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Welcome to the June issue of *Veterinary Practice* magazine. I hope you are all keeping well and safe during these uncertain times.

Wound management is at the forefront of this issue, with articles for small animal, equine and farm vets. Jon Hall details the peracute management of traumatic wounds and Zoe Halfacree discusses general wound management techniques in small animal practice. RCVS Knowledge investigates the use of laser therapy in canine wound management; Beth Reilly provides a useful guide on wound management in farm animals; and Andy Fiske-Jackson highlights the importance of initial management in wound management in horses.

Ellie Groves looks at the importance of the gastrointestinal microbiome in the small animal section this month, and learn about sebaceous adenitis in dogs in Anita Patel’s latest dermatology column. Gemma Ives discusses the causes of acute diarrhoea and the use of faecal analysis in dogs and cats, and Lauren Hayes investigates constipation in cats.

Elsewhere in the magazine, Paul Rose discusses how a change in behaviour could indicate health problems in pets and Rosie Bescoby looks at separation-related behaviours in puppies. Vet Sustain steering group member Fay Marley-Cook explores how the use of telemedicine during the pandemic provides insight on how it can be used for a more sustainable future.

The Official Vet section is back this month and is packed with informative content. APHA provides some updates on the use of approved tuberculin testers in England, as well as information about its online system for bovine tuberculosis. Find out what you need to know to provide OV captive bird export services in Neil Forbes’s article, and read Claire White’s review of the legal framework and principles of on-farm slaughter and killing, the first part of a two-part series on the topic.

In the practice management section, Adam Bernstein investigates strategies to manage disputes that may arise when running a business with a family member; Elaine Fisher discusses best practice when dealing with disciplinary issues and Will Stirling gives advice on how best to use newsletters in your practice’s marketing strategy.

"Find out what you need to know to provide OV captive bird export services"
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“You want to spend your life in those chunks of time in the history books where nothing much happens”
"Under care" review plans delayed due to COVID-19

The RCVS has announced further amendments to the planned timetable for its review of "under care" and 24/7 out-of-hours emergency cover in view of the government’s social distancing guidance, and is also looking to gather feedback on the provision of remote services during the ongoing pandemic.

The main areas under consideration in the College’s wide-ranging review include the provision of 24-hour emergency cover and the interpretation and application of an animal being under the care of a veterinary surgeon. RCVS Council had agreed a new timeline and methodology for the review at its March meeting, which accounted for the project having a broader scope and increased complexity than originally thought.

However, due to the ongoing government restrictions in place around social distancing, and that practice teams are currently working under extreme time pressures, the College has decided it will not be feasible to run these focus groups at the planned time.

In the meantime, the RCVS is aware that veterinary practices have been rapidly adapting to the extreme challenges of lockdown conditions over the past two months, and successfully continuing to provide the animal-owning public with veterinary services, a proportion of which via remote means.

To enable the profession to continue to provide veterinary care during this time, whilst safeguarding the health of their teams and their clients, RCVS Council in March agreed to temporarily allow veterinary surgeons to prescribe prescription-only veterinary medicines (POM-Vs) remotely, without first having physically examined the animal, subject to a number of conditions and safeguards being in place.

Vets North 2020 postponed

Veterinary CPD specialist Improve International has announced the postponement of this year’s Vets North, in the light of the COVID-19 emergency. The congress was scheduled to take place at Haydock Park Racecourse, Merseyside, on 8 and 9 July 2020 and will now be rearranged for 7 and 8 July 2021.

Event director Aram Diez said: “As the pandemic continues to run its course, it has become increasingly clear that we may well be living under quite challenging restrictions for several months at least. We are, of course, very disappointed to have to postpone Vets North but the safety of our delegates, speakers, sponsors, exhibitors is key and, with this in mind, we didn’t feel it was appropriate to hold the event this year.

“We will be back in 2021 and are already planning to make both Vets North and Vets South unmissable fixtures in the veterinary CPD diary.”

RCVS releases report on second COVID-19 impact survey

The RCVS has published the report on its second survey on the impact of the COVID-19 pandemic on veterinary businesses. The survey was held between 1 and 5 May and it gathered a total of 251 responses compared to the 532 responses to the initial survey conducted between 3 and 7 April.

Lizzie Lockett, RCVS CEO, commented: “This latest survey has identified some positive trends in terms of a slight uptick in business, including turnover, and fewer incidences of staff having to take time off with COVID or COVID-like symptoms.”

“We will continue to monitor the situation via these regular surveys, with the next one planned for early June. I would urge as many practices as possible to continue to complete them, so that we can build up a stronger evidence-base on how veterinary businesses have been affected. This information is not only vital for our own policy decisions but also allows us to present a stronger case to the government and other public bodies where we wish to influence the decisions they make that will impact the veterinary professions and businesses.”

For more information, including details about ticket purchases, please visit vetsnorth.com or call 01793 759159
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Social science input needed for pandemic policy and response, says new RVC study

A new study by the RVC highlights the challenges and implications for One Health research and the importance of including the social sciences in creating effective government policy to mitigate the spread of zoonotic diseases, such as COVID-19.

A One Health approach is a perspective of health that recognises the interconnection between people, animals, plants and the shared environment. It is a methodology that merits close interdisciplinary cooperation between biological sciences, epidemiology and the social sciences. However, social sciences are often omitted when informing public policy, as demonstrated by recent calls for a more inclusive committee for the UK government’s Scientific Advisory Group for Emergencies (SAGE).

The research, led by Professor Tony Barnett, a social scientist at the RVC, analysed current limitations facing interdisciplinarity and the ability to achieve holistic understandings. As well as this, it explored the separate interventions with regards to both human and animal health which fail to account for human behaviour in relation to the social sciences disciplines.

The results show how and why social sciences should always be used to understand pandemics – both now and in the future. Professor Barnett and teams from the RVC and Bangladesh conducted long-term studies of poultry production and trading in Bangladesh and are now undertaking additional studies in India, Bangladesh, Sri Lanka and Vietnam.

The findings of this study indicate that in order to avoid the historical “gross simplification” of responses to zoonotic transmission of disease, there must be proper conceptualisation as to how future projects might be successfully undertaken, particularly in achieving a contextualised understanding, including social science disciplines.

BVA and AVS issue warning over unpaid veterinary work

Veterinary practices should not be exploiting recruitment fears by offering unpaid or voluntary veterinary roles, according to the BVA and the Association of Veterinary Students (AVS).

In response to the dual challenges of financial pressures caused by COVID-19 and increasing concerns around veterinary employment prospects, veterinary practices have been offering unpaid or voluntary veterinary work to final year students and new graduates. While these offers may seem attractive to newly qualified vets who want to gain access to veterinary workplaces, the Associations are concerned that they devalue the individuals, who have completed their studies and are therefore fully qualified veterinary surgeons, and the veterinary profession.

Offering unpaid roles also exacerbates the problems surrounding lack of access to the profession for those who can’t afford to work for free and contradicts efforts to widen participation in the veterinary sector.

In addition, there are governance issues associated with individuals undertaking veterinary roles before they are registered with the RCVS and there are concerns around individuals undertaking voluntary roles without indemnity insurance.

The Veterinary Defence Society (VDS) has advised that the Veterinary Surgeons (Practice by Students) (Amendment) Regulations 1993 allow veterinary students who are attending university to carry out acts of veterinary surgery under the direction and supervision of a veterinary surgeon. After graduating as a vet, individuals are no longer classified as “veterinary students” and therefore must either revert to only doing work which would be delegated to a lay member of staff or register with the RCVS to describe themselves as veterinary surgeons and undertake veterinary work.

Once registered with the RCVS, graduates must abide by all aspects of the RCVS Code of Conduct whether they are volunteering or paid. One such requirement of the Code is that registered veterinary surgeons must ensure their work is covered by professional indemnity insurance. Veterinary graduates cannot register as a veterinary nurse and if they are not registered as a veterinary surgeon, they must not undertake those acts of veterinary surgery that can lawfully be delegated to RVNs.
Taking a closer look at veterinary nurse insurance during COVID-19

Are you self-employed? Do you work on a contract as a locum Veterinary Nurse? If you do, you may be finding things a little uncertain at the moment. While most veterinary practices remain open, the Coronavirus pandemic means that many are operating with skeleton staff and dealing with emergency cases only.

Why is now a good time to review your cover?
If you’ve been working as a Veterinary Nurse for a number of years it may be that you bought cover when you first started out on your own and haven’t reviewed it since. But over time, your work and responsibilities may have changed so it’s worth taking the time now to take a closer look at the details of your policy to make sure they still meet your needs and the risks you face.

If you have found yourself with time on your hands because of the current situation, it would definitely be worth putting some of that time to good use by reviewing your insurance. The insurers providing cover for Veterinary Nurses have changed too. At PLH Medical we’ve partnered with Tapoly who are on a mission to revolutionise the insurance landscape. Tapoly offer up to £5 million of Medical Malpractice Insurance for Veterinary Nurses which you can buy quickly and easily online.

Discover how you can be covered for as little as £5 per month
www.plhmedical.co.uk/insurance-get-cover/

A comprehensive policy, which has an adjustable limit, provides you with flexibility and control over the amount of cover that you need. The cover includes:

- Professional Indemnity cover in relation to any financial loss caused to third parties by negligent act, error or omission during the provision of professional services
- Public/General and Product Liability cover in relation to any bodily injury and/or property damage caused by an accident in connection with your business
- Loss of documents (destruction, damage or loss) owned or are entrusted to you
- Breach of professional confidentiality during your business
- Libel and slander committed without malice in the conduct of your business
- Inquest costs in respect of unexpected deaths which may give rise to a claim
- Good Samaritan acts where you render assistance to a passer-by not under your direct care
Results of 2020 RCVS and VN Council elections announced

The results of the RCVS Council and the Veterinary Nurses (VN) Council elections have been announced, both of which saw another record number and proportion of the professions turning out to vote this year.

The RCVS Council election had a turnout rate of 26.2 percent. This compares to a 25.5 percent turnout in the 2019 election and 22.7 percent in 2018. Dr Kate Richards, Dr Richard Stephenson and Dr Melissa Donald were elected to the RCVS Council.

The VN Council election had a turnout rate of 17.1 percent. While there were no VN Council elections in 2019 and 2018, this compares to a turnout of 14.5 percent in 2017 and 10.9 percent in 2016. Matthew Rendle and Claire Roberts were elected to the VN Council.

Eleanor Ferguson, RCVS Registrar and Returning Officer for both elections, said: "I would like to sincerely thank all those who put themselves forward for election this year, especially the record number of veterinary nurse candidates. I hope that, if unsuccessful this time, they will consider standing again in future years.

"Many congratulations to all those who were elected this year and we look forward to welcoming them to their places on their respective Councils at our Annual General Meeting later this year."

“Lockdown learning” offer from Improve International

Veterinary CPD provider Improve International is offering discounted access to its Online Bitesize CPD training for veterinary professionals keen to refresh or develop their learning during the COVID-19 lockdown. The training offers complete flexibility to vets and nurses who want to access Improve’s high-quality learning on clinical topics in short “chunks”, at a time and place to suit them.

Online Bitesize CPD covers ten core subject areas for vets and six for vet nurses with new modules released bi-monthly. The sessions are interactive and feature quizzes, case studies and support materials. Each course is accredited by the International School of Veterinary Postgraduate Studies (ISVPS).

Commenting, John Douglass, general manager of Improve International, said: "We felt that our Online Bitesize CPD could be particularly useful for [vets and nurses] at this time so we are making it available at a discounted price. We hope that it will help them to make the most of [any] time away from practice and ensure that they return to practice inspired and energised to treat their patients according to the latest thinking."

Full details are available at improveinternational.com/uk/improve-at-home/
SPVS 2020 salary survey now available

SPVS is pleased to announce the release of its Salary Survey for 2020. The survey attracted 1,582 respondents from across the profession between January and March, reflecting a world prior to the advent of COVID-19, and will undoubtedly be a useful benchmark as the profession grapples with new ways of working.

In addition to basic salary, the survey asked about other quantifiable elements such as accommodation and CPD budget and found that a typical package for a first-year vet was worth £33,500. Across all respondents, the median value of the salary package was £46,400 in small animal/exotic practice, £42,206 in equine practice and £40,333 in mixed practice. Median salaries for qualified veterinary nurses ranged from £21,663 to £28,875 depending upon the degree of seniority.

Among veterinary surgeons there was an overall gender pay gap of 15 percent, although this was skewed by the results for vets qualified more than 15 years. Below this age the gap varied from 3 to 6 percent. When compared with their male counterparts, women qualified 15 years or more were more than three times as likely to describe themselves as an “assistant or associate veterinary surgeon” rather than a more senior role, suggesting that differences in career progression account for at least part of the headline pay gap.

Fourteen percent of respondents said they had another role in addition to their main veterinary one, and 10 percent of all respondents gave figures for locum work. Just over 23 percent of employed veterinary surgeons were working part-time in their main role (34 hours a week or less) compared with 12.5 percent in 2015. These figures suggest an increasing interest in flexible ways of working, something to which the profession as a whole is learning to adapt.

SPVS also asked respondents about their level of satisfaction with their remuneration, hours and condition of work, support received and prospects for career advancement. Overall, veterinary surgeons and nurses were more satisfied with their conditions of work and less happy with their remuneration or career prospects.

RCVS, BVA and VSC write to universities minister over student cap concerns

The RCVS, the BVA and the body representing the eight accredited UK veterinary schools (the Veterinary Schools Council) have written a joint letter to the government over their concerns about the recently announced plans to cap student numbers at UK universities.

The letter, addressed to Michelle Donelan MP, the Minister of State for Universities at the Department of Education, was written in response to the announcement (on 4 May) that the government would be introducing a temporary cap on student numbers as part of measures to support the Higher Education sector during the coronavirus pandemic.

The letter, signed by RCVS President Niall Connell, BVA President Daniella Dos Santos and Professor Susan Dawson, Chair of the VSC, requests that the UK’s veterinary schools be exempted from those measures because of the need to greatly increase the number of UK graduates. There is currently a shortage of veterinary surgeons in the UK (of between 11 and 13 percent).

Further, the veterinary sector is currently heavily reliant on veterinary surgeons educated in the European Union. Currently, around 60 percent of those joining the Register of Veterinary Surgeons in a given year are from the EU, and an estimated 95 percent of vets working in the vital public health and food safety sectors are EU-qualified.

It is expected that the coronavirus pandemic and its associated restrictions, both in the UK and EU countries, will see a reduction in the number of EU vets applying to join the Register of Veterinary Surgeons in the UK, meaning that the shortfall is likely to be exacerbated. This would be made even worse if the domestic supply of new veterinary surgeons is reduced because of caps.

In addition to asking veterinary courses to be exempted from the student numbers cap, the letter also asks the government to issue guidance to ensure that the extra funding it will be providing to the Higher Education sector is not used on more “profitable” courses at the expense of courses such as veterinary science.

The full letter can be read online at rcvs.org.uk/document-library/letter-to-the-department-of-education-regarding-a-potential-cap/
Understanding and preventing separation anxiety

With many dog owners spending more time at home recently, we are expecting to see an increase in separation anxiety issues once they can return to work.

Trainer and behaviourist for Agria Pet Insurance, Carolyne Menteith, gives an insight into separation-related behaviour problems and advice you can give owners to help them avoid issues when their dog is left home alone once more.

For most dogs, having us at home far more is a joy. They still get their daily walks – maybe several – and they have the company of their beloved owners 24/7. Providing they can get the exercise they need, for dogs, lockdown has been a win-win situation.

For puppies, this can be the perfect time to train them, get them used to their new life and begin the bonding process that will last for life. Owners can concentrate on toilet training, playing interactive games, starting to work on training exercises – and just have some relaxing home time building their relationship with their new best friend.

There is however one big potential problem. What happens when we return to our regular lives? What happens when dogs who are used to having us around all the time must spend time home alone?

If we are not careful, we are creating issues that will last long after the lockdown is over. Separation anxiety is one of the hardest behaviour problems to cure or manage – and for a dog who doesn’t have the coping skills to deal with home alone time, life can be anything from an occasional misery to a constant state of anxiety and stress that affects their entire life. Thankfully, it is also one of the easier behaviour problems to prevent.

Separation-related behaviour problems occur when the dog doesn’t have the coping skills to be alone or without their owner. It is like a human panic attack - involuntary and highly distressing. Every instinct in their body tells them that being alone is a source of anxiety or fear - because they’ve never been taught that it is “safe” and that it’s just part of the life of a companion dog.

Teaching a dog home-alone coping skills is a crucial part of socialisation and habituation – but it’s something that owners often neglect in their desire to create a strong bond with their dog. Whether you have a puppy or an older dog, it is important to spend time working on this while you are at home more than usual, to ensure that your dog is happy when everything goes back to normal.

Teaching home alone skills

1. The aim is to teach your dog that being on their own is safe and even enjoyable, so when you do leave them, leave them something tasty or fun to do
2. Start from as soon as you begin your life together – or if you haven’t – start today
3. Prevent your dog following you everywhere all the time using a stairgate and give your dog a treat while you’re gone. The aim is that they look forward to your absences, not worry about them
4. Start small... Give your dog their dinner and leave the room for a minute – and slowly build up this time. They are slowly learning that good things can happen while you are not there.
5. Try scatter-feeding so they can learn that good things can and do happen when you are not there
6. Use an interactive toy (like a Kong) - and leave them the other side of a stairgate while they work out how to get their food out of the toy
7. Once you know they are happy, very slowly build up the length of time you leave them. If you go too quickly, you’ll only teach them that you keep vanishing for ages and it is scary!
8. Use a webcam to spot any signs of separation-related behaviours. If you do, consult an accredited behaviour professional with experience in separation anxieties for help. These problems do not go away on their own – and usually get worse
9. Remember, training home alone skills are just as important as toilet training or any other life skill

This article, with additional details, is available to share with pet owners at: agriapet.co.uk/pet-owners/pet-advice/

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It’s difficult to be upbeat at the moment when all around us people are losing their jobs, being abused in their own homes and dying alone. Or is it?

The weather has been unseasonably gorgeous, many of us are on 80 percent pay while essentially on holidays, there’s no traffic on the roads and off-licences are deemed to be “essential”.

The contradictions in our minds between loving lockdown and all the benefits it brings, and knowing all the while that more people than not worldwide are suffering, can bring on massive and overwhelming feelings of guilt: survivor’s guilt.

Maybe you feel guilty for not being on the frontline at the NHS or for not volunteering to make PPE. Maybe you feel guilty for having enough toilet paper, hand steriliser and Tesco delivery slots. Is it guilt for having a comfortable home during lockdown with a nice garden and the time to tend to it? Or perhaps you have kept your job and your family are safe too which brings on guilty feelings.

Being self-aware is the first competency of emotional intelligence. So, understanding that you are feeling guilty is fantastic. Now, what to do with these feelings. As self-awareness is the first, then self-regulation is the second: our internal and external reactions to this emotion are totally within our control. Especially now that the pace of life has slowed down enough for us all to be more emotionally intelligent than we are during busy times.

What is guilt?

Guilt is a wired-in emotion evoked when we believe we have done something bad. It’s quite a complex emotion and an inhibitory one. For example, if I have done something unkind to another person, I may feel guilty afterwards. This overriding emotion blocks out the other emotions which could otherwise arise such as anger towards that person or towards myself, or sadness at the downgrading of our friendship.

Acceptance of your feeling of misplaced guilt is paramount if you are to use it in a positive way.

Acceptance of your own oxygen mask on before helping others with theirs. Should I feel guilty about that?

At work, I am not doing everything I could be doing for my patients. I’m not sampling every mass and I’m not taking radiographs of every lameness. Is that shameful? Or social distancing?

My point is that we each have our own limitations and it is so important to realise your own limits and to accept them if you are to move to accepting your feelings of guilt and shame. Trying to push them away will not be as effective as accepting them. Acceptance of your feelings and owning them will paradoxically help you to feel less “bad”.

Guilt can be useful when it’s the driving force to make amends for something truly bad that we have done to another. Once our emotionally intelligent self has identified that what we are feeling is guilt, it can be the impetus for change to becoming a better person.

However, misplaced guilt can be harmful. For example,
guilt for feeling good when others are suffering, or guilt for surviving COVID-19 when hundreds of thousands have not, can bring us down and can prevent us from being a source of strength and happiness for others.

So how do I transform misplaced guilt into something beneficial?

What’s another way to deal with our good luck and good fortune? Shift from guilt to gratitude. Here’s how you do it: Think about what you have (eg enough room in your house for everyone to have privacy) or what you don’t have to do (work in a hospital) that makes you feel guilty. Now, feel grateful for it.

For example, I feel guilty that I can still work in my regular job and put food on the table for my family as normal. I experience my guilt as a sinking feeling in my stomach reaching down to my toes.

Now I shift into gratitude. I say out loud “I’m so lucky that being a vet is deemed as essential work. It’s fantastic that I am still earning and I have job security.”

Try not to shift into “I don’t deserve it” or even “I do deserve it” because we all deserve job security. That’s not the issue. The issue is that gratitude is so much more useful to us and to others than misplaced guilt is.

How to use gratitude

First, be aware of the feelings associated with gratitude and be mindful of what you are grateful for. For example, I’m grateful for that Tesco slot where I bought a new shower gel. Now I’m going to shower slowly and breathe in the gorgeous scent so I can truly and mindfully appreciate it.

I’m grateful that I have more time on my hands than before to mow the lawn. So, I’m going to thoroughly enjoy it, focus on nothing else and smell the sweet smell of newly cut grass.

I’m grateful that our clients at work seem more thankful than ever during these hard times. Just being open and there for them has brought out the best in our clients. I’m going to pause after each consultation for just a minute and allow their comments to sink in.

Now, you can use the inner strength and calm that the gratitude brings and put it to good use. There are so many ways: donating to the food bank, sending photos with a letter to an elderly relative, reaching out to our clients to ease their anxieties about more than just their pets.

And most importantly, we can be with those we love in a more mindful and actively caring way, showering them with positive actions driven by gratitude rather than by guilt. It’s OK to feel OK; we are allowed to feel good even during this pandemic.

Gratitude is so much more useful to us and to others than misplaced guilt is.
Turning to telemedicine now and for a sustainable future

Telemedicine has helped us maintain our professional obligations and holds exciting sustainability potential

**FAY MARLEY-COOK**

Fay Marley-Cook, BVSc(Hons), PgD. SAM, MRCVS, graduated from the University of Bristol in 2011. She worked in small animal practice for eight years and completed a certificate in small animal medicine. She now works for a veterinary pharmaceutical company and is a member of the Vet Sustain steering group.

At the time of writing we are six weeks into lockdown. The unprecedented situation the world finds itself in due to the COVID-19 pandemic can feel upsetting, overbearing and far from a resolution. For many people during this time, trying to cope with the present often involves searching for any positives within the situation: perhaps finding resolve in the sense of community established on the back of such tragic circumstances or the creative offerings of many to help entertain us all during these times of isolation.

Many optimists may look to the positive effect reducing our daily activities is having on the environment – reduced greenhouse gas emissions and improved air quality may be some of the few positive things to appreciate during this global tragedy. However, these environmental gains due to country lockdown measures are not to be met with complacency – as economies regain momentum these benefits will diminish and now is the time to consider how we rebuild ourselves, ideally or rather critically, in a more sustainable manner.

We too as veterinary professionals have an opportunity to contribute to this. There is one particular aspect of the profession’s response to the situation so far (aside from the incredibly adaptive, downright amazing qualities of the veterinary community) which could be utilised going forward as part of such a green initiative, and that is telemedicine.

Telemedicine allows healthcare to be delivered outside of the normal healthcare facilities using telecommunications and virtual technology. Its use is not intended to entirely replace face-to-face consultations, but to deliver healthcare remotely when and if appropriate.

Its uptake in the veterinary world in comparison to the human sector has been relatively low. Only last year, a mere 22.4 percent of practitioners reported sometimes utilising telemedicine (the most common modality for this being the telephone) (Watson et al., 2019). However, during the COVID-19 pandemic, telemedicine has allowed veterinary practices to continue to provide appropriate care to their patients under BVA and RCVS guidance, whilst also protecting their staff and members of the public. As such, the demand for veterinary telemedicine services has seen an upward turn.

Whilst not appropriate for every clinical scenario, it has assisted with both telephone and video triage, consultations and where appropriate prescription of medication, using either commercial veterinary telemedicine suppliers or adapting the use of existing video calling technologies. Other veterinary fields have also risen to the challenge, from holding virtual “Lunch and Learns” in the pharmaceutical world, to increasing online CPD content where physical congresses have no longer been able to proceed. The demand for online CPD increased.

The use of telemedicine within the human health sector has been studied and it has been shown to have a beneficial effect on the environment. A reduction in carbon emissions by 40 to 70 times, following replacement of face-to-face visits with telemedicine consults, is possible (Holmner et al., 2014), the variation in benefit.
being influenced by factors such as meeting duration, bandwidths and use rates.

Within the NHS, telemedicine is considered a useful method to help reduce overall emissions, with travel thought to contribute up to 18 percent of the total carbon footprint of the UK health sector (Holmner et al., 2014). Taking this into account, alongside the fact that the healthcare sector in developed countries is reported to contribute 3 to 8 percent of total emissions (Holmner et al., 2012), anything that can be done within the healthcare sector can have significant overall impact. We too as veterinary professionals have a responsibility to reduce our profession’s impact accordingly.

The statistics are very favourable, but it would be naive to disregard the emissions generated in producing, using and discarding the equipment used for telemedicine consults. The development of LCD screens is implicated as the foremost environmental impact of virtually held business meetings (Borggren et al., 2013). The services would therefore have to be used frequently, with some consideration to the equipment used in order to balance emissions and financial costs of set-up. Fortunately, much of the computer equipment is likely to already exist within the veterinary practice setting.

We don’t yet have a centralised measure of carbon emissions from veterinary practices in the UK on which to measure ourselves and track progress collectively. But we can look to efforts from our human healthcare counterparts to provide some guide as to how telemedicine might help reduce our emissions. Any tool the veterinary profession can utilise in our attempts to encourage sustainable practice should be explored further, particularly in a time when its usage has already seen a sharp increase and there is now increased familiarity from both clients and practitioners. Additionally, sustainability benefits such as reduced air pollution as well as social benefits for clients less able to travel exist. It is an exciting area in need of further study.

This is definitely not to say that telemedicine should entirely replace our in-person consults, and care must be exercised so that it is not used inappropriately – it would need to adhere to guidance from our governing body and ensure the health of patients remains paramount throughout. However, it remains food for thought during this time of lockdown reflection, that telemedicine has helped us maintain our professional obligations through a difficult time and holds exciting potential for a more sustainable veterinary future.

References


How a change in behaviour could indicate health problems

It is important to locate and rectify the cause of any behavioural change and to prevent any worsening of the condition and the eventual development of health issues.

Behavioural normality can be an excellent signal that a pet or companion animal is doing well and is thriving and healthy. Even domestic species retain lots of “wild-type” behaviours (i.e., behaviours similar or the same as those of their ancestor) whose performance provides us with knowledge of their health and well-being. Maintenance behaviours are routines that animals will perform daily to keep themselves in good condition (Figure 1). Maintenance activities can include grooming and preening, washing and bathing, drinking and feeding; behaviours that allow an animal to keep homeostasis functioning normally.

Because these behaviours are so important to an individual’s overall condition as well as to its physical and psychological health, one of the first signs that an animal is not feeling well and may be in need of some veterinary attention is a change in its overall behaviour or demeanour, and thus a reduction in time spent on maintenance behaviour. One key pointer of health in most of the common domestic or companion species is a change in their social disposition: whether they become withdrawn or subdued and take themselves away from the new social environment and social character that is associated with that individual animal. Conversely, another friendly or peaceful individual could begin to show atypical and unexpected aggressive behaviour. Therefore, sudden changes to temperament can be linked to underlying health conditions and are worthy of further investigation.

Behavioural disorders can occur if animals are not provided with the correct diet, housing, social environment or abilities to keep themselves clean and well-groomed. These types of problem can be seen across all forms of domestic pet, be they familiar mammals (dogs and cats), to companion birds (budgies and parakeets) and even in aquarium fish that have found themselves living in an inappropriate “community tank” species mix. Owners of tropical aquaria may report dominance or bullying of other tank mates by individuals of territorial or highly aggressive species that find themselves constantly trying to defend a territory because the tank size is inadequate for the behavioural needs of all species of fish kept (Figure 2). Likewise, sensitive and highly specialised species that require specific water conditions, substrates and lighting may not thrive and not eat if aquarium conditions are too general. Consequently, regardless of the type of “pet”, it’s always important to pinpoint the cause of any change in behaviour and rectify the management of the animal to prevent any worsening of the condition and the eventual development of health issues.

It is important for owners with animals displaying potential “problem behaviours” to remember that the behaviour is not the animal’s fault and that the problem is related to the context in which the behaviour is performed.
handle it may have past trauma or a history of abuse that is causing the dangerous bouts of aggression later in life. Inappropriate elimination behaviour in a pet cat can be suggestive of an animal that is trying to mark a territory, or it could be a stress response because the cat is unhappy or worried about using a litter tray, or it could indicate a urinary tract complication. Consequently, the multifactorial nature of “problem behaviours” needs to be considered and all potential causes assessed before any treatment plan is decided upon.

Individual cases of problem behaviours across a wide range of animal species can be referred by the owner’s veterinary surgeon to a qualified pet behaviour counsellor, such as those registered with the Association of Pet Behaviour Counsellors (APBC). APBC members have the experience and expertise for investigating the causation of the behavioural issue and can help implement a practical treatment plan to remedy the problem. The APBC also runs seminars and workshops for its members, as well as for veterinary surgeons to develop knowledge of and skills around the subject of pet behaviour therapy.

It’s important to realise that change to a pet’s behaviour can occur by using enrichment. Just in the same way that providing environmental enrichment to zoo animals is beneficial (Carlstead and Shepherdson, 2000), and can improve behaviour patterns and reduce the chances of seeing abnormal repetitive behaviours (“stereotypy”), so domestic pets benefit in the same way (Wells, 2004; van Zeeland et al., 2013; Vitale Shreve et al., 2017). And that’s not just the dogs, cats and parrots; research also shows that aquarium fish can benefit from behavioural enrichment (Näslund and Johnsson, 2016) with some species reducing performance of unwanted aggression to tankmates when provided with an enriched environment (Kadry and Barreto, 2010). Consequently, re-directing behavioural performance and changing stimuli to elicit more positive outcomes benefits the individual animal as well as the animal’s caregivers.

It is important for owners with animals displaying potential ‘problem behaviours’ to remember that the behaviour is not the animal’s fault and that the problem is related to the context in which the behaviour is performed. For example, if it is inappropriate to the situation or it is negatively impacting on the owner’s quality of life with their pet, or if it is causing the owner to change how they interact with others (humans and animals) when their pet is around. A parrot that continues to squawk when an owner is out of contact is overly aggressive to other members of the household will cause unwanted pressure on one caregiver and affect how the bird can be managed (Figure 3). A hyper-aggressive horse or pony that attempts to attack certain people when they approach or try to

References
Näslund, J. and Johnsson, J. I. (2016) Environmental enrichment for fish in captive environments: effects of physical structures and substrates. Fish and Fisheries, 17, 1-30
Laser therapy in canine wound management

Does the use of low-level laser therapy reduce healing time in dogs?

Imagine this scenario: an owner has presented a two-year-old female Labrador for a routine open ovariohysterectomy. The owner is concerned about the wound post-surgery; their previous dog was distressed by her spay wound, which still looked red and swollen two weeks after surgery. They would like to know if anything can be done to speed up the healing. You have recently seen therapeutic veterinary lasers advocated for improved wound healing. You want to know if low-level laser therapy will improve wound healing in dogs and therefore be a worthwhile investment for your practice.

The evidence

Five papers were critically appraised: one case study and four randomised controlled studies. In one of the randomised control studies, no distinct differences were reported between the laser therapy and non-laser therapy groups on qualitative appearance (deBraekt et al., 1991). There were no significant differences in wound surface area and rate of wound healing between both groups, with all wounds fully healed within four weeks of the surgical procedure.

A further study used dogs as their own control, with wounds created bilaterally on each dog (Kurach et al., 2015). There was no statistical significance between the laser-treated and control wounds in all parameters measured, including mean total wound area, mean percentage of wound contraction and epithelialisation, and mean histologic acute inflammation scores. All wounds were healed by the end of the study, with no apparent beneficial effects of low-level laser therapy at the specified laser settings and technique.

In another study, dogs had a bilateral flank ovariecctomy performed (Gammel et al., 2018). On each flank, a standardised dorsal ventral incision was performed, which was then sutured, as well as a punch biopsy, which was left open. Each flank was randomly assigned to either a control group with no laser therapy or a treatment group with laser therapy. Both a blinded qualitative assessment of wound photographs and quantitative assessment of wound measurements indicated no significant difference in healing time, wound area size or histological changes between the laser-treated wounds (incisional and open), compared to the control. However, as both these studies used dogs as their own control, there is a possibility that laser therapy had systemic effects which could have influenced the healing of control wounds.

In the fourth randomised controlled study, 12 dogs received hemilaminectomy surgery and were randomly assigned to a laser treatment group or control group (Ward-law et al., 2019). Qualitative assessment of wound photographs demonstrated that laser therapy-treated dogs had improved scar scales, with a statistically significant difference by day 21, when compared to control dogs. The authors concluded that laser therapy accelerates wound healing. However, four dogs in the non-laser control group and two in the laser group were on steroids during the study, which is a potentially confounding factor. Additional statistical analysis showed dogs on steroids had a significantly lower scar scale than dogs who were not.

A case report described a single dog with a pre-existing chronic wound, where laser therapy was given once a day for four consecutive days (Lucroy et al., 1999). Wound size was measured each day for 21 days, with wound surface area being analysed from photographs. A reduction in wound surface area was observed on day four, with the wound reportedly completely healed by day 21. The laser therapy appeared to aid the healing of a chronic non-healing wound. However, as this is a case study, this is a low level of evidence with no direct control comparison or statistical analysis.

Conclusion

Overall, there is moderate strength of evidence that low-level laser therapy does not increase the speed of wound contraction or reduce healing time.

Only two studies concluded a positive effect of laser treatment on wounds. One was a case report and investigated a chronic wound rather than acute wounds, making it hard to compare with other studies. The other treated only three dogs with laser therapy, and there was a lack of standardisation of wound or treatment protocol. The other three papers had a good randomised control study design, with objective and subjective assessments of standardised wounds. However, each study had a small number of dogs and investigated different protocols, making it difficult to compare directly.

Further controlled studies are needed, with larger populations of dogs and using laser settings from previous studies, to provide a stronger level of evidence for the effectiveness of low-level laser therapy.

The full Knowledge Summary can be accessed here: veterinaryevidence.org/index.php/ve/article/view/270

A full reference list is available online.
As Vets, Nurses and other practice staff return to work and start to see clients and their pets once more, measures to help minimise the spread of coronavirus are essential.

One measure to consider is that pets may be harbouring virus particles directly on their fur, muzzle and feet as well as on the leash or collar.\textsuperscript{1,2}

Such harbouring may allow for the transfer of the virus from the pet to the owner or from the pet to practice staff. To minimise the risk of spread, it is a sensible precautionary measure to clean the pet’s coat, collar and lead prior to any contact with practice staff and again before handing the pet back to the owner after treatment has been carried out.\textsuperscript{1,2}

Two recent studies\textsuperscript{3,4,5} show that exposure to chlorhexidine makes coronavirus undetectable after 5 minutes. CLX Wipes and NEW CLX Spray both contain chlorhexidine and can be used directly on those areas to help minimise the risk of contamination.

CLX Wipes and NEW CLX Spray are easy to use and allow for quick and convenient cleansing of the coat, feet, collar and lead. Extra protection for practice staff during the Covid-19 crisis.

Sebaceous adenitis in dogs

The condition is usually managed with a combination of topical and systemic treatments

Sebaceous adenitis is an uncommon dermatosis characterised by alopecia and scaling. It can be idiopathic or associated with other diseases such as leishmaniosis. The condition can occur in any breed, but a breed predisposition has been reported in Standard Poodles, Akitas, Samoyeds, Chow Chows, English Springer Spaniels and Vizslas. An autosomal recessive mode of inheritance has been proposed in Standard Poodles and Akitas. There is no sex predilection and mostly young to middle-aged dogs are affected. Sebaceous adenitis has also been reported in cats and rabbits, but rarely.

Pathogenesis
Destruction of the sebaceous glands results in reduced sebum to coat the hair shaft and the hair follicle infundibulum. This subsequently leads to hyperkeratosis, follicular plugging and weakness in the hair shaft, resulting in fracture and subsequent alopecia.

The mechanism for the destruction of the sebaceous glands is unclear, but T-cell mediated destruction of sebaceous glands, genetic factors and defects in lipid metabolism have all been implicated.

Clinical signs
Generally, the condition is non-pruritic, but with time can become pruritic due to secondary pyoderma. The lesions generally progress from the face and ears (Figure 1) to the trunk. Lesions vary between short-haired and long-haired dogs.

Short-coated dogs generally present with a moth-eaten appearance, due to multifocal annular or serpiginous areas of alopecia and fine scaling.

Long-haired dogs present with poor coat condition with varying degrees of alopecia (localised patches to generalised), follicular casts, adherent scaling on the hair shafts and easily epilated hairs.

Apart from the cutaneous signs, the general health of affected dogs is good.

Diagnosis
Skin scrapes, trichography (Figure 2), fungal culture, haematology, biochemistry and hormonal assays to rule in, or out, other causes of scaling, crusting and alopecia, should be undertaken as appropriate depending on the history and other clinical signs.

The diagnosis of sebaceous adenitis is confirmed on histological findings of:

- Nodular to pyogranulomatous inflammation at the mid-dermis and perifollicular regions
- Inflammatory cell infiltrate composed of histiocytes, lymphocytes, neutrophils and plasma cells
- Small, shrunken, or absent sebaceous glands
- Orthokeratotic hyperkeratosis and irregular hyperplasia
- Follicular hyperkeratosis

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FIGURE (1) Alopecia, scaling and crusting are symptoms of sebaceous adenitis, here seen on the forehead of a Golden Retriever (2) Trichography should be used as a diagnostic aid to look for things such as follicular casting
Treatment

Several options are available for the management of sebaceous adenitis. Treatment is aimed at improving coat condition, attempting to stop the progression of sebaceous gland destruction and removal of excessive scale.

Topical treatments

Salicylic acid and sulphur-containing shampoos are most useful in the management as they are effective in removing the crusts and scale. Following the shampooing, application of a humectant such as 50 to 70 percent propylene glycol helps moisturise the skin.

Good results have been reported from prewashing with a shampoo containing either sulphur and salicylic acid, or ethyl lactate. A contact time of 10 minutes is allowed before rinsing, after which baby oil is rubbed into the skin, allowed to soak for up to two hours and then rinsed off using the same shampoo. Following this, a humectant is applied.

Systemic treatments

Essential fatty acids

Omega-6 and omega-3 fatty acids combined with topical treatment have been reported to be effective in some dogs. Essential fatty acids help replace fatty acids in hair and skin and they also have anti-inflammatory properties and help maintain the epidermal barrier.

Ciclosporin

Ciclosporin at a dose of 5 to 10mg/kg once daily is a useful treatment in the management of sebaceous adenitis (Figure 3). Adverse effects of ciclosporin include vomiting, diarrhoea, abdominal discomfort, gingival hyperplasia and papillomatosis.

Vitamin A

Vitamin A administered at 10,000 IU orally BID may help some dogs. Dosages up to 20,000 to 30,000 IU can be tried. One study reported an 80 to 90 percent improvement within three months. It is, however, important to note that the clinical signs of vitamin A toxicity include reduced tear production, hepatotoxicity, cheilitis, teratogenicity and xerosis.

Isotretinoin

Isotretinoin, a synthetic retinoid, has been used in the past with some success at dosages of 1 to 3mg/kg SID. This is not licensed for veterinary use and is expensive, and in recent years this medication appears to have been replaced by ciclosporin.

Summary

Idiopathic sebaceous adenitis is a non-curable, but non-life threatening, condition that requires lifelong management. It can affect any breed of dog, but genetic predispositions have been reported. The condition is usually managed with a combination of topical and systemic treatments, depending on individual circumstances.

Further reading


The importance of the gastrointestinal microbiome

The microbiome of the gastrointestinal tract is thought to play a role in general health and well-being of animals

There is growing interest in the microbiota and its role in pet health, as increasing research into the gastrointestinal microbiota starts to identify the important role it has to play in general health and well-being in both humans and animals. In fact, the intestinal microbiota is now considered to be a metabolic organ with important impacts on host health (Suchodolski, 2018). So, what constitutes a healthy microbiota, and what factors can influence its composition? An impaired microbiota can lead to gut dysbiosis – but what is the impact of this and how may we be able to ameliorate this with management strategies, now and in the future?

What are the roles of the intestinal microbiota?

There are an estimated 100 trillion microbial cells in the gastrointestinal tract – tenfold more than the number of host cells (Suchodolski, 2018). They have a number of roles. They can influence both the systemic and gastrointestinal immune system of the host. They assist in disease resistance and defence against enteropathogens, thought to be due to creation of a physical barrier to pathogen colonisation, competition for nutrients and production of antimicrobial substances (Caddick, 2020). They also provide nutritional benefits (Suchodolski, 2018). For example, fibre sources such as inulin from chicory and beet pulp are fermented by bacteria in the large intestine to produce short chain fatty acids (SCFAs), which have a number of potentially beneficial roles in the gastrointestinal tract, including acting as energy sources for the host, regulating intestinal motility and providing growth factors for epithelial cells as well as reducing ionised bile acids, long chain triglycerides and ammonia (colon irritants), and reducing overgrowth of potentially pathogenic bacteria such as Clostridium spp. They also have direct anti-inflammatory properties through expansion of immunoregulatory lymphocytes (Suchodolski, 2018). Intestinal microflora also hydrolyse urea, modify the metabolism of cholesterol and bile salts, and synthesise vitamins including B12, folic acid and biotin (Jean-Phillippe, 2012). In fact, gastrointestinal bacteria are solely responsible for the conversion of primary bile acids to secondary bile acids (Suchodolski, 2018) – one example of how important they are to the physiology of companion animals and humans.

Does the intestinal microbiota have roles beyond the gut?

There is accumulating evidence that the intestinal microbiome has impacts on the body beyond its local effects of digestion and protection within the gastrointestinal tract. In fact, the health of the intestinal microbiome is now thought to play a role in the development and progression of obesity, atopic dermatitis and neoplasia, as well as having an impact on cognition and renal function (Valdes et al., 2018; Geva-Zatorsky, 2018; Caddick, 2020). Thus, maximising health of the intestinal microbiota could have key roles in overall health of the animal.

**KEY DEFINITIONS OF TERMS USED**

**Microbiota:** The microorganisms that typically inhabit a particular environment, including a site in or on an organism. For the purpose of this article, microbiota refers to the microorganisms within the gastrointestinal tract.

**Microbiome:** The genetic make-up of the whole of the microbiota, ie the genes from all of the bacteria, fungi and viruses that inhabit a particular environment.

**Intestinal dysbiosis:** An alteration or imbalance in the intestinal microbiota composition and/or richness.

**Metabolomics:** The large-scale study of small molecules, commonly known as metabolites, within cells, biofluids, tissues or organisms. Collectively, these small molecules and their interactions within a biological system are known as the metabolome.

**Postbiotics:** Beneficial metabolic end-products of bacterial metabolism.

**Prebiotic:** Non-digestible food ingredients (fibres) that selectively stimulate growth and/or activity of one or several species of gastrointestinal bacteria with the potential to improve host health.

**Probiotic:** A product or preparation containing microorganisms such as Lactobacillus, Bifidobacterium, Enterococcus faecium that maintains or restores beneficial bacteria to the digestive tract when consumed in a food or supplement.

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What constitutes a healthy microbiota?
Most research investigating the role of the microbiome has been conducted in humans, but as technologies advance and we realise the importance of the gastrointestinal microbiome, increasing resources are being invested in studying it within the veterinary community, although this research comes with a number of challenges. Traditional techniques to gain information about the microbiome composition have included culture, but this is thought to be suitable for only approximately 5 percent of the gastrointestinal microbiome (Suchodolski, 2018), and does not give consideration to elements such as the postbiotics produced by bacterial metabolism. Every individual has a very different microbiome – differing both in the balance and the species and strains of bacteria within the gastrointestinal tract (Suchodolski, 2018). We do see clear differences between the microbiome present in a healthy animal and that of a diseased animal, and over time, certain disease phenotypes demonstrate specific patterns of microbiome shifts (Suchodolski, 2018). However, further information about both the microbial composition and their functions, including their metabolic activity and immune interactions, is needed to define what is “healthy” or “unhealthy”.

A dysbiotic microbiome may impact the host in functional or immunological ways that can be deleterious – for example, due to the production of toxins or reduction in anti-inflammatory metabolites (Suchodolski, 2018). Dysbiosis is often associated with acute and chronic gastrointestinal disorders (Suchodolski, 2018), although in the majority of cases it is still unknown whether dysbiosis is the cause or result of disease. As mentioned above, it also appears to play a role in extraintestinal diseases including atopic dermatitis and obesity (Valdes et al., 2018; Geva-Zatorsky, 2018). It is becoming increasingly evident that a bidirectional communication exists between the gut microbiota and the brain (the microbiota-gut-brain axis). Dysbiosis has been shown to affect behaviour and be involved in the pathogenesis of neurological diseases including Parkinson’s in humans, and to correlate with aggressive behaviours in dogs (Geva-Zatorsky, 2018).

However, it can be difficult to correlate dysbiosis with a clinical picture, and its contribution to disease does seem to vary between different patients. There is some evidence that genetics plays a role in influencing the microbiota composition, but the environment appears to be the major factor. Lifestyle and environmental triggers such as medication use, especially antibiotic use, as well as diet can influence the microbiota and also impact upon the likelihood of dysbiosis developing (Suchodolski, 2018). Antibiotics and their potential influence on dysbiosis is particularly complex. Veterinarians may give antibiotics to treat an animal with chronic diarrhoea, but by doing so could potentially induce or worsen any dysbiosis, as well as causing further diarrhoea (Suchodolski, 2018). Antibiotic-induced dysbiosis has the potential to trigger longer-term problems. In humans, the development of intestinal microbiota when young has a significant impact on health later in life, and antibiotic-induced dysbiosis in early childhood has been identified as one of the most important risk factors in the development of allergies, obesity and inflammatory bowel disease in adults (Suchodolski, 2018). Further understanding of dysbiosis, the factors that influence it and the potential clinical impacts for companion animals is crucial to help us more fully understand both the therapeutic strategies we currently use in veterinary practice to help treat acute and chronic gastrointestinal disorders and how we can influence the microbiome beneficially.

What can we currently do clinically?
There are four main ways we can currently influence the microbiome in veterinary medicine: antibiotics, diet and prebiotics, probiotics and more novel therapeutic strategies such as faecal matter transplantation. Given that every individual has such a varied microbiome, companion animal patients may clinically have very different responses to each of these strategies. The traditional approach of antibiotics has increasing concerns around it – due to both antibiotic resistance and the potentially negative impacts it appears to have in inducing major shifts in microbiota and potentially causing diarrhoea as an unwanted side effect. At the moment we have no way to block the effects of antibiotics on dysbiosis. Nutritional support in the form of increased fibre and prebiotics, and probiotics, are attracting increased interest. A number of commercially available diets containing prebiotics are available, particularly those tailored towards support in gastrointestinal disease. There is also a range of veterinary-authorised probiotic products, although there is great variability in the quality and potential efficacy of these products, so clinicians are encouraged to assess the evidence for the particular strain and preparation of probiotic being marketed before selecting it for use. In addition to this, consideration of advice to owners to help minimise stress, which may adversely impact microflora diversity and stability – for example, in incidences of environmental changes – may help support the GI microbiome. Appropriate guidance to owners during any dietary changes, including a gradual diet transition and considering use of gastrointestinal supportive products during this switch, may also help minimise changes in microbiome stability (Caddock, 2020).

Conclusion
We should now start to recognise the importance of the gastrointestinal microbiota as an organ in itself, and consider the significant functional and immunological roles it may have in both gastrointestinal health and overall health and behaviour. Many conditions we previously or may still treat with antibiotics may not actually be conditions where we should use antibiotics as a first line approach and there are concerns that antibiotic administration in itself may induce dysbiosis. Nutritional support in the form of prebiotics and supplements such as probiotics show great potential, although more controlled studies and evidence are needed to identify how we may optimally support the gastrointestinal microbiome.

A full reference list is available online
Constipation in cats

Constipation can be managed medically, surgically and through a high fibre diet

Constipation is defined as difficult, painful or reduced defecation over a period of time ranging from days to weeks or months (Washabau and Day, 2013). Cats should easily pass their faeces daily with stools observed being brown, formed and, if in a litter tray, soft enough so that some litter adheres to them. If the cat is straining in the litter box or if their faeces are dry and hard, this may be an early indication of a problem (Keeler, 2009).

The colon has numerous roles, including the absorption of water and electrolytes and storage for digestive waste, by means of coordinated neuro-hormonal mechanisms including segmental contractions mediated by the sympathetic nervous system and the peristaltic ones generated by the parasympathetic; it also periodically eliminates that waste (Danks, 2015). The fact that the large intestine contains a diverse ecosystem and microbiome of its own can often be overlooked; each gram of faecal matter contains $10^{10}$ microbes (one million times that of the distal small intestine) and it’s these which maintain the delicate environmental balance in short-chain fatty acids, water, hydrogen, methane and carbon dioxide on which colonic function depends (Freiche, 2013). A study conducted across rescue centres in the UK found that 5.6 percent of cats suffer with constipation and that increasing age was a risk factor, as was seasonality, namely winter (German et al., 2015), potentially due to the increased amount of time spent inside and not exercising.

Clinical signs

Some cats are observed making multiple, unproductive attempts to defecate in the litter box, while other cats may sit in the litter box for prolonged periods of time without assuming a defecation posture. Dry, hardened faeces are observed inside and outside of the litter box. Occasionally, chronically constipated cats have intermittent episodes of haematochezia or diarrhoea caused by the mucosal irritant effect of the faeces remaining in situ. Owners may observe this as small amounts of loose stools being passed around a hardened impacted stool and misinterpret this as their cat suffering with diarrhoea rather than constipation as the primary issue. Prolonged inability to defecate may result in other systemic signs, including anorexia, lethargy, weight loss and vomiting (Washabau and Day, 2013). If constipation remains untreated for long enough, the condition may progress to obstipation, which is defined as intractable constipation that has become refractory to cure or control (Foley, 2017); this may further develop into acquired secondary megacolon.

Risk factors

One study found that older, overweight cats and cats with chronic kidney disease or previous episodes of constipation were found to be at increased risk of constipation ($P < 0.0001$, $P = 0.0004$, $P = 0.0046$ and $P < 0.0001$, respectively) (Benjamin and Drobatz, 2019). The same study documented that cats noted to be painful on abdominal palpation were less likely to defecate following an enema and that adjunctive treatments such as fluids and laxatives increased the likelihood of a successful enema. Chronic kidney disease was identified as a prominent risk factor due to the accompanying level of dehydration that will result in decreased fluid in the colon while the body attempts to retain fluids, but inevitably loses them through the diseased kidneys (Cannon, 2016).

A full history should be taken to rule out causes relating to drug therapy, such as use of opioids, anticholinergics and sucralfate, and any behavioural components which may be causing the cat stress or aversion to their litter tray (Little, 2011). Physical examination confirms the presence of large amounts of faeces palpable in the colon, sometimes accompanied by abdominal pain. A careful evaluation (e.g. musculoskeletal system, caudal spinal cord function and ano-rectal area) should be made for underlying causes. A rectal exam should be performed, under sedation if necessary, for masses, pelvic fracture malunion and anal gland abnormalities (Washabau and Day, 2013). A minimum database (CBC, serum chemistries/electrolytes, urinalysis) should be
assessed, especially to determine hydration and electrolyte status and identify underlying diseases such as chronic renal disease (Cannon, 2016). Survey abdominal radiographs are useful to confirm the diagnosis and assess severity as well as to evaluate for potential underlying causes, such as previous pelvic trauma and arthritis. Studies have suggested that measuring the ratio of radiographic colonic diameter to fifth lumbar vertebral length can be used to differentiate between the colon of a normal or constipated cat (defined as a colon diameter of less than 1.28 times the length of the fifth lumbar vertebra (LS)) and that of a cat suspected of having megacolon (defined as a colon diameter larger than 1.48 times the length of LS), where there is not only generalised distension but a loss of motility as well (Trevail et al., 2011).

Treatment
The specific therapeutic plan will depend upon the severity of constipation and the underlying cause. Medical therapy may not be necessary with first presentation of constipation as some episodes are often transient and resolve without therapy. Mild to moderate or recurrent episodes of constipation usually require management with dietary modification, water enemas, oral or suppository laxatives and/or colonic prokinetic agents (Washabau, 2001). Follow-up therapy and dietary changes in such cases are directed at correcting predisposing factors and preventing recurrence.

Recurring episodes of constipation may require administration of enemas. Several types of enema solutions may be administered, such as warm tap water (5 to 10 ml/kg), warm isotonic saline (5 to 10 ml/kg), dextrose sodium sulfofusinate (5 to 10 ml per cat), mineral oil (5 to 10 ml per cat) or a polysaccharide laxative with poor absorption such as lactulose (5 to 10 ml per cat). Enema solutions should be administered with a well-lubricated 10 to 12 Fr. rubber catheter or feeding tube (Little, 2011).

Cases unresponsive to enemas may require manual extraction of impacted faeces. Cats should be adequately rehydrated and then anaesthetised with an endotracheal tube in place to prevent aspiration should colonic manipulation induce vomiting (Carr and Gaunt, 2010). Water or saline should be infused into the colon while the faecal mass is manually reduced by abdominal palpation. Depending on the severity of the impaction it may be advisable to evacuate the faecal mass over a period of several days to reduce the risks of prolonged anaesthesia and perforation of a devitalised colon (Washabau, 2001). If this approach fails, subtotal colectomy will become necessary in cats suffering from obstruction or idiopathic dilated megacolon which are unresponsive to medical management (White, 2002).

Dietary management
Most of the available bulk-forming laxatives are dietary fibre supplements of poorly digestible polysaccharides and celluloses made primarily from cereal grain, wheat bran and psyllium. Many constipated cats will respond to supplementation of the diet with one of these products (Freiche et al., 2011). Dietary fibre is preferable because it is well tolerated, more effective and more physiologic than other laxatives. Fibre-supplemented diets are available commercially and cats should be well hydrated before commencing fibre supplementation to minimise the impactation of fibre in the constipated colon. Two field trials across 66 cats were conducted to assess the efficacy of a psyllium-enriched diet for management of constipation in cats (Freiche et al., 2011). After investigations and faecal evacuation (by enema if required), all cats were fed on a moderate fibre, psyllium-enriched, dry extruded diet. Additional therapy was either not used (trial one) or initially allowed but was subsequently withdrawn if possible (trial two). The diet was well tolerated, and palatability was excellent. Most cases improved after initial therapy (at two months; trial one: 14/15 [93 percent]; trial two: 62/51 [82 percent]) and faecal consistency improved significantly in both trials (P < 0.001). The diets used in these pilot studies appeared to be beneficial in the management of cats with recurrent constipation (Freiche et al., 2011). Some cats prone to constipation may benefit from a high fibre diet. Other cats perform better on a highly digestible “low residue” formula. The choice between the two is down to individual case presentation and response to treatment and management.

References
Freiche V. (2013) How I approach constipation in the cat. Veterinary Focus, 23, 14-21

Constipation in cats
Acute diarrhoea in dogs and cats: causes and faecal analysis

It can be difficult to ascertain whether isolation of potentially pathogenic bacteria is of clinical relevance

Acute diarrhoea is a common complaint seen in first-opinion small animal veterinary practice. Despite the fact that it is often self-limiting and likely to resolve with symptomatic treatment alone, antibiotics are frequently prescribed as part of the therapeutic management plan. In part one of this two-part article we will look at the common causes of acute diarrhoea, including infectious agents, and consider the use of faecal analysis. In part two, we will address when and why antibiotics are used in the management of acute diarrhoea, whether they are truly indicated and the potential adverse effects of antibiotic usage.

Diarrhoea is defined as an increase in frequency, fluidity or volume of faeces and is a common complaint in dogs and cats (Battersby and Harvey, 2006). Diarrhoea can occur secondary to disorders affecting the small or large intestines, or both (Hall, 2009). Localisation to the small or large bowel may not be possible in diffuse disease; it may also be less relevant in acute diarrhoea as biopsies are unlikely to be required and symptomatic treatment may not differ. Diarrhoea lasting for less than two weeks is generally described as acute (Chandler, 2002) and commonly resolves without the requirement for veterinary intervention (Hubbard et al., 2007). Therefore, animals are often presented at the vets due to owner concern or difficulty in managing the symptoms.

In terms of prevalence, one study found that 14.9 percent of dogs had experienced an episode of diarrhoea within the previous two-week period (Hubbard et al., 2007); another reported 28.6 percent of dogs visiting the vets had diarrhoea as their presenting complaint or had experienced an episode of diarrhoea within the previous month (Stavisky et al., 2010). Data from pet cats is limited, but one study showed that prevalence of diarrhoea in a rescue cat population was 11.9 percent (German et al., 2017).

Common causes of acute diarrhoea
Given the often self-limiting nature of acute diarrhoea, an exact aetiology is not always established. However, common causes of acute gastrointestinal upset include:

- **INFECTIOUS**
  - **Parasites**
    - Toxocara spp.
    - Taenia spp.
    - Dipylidium caninum
    - Trichuris vulpis
    - Uncinaria stenocephala
  - **Protozoa**
    - Giardia
    - Cryptosporidium
    - Coccidia
    - Isospora
    - Tritrichomonas foetus
  - **Bacterial**
    - Salmonella spp.
    - Pathogenic E. coli
    - Campylobacter jejuni
    - Clostridium difficile
    - Clostridium perfringens
    - Yersinia spp.
  - **Viral**
    - Parvovirus
    - Coronavirus
    - FeLV
    - FIV
    - Distemper
    - Rotavirus
    - Circovirus
    - Norovirus
    - Canine adenovirus
    - Feline torovirus
    - Reovirus
    - Enteroviruses
    - Feline astrovirus
  - **Algal**
    - Prototheca
  - **Fungal**
    - Intussusception
    - Acute haemorrhagic diarrhoea syndrome
    - Acute pancreatitis
    - Obstruction

**DIETARY**
- Sudden diet change
- Indiscretion (scavenging)
- Hypersensitivity (allergy)
- Intolerance
- Poor quality diet
- Mouldy food

**TOXIN EXPOSURE**
- Drugs
- Heavy metals

**ANATOMICAL**
- Intussusception

**ANOMALOUS**
- Acute haemorrhagic diarrhoea syndrome
- Acute pancreatitis
- Obstruction

**METABOLIC**
- Hypoadrenocorticism

**BOX (1) Causes of acute diarrhoea (Battersby and Harvey, 2006; Hall and Day, 2017)**

dietary indiscretion, dietary intolerance, sudden change in dietary composition, infectious organisms, anatomical abnormalities (eg intussusception), toxin exposure and metabolic or systemic disease (Box 1). Dogs which have experienced a recent change of diet (scavenging or owner administered) or are fed a home-cooked diet, that live in a multi-dog household or have recently stayed in kennels, are at increased risk of diarrhoea (Stavisky et al., 2011). There are other potential causes of diarrhoea which may initially present as acute diarrhoea, but then develop into chronic diarrhoea. While there is some overlap with the...
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causes of acute diarrhoea, an extensive list of differential diagnoses for chronic diarrhoea is beyond the scope of this article.

**Infectious causes of acute diarrhoea**

There are many potentially pathogenic organisms which may cause or contribute to the development of acute diarrhoea. Given that a healthy gastrointestinal microbiota consists of a diverse mix of microorganisms, including some which are potentially pathogenic, it can be difficult to determine whether the presence of certain microorganisms is of clinical significance in cases of diarrhoea. A North American study investigating the prevalence of enteric pathogens found that 30 percent of faecal samples from dogs with diarrhoea, and 22 percent of faecal samples from healthy dogs, contained potential pathogens (Hackett and Lappin, 2003).

**Parasites and protozoa**

Parasitic infections tend to be more common in younger animals (ESCCAP, 2018). Identification of worms or their eggs in the faeces of diarrhoeic animals is an indication for treatment with an appropriate endoparasiticide. While protozoal diseases may require medical management, faecal samples from healthy animals (ESCCAP, 2018). Identification of worms or their eggs in the faeces of diarrhoeic animals is an indication for treatment with an appropriate endoparasiticide. While protozoal infections can be subclinical (Santín, 2013; Tysnes et al., 2014), diarrhoea may follow heavy infestations, infections in young or immunocompromised animals or infections alongside other pathogens or concurrent disease (Battersby and Harvey, 2006). Clinical manifestations of protozoal disease may require medical management.

**Viruses**

Various viruses have been associated with acute diarrhoea in dogs and cats. The most commonly detected are parvoviruses, coronaviruses, paramyxoviruses, rotaviruses and caliciviruses (Schulz et al., 2008). Parvovirus and paramyxovirus have been shown to be strongly associated with acute haemorrhagic diarrhoea (Schulz et al., 2008). Parvovirus (type 2) is perhaps the most feared within the UK as it can cause acute, fatal diarrhoea, most commonly in young, unvaccinated dogs (Goddard and Leisewitz, 2019). Since parvovirus requires actively dividing cells to replicate, gastrointestinal and lymphoid tissue are particularly susceptible, resulting in intestinal necrosis and immunosuppression. Parvoviral infection may also lead to permanent changes in the cytoarchitecture of the gut. Severe disruption to the intestinal mucosal barrier may facilitate bacterial translocation, which could result in septicaemia (Goddard and Leisewitz, 2019). The significance of other viral agents in the pathogenesis of acute diarrhoea is less clear, which may be the result of interplay between other predisposing factors. For example, although circoviral infection alone is unlikely to cause acute diarrhoea, it may worsen the prognosis of parvoviral infection (Anderson et al., 2017). Similarly, co-infection with rotavirus has been shown to worsen the clinical signs of parvoviral infections (Ortega et al., 2017). Coronavirus is found more commonly in the stools of healthy animals than those with diarrhoea, but it may cause mild diarrhoea in young animals (Schulz et al., 2008; Tennant et al., 1991; Tupler et al., 2012). The feline retroviruses FeLV and FIV are more commonly associated with chronic diarrhoea but they may also predispose cats to secondary infections, which could have an acute presentation (Cooper, 2011).

Antibiotics are ineffective in the treatment of viruses. However, when considering the use of antibiotics in acute diarrhoea, viral infections become particularly relevant if they are likely to increase the risk of sepsis, for which antibiotics would then be required. This may be via immunosuppression or disruption to the mucosal barrier which could enable translocation of commensal bacteria.

<table>
<thead>
<tr>
<th>BACTERIA</th>
<th>PREVALENCE IN HEALTHY DOGS</th>
<th>PREVALENCE IN DIARRHOEIC DOGS</th>
<th>PREVALENCE IN HEALTHY CATS</th>
<th>PREVALENCE IN DIARRHOEIC CATS</th>
</tr>
</thead>
<tbody>
<tr>
<td>CAMPYLOBACTER SPP.</td>
<td>21 to 76 percent 1,10</td>
<td>27 to 97 percent 1,2,21</td>
<td>18 to 55 percent 2,7,11</td>
<td>16 to 31 percent 2,3,11</td>
</tr>
<tr>
<td>CLOSTRIDIUM DIFFICILE</td>
<td>10 to 55 percent 1,12-14</td>
<td>18 percent 12</td>
<td>0 percent 14</td>
<td>(9.4 percent in hospitalised cats, of which 43 percent had diarrhoea 10)</td>
</tr>
<tr>
<td>CLOSTRIDIUM PERFRINGENS</td>
<td>11 to 100 percent 19-22</td>
<td>27 to 87.1 percent 19-21,23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SALMONELLA SPP.</td>
<td>3 percent 26</td>
<td>1.2 to 2.3 percent 12,27</td>
<td>0.36 to 0.8 percent 28,21</td>
<td></td>
</tr>
<tr>
<td>(up to 93 percent if raw fed) 25,26</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ENTEROTOXIGENIC E. COLI</td>
<td>2.7 percent 26</td>
<td>35.1 percent 31</td>
<td>Detected 32</td>
<td></td>
</tr>
<tr>
<td>ENTEROPATHOGENIC E. COLI</td>
<td>14 percent 31</td>
<td></td>
<td>Detected 33</td>
<td></td>
</tr>
<tr>
<td>VEROTOXIGENIC E. COLI</td>
<td>1.6 percent 31</td>
<td>24.6 percent 31</td>
<td>Detected 33</td>
<td></td>
</tr>
</tbody>
</table>

**TABLE (1)** Potential enteropathogens have been reported in both healthy and diarrhoeic dogs and cats.

Bacteria

Many potentially enteropathogenic bacteria are detected in the faeces of healthy animals (Table 1), hence their detection in stool samples of patients with diarrhoea may be of questionable clinical significance. Some studies have shown that stools from healthy animals are more likely to contain potentially pathogenic bacteria (e.g. Campylobacter spp. and Clostridium difficile) than the faeces from diarrhoeic animals (Cave et al., 2002; Sandberg et al., 2002; Stavisky et al., 2011).

Even when bacteria have been cultured from stools, further tests are likely to be required to identify whether or not the isolated strain is pathogenic. For example, there are many commensal, non-pathogenic strains of E. coli, yet others (Table 1) may be associated with severe disease. Specific toxins or genes need to be identified to ascertain whether an individual E. coli strain is pathogenic because a positive culture alone is not sufficient for diagnosis (Marks and Kather, 2003; Hall, 2009). Campylobacter jejuni and Campylobacter coli may be pathogenic in dogs, yet Campylobacter upsaliensis, the most common isolate from dogs, is not thought to be (Hald et al., 2004). Identification of specific Campylobacter species requires molecular based techniques such as PCR (Marks and Kather, 2003), which are not routinely carried out at faecal analysis.

With other bacteria, such as Clostridium spp., detection of specific toxins produced by pathogenic strains may be more relevant than isolating the bacteria themselves. One study found no significant difference in the likelihood of isolating Clostridium difficile or Clostridium perfringens between healthy and diarrhoeic dogs (Marks et al., 2002), and while Clostridium perfringens enterotoxin (CPE) and Clostridium difficile toxins A and B are more likely to be found in the stools of diarrhoeic dogs, they have also been detected in stools from healthy dogs (Cave et al., 2002; Marks et al., 2002; Weese et al., 2001). This means that even if these toxins are isolated from the faeces of diarrhoeic patients, it is very difficult to be certain that they are the cause of the diarrhoea. Finally, given that any change to the gastrointestinal environment can result in alterations to the microbiota (termed dysbiosis), it is possible that an increased prevalence of certain microorganisms may be caused by, rather than causative of, acute diarrhoea.

Faecal panels – what are we testing for?

By definition, acute diarrhoea will resolve, with or without treatment, within two weeks (Chandler, 2002). Diagnostic testing is therefore infrequently carried out. A study using data from the Small Animal Veterinary Surveillance Network (SAVSNET) reported that diagnostic tests were performed in only 16 percent of cases with diarrhoea that were seen in general practice. The most common tests performed were blood tests (haematology and biochemistry) and faecal analysis (parasitology and bacteriology) (Jones et al., 2014). Another recent study reported that faecal analysis was carried out in 7.8 percent of dogs and 6.8 percent of cats presenting with diarrhoea (Singleton et al., 2019). One author writing about the management of diarrhoea in cats recommended reserving faecal cultures for cats which develop sudden-onset, acute, bloody diarrhoea with evidence of sepsis; cats which develop diarrhoea after kennelling or shows; or when multiple cats from one household are affected (Marks, 2000). These seem reasonable considerations for faecal culture as they are situations more suggestive of potential bacterial infection, although viral, protozoal and parasitic infections should also be considered.

It is possible that an increased prevalence of certain microorganisms may be caused by, rather than causative of, acute diarrhoea

The aim of faecal analysis in cases of acute diarrhoea is to identify the presence of infectious agents to guide treatment or to provide prognostic information. There is no doubt that detection of parasites or protozoa will often indicate that certain treatments are required, or that isolation of certain viruses (e.g. parvovirus) will help the clinician to provide prognostic guidance for the owner. However, given that Salmonella, Campylobacter, Yersinia (Fukushima et al., 1984; Fantasia et al., 1985) and E. coli O157 (Beutin, 1999) have all been isolated from healthy animals (Table 1), detection of these bacteria in faecal samples does not necessarily confirm the cause of the diarrhoea. All of these bacteria are zoonotic, so testing may be indicated if there is concern regarding zoonotic disease within a household (e.g. presence of children, immunocompromised people or owners with significant symptoms themselves). However, as we will discuss in more detail in part two, the use of antibiotics solely to try to achieve elimination of these bacteria from the pet’s stool samples is questionable (Weese, 2011).

Summary

Part one of this two-part series investigated the potential causes for acute diarrhoea and how difficult it can be to ascertain whether isolation of potentially pathogenic bacteria, from the stools of dogs with acute diarrhoea, is of clinical relevance to an individual patient. Part two will address when and why antibiotics are currently prescribed for acute diarrhoea, whether they are truly indicated and the potential adverse effects of their use.

A full reference list is available online.
General practitioners are increasingly faced with a histology report which suggests they use immunohistochemistry to further classify their tumour. With the development of immunohistochemical markers, retrospective studies have shown that some tumours were previously misclassified based on histological examination alone. Although there are often clear histological indicators of a tumour origin, some masses exhibit multiple conflicting features or are so poorly differentiated that no typical features are present and so further diagnosis can only be made with the use of immunohistochemistry. Some excessively reactive lesions, particularly those of lymphocytic origin, can mimic neoplasia. Here, immunophenotyping may help to differentiate between reactive and neoplastic change.

Many will remember a time when immunohistochemistry was rarely recommended as a further diagnostic test, due to the limited availability of antibodies for accurate tumour identification, but also due to the limitations and costs of veterinary oncology. For many owners, hearing their animal has cancer is very distressing and for some the thought (and expense) of chemotherapy or radiotherapy is more than they wish to consider. However, with an increasing number of insured pets and rapid advances in veterinary oncology, survival times for even some of the most aggressive cancers have been greatly improved. The increasing range of chemotherapeutics available for our patients makes an accurate diagnosis imperative, if the most up-to-date advice regarding the prognosis and possibilities of further treatment are to be provided. So how does it work?

Immunohistochemistry is the process of detecting tissue antigens in histologic sections using target antibodies. It is mainly performed on formalin-fixed paraffin embedded tissue sections. In the case of tumours, the antigens are typically structural proteins inherent to the specific cell of origin (eg cytokeratins in carcinomas). The antibodies bind specifically to these antigens and the subsequent antibody-antigen complex is then visualised, typically by means of a conjugated enzyme, such as peroxidase, that can catalyse a colour-producing reaction. Alternatively, a fluorophore, such as fluorescein or rhodamine, can be used to label the antibody. The sections are then examined microscopically and the neoplastic cells can be identified by means of positive or negative staining.

Although there are a large number of commercially available antibodies, the time and costs of processing an individual antibody are huge and many are prohibitively expensive. As a result, many published antibodies are, as of yet, only available in research establishments. However, the approach we use offers a diverse range of antibodies, which covers the majority of the neoplastic lesions encountered in practice. We are here to offer help and advice on the most appropriate test or tests for your particular case. Please contact us to discuss your options.
The elderly Labrador owned by my equally elderly next-door neighbour is slowing down with arthritis, despite NSAIDs and glucosamine together with a wonderful mix (his words not mine) of devil’s claw tuber, sarsaparilla root and *Boswellia* gum. Thank goodness he didn’t ask for my professional opinion on his canine friend’s medication. Instead, at the required two metres distance, we talked about slowing down more generally.

For ages we young-uns (again, his words not mine!) have been told, in the words of the Simon and Garfunkel song, to “slow down – you move too fast”. And now the queue at the supermarket makes us slow down, doesn’t it? That or developing arthritis... or being a tortoise! I suggested to my elderly friend that while a mouse lives for a year or two, a dog for 10 or 15, the slow old tortoise can reach seventy for sure.

Is it being ectothermic that leads to this extended longevity, I wondered? I say ectothermic rather than cold-blooded as a *Gopherus agassizii* tortoise living in the Mojave Desert has to cope with temperatures of around 50 degrees and can live to up to 80 years. Their heart rate, though, is around 10 beats per minute. Not a piece of information I have immediately to hand it must be said – but the joy of Google Scholar is that within an internet instant I can access a great thesis like that of Ann Bowles 20 years ago on “the effects of flight noise from jet aircraft and sonic booms on hearing, behaviour, heart rate and oxygen consumption of desert tortoises”.

Honestly the only problem with having such a plethora of information at the tap of a button is that one can spend all day finding out things one never needed to know at the beginning of a literature search for something completely different. But perhaps that’s the whole point of slowing down – not worrying that you spent half an hour reading a paper packed full of fascinating facts you will never in all probability ever need to know.

Take the concept of physiological time for instance. Body size dictates your lifespan. Your metabolic rate as a species scales with your body mass to the 0.75. We know the importance of that allometry in giving toxic drugs such as chemotherapeutics. And it links with lifespan as well. The mouse lives a shorter time than the cat, quite apart from whether one is eaten by the other or not! And the elephant lives longer than the cat, that goes without saying.

A plot of the number of heartbeats per lifetime against body weight and life expectancy gives a remarkably constant number – around seven and a half hundred million heart beats per lifetime – please don’t start counting! Or at least that’s what Herbert Levine calculated in a paper in the *Journal of the American College of Cardiologists* back in 1997 and I’m afraid life’s too short to go back over his maths and see if I agree with them.

Except... what about birds? A budgie is the weight of a mouse but can live for 15 years while the mouse lasts at most until it is three. The average heart rate for both is 300 to 600 beats per minute, so why is their lifespan so different?

The naked mole rat is the same size as a mouse and yet living for 30 years with next to no neoplasia noted and existing at oxygen levels giving a hypoxia that would kill us. Not much of a life though, you might say – they live in a eusocial group where sterile males do the bidding of the giant queen weighing in at 70 grams, taking orders through chemicals in her urine. And when she dies the remaining females who fancy taking over fight to the death for the place at the top. And you thought that we live in a crazy world at the moment – think again!

“One can spend all day finding out things one never needed to know”

David Williams
Associate Lecturer, Veterinary Ophthalmology

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The peracute management of traumatic wounds

Optimal treatment at initial presentation is essential to minimise the risk of infection, delayed wound healing, patient morbidity and cost.

Optimal initial management of traumatic wounds can make an enormous difference to the end outcome. They are often a component of polytrauma and stabilising the animal takes priority even though the wound can be eye catching. Exceptions may include life threatening haemorrhage and open thorax or abdominal injury.

Early provision of analgesia and protection of the wound from contamination in the hospital is essential. Use of personal protective equipment (particularly gloves) and covering the wound with a clean material (eg fresh incontinence sheet, cling film) can minimise debris and bacteria being introduced to the wound surface.

Once the animal is stabilised, thorough patient assessment is required. A holistic approach to consider the possibility of concurrent pathology (such as pneumothorax, diaphragmatic rupture, urinary tract injury, fractures) and provision of supportive nursing care (for example enteral nutrition or managing expected recumbency) often means that a general anaesthetic or sedation for early treatment and appraisal of the wound is combined with imaging studies and consideration of central lines, feeding tubes and urinary catheters.

Pragmatically, even at this early stage, some thought should be given to the strategy for final closure of the wound to help an owner make decisions that they are emotionally and financially able to pursue. A large degloving injury of a limb with multiple complex fractures may be amputated to facilitate prompt and successful treatment if the possibility of orthopaedic surgery and then potentially several weeks of wound management with final reconstructive surgery are not conceivable.

Veterinary surgeons should temper their primal urge to primarily close a wound immediately because thorough

**JON HALL**

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**FIGURE (1)** A traumatic skin avulsion injury following a road traffic accident affecting a seven-year-old female neutered Jack Russell Terrier managed at a primary care practice (A). The wound was appropriately decontaminated (B) and a pragmatic primary closure performed with the owners being warned that infection or ischaemic necrosis were a high risk (C). Seven days: the skin over the left shoulder is developing ischaemic necrosis but the full extent of local tissue viability is difficult to determine. Staged debridement and dressing at this stage would reduce the bioburden of the wound and remove inflammatory tissue and exudate that might impair local healing (D). Eleven days: a clear delineation between necrotic and viable tissue is evident (E). The non-viable tissue was excised (F) and definitive secondary closure performed over the healthy granulation tissue (G) (Images courtesy of Beryl Foster)
The peracute management of traumatic wounds

Decontamination is essential to reduce the risk of infection. Also, declaration of local tissue viability can take several days as a result of contusion, avulsion and vascular trauma. Once debris, bacteria and non-viable tissue has been removed from the wound, then more predictably successful surgical closure can be performed before or after granulation tissue develops (delayed primary and secondary closure respectively). That is not to suggest immediate closure is never successful if it is a recent clean wound (and ensuring that client expectations are appropriately managed, warning them of the risk of infection or dehiscence if skin subsequently declares itself ischaemic and non-viable) but more often, several days of repeated cleaning and debridement are required. Primary closure may be a pragmatic method to protect the underlying tissues and then monitoring tissue viability pending a definitive procedure (Figure 1).

An overlooked and valuable alternative is to facilitate the normal processes of tissue healing (second intention closure); however, this generally takes at least three to four weeks in healthy dogs and can be slower in cats or for very large wounds. Second intention closure is unlikely to be an option if a wound traverses a joint or is greater than approximately 50 percent the circumference of a limb, since contraction of the wound can impair function or act as a physiological tourniquet.

The aetiology of a wound influences the extent of injury and expected sequelae. Burns can result in deeper tissue damage than expected, especially over bony prominences. Lacerations are generally less contaminated than abrasions. Bite injuries are complicated by dramatic contusion, a potential for localised ischaemic necrosis that develops over subsequent days and considerably worse deeper tissue injury than tends to be visible on the skin. Bites over the abdomen and thorax should be carefully evaluated in case they enter a body cavity (Figure 2).

A standardised team approach

Adopting a largely standardised approach to wound management can help the clinical team to follow an appropriate well-evidenced routine and avoid inadvertent suboptimal treatment. All members of a team should be educated, empowered and encouraged to identify when a colleague forgets an important consideration (eg wearing gloves to handle a wound should be recognised to be as important as a break in aseptic technique in theatre).

Clipping

- **Wear gloves!** – not necessarily sterile
- Protect the wound from the hospital environment: a clean incontinence sheet on the table or directly beneath a limb can be useful
- Cover the wound with water-soluble gel (eg sterile sachets of lubricant)
- **Clip widely.** Limbs should be clipped circumferentially and all of the area that is expected to finally be bandaged should be clipped. Haired skin carries three times the bacterial load and including this underneath a dressing increases contamination and the risk of subsequent infection
- Clean skin around the wound with chlorhexidine skin preparation (or similar) as if for a surgical procedure. Aseptic preparation of the peri-wound decreases bacterial load and a source of potential future infection (exactly the same as for a surgically created incision)
- Change gloves/incontinence sheet/towel

Wound lavage

- Heavily contaminated wounds can first be showered with tepid tap water if necessary. Large volume dilution is the key to wound decontamination rather than the type of fluid
- Flush wound with 1l of sterile Hartmann’s solution (more for larger wounds) using either:
  - A fluid bag attached to a giving set and a three-way tap with a 20ml syringe and 21G needle (Figure 3)
  - A fluid bag inside a pressure infusion cuff (pumped...
IN FOCUS

up to maximum pressure) attached to a giving set and a 21G needle screwed on to the end. This “hose” system achieves optimal fluid lavage pressure and avoids the clinician getting bored with using a syringe and stopping before a suitable volume is applied.

- Considerable recent and ongoing research into novel wound lavage solutions (largely driven by a need to find alternatives to systemic antimicrobial therapy) is yielding interesting results. Hypochlorous acid can be an effective bactericidal agent and probably has no negative effects on wound healing. The duration of efficacy of hypochlorous acid preparations (once opened) varies between brands.

- Consider collecting swabs/tissue samples for bacteriology. Start antibiotics after sample collection if there is concern regarding bacterial contamination or evidence of infection and choose a broad-spectrum drug until culture/sensitivity results are obtained (eg potentiated amoxicillin). Topical wound cytology to determine the bacterial cellular morphology can be extremely useful and is very cost effective; rods or cocci can help determine which systemic and topical antimicrobial and bactericidal agents are more likely to be effective (and improve antimicrobial stewardship).

Debridement

Removal of dead tissue is vital for progression of normal wound healing. This can be performed by:

- Sharp selective surgical removal of dead or contaminated tissue, being careful to preserve vital anatomy (nerves, tendons, ligaments).

- Mechanical debridement using dressings (eg wet-to-dry) to tear off debris and dead tissue that sticks to the dressings when changed daily. This is non-selective but very effective, particularly for small particulate debris.

- Autolytic debridement, using dressings to maintain a moist environment that facilitates the body’s natural debridement process and lavage away the debris during dressing change.

- Enzymatic (rare): proteolytic enzymes applied to the wound surface.

- Biosurgical (uncommon): biological grade maggots, five to eight per cm², that remove necrotic tissue, disinfect the wound and promote granulation tissue.

Initially, sharp debridement under general anaesthesia is often performed in the prep room, wearing sterile gloves and a scrub top (not necessarily full gown, etc). Unless necrotising fascitis is suspected, only clearly devitalised tissue is generally cut away. If in doubt, leave questionable tissue and it will declare its viability in subsequent days and can then be removed (staged debridement). Topical wound dressings are then applied and secured using a bandage, if delayed surgical management or second intention healing is planned.

Conclusion

Optimal treatment of a wound at initial presentation is essential to reduce topical contamination (from the injury or the hospital environment) thereby minimising the risk of infection, delayed wound healing, patient morbidity and cost. The most common and easily avoided breaches in wound care are failure to wear gloves, not clipping enough hair off and using insufficient volumes of lavage fluid. These are cheap, easy and simple considerations that make the world of difference in daily wound management.
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The cause of wounds is broadly divided into traumatic or iatrogenic aetiology. There are important additional considerations to make when evaluating or nursing the patient depending upon the aetiology. In a patient that has experienced trauma, the wound may be only one of a multitude of injuries and it is important that thorough patient evaluation is performed. If the wound has been caused by a high velocity impact, such as a road traffic accident or a fall, then thoracic and abdominal radiography should be considered to exclude the presence of a traumatic hernia. Bite wounds overlying a body cavity, in particular where an animal has been picked up in the jaws of a larger animal, should also lead to thoracic and abdominal radiography to evaluate for internal injury (Figure 1). The superficial appearance of a bite wound can often hide the severity of the underlying injuries and what can be seen must be considered to be the “tip of the iceberg”.

Traumatic wounds are likely to have significant contamination from environmental debris; bite wounds are a particularly high risk for infection due to bacterial inoculation from the penetration of teeth into deeper tissues, concurrent with crushing injury which devitalises tissues and provides the optimal bacterial multiplication site (Frykfors von Hekkel et al., 2020).

Iatrogenic wounds are those that occur related to prior surgical intervention. Wound breakdown is a recognised complication of any surgical procedure. It may occur due to patient-related factors affecting healing, such as an endocrine disorder, concurrent medication or patient interference. Wound breakdown can also occur due to tension, excess mobility or skin necrosis, in particular if a large or complex wound reconstruction has been required (Figure 2). If the open wound is a prior surgical wound that has broken down, it is important to consider that there is a greater risk that the wound may be infected with a multidrug resistant organism. This is important to plan appropriate nursing care and minimise the possible contamination of areas of your practice or hospital.

First aid management
Following appropriate analgesia and patient stabilisation, thorough evaluation of the wound and lavage is the next step. It is important that this is performed under sedation or general anaesthesia to allow extensive clipping, lavage and decontamination, probing and debridement as necessary, and to maintain patient welfare. Lavage is performed using
Wound management in small animal practice

Appropriate wound management can be time consuming and costly in the initial stages.

A set-up with a fluid bag and giving set and a three-way tap, to provide a suitable pressure for dislodgement of debris and bacteria from within the wound (Figure 3). The optimal fluid for wound lavage is isotonic, so compound sodium lactate and 0.9% sodium chloride are appropriate.

A bacteriology swab taken from within the wound immediately following lavage is likely to be the most representative of remaining bacterial contamination that may progress to wound infection. It may be worthwhile, however, to take a swab of the wound before lavage if prior surgery has been performed to optimise detection of hospital-acquired infection. Thorough documentation of the nature and extent of the wound should be recorded in the clinical notes, to allow assessment of wound healing and progress to be reviewed as necessary.

Appropriate wound management can be time consuming and costly in the initial stages. Debridement typically requires general anaesthesia and surgical management in the first instance and this may need to be repeated if progressive loss of skin viability is evident, requiring daily sedation or general anaesthesia. The use of open weave gauze swabs is very effective as a debridement dressing; removal is painful and therefore sedation or general anaesthesia is essential. It is important to recognise when healthy granulation tissue develops and to change the primary dressing material at this stage, as otherwise the wet-to-dry dressings will damage delicate epithelising tissue from progressing with wound healing. For more gentle debridement, the use of a hydrocolloid gel is effective. This may be possible to change less frequently. Some clinicians may choose to start with wet-to-dry dressings and to switch to use of a hydrocolloid gel once more gentle debridement is required. This also allows moist wound healing to occur. If drainage is required from the wound and there are also concerns about the vascularisation of the wound, the use of negative pressure wound therapy can be very beneficial. This does not, however, replace the need for initial surgical wound debridement if there is necrotic tissue in the wound bed. A bolus tie-over dressing is a very useful technique to secure the dressing to wounds in places that are difficult to comfortably dress (Figure 4).

Wound closure

In a wound with good tissue viability, or where en bloc debridement of affected tissue can be achieved, it may be suitable for primary closure to be performed. Due to the contaminated nature of wounds, it would often be appropriate to place a dependent drain (eg Penrose drain) exiting via a separate stab incision. If there is a greater degree of tissue contamination and stepwise wound debridement is required, then delayed primary closure would be preferable. Where there has been significant compromise to tissue and wound contamination and there is a resulting tissue deficit, second intention healing with open wound management may be considered; for large defects a reconstructive technique such as use of an axial pattern flap (Field et al., 2015) or a free skin graft may be used (Riggs et al., 2015; Figure 5).

The chronic wound

Wounds are a common clinical presentation in first opinion and referral veterinary practice. The healing capacity of the skin in the dog and cat is tremendous and their abundant skin, over the dorsal neck and flank in particular, allow for simple primary closure when dealing with many wounds. There are, however, situations when we are faced with non-healing wounds and the management can be tricky. Systematic evaluation of the patient and the wound are essential to troubleshoot the issue and resolve the problem. Many of the plans for addressing a non-healing wound could and should have been considered in management of all wounds, thereby decreasing the likelihood of encountering those that become non healing.
What are the possible causes for a non-healing wound?

- Excessive tension or movement
- Poor vascularity
- Large size
- Infection: could there be a multidrug resistant organism or mycobacterial infection? Is there a nidus for infection?
- Neoplasia
- Management factors
- Endocrine disease or medication factors

Bacterial wound infection, possibly with multidrug resistant bacterial isolates, may impair wound healing. It is important, however, to remember that even in the face of multidrug resistant infections, and in fact particularly so, appropriate wound management is the mainstay of management. Progressive and regular debridement and drainage from the wound is essential to create a healthy wound bed. It is normal that bacterial isolates will be obtained from the surface of a wound; however, it is typically the presence of poorly vascularised tissue, necrotic tissue or lack of drainage from dead space that allows infection to establish. Whether or not you have antibiotics available to augment your management of the non-healing infected wound, thorough and regular wound management is the most important.

Neoplasia

A non-healing wound should always have a biopsy. Even if it does not appear that there is a mass, the issue with healing may be due to neoplasia. Squamous cell carcinoma may readily manifest as a non-healing wound, as may an ulcerated mast cell tumour or inflammatory mammary carcinoma – there are of course many more examples. Tissue biopsy is also important for extended culture. Wound management is expensive – it is not a good financial saving to bypass a biopsy of the wound.

Management factors

When a wound has been managed chronically, there may be a fundamental underlying reason why the wound is not healing and often it will be multifactorial. It is also important to consider that our interventions may be contributing to the poor progression of wound healing. For example, a wound on the paw or limb may be able to progress to healing via contraction and epithelialisation if left undressed, with appropriate precautions taken to maintain the health of the wound, whereas abrasion from ongoing dressing may stop the process of epithelialisation from working effectively.

References


### A look through the latest literature

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<tr>
<td><strong>Comparison of monofilament with barbed sutures for intradermal closure</strong></td>
<td>Penny Regier and others, Colorado State University, Fort Collins</td>
<td>Veterinary Surgery, 48, 1399-1405</td>
<td></td>
</tr>
<tr>
<td><strong>Autologous fascia lata graft used to repair an equine corneal ulcer</strong></td>
<td>Marcos Lores and others, Sharjah Equine Hospital, United Arab Emirates</td>
<td>Irish Veterinary Journal, doi.org/10.1186/s13620-020-00160-4</td>
<td></td>
</tr>
<tr>
<td><strong>Allogenic adipose tissue-derived mesenchymal cells in repairing canine skin wounds</strong></td>
<td>Nathaly Encisco and others, University of Madrid</td>
<td>Acta Veterinaria Scandinavica, 62, 13</td>
<td></td>
</tr>
<tr>
<td><strong>Effects of a combination of cannabidiol and manuka honey on wound healing in horses</strong></td>
<td>Victoria McIver and others, University of Sydney</td>
<td>Australian Veterinary Journal, doi.org/10.1111/avj.12932</td>
<td></td>
</tr>
<tr>
<td><strong>Use of hydrogel-encapsulated endothelial colony forming cells in wound repair</strong></td>
<td>Randolph Winter and others, Auburn University, Alabama</td>
<td>BMC Veterinary Research, 16, 43</td>
<td></td>
</tr>
</tbody>
</table>
The BVA has welcomed temporary amendments to bovine tuberculosis (TB) testing in England, Wales and Northern Ireland that will allow herd tests to continue while maintaining the safety of farmers and vets during the COVID-19 pandemic. It follows campaigning by the veterinary profession to allow a greater number of TB herd tests to be completed safely.

The new measures in England and Wales, announced by APHA, came into force on 4 May. These measures allow calves under 180 days old to be excluded from certain routine and targeted surveillance TB skin tests in Officially TB Free (OTF) herds if, in the vet’s judgement, they can’t be tested safely in line with government social distancing guidance. No movement restrictions will be placed on herds as long as the other eligible (older) animals in the herd have been TB tested with negative results within the relevant testing window.

In Northern Ireland, DAERA has introduced measures whereby TB testing is being allowed to proceed only in exceptional circumstances where it can be carried out safely. As of yesterday, calves under 180 days old may be exempt from all TB herd test types if they cannot be tested in accordance with public health guidance. Herds with clear tests will retain or regain their OTF status and can trade freely, with the exception of untested calves aged between 42 and 180 days. The untested calves will be restricted and cannot be traded until they can be tested safely with a negative result.

In Scotland, normal TB testing procedures still apply. If it’s not possible to safely TB test calves whilst maintaining social distancing, vets must record this on the test chart and the test will be incomplete. If it is not completed within the testing window, then the whole test will become overdue.

BVA’s guide for farm vets and Official Veterinarians on assessing essential care during the COVID-19 pandemic is available to view at bva.co.uk/coronavirus/coronavirus-advice-for-farm-vets-farmers-and-livestock-keepers/

More information is also available in the BVA’s coronavirus FAQs: bva.co.uk/coronavirus/frequently-asked-questions/

APHA is continuing to update its OV briefings for TB testing in England, Wales and Scotland, which can be found here: apha.defra.gov.uk/official-vets/briefing%20notes.htm

The full briefing note can be found online: apha.defra.gov.uk/documents/ov/Briefng-Note-0920.pdf

The full briefing note can be found online: apha.defra.gov.uk/documents/ov/Briefng-Note-1120.pdf
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ibTB was set up to help cattle vets and farmers understand bTB levels in their area and inform purchasing decisions

Inception, the ibTB site has been visited over 195,000 times, with average daily usage now standing at over 200 hits/day. The bTB data that underpins the site is updated every two weeks.

In 2018, the APHA and ERGO development team held a series of meetings with farming groups across England and Wales to better understand their requirements for ibTB and in particular to assess the system’s suitability as a portal for providing knowledge-based trading (KBT) information. As well as confirming that ibTB was an appropriate tool for the display of KBT information, the analysis of feedback identified distinct requirements for several subsets of users, such as farmers in high and low bTB risk areas, vets and TB advisors. These requirements have been distilled into a series of staged system improvements, the first tranche of which were released on 4 May this year. The new version (2.2) features certain improvements requested in the meetings held in late 2018, including to show ongoing and resolved TB breakdowns in England and Wales over the past 10 years instead of five; a page with links to other useful bTB sites; a clearer representation of the extent of a cluster of breakdowns on the map; and an improved help function, including a link to a Defra hosted YouTube video which shows users how to get started with ibTB.

The next upgrade (planned for September 2020) will ensure ibTB conforms to the data accessibility regulations for public sector websites that come into force on the 23 September 2020. A further upgrade, which will add a number of significant new features, is planned for April 2021.

Access to the site can be made either directly from ibTB.co.uk or via the TB hub tbhub.co.uk

The development team are actively looking for users to help assess the future planned improvements. If you are interested in becoming part of the ibTB user group, please contact the ibTB project team at ibTB-SUPPORT@apha.gov.uk

FIGURE (1) The latest version of www.ibTB.co.uk (version 2.2) which went live on 4 May
The use of approved tuberculin testers to be approved in England

ATTs will be permitted to carry out all skin test types with the exception of tests for export purposes

In 2018 the APHA conducted a public consultation on the proposal to extend the use of Approved Tuberculin Testers (ATTs) into private veterinary businesses in England to carry out TB skin testing of cattle. Responses to the consultation were generally positive, the key points raised being the need for robust veterinary supervision and quality assurance (QA).

APHA conducted a pilot to test the proposal and to ensure that the points raised in the consultation were rigorously examined. A total of 19 veterinary practices across four of the five English Veterinary Delivery Partner (VDP) regions took part and 22 ATTs were recruited.

The pilot’s objectives were to test the methods and procedures concerned with the use of ATTs by private veterinary businesses including registration, theoretical and practical training, supervision, authorisation, performance and QA. Criteria were set against which the objectives were measured.

The pilot was very successful. The majority of the delivery criteria were met and the few issues which arose have been resolved and action taken to reduce future risk of recurrence. Many of the issues raised are not ATT specific and highlight issues common to any TB tester. The issues, along with extensive feedback received during the pilot, have been fundamental in informing improvements to the processes and highlighted areas that needed to be addressed before further ATTs are permitted.

A significant issue that arose was the ability of ATTs in some practices to meet the criteria for identification of the required number of oedematous reactions to the skin test while training. To address this, APHA agreed that ATTs could observe and record these reactions in any test, not just their own, and they could travel to areas where these types of reaction are more common in order to meet the requirement.

A post-pilot review including detailed feedback from the veterinary supervisors on this aspect concluded that the total number of reactions required should be maintained at 80, but that the total number of oedematous and circumscribed reactions could be lowered to a minimum of 20 of each (rather than 30) without compromising standards.

Feedback was very positive from farmers who praised the ATTs for their high-quality TB testing, professionalism and cattle handling skills. Feedback from ATTs, supervisors, practices and farmers indicates that farmers were very accepting of the role, impressed with the high standard of training and requested that ATTs return to carry out future testing. There was only one report of a significant challenge regarding a test result which required the supervisor to attend the farm.

Feedback from veterinary supervisors indicated that the level of supervision required was manageable and that they would be willing to train and supervise further ATTs. Whilst there was some variation in responses, the conclusion was that in order to perform the role to the required level, the maximum number of ATTs for which a supervisor has main responsibility should not exceed two and only one of those should be in training at any given time. Some supervisors commented that the ATT role improved their job satisfaction both in terms of having a supervisory role and also in being able to concentrate on more clinical work once the ATT was able to test without direct supervision.

Following a review of the pilot, APHA recommended that the use of ATTs to be rolled out more widely in England, subject to certain conditions. Those conditions are required to provide assurance that the standards of QA and supervision of ATTs are maintained through ongoing monitoring and management by APHA. This recommendation was fully supported by the Defra TB Strategy Board and has subsequently received ministerial approval.

There are several new processes that need to be implemented before ATTs can be used more widely. In order to ensure a smooth transition, and so that APHA can continue to closely monitor ATTs, it is essential that all these processes are implemented and fully tested prior to the rollout. It is anticipated that rollout will commence from late 2020.

All veterinary businesses in England, not only those carrying out TB testing for VDPs, will have the opportunity to employ ATTs subject to providing the requirements. ATTs will be permitted to carry out all skin test types with the exception of tests required for any export purposes. Subcontracted or “locum” ATTs will be permitted, but all ATTs must work within a veterinary-led team and meet the strict veterinary supervision requirements.

Full details on requirements and processes will be provided by the end of summer 2020

An APHA OV Briefing Note providing links to a pilot report can be accessed here: apha.defra.gov.uk/documents/ov/Briefing-Note-0520.pdf
Planning and preparing for the exportation of captive birds

There are many things to consider when asked to provide OV captive bird export services

NEIL FORBES

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Never before has the role of the official veterinarian (OV) been so important. With Brexit having been signed off but all procedural changes in abeyance until January 2021, we must be able to show to all importing countries that we are proud to be UK OVs, proud of our role, proud of the quality of our exports and of the diligence with which we complete our role in respect of export certification. Not only Brexit, but with the current turmoil created by COVID, we need the rest of the world to be confident in our ability to control the exportation of contagious and infectious diseases, especially when dealing with species which could have had contact with wildlife species.

As captive bird exports all fall under the Balai Directive (with all exporters being required to be approved or registered), all exportations must be compliant with national and EU animal welfare legislation. As an OV, your responsibility for welfare compliance extends for the whole duration of transit, so all aspects of feeding, watering, rest intervals, transit containers, stop overs and delays in transit are relevant. With all farm animals the necessary requirements are all documented, but in respect of captive birds, it is generally stated “as relevant/appropriate or necessary”, and it will be for you to determine what is appropriate for this species.

As the appointed OV, in respect of a Balai Directive-governed exportation, you are also responsible to certify that the exporter is compliant with their Balai conditions (all birds to be individually identified, to maintain records of all identifications and movements, to report suspicions of notifiable diseases, to comply with disease control restrictions, to only trade in healthy birds and to comply with all national and EU welfare legislation). Captive bird exportation applies to all non-poultry bird exports, both commercial and pet, so some exporting owners will be lay persons with no understanding of testing, certification, disease control, etc. Taking it a step further, under this legislation, what is the definition of poultry? Fowl, turkey, guineafowl, ducks, geese, quail, pigeons, pheasants, partridges and ratites, reared or kept in captivity for breeding, the production of meat or eggs for consumption or restocking supplies of game.

Particular challenges

The trade in UK captive-bred birds is predominantly raptors and psittacines; the trade tends to be very seasonal and time critical – a delay of just 14 days in birds arriving abroad can result in a halving of their value. Exportations tend to comprise low numbers of high-value birds, many of which are also subject to Convention in the International Trade in Endangered Species (CITES), thereby requiring an Article 10 licence (involvement in a commercial activity), an export CITES licence from the UK and an import CITES licence to enter the country of destination. Breeder and importer applications for CITES certificates are in addition to and separate from export and import health applications.

Captive bird exports are sub-divided into psittacines and non-psittacine captive birds. The OV must sign psittacine forms to state that there have been no signs of psittacosis at the breeder’s site in the previous eight weeks (some countries may have specific test requirements), and yet, as the OV, you may not have been there, so this can be challenging. On occasion, one will need to meet the requirements of transit countries, as well as the final import country, which can create yet more challenges.

As stated above, captive birds for export must be captive bred and individually identified (by closed breeders ring applied when the chick is less than 10 days old or identichip). The presence of a closed breeders ring is
taken as proof that the chick was legally captive reared, and yet in the absence of any “evidence of continuity” an identichip cannot prove the same and an additional breeder declaration or other evidence will be required. The OV should be mindful that a closed breeders ring is only acceptable if legitimate, ie it is the correct ring size (so that it could not have been forced onto the foot of an older bird), legible and hasn’t been tampered with, eg expanded, forced onto a leg and then crimped back to size. The OV should be familiar with signs of ring tampering. The export application will need to state the age, sex and speciation of the bird(s); an ability to verify the species and age is important, as it is not unheard of for exporters to attempt to pass off a species (eg that the bird has been on site since hatching, has not required additional laboratory testing or pre-export isolation) as being purebred.

**Welfare in transit**
The OV must (to the best of their ability) assure the birds’ welfare during transit, taking into consideration transit containers, duration of transit, rest periods, appropriate feed and water intervals and temperature tolerances, all the while bearing in mind possible delays in transit, at stops or in clearing customs on arrival. On occasion with valuable shipments, it can be prudent to attach dataloggers to transit containers, but if this is done shipping agents must be informed as they can trigger security alerts. The pre-transit export certification check must be completed less than 48 hours prior to anticipated departure.

**Things to consider before accepting a request to provide OV captive bird export services**
Will the practice certainly have a duly certified (and experienced in that type of bird) OV available on the correct date and time required? Many export consignments will require additional laboratory testing or pre-export isolation (on occasions in midge/mosquito-free accommodation for a period of 90 days). Pre-isolation accommodation inspection may be required before quarantine can commence. It is vital that there is sufficient time to complete laboratory tests and that the tests required by the importing country can be undertaken in the UK. The birds’ identification number must be on the laboratory test submission and appear correctly on the result certificate. Some export certificates are required to be countersigned by an importing country’s embassy or consulate, prior to departure; if so, locating the necessary office, verifying hours of business, etc, is vitally important. Any assurance outside the OV’s own knowledge (eg that the bird has been on site since hatching, has not travelled from/through an area of control for a notifiable disease) will need to be certified by a written declaration by the owner, prior to certification by the OV. It is prudent to inform the breeder of this requirement and correct wording prior to your inspection visit.

**Lifespan of the certificate**
Generally, only one shipment of birds from one breeder can travel on any flight, so shipments of birds can be bumped back a flight and hence unexpectedly delayed. The OV’s authority to sign the form is time-limited (by the 618NDC). The latter tends to have a validity period of 10 to 15 days; if this expires prior to certification, a request in writing to APHA Exports (Carlisle) giving sufficient time for a replacement to be provided is necessary.

**Inspection/examination of birds**
It is essential that the OV verifies the identification of each bird, also inspecting for any signs of infectious or contagious disease, or any other illness or injury which would render the bird unfit to travel. Great care must be taken in catching or handling a bird; a single broken feather will typically result in cancellation of the export.

**Pre-export treatments**
On occasions importing countries will require that a bird is “treated for endo or ecto parasites, using a licensed veterinary medicine, administered in accordance with the manufacturer’s recommendation”. This is a real challenge, as no licensed product will have instructions for the treatment of exotic bird species, hence the OV can not sign off to this effect. In such circumstances, the issue should be raised with the embassy of the importing country, requesting that a dispensation is made or the wording is altered.

**Pre-export planning**
Do not accept instruction unless manpower will certainly be available at the necessary time, taking into account delays or changes in departure time. Open and check papers as soon as they arrive.
Verify pre-export conditions, pre-export treatments, laboratory tests, test methods, laboratory turnaround time and staff availability. Ensure there are facilities to copy the completed certificate (if at the breeder’s establishment).

**Completing certificates**
Always keep your stamp secure. Always sign in a colour other than black, signing and stamping any changes or entries on any APHA-issued export document (do not use your OV stamp on any document not provided by APHA). Do not leave any lines blank or empty: cross them through, sign and stamp. Always return a certified copy to APHA, attaching a note to your copy to confirm it was sent, and file all export certificates, together with all supporting laboratory results and breeder declarations. Forms relating to cancelled shipments must also be returned to APHA. Do ensure that you are paid for the certificate before it is issued to the client/shipping agent. Always ensure that all your actions in completing the export certificate are compliant with the RCVS Guide to Professional Conduct.

If after signing an export certificate, changes are inevitable (eg delayed departure, not all individuals are loaded because of injury or illness), the breeder must contact APHA Carlisle informing them of any changes. In some circumstances the OV will be required to alter (sign and stamp), or sign fresh export forms. ☑
On-farm slaughter and killing

What is the legal framework for making end-of-life decisions, and what are the main principles of killing?

Encountering animals on-farm when euthanasia or slaughter is the only practicable solution to avoid unnecessary suffering is not uncommon in the life of a veterinarian. Knowing how best to approach such cases from a practical perspective and understanding the principles which underpin the methods available will assist decision making, best manage animal welfare and reassure the owner or keeper in sometimes challenging situations.

This first article outlines the legal framework for making end-of-life decisions and the principles of killing for commonly farmed large animal species. A following article (September 2020) will describe practical options available for a veterinarian needing to administer euthanasia or oversee arrangements for slaughter.

The law

The Animal Welfare Act of 2006 requires all persons to not cause, or allow through failure of action, an animal to suffer. It states that it is the duty of the person responsible for the animal to ensure welfare by meeting its needs, including protection from pain, suffering, injury and disease. Where it is no longer possible to protect an animal’s welfare, a person (responsible or otherwise) must ensure that further, unnecessary suffering is prevented. In circumstances where the prognosis, situation or economic pressures rule out treatment, emergency on-farm slaughter or euthanasia is justified as a means to eliminate further unnecessary suffering. The administration of such interventions is not specifically covered by the Animal Welfare Act and may – exceptionally – be actioned or arranged by a constable or inspector, following certification by a veterinarian. However, in most circumstances, the decision to euthanise or slaughter can be made independently by the person responsible – usually the owner or keeper, or following examination by a veterinarian.

On-farm slaughter or euthanasia of farmed large animals can be administered by one of three methods: death by lethal injection, stunning by captive bolt followed by death caused by bleeding or pithing, and killing by free projectile. Lethal injection using controlled drugs is authorised for veterinary use only and likely to be least preferred. The practicalities of administration, cost, route of disposal and intended end use of the animal are all considerations. Animals euthanised by lethal injection are unsuitable for human consumption and cannot be used at hunt kennels.

Depending on route of disposal and intended end use, captive bolt stunning or free-projectile killing may be the best options. If sufficiently competent and authorised (in the case of firearms), any individual may euthanise an animal where it is justified by unnecessary suffering.

Animals intended for human consumption through emergency on-farm slaughter must comply with relevant hygiene (853/2004 and 2017/625) and EC (1099/2009; PATOK) and Welfare at the Time of Killing (WATOK, 2015) regulations, requiring antemortem inspection by a veterinarian and slaughter by qualified personnel. Transmissible Spongiform Encephalopathy (TSE) Regulations 2018 compliance must also be met in relevant species, effectively prohibiting pithing. When killing or slaughtering for human consumption, the operator must also hold either a WATOK licence for on-farm slaughter, or a Certificate of Competence (COC), in the relevant species and method used. Further conditions of WATOK must also be met when performing slaughter, including conditions for restraint, stunning and killing. Practical advice for handling and secondary procedures will be explored in the next article.

Principles

Humane euthanasia or slaughter requires the operator to effect irreversible unconsciousness and subsequent brain death to the animal in a painless manner, thereby avoiding further unnecessary suffering. This can be achieved using free-projectile killing devices, or by using a captive bolt stunning device to render the animal immediately insensible, followed by a process which causes cerebral death, including bilateral severance of carotid arteries (bleeding) or manual destruction of the brain (pithing).

A free-projectile device is identified as either a rifle, pistol or shotgun, where the projectile (a bullet or mass of lead shot) enters the brain separate from the firearm. Captive bolt stunners are an alternative design of firearm, where the bolt – delivering the percussive blow to the skull – is projected from the barrel upon firing, retracting back once completed.

Captive bolt stunners fit into two basic types: penetrating and non-penetrating (Figure 1). Non-penetrating devices use a flat or mushroom-ended bolt which distributes the
percussive force of impact over a larger area and therefore do not penetrate the brain. Conversely, a penetrating captive bolt device houses a bolt with straight bolt; the impact force is therefore imparted over a much smaller area, resulting in the bolt punching through the skull to penetrate the midbrain.

When correctly applied, both methods are highly effective and reliable stunning methods; however, under PATOK regulations, non-penetrating captive bolt devices must not be used for ruminants over 10kg, or pigs. In practice, this means that they are prohibited for on-farm slaughter of ruminant species, if they are destined for human consumption.

The critical element in achieving a painless stun or kill is speed of induction to irreversible unconsciousness, achieved by producing brain dysfunction. Brain dysfunction must therefore occur faster than the animal is able to perceive the application of the method. The measured speed of afferent nerve impulses following sensory input is 100 to 150ms; therefore, any method which can achieve brain dysfunction in less time will render the animal immediately insensible.

Captive bolt devices and free projectiles cause brain dysfunction by energy imparted on the skull causing differential acceleration of the brain inside the cranial cavity. This is equivalent to a profound concussion. Brain movement inside the skull also produces contrecoup haemorrhages and shearing forces within its matter, leading to a deep state of unconsciousness which is often irreversible. The energy imparted on the skull on impact is related to the velocity of the bolt or projectile (Figure 2).

For the most effective transfer of energy upon impact with the skull, the bolt or projectile must impact trabecular bone directly overlying the brain surface. Optimal stunning and killing positions for each species exist (Figure 3) and will be discussed in the second article. Animals with thicker skulls require greater generation of kinetic energy upon impact to achieve the same effect on the brain. Therefore, the exit velocity from the gun must be higher, requiring use of a more powerful cartridge. Manufacturers of both captive bolt and free-projectile cartridges offer a range of cartridge powers, allowing effective stunning or killing of all species, age ranges and breed differences. When using captive bolt devices, following the manufacturer’s recommendations for cartridge power selection is essential. A wide range of free-projectile cartridges are available so some simple power calculations are needed to estimate muzzle energy and velocity to select the combination which will achieve the required muzzle energy of over 200J.

What makes both captive bolt and free-projectile devices so effective at delivering an immediate stun or kill is their speed. When using a free-projectile killing device, the shot or bullet will be travelling at 200 to 450m/s (model and cartridge dependent). Immediate irreversible unconsciousness will follow on impact and brain death from the subsequent destruction of brain matter by the travel and expansion of the projectile upon entry will occur in a fraction of the time required for sensory perception.

Equally, a captive bolt travelling at roughly 50m/s will cause brain dysfunction and unconsciousness from the force of impact in 1.5ms – 100 times faster than the animal is able to perceive its application. When using a penetrating device, the bolt trajectory into the midbrain will cause further mechanical destruction, lessening likelihood of recovery. Nevertheless, this method does not reliably result in brain death and must be followed immediately by a process which does: either bleeding or pithing.

Effective stunning or killing is recognised by immediate loss of posture, absence of rhythmic breathing and fixed glazed expression, followed by a degree of uncontrolled kicking and paddling. Eye movement, corneal reflex, incorrect body posture and presence (or return) of rhythmic breathing indicate a failed stun or kill, or recovery. The animal must be immediately re-stunned or -shot, in a position just above and to the side of the first shot, and signs of unconsciousness reassessed.

Following assessment of an effective stun, secondary processes must be performed to elicit brain death: bleeding or “sticking” interrupts blood supply to the brain, which varies between species due to anatomical differences in the vertebral blood supply to the circle of Willis. In the case of bleeding, brain death will occur after 14 seconds in sheep (Wotton and Gregory, 1986), 18 seconds in pigs (Gregory and Wotton, 1984a) and 55 seconds in cattle (Gregory and Wotton, 1984b). Animals must be monitored for signs of recovery during the process. Pithing, using a reusable or disposable “cane”, requires insertion of the rod through the captive bolt hole, rotating it inside the cranial cavity to disrupt brain and spinal cord architecture, resulting in immediate brain death.

Following brain death by whatever means, the animal must be promptly transferred to either an abattoir or fallen stock handling establishment, dependent on its intended use. The next article (September 2020) will cover practical applications of the principles of welfare at slaughter and euthanasia, ensuring – via careful preparation and management – that unnecessary suffering is avoided and human safety is protected.

A full reference list can be found online.

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KE = \frac{1}{2}mv^2
\]

**Figure 2** The energy imparted on the skull on impact is related to the velocity of the bolt or projectile; here KE is the kinetic energy, m is the mass of the bolt projectile and v is its velocity.

**Figure 3** There are optimal stunning and killing positions for each species.
Farm animal wound management

Wound management is a day one skill for farm animal vets and there are many aspects to consider

Wound management is a part of everyday life as a farm vet. This article aims to cover wound management practices and promote reflection on standard operating procedures, as well as provide guidance for new graduates. Wounds will be classified into two main sections: traumatic or elective.

**Traumatic wounds**

History taking is an essential part of wound management before treating in accordance with Esmarch’s principles (Box 1).

It is important to ascertain:

1. When did this happen?
2. Where did this happen?
3. Haemorrhage?
4. Any other issues? Examine the rest of the animal to ensure an obvious problem has not been missed (e.g., fracture)

It is important to secure the animal safely (Figure 1) and foot trimming crushes are ideal for wound repairs; the belly band provides support and it is easy to lift a leg to prevent kicking. Sedation can be helpful, but alpha-2 agonists, such as xylazine, may not work well if the animal has high levels of adrenaline circulating. Care must be taken to avoid recumbency in a crush.

**Haemostasis**

With severe haemorrhage, temporary ligation using haemostats or flutter valve tubes as a tourniquet can be useful for achieving haemostasis and visibility. For udder cleft lesions, sometimes haemostasis can only be achieved with primary closure of the wound using tension-relieving patterns such as mattress sutures.

**Local anaesthetic**

Line blocks are most common, but inverted L blocks are useful for wounds on the flank as well as intravenous regional anaesthesia for foot wounds. For teat surgery, a four-point teat block is very effective.
It is important to remember that goats are sensitive to local anaesthetic so it may be necessary to dilute in sterile water to avoid signs of toxicity. Harwood and Mueller (2018) quote a maximum dose of 6mg/kg for lidocaine hydrochloride 2% and report no toxic side effects seen at 15mg/kg for procaine hydrochloride 5% (no maximum dose available for this product).

To clip or not to clip
Clipping is good practice to reduce foreign material that may interfere with wound healing. Animal temperament, poor handling facilities and a need for a fast closure may be the deciding factor.

Debridement
Debridement is very important to aid wound healing. Use of either gauze swabs or a scalpel blade work well, but some cases will require resection of necrotic tissue. The depth of the wound should be assessed and bone fragments removed where possible to aid wound healing (Figure 2).

Contamination
Chlorhexidine and povidone iodine, used at dilute concentrations of 0.05% and 0.1% to 1% respectively, are two commonly used disinfectants (McCaghteryx and Woods, 2018). At higher concentrations, there are risks of cell damage and delayed wound healing (Anderson, 2009; Faria et al., 2009). Chlorhexidine has a higher bactericidal effect than povidone iodine and has some residual activity even after irrigation (Sanchez et al., 1988). Sterile saline is indicated for wound lavage but is often not used due to cost and limited...
space in farm vet’s vehicles to stock multiple bags. Saline forced through a 60ml syringe with an 18-gauge needle will reach the required pressure to dislodge bacteria, but pressure significantly higher than this will force bacteria deeper into the tissue (Fubini and Ducharme, 2017). Warmed fluids will increase the circulation to the area, in turn aiding wound healing. Heavily contaminated wounds will need plenty of irrigation (Figure 3) and if unable to clean thoroughly, wounds should be allowed to heal by secondary intention.

Closure times
The general rule of thumb is that wounds less than 12 hours old can be closed by primary intention: skin edges closed with sutures or staples. Wounds more than 12 hours old should be left open to heal by secondary intention (Figure 4). If in doubt, don’t close! Wounds on teats should only be closed if less than 12 hours old (Figure 5) (Fubini and Ducharme, 2017). However, the prognosis worsens if over four hours old (Roberts and Fishwick, 2010).

Dead space
Placement of drains helps prevent build-up of fluid if closure of dead space is not possible (Figure 6). Gauze swabs or rectal gloves are handy methods of keeping wounds open to allow for drainage.

Antibiotics
Topical antibiotics are a common tool at present for wound management. The use of metal-based sprays, such as aluminium, as an alternative is becoming increasingly popular. If there is a risk of certain infections (eg treponemes), then antibiotics are indicated.
Systemic antibiotic usage should be based on the following: level of contamination, level of foreign material in the wound, duration of time since wound occurred and appropriate use of antibiotics.

Generally, long acting preparations of penicillin are convenient and antibiotics such as amoxicillin clavulanic acid are useful for beta-lactam resistance. Long acting preparations of amoxicillin do not reach as high a concentration in the serum as short acting preparations (Delis et al., 2009), so initial use of a short acting followed by a long acting antibiotic may be beneficial. Florfenicol is a useful antibiotic in wound management as it has good penetration of synovial fluid (Jones et al., 2015).

Further treatments
NSAIDs should be given to aid with wound healing and pain management. Fly prevention should be used during the warmer months. Bandages are useful but do require frequent changes to prevent increased risk of infection from soiling and are perhaps underutilised in farm animal wound management.

Elective wounds
Elective wounds are much easier to manage as the animal can be clipped and aseptically prepared prior to incision, wounds are easily closed or deliberately left open to drain (eg calf castrations). It is always important to ensure that your surgical technique is in line with Halsted’s principles of surgery (Box 2).

Aseptic technique
Farm vets have a level of aseptic challenge in the farm environment. Drapes and surgical gloves can help minimise levels of contamination. In cases where contamination occurs during surgery (eg foetal fluid during C-sections), lavaging of the abdomen is indicated. Saline lavage of the closed uterus is best practice for removal of blood clots.

Where a gauze swab is used instead of saline, there is an increased risk of abdominal adhesion formation (Anderson and Rings, 2009).

Tension relieving
Tension relieving can be done using certain suture patterns (eg mattress). When suturing fragile areas under tension, placing sutures through sections of IV fluid lines can be helpful (Figures 8 and 9).

Dead space
Subcutaneous closure is crucial to avoid seroma and abscess formation and recommended for all large elective wounds. Anecdotally, both for the author and colleagues, less post-operative swelling at the incision site has occurred since routine subcutaneous closures.

Post-operative problems
Common post-operative problems occur if Halsted’s principles of surgery are not followed. Haematomas and haemorrhage, swelling and oedema, and seromas occur when haemostasis, elimination of dead space and tension-free closure are not achieved. These can all increase the risk of wound infection, dehiscence and tissue necrosis.

Wound infection can be a particular challenge, often requiring long courses of antibiotic therapy. For cases with infection present prior to surgery (eg claw amputations; Figure 10) then antibiotic therapy should be started a few days prior to surgery.

References


Action Johne’s: preventing disease by managing risk

With milk producers needing an approved Johne’s disease control strategy, it is important to understand the risks of this disease

Milk producers are asked to submit a Johne’s disease control strategy to their milk buyer and this is certified by their vet. Not just any vet but one who is a BCVA Accredited Johne’s Veterinary Advisor (BAJVA; Figure 1). Some 1,200 individuals have completed the online training and correctly answered the test. This is no easy achievement for those who have developed the strategies and the programme. One of the big issues is that the farmer and his vet need to have a real understanding of risk with this disease. A dramatic statement that “80 percent compliance is 100 percent failure” has eased into the veterinary psyche.

Working with dairy farmers to reduce the risk of Johne’s disease requires an element of missionary zeal. Both the farmer and the vet need faith and perseverance because the benefits will not be realised for years to come. Detailed work now to prevent MAP (Mycobacterium avium subspecies paratuberculosis) coming into a herd and spreading within a herd will yield benefits as the calf grows into a heifer and then a productive cow. The work now intends to raise productivity in individuals and the herd for three, four, five, six and seven years hence. Also, turn that awareness around and adopt awareness that the incidence of the disease now reflects management weaknesses or strengths that took place historically.

The 15th International Association for Paratuberculosis Colloquium 2020 was due to take place in Dublin in June, but is now arranged for 6 to 9 April 2021. Pete Orpin has published widely, together with Dick Sibley, on developing a national and practice Johne’s control programme. Pete has been preparing a paper for the meeting that brings together the efforts and understanding of veterinary surgeons, farmers and milk buyers in the UK. It is likely to become essential reading for all involved. Many members of BCVA and those collaborating with My Healthy Herd have already contributed to the knowledge base and there is much to be further understood and appreciated. Hopefully there will be an opportunity for discussion later this year so that UK vets are able to benefit from the lessons learned. Work with Johne’s disease is not standing still and the meetings attended by veterinary surgeons as the BAJVA programme was being run out will have fresh awareness now, to be applied moving forwards.

The clinical issues with Johne’s disease appear to be well understood. The bacteria causes thickening of the intestinal wall which leads to inhibition of the absorption of nutrients, with a range of outcomes from poor productive performance to loss of weight, scour and a bullet. There is no national incidence data but various assessments have indicated that certainly half, and maybe three quarters, of dairy herds are infected. What is more accurately identified are the herds at risk. An awareness of risk indicates that over half of the herds do not have adequate biosecurity and biocontainment. Protecting the herds with a low or nil level of infection is a primary aim of the veterinary activity. Assessing risk has moved on a long way from a simple discussion with the farmer. There are tools available online and there is increasing awareness of the value of the My Healthy Herd approach. This is a commercial assessment tool but also a hand-holding exercise to enable veterinary surgeons to offer fact-based advice to their clients and to continue to monitor progress.

Testing plays a part, but the indications are that relying on a test and cull policy does not control the disease entering the herd and does not prevent the organism from circulating within the herd. The milk samples that are taken for milk quality assessment and farmer payment can be ELISA tested for the presence of MAP, with a warning that groups of cows need to be carefully selected to reflect the true incidence of disease. This is an area requiring detailed awareness and the National Milk Laboratory is able to select samples as required. One of the difficulties is the interference with detecting MAP if the herd is being tested for bTB and the MAP sample needs to be taken more than 42 days after the bTB test. For herds being tested for bTB every 60 days, this provides a narrow window and requires detailed attention by vet and farmer.
There are complexities for the farmer in the management of MAP contaminated dung. An infected cow is understood to have peaks and troughs of shedding the organism. The idea that identifying super shedders and culling them will lead to control does not fit the technical awareness. The farmer and his vet need to consider that if there is disease within the herd then any cows may shed the organism at any time. All cows at all times are therefore considered a risk to calves. The whole programme has been described as the need to prevent “dung in mouth”. Infected faeces contaminate the teats, the calf suckles and three years later the impacts start to be realised. Examples of improvements include a detailed awareness of colostrum management, infection within the calving areas and spreading of slurry.

The risk of introducing infection with bought-in cattle has to be addressed and a strict protocol developed. Fortunately the need for dairy herds to buy in replacements is diminished by the use of sexed semen and importing embryos. The Cattle Health Certification Standards (CHECS) allows breeding bulls to be purchased from certified low-risk herds with a long-term testing history of negative test results. The current testing regimes do not enable herds to be classified as JD free.

Participation in the National Johne’s Management Plan is now a mandatory part of the Red Tractor Scheme. Veterinary certification for herds will need to be completed by October 2020 and one of six strategies is to be overseen by the vet. Roughly half of the participating herds in 2019 chose to improve the farm management by breaking the cycle of transmission from cow to calf coupled with strategic testing. Improving the farm management, combined with culling test positives, is suitable for low prevalence herds and was adopted by 30 percent of the farmers.

Herds with no evidence of disease and adopting biosecurity protect and monitor, involving a robust security protocol with surveillance testing, account for 10 percent. Breeding to a terminal sire with no herd replacements, improved herd management without testing and adopting firebreak vaccination that does not prevent infection accounts for the remaining 10 percent of herds. As the 2020 participation data is assessed the figures are expected to change.

The milk buyers are a major mover for change. There are concerns relating to the potential human health risks from MAP and this has helped to drive the adoption of the National Johne’s Management Plan in the UK. This is an important time for veterinary surgeons to interact with their dairy farmer clients and continue to develop the on-farm management of risk from disease. There is a major difference between the farmer agreeing to adopt a protocol, actually carrying out the plan and then realising the benefits. Meetings between farmers unsure about the whole topic and farmers who have successfully adopted disease control are very enlightening. All good vibes as the UK Animal Health Pathway is further developed, with the intention of supporting high animal welfare, to increase productivity and profitability and lead to a reduction in greenhouse gas emissions.
Will online CPD work for me?

CPD as we have known it is currently undergoing an acute Darwinian trial

Distance learning or teaching has been around for many years. It’s been used in some countries when distance to “normal” teaching environments is too great to be feasible as an accepted form of teaching since child education became the norm. With the evolution of the internet and its rapidly increasing availability, this has evolved into “online learning” or “e-learning”.

The COVID-19 period of lockdown and imposed physical isolation has made the global, not just the UK, population explore how they can use the internet to talk to family and friends, socialise, shop and share funny, uplifting or plain wacky thoughts. We’ve laughed together, ranted together and supported each other, online. Now, increasingly, we can learn together.

There are many well quoted benefits to online learning:

- Increased availability: not restricted to certain times
- Increased access: can be done from home
- More time efficient: no need to swap rotas or allow for travel time to attend the course
- More personal: easier to tailor a course to your needs
- Increased access to international experts: no need for CPD providers to pay airfares to hear international experts
- Can be more interactive for some people: some are more likely to interact online than in person as they feel less intimidated

These factors all make online CPD an obvious choice in these times of restrictions and likely long-lasting worldwide social distancing and quarantine requirements. There are downsides, however: to watch high-quality webinars or participate in video conferencing you need a good internet connection, which is not always possible in the evenings in rural areas; a much greater degree of self-discipline and motivation can be required to watch a CPD talk rather than sink onto the sofa in front of the latest box set; and, at the end of the day, it’s not the same as catching up with your mates for the day.

Having said all that, online CPD is here to stay. It can be surprisingly interactive and enjoyable (and I speak as a technophobe with a dislike of computers). If we go back to raw, basic learning objectives, online CPD can teach you an amazing amount of practical skills and practical problem solving.

So, whilst we are continuing to look at how we run practical courses building in social distancing, smaller group sizes, reducing transmission risk and making attended CPD courses safe for delegates, speakers and staff for the future, we’re also taking on this challenge.

This is a huge opportunity for us as a profession to evolve and develop our ways of learning so we can benefit from a global learning experience, using speakers and their knowledge and experience from around the world, as well as locally. We can also easily include overseas vets in our learning community, gathering knowledge from them and discussing how they recognise and approach exotic diseases such as West Nile fever, bluetongue or African horse sickness.

At BEVA, we’ve started running online “Furlough Clubs”. These are directed at furloughed vets with the aim of trying to prevent isolation from work and colleagues, but are open to all BEVA members. They start with a presentation of a case or topic, then we discuss any questions arising from the case and move on to a more open discussion about life as we now know it.

So far, we have covered everything ranging from furloughed DIY projects to the trauma of home schooling, or the likelihood of a vaccine and what ambulatory work will look like in six months. As time progresses and the furloughed proportion decreases, we hope to evolve this into a fortnightly clinical club. We’re also trialling journal clubs in a similar format, as well as working on running interactive CPD on topics that we’d planned as attended CPD courses.

We are lucky to have a bank of over 100 webinars and congress sessions, as well as quizzes, narrated PowerPoints and clinical soundbites to fall back on – these are all free to BEVA members and cover everything from management and business tips, to avoiding client debt, time management, lameness, reproduction, medicine and the latest in how to diet fat field-kept ponies.

CPD as we have known it is currently undergoing an acute Darwinian trial – those who can evolve quickly and innovate will survive and thrive, those who can’t will struggle. One thing is certain, vets and vet nurses are still going to need CPD, possibly more than ever, and we at BEVA CPD will rise to the challenge of providing it.

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Wound management in horses

The healing of any wound is influenced most by its initial management

Wounds are frequently encountered in equine practice and come in all shapes and sizes. Many, based on their location or degree of lameness, require immobilisation, radiographs and referral. A sound knowledge of anatomy is essential to fully appreciate factors which may complicate wound healing. In this article, we will look at management of wounds which are not over a synovial structure or over a bone with accompanying severe lameness which would raise suspicion of a fracture.

Type of injury
How the wound was created will influence the degree of soft tissue damage and the risk of subsequent wound infection (Edlich et al., 1988). Kicks and similar crush injuries will be accompanied by contusions which will result in vessel thrombosis making them more prone to infection compared to sharp lacerations or incisions.

Stages of wound healing
It is important to recognise that different parts of the wound can be at different stages in the wound healing process (Figure 1). This will usually be due to one part being stuck in the inflammatory phase and this is the most common reason for the formation of exuberant granulation tissue. During the cell proliferation phase, wound strength starts to increase but progress is slow, reaching 20 percent of normal tissue strength after three weeks, increasing to 50 percent after three months. This should be borne in mind when advising a return to work following wounds in high motion areas.

Exuberant granulation tissue (EGT)
Horses have a slow and inefficient inflammatory response, even compared to ponies whose inflammatory response is demonstrably swifter and more intense (Wilmink et al., 2003). This leads to a protracted inflammatory phase of wound healing with associated persistence of macrophages which signal to fibroblasts to retain their synthetic role rather than differentiating into myofibroblasts. Anything which potentiates inflammation (eg movement, necrotic tissue, foreign bodies, infection) will therefore predispose to EGT. Such factors must be managed appropriately to reduce the formation of EGT.

EGT should be excised to 1mm below the level of the surrounding skin (Figure 2); whilst bleeding is profuse there are no nerve endings within the EGT. This may need to be repeated during the process of healing. A single application of topical corticosteroid (provided underlying causes of EGT have been addressed) can be very effective in reducing the rate of EGT formation. Delayed skin closure and skin grafting techniques can also be useful.

Initial management of wounds
The healing of any wound is influenced most by its initial management. Prolonged irrigation with tap water (for more than 10 minutes) should be avoided as its hypotonicity will result in cellular swelling (Moscati et al., 1998). A water-soluble hydrogel placed on the wound prior to clipping will prevent hair from becoming adhered to the wound surface. Chlorhexidine at 0.05% (25ml of 2% solution in 975ml water)

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**FIGURE (1)** There are three main stages of wound healing: the inflammatory phase, the cell proliferation phase and the remodelling phase.
or povidone iodine at 0.1% to 0.2% (10 to 20ml of 10% solution in 1 litre water [weak tea colour]) can be used for wound lavage but higher concentrations are cytotoxic (Sanchez et al., 1988). The last lavage should always be with 0.9% sodium chloride solution.

Perineural analgesia is most effective at removing sensation otherwise infiltration of local anaesthetic (mepivicaine) around the wound is another option. Wound debridement removes contaminated or devitalised tissue reducing the requirement for autolytic debridement (and the associated inflammation). Sharp debridement with a scalpel blade is least traumatic but caution should be exercised as it is not always clear initially whether tissue is viable or not, and knowledge of local anatomy is required. Debridement can be repeated or delayed for three to five days to allow distinction between viable and non-viable tissue.

**Suturing**

Skin closure should only be performed if it can be achieved without undue tension (Box 1), with a good blood supply and following scrupulous debridement. Dead space must be addressed; this is most effectively achieved in the field with Penrose drains sutured deep in the wound proximally (with a nylon suture exiting through the skin which can be removed) and exiting at the most dependent part of the wound, ideally though a separate stab incision (Figure 3). This is removed after two to five days; longer placement can generate wound exudate. Other techniques such as meshing the skin (Figure 4) or deep monofilament absorbable sutures can be used to reduce dead space. When required, tension-relieving sutures should be employed; the author prefers the near-far-far-near suture which combines a tension suture, the far portion, and an appositional suture, the near portion. Equally, partial closure can be performed or stents can be applied (Figure 5). All tension-relieving sutures should be perpendicular to the wound so as to not compromise blood supply. Delayed primary closure allows debridement to take place (either surgical or autolytic) alongside a reduction in bacterial contamination with closure performed after three to five days.

**Second intention healing**

The majority of wounds are left to heal by second intention. This will be the case when primary or delayed primary closure cannot be accomplished. The wound surface should be kept moist and as such the wound exudate is purposely left in contact with the wound bed. The wound exudate provides the necessary cells, is rich in growth and chemotactic factors (enhancing the inflammatory response) and enzymes and has some antimicrobial action.

**Dressings**

The author uses a low adherent absorbent dressing on the majority of wounds with cotton wool layers to absorb excess exudate. This can be switched to a semi-occlusive foam dressing once a healthy bed of granulation tissue is present as these provide a moist environment and thermal regulation suitable for epithelialisation. In the presence of highly infected wounds, manuka honey impregnated dressings can be effective (Bischofberger et al., 2012). For wounds healing by second intention initially

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**Box (1) Techniques to reduce tension**

- Undermine surrounding skin
- Mesh expanding incisions
- Tension-relieving suture patterns
- Stents
- Partial closure
- Immobilisation
- Skin expanders
Wound management in horses

an occlusive, hydrogel or honey dressing should be used followed by a semi-occlusive foam dressing. The field of wound dressings is huge and a full description of them all is beyond the scope of this article. Nevertheless, be prepared to research and adjust what you use as their different properties can be employed very effectively in different wounds.

Progression of healing
A wound should be regularly monitored to ensure healing is proceeding satisfactorily. Persistent exudate can indicate infection, or the presence of necrotic tissue (eg sequestrum) or foreign body. Other signs of infection include discoloured granulation tissue, oedema, fetid odour, lameness and pain on palpation. A swab for culture and sensitivity should be taken alongside radiography and ultrasound assessment if appropriate. Debridement remains the most effective way of reducing bacterial numbers. Regional perfusion with antibiotics (usually an aminoglycoside) or topical therapy (eg silver sulphadiazine) can also be employed.

Movement is also a contributor to delayed wound healing thus box rest is usually the most appropriate management regime.

Splints or casts should be considered; this can be in the form of a bandage cast. Slipper casts are particularly effective in managing heel bulb lacerations and can be placed under sedation.

Grafts
If a healthy bed of granulation tissue is present but epithelialisation remains sluggish grafts should be considered. Likewise, large wounds that would struggle to heal by any other means should be considered for grafting. There are two basic types of skin graft: pedicle and free grafts. A pedicle graft remains connected to the donor site and therefore does not rely on a healthy bed of granulation tissue at the recipient site. The author most commonly uses these for facial wounds where a communication exists with the underlying sinuses (Figure 6). Free grafts are completely separated from the donor site and transferred to a healthy bed of granulation tissue at the recipient site where new vascular connections must be established. In practice, punch and pinch grafts are most practical; punch grafts are illustrated in Figure 7. Pinch grafts are usually harvested from the area of neck under the mane. A small cone of skin is elevated using forceps or a hypodermic needle with a bent point and excised using a scalpel blade. The grafts are implanted into pockets created in the recipient granulation bed using a number 15 scalpel blade at an acute angle 3 to 5mm apart. One can expect 50 to 75 percent of grafts to survive (Mackay-Smith and Marks, 1968). Full- and split-thickness skin grafts are much larger and require specialist equipment and expertise so are usually performed in referral hospitals.

A full reference list can be found online.
Preventing separation-related behaviours developing in puppies

It is important to prepare puppies for separation from their owners and littermates to minimise any distress

The dog is a social species that has a fundamental drive for social contact (McCrave, 1991). When separated from the dam or litter, puppies engage in a variety of unconditioned behaviours that function to regain social contact (Borchelt and Voith, 1982), including whining, crying and attempting to follow the maternal figure. In the natural environment, these behaviours result in reuniting the young and parent and the distress response ceases (McCrave, 1991; Taylor and Mills, 2007). Dependence on the dam, littermates and nest site develops as a result of the puppies learning to respond to cues in the environment (Appleby and Pluijmakers, 2003). Over time, the stability this provides enables the puppy to explore and interact with their environment, resulting in greater independence. The natural weaning process then further reduces dependence on the dam as she becomes less salient, less responsive and less tolerant.

The term “separation-related behaviour” is used to describe any behaviour that only occurs when a dog is left alone (or when predicting a separation may be imminent) or in the absence of an attachment figure (this may be a human or animal). The behaviour may happen every time they are alone or the attachment figure has departed or may only happen in particular contexts (e.g., when left during evenings or out of routine). Symptoms typically include vocalising, destruction, toileting (either as an involuntary physiological effect of extreme distress or territorial marking to release anxiety), attempts to prevent a person from leaving, panting, excessive salivation, vomiting, self-mutilation, repetitive behaviours, inappetence and complete withdrawal (McCrave, 1991; Blackwell, 2008).

Research has shown that in the UK, between 13 and 29 percent of dogs exhibit signs of separation-related behaviour (Casey, 2013; Ballentyne, 2018), but these figures only include owners who recognise symptoms. There are many owners who perceive their dogs to be relaxed when left alone, yet one study found that 80 percent of dogs who showed no active signs of separation-related behaviour did show signs of anxiety and stress when assessed by means of video footage and salivary cortisol samples (Blackwell and Casey, 2014).

Developmental window of opportunity

Dogs have a primary socialisation period between approximately 3 and 16 weeks of age (Freedman et al., 1961; Scott and Fuller, 1965; Fox, 1978) when they are particularly sensitive to learning about social environments and situations which are likely to recur (Bradshaw et al., 2002). This sensitive period becomes less plastic around 18 weeks of age when dogs enter a more independent and fearful stage. Puppies that do not have the opportunity to encounter particular experiences during this period are more likely to develop a fear response to those situations when they are older (Appleby et al., 2002). Habituation can be defined as the process whereby an animal becomes accustomed to environmental stimuli (Bowen and Heath, 2005). It involves exposure to mildly arousing stimuli or environments to allow acceptance of the situation (Mills, 2005).

Puppies need to start learning that being separated is not frightening from around three weeks of age, so it is the breeder’s responsibility to start this process. The time that each puppy is kept away from its littermates should be increased gradually, starting with momentary removal.
Puppies need to start learning that being separated is not frightening from around three weeks of age with immediate replacement in the litter. By building up this process whilst ensuring that the puppy does not show signs of distress, puppies should be in a much better position to continue learning about isolation once in their new homes (Casey, 2016).

Prevention is better than cure
After rehoming, overdependence may be unintentionally reinforced if puppies are not given the opportunity to learn to cope with time away from their new owners (McCrae, 1991). The important principle is for new owners to gradually build up the period that the puppy is left alone, including at night time (Casey, 2016).

A safe area where the puppy will be left alone should include a comfortable bed as well as space for the puppy to rest elsewhere (if they get too hot or want to stretch out, for example). Enrichment in the form of novel items to explore and self-reinforcing activity feeders such as Kongs and LickiMats can be used to create positive associations with this area. Teaching the puppy to settle in their safe space and then gradually building up distance away from them whilst remaining in the home is a sensible starting point. Once the puppy can remain relaxed with the owner moving around the home and out of sight, absences out of the house can be trialled. At night time, owners can start with providing human company and then over the proceeding days/weeks segregation can be implemented. Diffusers exist which reduce signs of stress in puppies left alone (Taylor and Mills, 2007; Gautier et al., 2008).

It’s important to remember that puppies have spent all their lives with their mum and/or littermates and in the only environment they have ever known. Leaving a puppy to cry-it-out can be a precursor for separation-related behaviours, so setting them up for success in the first place so they show minimum distress at night is preferable.  

A full reference list is available online.
Families in dispute

It is important to have a plan to manage any disputes that may arise when running a business with family members.

You can choose your friends but not your family. So, what happens if you run a practice with family – is trouble then guaranteed or will commercial harmony follow?

David Emanuel, chairman and a corporate law partner at VWV, thinks that every family business dispute will be different, but there are common themes, many of which are obvious. The most frequent tend to involve a lack of succession planning which leaves the next generation feeling frustrated or uncertain about what comes next and which of the next generation should be involved; differences over strategic direction – a family-owned lifestyle business or one that demands external management expertise at the expense of family members employed in the business; and different attitudes among or across generations on whether the business should stay in the family or be sold, and who decides.

But other issues can drive a wedge between family members, and some of them, reckons Philippa Dempster, managing partner of law firm Freeths, may be very trivial but can become significant. And money is often the root cause. She says “remuneration can often lead to a dispute if one family member feels that they are not being financially rewarded as well as another, or if they feel others are not pulling their weight in the business but being remunerated the same as those that are taking a key role in driving the business forward”. On top of this is what happens when one family member feels that they are not being included in decision making, however small that decision may be.

Dealing with the issues
As any good lawyer knows, documentation is key. For David, this could include an obligation in a shareholder’s agreement with mediation as a mechanism for resolving disputes. The reason for this is simple – “it is less adversarial, keeps the dispute out of the public eye and will generally be less costly than resorting to court action”. And Philippa agrees, stating that alternative means of dispute resolution is always preferable “because litigation can be expensive and time consuming and is a distraction from the business”. Further, she adds that “if the key players in the business spend time on litigation the business will suffer as a result and the assets of the business start to dwindle as more and more money is spent on legal fees”.

This point is taken up by David. He suggests that if the family doesn’t want to bear the cost of mediation that an alternative “is an independent, respected, family-related figure – perhaps a trusted family lawyer or accountant, who may already be a non-executive director”. But as he explains, “the parties need to be in a frame of mind to mediate for this to have a chance of success. We have worked on family business disputes where mediation was being attempted at the same time as some protagonists were taking it upon themselves to shout at each other on their doorsteps late at night in earshot of their children. Needless to say, mediation was not successful.”

For Philippa, one prime benefit of mediation is that it will be felt outside of the practice – “it serves to preserve the family relationships [precisely] because it is a less aggressive approach to resolving the dispute”.

But before embarking on mediation, she emphasises that it’s important for the parties to know what their legal position is and the strength of that position. “Sometimes,” she says, “individuals can have a skewed view or perspective of their own case, especially when emotions are involved, and this is not helpful for mediation because parties become entrenched in their position.” She believes that by knowing, for example, that a court may not agree with a party’s position from a legal perspective (that it is weak), they will go to mediation with an open mind.

Risk management
The fact that disputes happen is a given, but families can lower the risk of trouble through a family charter which sets out the fundamental principles on which members want to see the practice run, and a shareholder’s agree-
Families in dispute

ment that offers detail on ownership and management rights and responsibilities. For David, these important governance documents can, he says, “help business and family relationships, and give confidence to face future challenges”.

Philippa sees similar value here too. She thinks a formal business plan should be written “so that the parties have some structure and each party is aware of the direction that is proposed for the business... Meetings should always be minuted to avoid misunderstandings down the line, with minutes circulated and if possible, an independent third party present.”

Both Philippa and David think that regular communication is critical. David advocates a “forum for family members to meet, away from home, to discuss family business issues in the context of their respective roles, whether as family member, employee or shareholder”. Philippa recommends openness where “parties can... be open and transparent with one another by, for example, having regular meetings to discuss company finances, business initiatives, staff issues”.

It’s interesting that anecdotaly at least, David says that those family businesses which have remained successful into the second generation and beyond say that business comes first, however difficult that may be in personal terms. But from his perspective, problems don’t necessarily mean that a family member is cast out – “many longstanding family businesses find ways to involve the family through meetings and social occasions even where they may no longer have any association with the business beyond sharing the family name”.

It’s about people too

But what if there’s an irreconcilable disagreement? The solution – end game – will vary from family to family and depends on the priorities of each family member. As Philippa has witnessed, for some “family will always come first and for others money and success may be more important. We do see all too often families falling out over money and in those cases clearly the business is more important.”

But if agreement on business decisions cannot be reached then it is inevitable that one (or more) family members is going to have to exit the practice or it’s wound up. Here, says Philippa, any member wishing to exit will no doubt require payment for their shares – “the business will need to be valued (the same as it would be in any other shareholder dispute) so that the leaving party can either be bought out by the remaining parties or the company buys back the shares at value”.

Of course, business isn’t necessarily about the current generation; it also concerns the future. Protection follows on from bringing in new family members at an early age to help them feel that the practice is very much part of the family. However, as David notes, to work in any business long term they need to have the right skills for their roles. Philippa thinks the same. Her advice is to get younger members of the family into the practice to shadow older family members – she says that it’s “a great way for them to learn what is involved with, and what it takes, to successfully run the business”. But she warns that shadowing alone may not be appealing to the younger generation “so it might be useful to give them small tasks, so they feel that they are contributing. As their confidence and competence grows, they can be given more responsibility.” And just as with the current generation, it is also important to reward hard work so that they feel their contributions are financially worthwhile.

In finishing, David notes that he has seen that “in larger, more established family businesses, the younger generation are often encouraged to find careers and build experience elsewhere, before bringing their external experience back to the family business”.

To conclude

So, while blood may be the strongest bond, it doesn’t guarantee success. The reality is that without a firm basis for good communications, an understanding of how a business is run and, ideally, good documentation, the seeds of destruction can be sown.
Dealing with disciplinary issues

Getting disciplinary procedures right first time requires consideration of best practice and procedure

Running and resourcing a veterinary practice is challenging. Coupled with the shortage of qualified surgeons, it can be increasingly difficult to take time away from clinical work to deal with the day-to-day issues concerning your employees. Frequently, practice owners and management report there are not enough hours in the day or senior resource to support complex staffing issues.

Time keeping and attendance

A common issue our clients experience is staff not turning up for a shift or arriving late. When employees occasionally arrive a couple of minutes late it is not generally a big issue. Prolonged lateness, on the other hand, is different. For practice owners and managers, staff regularly coming in late – or intermittent short-term absence – can have significant time and cost implications.

Repeated instances of lateness should be dealt with firmly and professionally. Set clear expectations with your employees so they understand and comply with this important workplace rule and have a full understanding of what the consequences are if lateness continues to be a problem.

On the topic of shifts, many practices provide their staff with the autonomy to arrange the rota among themselves. This may seem like a great idea in principle but it can give rise to issues around performance and attendance, or could see misconduct matters such as bullying evolve into bigger issues, yet go unnoticed for some time.

The backbone of any sickness management process is a sickness absence policy which makes it clear what is expected of employees and what they can expect when they are off sick. Discuss each incidence of absence through a return to work (RTW) interview, as soon as possible once an employee returns from sick leave. Review the employee’s sickness record before the RTW interview so that you are aware of the current sickness levels and if there is a pattern developing. Check that the correct absence reporting procedure was followed. If not, the employee can be reminded of these requirements. A note should be kept of such conversations as repeated failure to follow the absence reporting procedure may be treated as misconduct and dealt with under the disciplinary policy.

Any period of sickness lasting more than four weeks is usually classed as long term. Good communication is essential in all aspects of sickness management but especially for long-term sickness. Have regular contact with an employee on long-term sick leave to keep up to date on their progress and their expected return to work date, as well as to update them on events at the practice. This will help ease their transition back to work.

Conduct

Dealing with misconduct issues are inevitably always tricky. If you have an employee who’s not meeting expectations, or is not behaving in an appropriate way, you must deal with the issue head-on and make a plan to improve it.

Resolving informally?

Before invoking a disciplinary procedure, you should first see whether the problem can be resolved quickly in an informal way by: privately talking with them and any other staff involved; listening to their point of view; agreeing improvements to be made; or setting up a training or development plan, if it’s a performance issue.

Dealing formally?

Even where you have a valid reason to dismiss an employee, it’s critically important not to pre-judge the outcome and to follow due process. This is where your disciplinary policy is vital. Take all reasonable steps to investigate, explain the allegations to the employee, and give them a right of reply. Consider the employee’s explanation when deciding disciplinary action or dismissal. Offer the right of appeal.

Suspend employees if it is necessary to fully investigate acts of misconduct, but only as a last resort.

Employees should be kept informed of what stage of the process has been reached, and if they are on suspension their suspension should not last longer than is reasonably necessary. The clearer the process, the easier it will be for employers to show an employment tribunal they have followed a fair and reasonable process.

Alternatives to dismissal or formal disciplinary

Try a personal improvement plan: this will really help an underperforming employee understand what is required of them with explicit timeframes and resources. Meet with them on a regular basis to check their progress.

Suggest flexible working arrangements: poor attitude might be caused by a situation at home – do you really need this person to keep a strict shift pattern?

Try mediation: it’s easy to dismiss the person who’s causing most trouble. If you get to the root cause of an argument or disagreement, you might find that two opposing forces may become very strong allies.
Using newsletters in your marketing strategy

Email newsletters can be your cheapest and most effective form of marketing

When it comes to marketing your practice and growing your revenues, you don’t need to make things complicated. There are some simple laws of marketing which always apply in every situation. One of these key laws is that marketing to your existing customers is always more effective than marketing to non-customers.

Why is this?
Your existing customers have already purchased from you, which means that the hardest part of marketing has already taken place and you have gained their trust. Once a customer trusts you, they are more receptive to things you tell them about than someone who has never tried you before. This means that it is vital not to neglect your existing customers when it comes to planning your marketing promotions.

The best way you can inform existing customers of offers that will benefit them is to create a system of email newsletters. Newsletters are a great way to engage with your audience and to bring your business to their attention on a regular basis.

Before you start
Make sure you’re fully clear on your newsletter’s goal and how it fits into your larger marketing strategy. Keep in mind that your goal for the newsletter should be something beyond “how many people opened it”. Instead, it should be more closely tied to your overall business strategy.

Is your newsletter supposed to help you build your brand? Or add value to members of your Pet Health Plan? Whatever your reason, define your goal and let that guide your decisions as to what content you need to include each month.

Make it interesting
Once you’ve defined your strategy, then the next most important thing to bear in mind is that you need to make a newsletter that people want to read! If your email is boring or only about how great you are, then no one will want to read it.

Think carefully before you write. Think about your target customer and what they would like to read about. Make a short plan so that what you’re going to include is relevant and of value to your customers.

Health plans
Many clinics set up health plans and are content to just collect the monthly subscriptions, but there’s so much more you can be doing to give more value to your health plan members.

If health plan members can’t see and feel the benefits of their subscription, they are likely to cancel. By telling them about the special benefits they receive on their plan you reinforce in their minds the reason why they signed up. Give true value to your customers and they will repay you with their repeat custom.

You should be sending out a monthly newsletter to your health plan members. The aim is not to spam people with articles about how great you are, but to share timely and relevant advice to your clients reinforcing the benefits they receive from their plan.

Clients who sign up to a health plan are usually in the top-spending 20 percent of your customers and are your most loyal clients who are also most likely to purchase from you. They value what you have to say and trust your advice for their pets. This offers you a great opportunity, so don’t neglect this incredibly valuable resource!

Keep it simple
You should always keep the word count to a minimum in your newsletter. Don’t be tempted to cram too much in. Two links to interesting pet care articles and one section mentioning health plan benefits is a good ratio to start with.

Instead of including the full text of articles, use the first paragraph from a longer article and add a link through to your website so that people can click through to read the rest.

It’s not advisable to be too pushy about selling either – a good balance for your content should be around 80 percent educational to 20 percent promotional.

Be consistent
If you do decide that newsletters would be good for your practice, be consistent. Give your team a template to follow and make sure you commit to doing one per month. The benefits of being consistent will compound over time and you will be rewarded with the trust of your customers and a corresponding growth in your revenues.
R egular readers will notice that, for the first time in years, my column was missing from the pages of this essential publication last month. To be frank, like many of you I imagine, I was just too depressed and pre-occupied to come up with much to say, other than 800 words on how depressed I was with the whole situation. We had been through various low points, starting with the escalating NHS crisis when it looked like we may exceed capacity, the PM in intensive care, the list goes on. For vets, the closing of businesses and reduction of vets to emergency only was a shock for all of us. The week before we all learned what the word “furlough” means there seemed no alternative but mass redundancies, albeit if only medium term. Like many vets I was put out to grass for a few weeks which meant staying at home locked-in. We did not have it as bad as some other countries in that we were allowed out once a day to exercise, although the threat of suspending that permission was often discussed in the news briefing. The whole country had gone from normal in February to unrecognisable by end of March. GCSEs, A-levels and university exams were all cancelled in one brief sentence from the PM. Our local primary school head described how he received the school closure email the week before he had to shut his school, and how it was the worst day of his career. For those of us running practices those weeks felt similar to us: after years of work to create a practice and build up a team it had all just been stopped. I said to our kids that you don’t want to be living through history, you want to spend your life in those chunks of time in the history books where nothing much happens.

Whole decades where the main news is who won the Olympic medals, or a drawn-out political bickering over Brexit even. But try to avoid living through anything of true significance, like war or global pandemics.

On returning to work, I found my spirits lifted with some return to normality and to find that the practice was still running. Not in a long-term financially viable way, but still treating patients and managing to keep clients at more than the 2-metre regulation distance. We all felt “safe”. That word that now has a new value: “stay safe” being a new way of saying goodbye. Poisoned dogs were treated, fractures fixed and so on. Some sense of normality. We also had to get to grips with the bogeyman of teledicine. My GP friend is a big fan of teledicine and they have gone from about 20 percent phone consults to 80 percent. Of course, the big difference is they can say “tell me where it hurts”. One example of this failing for me was a typical example of a “it’s got something stuck in its throat” tele-consult – a cat with possible dental disease, possible oral foreign body, etc. Between the owner and me we just couldn’t reach a diagnosis so in the cat came. Carrier disinfected and into the practice. Ten seconds into my full GPE it was obviously stomatitis causing dysphagia. Other failings have been a “slightly lame” puppy from the owner’s description that turned out to have a physeal fracture and many catastrophically suffering non-weight-bearing lameness emergencies that trot round the car park and pull on all four feet on the lead. “Off colour” and “not himself” are also difficult to go very far with on phone or video. We have, like the human GPs, stuck mainly to telephone and used email photos a lot. We have access to video consult as well, but it is not much used as none of us are keen to perform in front of the camera and the thought of clients trying to film their pets and talk to you and manage the camera is not appealing. A well-filmed short video clip emailed in, however, is very useful. It has been a different way of working and not very efficient, but it has taught us a lot about communication. It is also useful to have years of experience to draw on; I think phone consults for more recent graduates would be more difficult.

VE day came towards the end of lockdown and served as a distraction and a reminder that things could be worse. On the theme of when not to be born, anyone living through one or even two world wars will be near the top of the list for a difficult life. One interviewee said their relative was in a POW camp in Japan for three years until he was released at the end of the war. Seven weeks and counting of lockdown is bad, but years of separation for that family, and for many others, with no promise of release, puts it into perspective.

We are now poised at the end of the beginning and no one knows what will happen next. Let’s take heart from one campaigner, Colonel Tom Moore: “The sun will shine on you again, the clouds will go away.”
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