternoon session dedicated to looking at the recruitment and retention issues in the veterinary profession. Vets will share their perspectives, BEVA will introduce their new career coaching pilot scheme, Leg Up, and Renate Weller will present the results of the BEVA BSAVA Recruitment and Retention Survey.

8. Practical demonstration area
Back again for 2019, the BEVA practical demonstration area will give delegates the opportunity to take part in practical-based CPD.

In a wet-lab environment, delegates will have the opportunity to take part in wound repair, intra-articular analgesia, distal limb ultrasound and dentistry. The demonstrations start with a vet demonstrating the technique and are followed by small group teaching sessions.

Full details can be found on the scientific programme and a sign-up form will be available in the exhibition hall for delegates who wish to take part.

9. Nursing stream
Saturday at BEVA 2019 welcomes the dedicated nursing stream, which is specifically designed for veterinary nurses. Featuring specialist surgeons and medics from around the world, nurses will be brought up to date on topics including foals, colics, lameness and diagnostic imaging.

10. Telemedicine: friend or foe?
The Moral Maze this year will debate the pros and cons of telemedicine, including communications between client and vet as well as vet-to-vet. There are many methods of communication, including telephone, SMS, WhatsApp, Snapchat and even Facebook. Can we justify turning our phones off, and what provisions do we need to make when we do?

The debate team includes Jonathan Pycock, Simon Stämpfli, Huw Griffiths, Marianna Biggi, Victoria Johnson, Niall Connell, Phil Cramp and Sarah Taylor.

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Meet the new BEVA President

During his presidency, Tim Mair plans to improve the uptake of evidence-based medicine and increase support for new vets

At the 2019 BEVA Congress, equine vet Tim Mair will take over from Renate Weller as BEVA President. Veterinary Practice interviews Tim to learn more about his experience and uncover his plans for the presidential year.

After qualifying, Tim spent some time in mixed practice and completed a PhD at the University of Bristol. He stayed on at Bristol as a lecturer in equine medicine before joining Bell Equine Veterinary Clinic in Kent, where he has been practising for 25 years. Tim is the Equine Veterinary Director of CVS and has particular interests in soft tissue surgery, medicine and diagnostic imaging.

How have you been involved with BEVA throughout your career?
I’ve been on BEVA Council for the last six or seven years, and I have been chair of the education committee for several years. I’ve also been editor of one of BEVA’s journals – Equine Veterinary Education – for 20 years. I joined council because I hoped I could give something back to the profession, and I enjoy meeting other people within the equine veterinary community and working with them on projects.

What are you most looking forward to at this year’s BEVA Congress?
Not speaking! I regularly go to BEVA Congress, and when I go, I often have meetings and other things to do, which means I can’t get to a lot of the sessions and talks that I’d love to go to. So, I’m looking forward to this year because I have no commitments for speaking – I can actually get to some of the sessions that I’d like to go to!

Will there be a theme for your presidential year?
I have several areas that I’m interested in and want to pursue as president. I have an interest in evidence-based veterinary medicine. I’m keen on trying to develop that within the equine community. I have concerns, like many people do, about recruitment and retention of vets in equine practice, of supporting younger vets in equine practice and supporting undergraduates who want to go into equine practice, because I think there’s a bit of a barrier. I’m also going to push the antimicrobial resistance and anthelmintic resistance issues; they’re really important and I think we can be doing more to try and reduce the impact of those.

Are you going to be bringing your education background into your role as president?
Over the coming years, we somehow need to try to support undergraduate vets who may be interested in equine practice, but feel a bit put off by the whole equine scene.

What are the biggest barriers that young equine vets have to face?
I’m not sure that we really know. There’s a lot of opinion out there as to why we have these problems, but actually, we don’t have very good, solid data to explain it. I’d like to get a handle on why we have a problem with recruitment and
retention. I think equine practice has its own unique problems: vets are often off on their own for long parts of the day; they’re in the car on their own and they don’t have the support that a lot of small animal vets can get in practice. And that seems especially to be a problem for new graduates. The hours tend to be longer in equine practice than small animal practice – the pay may not be as good, and the out of hours is an issue for some people.

What would further support entail?
I think it’s just talking to them, encouraging them, having role models; showing them that it’s actually not as difficult as they think to get into equine practice. If practices actually had the support system there to look after new graduates, they could support them and allow them to develop. At the moment it’s quite difficult to do that; other than the internship programme, which several practices do. It’s difficult for a new graduate to get into equine practice and that’s something that we need to address.

What would you consider to be good antimicrobial stewardship?
BEVA has antimicrobial stewardship guidelines, which have been up for several years. But there are problems. I think that most equine practices do try to stick to those guidelines, but we find ourselves under financial pressure – or under pressure from owners – to use critically important antimicrobials in situations where there’s a financial implication. And that makes life very difficult for us – we feel that some vets are put in a situation where they feel they have to use antimicrobials that they probably shouldn’t be using.

What are the main aims for BEVA in 2020?
I think the main aim of BEVA is education and continuing professional development. And obviously, I have an interest in that since I’m an editor of one of the journals. I think I’ll change the structure of the CPD we provide. Previously, it’s been a bit haphazard; we need to try to plan it and do it better, making sure that it’s aimed at people who are at different levels in their careers. I think that the support of practitioners and clinicians is also equally important, and something that we should focus more on.

What do you think will be the biggest challenges for the equine profession in the UK in the coming year?
Brexit seems to be the overriding problem that’s facing us, but it all seems very uncertain at the present time. Recruitment and retention has got to be another issue that we have to somehow tackle.

What do you enjoy most about the equine veterinary profession?
Collaborating with others. I enjoy meeting different owners and developing relationships with them, and I enjoy the technical challenges of the job. It’s the community that’s the most satisfying thing. I also really enjoy watching young vets develop their careers.
Asking the experts about skin disease

Challenging dermatology cases and questions are posed to two leading equine skin experts

**Kieran O’Brien**  
Kieran O’Brien, MA, MVB, PhD, MRCVS, worked as a clinician and lecturer at the University of Bristol before moving to Penbode Equine Vets in Devon 20 years ago. He is a columnist for Horse and Hound magazine and author of the book *Essential Horse Health.*

**The Experts**

**Tim Nuttall**  
**University of Edinburgh**  
Tim Nuttall, BSc, BVSc, CertVD, PhD, CBiol, MRCVS, is Head of Dermatology at the Royal Dick School of Veterinary Studies, University of Edinburgh.

**Janet Littlewood**  
**Veterinary Dermatology Referrals**  
Janet Littlewood, MA, PhD, BVSc (Hons), DVR, DVD, MRCVS, is an RCVS Specialist in Veterinary Dermatology at Landbeach, Cambridge.

Dealing with skin diseases is an almost daily task for first opinion equine practitioners. Here, two specialised dermatologists give their views on a variety of equine skin issues.

**A recurring corticosteroid-responsive case of urticaria in a horse fails to go into remission when the horse is completely removed from the stable environment and fed grass only for two months. How would you approach this case, and what could be the likely causes?**

**TN**  
There is a very wide range of potential triggers, which aren’t mutually exclusive, and horses can have more than one trigger. There are some cases that appear to be idiopathic. Potential triggers include hypersensitivities (indoor and outdoor environmental allergens, foods and insect bite reactions), physical (pressure, water, heat and/or cold), irritant plants (e.g. nettles) and chemicals (e.g. oils, soaps, cleaning fluids, creosote, etc.), reactions to drugs and vaccines and post-viral infections.

The key is a thorough history and clinical examination to narrow the differentials. It’s important to determine when and where the lesions occur, looking at activity and routine, stable environment, fly control, etc. Allergy testing may be indicated but equine serology tests have not been fully validated and the results must be interpreted with caution.

In particular, they must make sense in terms of likely exposure and the onset of lesions. Treatment options include avoiding the triggers, allergen-specific immunotherapy, glucocorticoids and antihistamines.

**JL**  
In cases that are persistent or recurrent for a period of six weeks or more, further investigations are indicated. The list of possible triggers to urticaria is lengthy. In a case such as the horse described here, a type 1 hypersensitivity reaction to outdoor environmental allergens is likely. A grass-only diet would rule out a food trigger — and food-induced urticaria, although often suspected, is actually rarely confirmed in the horse. A clinical diagnosis of atopic dermatitis is thus justified, and allergen-specific IgE testing to identify causal allergens would be indicated. This might allow effective allergen-avoidance measures and would provide information for selection of allergens for an allergen-specific immunotherapy (ASIT) vaccine — either injections or oral allergy drops. Tree pollens, grass pollens, weed pollens and insect bites have all been implicated in cases of equine atopic dermatitis, although in case series there is very frequently sensitivity to dust and forage mites in addition, and also moulds.

Horses with atopic dermatitis with ongoing symptoms of urticaria and/or pruritus will need symptomatic therapy, even if ASIT is undertaken.

It is usually held by dermatologists that intradermal testing (IDT) is the most sensitive and specific method for identification of allergen-specific IgE, and although there are multiple laboratories offering serum IgE tests for horses, both intra- and inter-assay correlation and correlation with IDT results are poor. Horses with atopic dermatitis with ongoing symptoms of urticaria and/or pruritus will need symptomatic therapy, even if ASIT is undertaken. A recent publication reported 64 percent of atopic horses derived benefit from ASIT, but there is a lag period before benefit is seen. Symptomatic therapy can include antihistamines, glucocorticoids and, in non-responsive pruritic cases, tricyclic antidepressant drugs can be helpful.
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The lesion in Figure 1 is found on the lip of this horse. What are the possible causes and what would your treatment be?

TN This is an ulcerative nodule (or nodules). It’s most likely to be inflammatory, with habronemiasis a consideration. A sarcoid or neoplasia is less likely. I’d recommend cytology to determine the nature of the inflammation with careful examination for infectious agents. Biopsy with special stains for bacteria, mycobacteria and fungi would be required if the cytology isn’t diagnostic.

JL The lesion appears to be dermal and breaking through the epidermis, so dermal pathology rather than epidermal or follicular pathology is likely. The aetiology could be either inflammatory or neoplastic, but at this location and depending on the time of year of the lesions, presence or absence of pruritus, then cutaneous larval migration due to deposition of L3 larvae of the nematode parasite Habronema by flies would be quite likely. Other differentials would include:

- Deep fungal infection, particularly saprophytic
- Deep bacterial infection, eg atypical mycobacteria
- Fibrosarcoma
- Cutaneous schwannoma (neurofibroma)
- Sarcoid – although absence of an epithelial component makes this unlikely

Microscopical examination of a surface impression smear might be very helpful, with an abundance of eosinophils being a feature of habronemiasis and, occasionally, larvae might be seen. In fungal granulomata it might be possible to detect fungal elements on surface cytology. Histopathological examination of biopsy material with use of special stains plus or minus culture and/or PCR assays would confirm a diagnosis. Treatment would be dependent on that definitive diagnosis, but if habronemiasis were confirmed then treatment would consist of ivermectin or an avermectin, with glucocorticoids to control hypersensitivity to the dying larvae.

You are presented with a horse with a verrucose sarcoid on the outer surface of the pinna of one ear. How would you deal with this case?

TN One option is monitoring; if it’s not progressive, not bothering the horse, has an intact surface without infection and isn’t attracting flies etc, it could be left. If treatment is indicated, I’d start with topical medication. Imiquimod (Aldara) and the AW5 cream from Equine Medical Solutions are both effective and well tolerated.

If topical treatment fails, laser ablation under standing sedation and a regional nerve block may be possible depending on the size and position of the lesion. Brachytherapy may also be possible, but the lesion would need to be reviewed carefully to see whether it is suitable.

JL If the lesion were near the base of the ear then laser surgery would be my treatment of choice. This modality would probably not be a good option for the less fleshy part of the pinna, as there would be risk of damaging the underlying cartilage and poor wound healing. Radiotherapeutic options would require referral to a suitable centre of excellence. Intra-lesion BCG injections are a good option for lesions around the face, but this vaccine can be difficult to source.

Topical cytotoxic products such as blood-root alkaloids and the Equine Medical Solutions AW5 cocktail are contraindicated for use on the head as they may cause quite severe inflammation and necrosis. 5-fluorouracil ointment is less aggressive and can be used on the head. My personal choice would be to use imiquimod (Aldara) cream, which up-regulates local immune function and cytokine production. It is licensed for treatment of human papillomavirus lesions, and also has anti-neoplastic effects. However, its use had been described for aural plaques/viral papillomata on the medial aspect of the pinnae and the paper reported significant inflammation and discomfort resulting in some horses becoming head-shy.

What are the common mistakes made in taking skin biopsies in horses?

TN The commonest mistake is not sampling representative lesions, which can lead to a misdiagnosis and inappropriate treatment. It’s important to obtain primary lesions – if in doubt, take several biopsies from different lesions (most histopathology labs will process at least three biopsies for the same cost). Deeper lesions may need a full thickness incisional biopsy rather than a superficial punch biopsy. Roughly speaking, for inflammatory disease select early lesions and in atrophic disease go for developed lesions.

Where possible, always perform cytology first, as this can help narrow the differential diagnosis and guide the next steps. Cytology consistent with an inflammatory reaction, for example, can prompt requests for special stains for bacterial, mycobacterial and fungal organisms and/or collection of more tissue for culture.
Other important things include supplying a full history, full lesion description (and it’s easy to send digital photos) and your differential diagnosis. Each biopsy should be submitted in a separate pot with enough formalin to completely submerge it. Each pot should be clearly labelled with the biopsy site.

**JL** There are lots of common mistakes in taking skin biopsies:

- Prepping the skin prior to taking samples – this removes the surface crusts and stratum corneum, which may contain vital features of the disease and its progression
- Use of local anaesthetic with adrenaline, which creates artefacts due to altered blood supply
- Crushing artefacts due to careless handling of samples with forceps
- Sampling atypical or old lesions – the lesions that look the worst are often not typical of the disease process
- Failure to indicate orientation to enable appropriate cutting of sections – a particular problem if biopsies are taken across the junction of normal to abnormal tissue; a line should be drawn on the sample surface to indicate direction of cutting, ie vertically from normal to abnormal
- Failure to label sample pots adequately – if multiple samples are taken, they are best put in separate, labelled pots of formalin
- Failure to save a sample of unfixed tissue in case it is needed for microbiological, immunological or PCR investigation
- Most importantly, failure to give a full clinical history on the submission form!

### A two-year-old Thoroughbred gelding is suffering from biopsy-confirmed pemphigus foliaceus (Figure 2). How would you manage this case?

**TN** The prognosis for horses with pemphigus foliaceus is usually good. Most cases are idiopathic, but it’s worth reviewing the history for potential triggers such as drugs. Glucocorticoids are the first-line treatment. Prednisolone is licensed for horses and is normally used at 1 to 2mg/kg daily to remission. The dose is then tapered to the lowest every other day dose that maintains remission.

Some horses respond better to dexamethasone (using 2mg tablets or a 2mg/ml injectable solution orally) than to prednisolone even at equipotent doses. Dexamethasone can be given at 0.1 to 0.2mg/kg daily to remission and then tapered to maintenance. It is longer acting so should be given twice weekly for maintenance. Azathioprine can be used if glucocorticoids don’t achieve remission or to help reduce their dose to avoid adverse effects. However, treated horses should be monitored carefully for side effects, owners must be instructed in safe handling of cytotoxic drugs and human exposure through contact with bodily fluids should be considered.

**JL** Oral glucocorticoids are the mainstay of treatment of pemphigus foliaceus in the horse. I prefer to use oral prednisolone, but dexamethasone can be used. The initial dose for immunosuppression that I use is 1.5 to 2mg/kg bodyweight once daily until no new lesions are apparent and there is significant clinical improvement, for a period of up to three weeks. The dose can then be gradually reduced, by halving the dose on alternate days for a similar period required to achieve remission/improvement, with successive halving of the alternate day dose leading ultimately to every other day dosing.

The prognosis is dependent on the age of the horse, with young animals sometimes achieving complete remission and able to come off therapy. Adult horses or ponies usually require ongoing maintenance therapy, often at a dose rate of 1.0 to 1.5mg/kg every other day.

If glucocorticoids alone fail to secure good improvement then adjunctive therapy with azathioprine or gold salts can be given. I have had good experience with use of sodium aurothiomalate given by deep intramuscular injection on a weekly basis. Other dermatologists report benefit from azathioprine, but my personal experience with this has been disappointing. Whilst most of the cases I have been involved with have done well on therapy, the prognosis is still guarded, as some cases fail to respond to treatment or develop complications and require euthanasia.

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2
The going rate

What pay-related problems are commonly encountered by employers and how can your practice keep on top of them?

As Chloe explains, “the Taylor Review made 53 recommendations and the government accepted the majority”. These include devising a better definition as to who a worker is as they are entitled to various benefits, NMW, holiday pay, sick pay, etc; ensuring that piece rates meet NMW; having a better alignment of tax between the employed and self-employed; considering a higher minimum wage for zero-hours workers; stopping the rules referred to as Swedish derogations that allow agency workers to be paid less than permanent staff; and giving HMRC the right to enforce holiday and sick pay as it does with NMW.

The Good Work Plan is significant for Chloe as it is “a holistic review of the UK labour market. It demonstrates that the government wants to make change in the labour market in a very employee-friendly and protective manner that could be extremely costly and operationally difficult for business.”

John too can see change coming. He believes that change is overdue precisely because of “the shifting nature of employment arrangements to ‘gig’ agency, zero-hour and part-time working, and the employment status issues that go with them”.

Gender pay differentials have been in the news recently. Despite the legislation being in place for more than a year, it’s telling that, according to a BBC report published at the start of April 2019, fewer than half of the UK’s biggest employers have succeeded in narrowing their gender pay gap.

The report noted that, “across 45 percent of firms, the discrepancy in pay increased in favour of men, while at a further 7 percent there was no change. Overall, 78 percent of companies had a pay gap in favour of men, 14 percent favoured women and the rest reported no difference.”

It is interesting to note that, according to a November 2018 BVA report, Gender Discrimination in the Veterinary Profession, there is gender discrimination and a pay gap. In an experiment, 260 employers in the profession were asked to review the performance of a vet and then advise on that vet’s salary. 44 percent of respondents offered the male a significantly higher salary than the female, ranging from £1,100 to £3,300 more.

But as John can attest, “people are [still] getting to grips with gender pay reporting, especially in terms of how it’s changing over time”. It’s taking enforcement action from the EHRC to gain compliance.

Charles Cotton, senior reward and performance adviser at the CIPD, a professional association for those in human resources, adds another complication: “From 1 April, employers which are publicly listed and employ 250 staff
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or more will need to report the pay ratio of their chief executive and their employees.” He reckons that around 1,000 companies will be affected. He goes further and says that it’s widely anticipated that from April 2020, all employers will be required to report on their ethnicity pay gaps just as they do now with their gender pay gaps.

Apart from gender issues, there is another pay-related change to reckon with, and it’s one that will be obvious to anyone wondering why their take-home pay may have fallen post 5 April 2019. Pension auto-enrolment saw an increase to the minimum employer and employee contributions. Based on past experience, Chloe says she wouldn’t be surprised if there were further minimum increases in the future too in order to encourage a move away from a reliance on state pensions.

Spilling over from the world of IT contracting come changes to the IR35 legislation, which determines whether someone is truly self-employed for tax purposes. Highlighted by Charles, this is another issue that HR teams will have to deal with: “If an organisation outsources work to a contractor, it will soon be down to the HR function to decide if the individual is self-employed or employed, impacting the amount of tax they pay.” This could have a significant impact on locum vets, who might want to check their position.

**Enforcement is altering the pay landscape**

Naturally, for legislation to be effective it needs enforcement. For breaches of NMW legislation it is notable that action can be brought by affected employees and workers, while HMRC has the power to carry out audits of potentially non-compliant firms.

Chloe emphasises here the potential impact of the Taylor Review, which suggested that there should be a new enforcement regime for sick pay and holiday pay. Her advice to businesses that may have NMW, holiday pay or sick pay issues is to “think seriously about how to rectify them in the event they become the subject of an audit”.

And if matters do get serious and end up before a court, evidence indicates that they too are taking a hard line when dealing with employers who do not meet statutory pay requirements, especially with regard to the NMW. “Employment tribunals have been given the power to publish names of employers who do not pay tribunal awards. Further, the maximum penalty for aggravated breaches increased from £5,000 to £20,000 as of 6 April 2019,” Chloe says.

**More changes**

From a legal perspective, Chloe reminds firms to be aware of the regular changes to statutory pay that are subject to annual review – NMW being a case in point. She adds that current hot topics are those relating to agency workers and the gig economy. She says “there is an increasing trend to give rights usually reserved for employees to workers to ensure they are treated fairly and are not taken advantage of. Recent cases on this include Uber and the National Gallery.”

And then there are the Swedish derogation rules that enable some agency workers to be paid less than permanent employees. This will be repealed from April 2020, meaning that agency workers must have pay parity after 12 weeks of service.

There are other changes that some may have missed. The first relates to payslips; these must be given to workers, not just employees, and from April 2019 the payslip must include the total number of hours worked where the pay varies accordingly (for example, for variable or zero-hour contracts). And new legislation that will apply from 2020 gives employed parents two weeks of leave if they lose a child or suffer a stillbirth from the 24th week of pregnancy. From April 2020, when calculating employees’ holiday pay, the reference period will change from 12 to 52 weeks.

Charles says, “all these changes will increase demand on HR teams, particularly organisations with a large headcount, and they should start preparing for these changes now to ensure they are ready”.

**In summary**

It is important to stay up to date with the law on pay, which changes frequently. It is good practice for employers to undertake routine checks and reviews to ensure that they are compliant with all legislation. If there is any doubt, they should take advice. With what’s on the horizon, it is best to plan ahead; change is not going away.
What’s the point of marketing?

Top tips for starting the process and ensuring a practice’s marketing messages are reaching the right audience

One thing practice owners often ask is “Do I really need to do marketing? Surely all I need to do is concentrate on being a good vet?” and whilst it’s true that people may single out a particular vet as the reason why they choose to visit, the reality is that to grow a business in today’s competitive market, a practice needs to get its story out there and in front of potential new customers. After all, if you aren’t actively growing and engaging with your customer base, there are plenty of corporate groups with large marketing departments ready to lure clients away.

Marketing is important because it helps to sell services. The bottom line of any business is to make money, and marketing is an essential channel to reach that end goal. Nearly everything that the customer knows or feels about a practice depends to some extent upon the way the brand is marketed.

What’s the difference between marketing and branding?

We have already discussed crystallising your brand identity through a brand audit, but it can be confusing to pinpoint the difference between branding and marketing; the easiest way is to imagine your brand as the story you want to tell about your company, and to think of marketing as the channels or methods to get that story out there to as many people as possible.

Through marketing, customers can get to know about the value of the service provided and additional information that might be helpful to keep their pets living longer, healthier lives.

Where to begin

The most common challenge that practice owners face when creating a marketing plan is knowing where to start. The good news is that whether you know it or not, your practice will already be engaged to some extent in marketing; the building, signage, pricing and service are all part of the story that you are telling clients. To take the next step to engage in actively marketing the clinic is simply to be more intentional in planning the messages.

Creating a plan means that success can be measured and improved without wasting time or money on things that don’t work for your practice.

The basics

At its core, marketing boils down to: identifying your practice’s ideal customers and choosing the best channels to get your message out to them. It should be possible to form a good idea of who your ideal customers are by using your brand audit as a guide – is your practice’s service and image targeted to attract affluent older retirees, or perhaps young professional families?

Who your ideal customer is will determine what “voice” to use in marketing, and where to display the message. For instance, a younger audience will be more likely to use social media whereas an older demographic might respond more favourably to newspaper or radio advertising.

Building trust

To ensure customers know about an amazing offer on dentals or neutering, it is important to have already established a connection where the customer has given the practice permission to reach out to them and tell them about it.

The veterinary business is a relationship business, and marketing creates trust. Nurturing this trusting relationship with marketing makes customers more loyal and gives them the confidence to engage with your practice.

Engagement is key

Customer engagement is at the heart of any successful marketing plan – this is especially true for independent vets. Engaging customers is different from shouting about your offers. Engagement means establishing a two-way dialogue to give customers relevant information and share insights into the company’s ethos. Marketing also solves the question of how to keep a conversation going once a customer has left the practice after their annual vaccination.

Research shows that the best way to keep a conversation going is by creating fresh content to share with clients. Social media is naturally the best platform to share this content with customers. Perhaps you’re already using short videos and fun pet content to engage with your customer base on Facebook and Instagram. Those members of your audience who are your practice’s true fans want to form a relationship with your brand, and social media can be used to do just that.

Keep growing

While current loyal customers should always be the main priority, marketing can help a practice to expand by attracting new customers and turning existing customers into true fans who tell others about your practice. In essence, marketing done well secures a business’s future through new and old customer engagement.

Top tips for starting the process and ensuring a practice’s marketing messages are reaching the right audience

WILL STIRLING

Will Stirling is a freelance marketing consultant who has worked in small animal practice marketing for over a decade, consulting on marketing strategy. He now spends his time helping independent veterinary clinics to grow and thrive.

MARKETING
What is one of the most valuable assets in your business but nearly always overlooked? No, it’s not you this time, but your property.

When acting in sales of veterinary practices, owners are frequently unconcerned with how their property is held or maintained. This may be because they see their practice, property and themselves as one entity.

Typically, the company being sold legally holds the property out of which a practice operates, although this is not always the case. More often than not, the sellers wish to retain ownership of this asset, and where it does not sit with the correct party, there are delays and tax implications as well as a loss of buyers because the business’s property affairs are not in order, or the property is in a state of disrepair.

Types of sale
There are two common types of sale. The first is an asset sale, where the purchaser “cherry picks” different parts of the practice (eg management, contracts) and the company retains the liabilities; in this case, the property may be leased or sold separately. The second is a share sale, where the purchaser buys the whole issued share capital of the business and effectively steps into the seller’s shoes.

In the case of a share sale, if the title to the property is vested in the company being sold then the property would also transfer upon the sale of those shares. However, it is not as simple as transferring the property or properties back to the practice owner(s).

When an offer is made to buy the entire practice, this often includes the property. If significant value is extracted out of the business, the seller is required to put an equal amount back in, usually in the form of cash consideration. Unfortunately, not every practice has cash reserves representing the value of their property to pay back into the business prior to a sale.

How to avoid the common pitfalls
At the point of purchasing the property, make sure the title to the property is bought as an individual or individuals so that the legal proprietorship is separate from that of the business. Upon the sale of the business, it is not unusual to find that the sellers will lease their property back to the acquirer in order to retain a capital income, and this arrangement allows for that to apply.

Prior to marketing the practice, ask a solicitor to provide an up-to-date copy of the registered title from Land Registry to ascertain ownership. Sellers could also obtain this themselves. This will allow appropriate tax advice to be obtained and should sort out any funding arrangements prior to making any transfers, and well in advance of any heads of terms being agreed or offers being accepted.

Incorporate a new company (often known as a Special Purpose Vehicle) to purchase the property, which would hold the legal title separately from the business and would not form part of any sale.

Do not purchase investment property through the company, as this too would become difficult to extract (transfer) out of the company.

Make sure any historical charges are removed (these are noted on the legal title to the property when there are borrowings from a bank, for example) and loans have been repaid. These can also cause a delay to transactions and should be rectified sooner rather than later by contacting the relationship manager or the bank’s securities team. If looking to lease your property back to a buyer, make sure any repair and dilapidations works are carried out in good time and the property is in a good state of repair; purchasers will often require the production of a schedule of condition.

For more information, please contact Qess at: qali@hcrlaw.com
I have just returned from a week-long CPD trip. Not for me, but for my daughter, who has GCSE Spanish looming. As a supreme act of educational investment, the whole family went off to Mallorca on a Spanish-speaking learning trip. We visited the rocky, hilly bit along the north coast. Highly recommended: great mountains, rocky coves and good snorkelling (apart from when the jellyfish are paying a visit). We did learn that Spanish for jellyfish is “medusa”; how fantastic is that?

One highlight was my daughter asking staff at a bar “Are you summer?” instead of “Are you open?” but our favourite was when she confused French “gateaux” for cake, with “gato” – Spanish for cat. Having left our lunch in a bag in the bakers to collect later, we sent her to the bakery where she asked the non-English speaking staff “We have come to collect our lunch, can we get our cat out of your fridge please?”

After she had recovered from this slight faux pas, she complained to me that: “We never learn anything useful for daily life in Spanish, just verbs and tenses and stuff.” This resonated with me thinking back to the days of being a recent graduate when I could happily write an essay on secondary hyperparathyroidism, but would struggle with how to deal with a client who walks in at 5:30pm on a Friday and says, “My dog is just not himself.” Where were our lectures on animals not being themselves?

I started in mixed practice and my very first client interaction was round the back of the practice with a local farmer. He accosted me and the only words I could understand were “blood”, “devil” and “sheep”. Just where the hell had I come to work? Turned out he was a very nice chap and to translate for you into Queen’s English, he was asking: “I say, would you mind awfully coming to visit my farm to blood sample some sheep? It’ll be somewhat tricky – verily a devil of a job.”

So as we are in newish graduate season, I was thinking what simple day-one tips we could give to young vets so, like my daughter in Mallorca, they can make practical and day-to-day use of their knowledge. I heard a pilot saying that when you start flying for a living, you start off with a full bucket of knowledge and an empty bucket of experience. The aim is to fill up the second one before the first one empties. In my work now, I couldn’t tell you where most of my knowledge comes from: vet school, reading up, CPD, experience, colleagues, etc.

My first piece of advice is: be like a sponge for passed-on experience from your colleagues. Learn the little things; I didn’t know until a colleague showed me that rabbit fleas like cats’ ears, or that a meibomian adenoma acts like a cork in a bottle, causing a big swelling under a tiny eyelid tumour. I used to have my own “case of the week”, where I’d pick something I’d seen and read up on it as much as I could.

Don’t rely on veterinary Facebook groups – they are well intentioned and useful for other things, but often you find that the emptiest vessels make the most noise. Always remember we are practitioners of evidence-based science, not third-hand anecdotes.

Books, even in this day and age, are very useful, too. The NOAH Compendium is a must for large animal vets and small animal vets alike. For large animal vets, why not write out a mini dose schedule of the stuff you have in your boot and withdrawal times, contraindications, etc? A sort of personal “What’s in my car dose guide”. For those of you in small animal practice, also have to hand something like Saunders Manual of Small Animal Practice. I used this book a lot after a period of travelling when my bucket of knowledge was emptying faster than my bucket of experience was filling. It reduces the most complex of procedures and diseases down to five bullet points and a picture. Another useful one is 100 Top Consultations in Small Animal General Practice; this book is a bit less comprehensive but is a very useful format.

A final note on time keeping for small animal vets: keep an eye on your consult times; try to make a decision as to whether this is a 15-minute problem or not. If not, admit it – even if just for the morning. It is quite stressful for you and your colleagues if you get too far behind. Not to mention the contents of the waiting room.

My last piece of advice to farm vets was shouted to me by a farmer as he and some of his friends stayed the safe side of the gate as I went into a pen to TB test a bull: “IF HE HITS YOU, JUST GO LIMPI!”

“Where were our lectures on animals not being themselves?”

Gareth Cross
DON'T MISS AN ISSUE!

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TAKE A COMPLETE NUTRITIONAL APPROACH TO DERMATOSIS

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