ONLINE EDITION VOLUME FIVE | ISSUE ONE | JANUARY/FEBRUARY 2017

## An inconvenient truth

PlacticeToday

FOR PERSONAL & PROFESSIONAL DEVELOPMENT

Simply reflecting on poor socialisation is not enough ...



Feline tooth resorption Recognition, diagnosis and treatment

Exercise-induced pulmonary haemorrhage An overview

Taking a proactive approach The role of disease risk analysis in zoo and wildlife medicine

Motivation It comes from within

THE JOURNAL OF VETCOMMUNITY.COM

# Practice Makes Perfect

PPS have been providing successful solutions to the veterinary profession since 1998.

We are the only consultancy providing financial advice and services exclusively to the veterinary profession.

### VETERINARY BUSINESS CONSULTANCY

Practice Finance & Sales | Wealth Management Partnership and Share Protection | Mortgage Advice Retirement Planning | Employee Benefits

### For a confidential, no obligation chat

**Call 01527 880345** www.pps-vet.co.uk



Professional Practice Services is authorised and regulated by the Financial Conduct Authority.



## **Providing Perfect Solutions**

PPS GI provide a full portfolio of general insurance products and services exclusively to the veterinary profession.

## Veterinary Insurance & Services

- Tailor Made Surgery Insurance
- Locum Insurance
- Equipment Finance
- Private Medical Insurance
- Motor Fleet
- Home Insurance
- Practice Sales & Goodwill Valuations



CALL 01527 909200

WWW.PPSGI.CO.UK



PPS GI is authorised and regulated by the Financial Conduct Authority.

# UP FRONT...

#### 2016 saw the rapid rise of a new phrase - 'post-truth'.

According to the Oxford English Dictionary the word denotes 'circumstances in which objective facts are less influential in shaping public opinion than appeals to emotion and personal belief'. So much for evidence-based medicine then!

The trend towards 'post-truth' has really taken hold since the EU Referendum in June and the election of Donald Trump to the presidency in the US. And ardent 'Brexiteer', Michael Gove, has famously said that, "people in this country have had enough of experts".

Picking up on this point, Michael Deacon, political sketch-writer in *The Telegraph* wrote, 'The so-called experts, of course, will tell you that if you want to fly a passenger jet, you need to have undergone some kind of formal training as a pilot. According to them, this will make everyone's journey "safer".

'Take a closer look at the facts, however, and you'll observe a deeply concerning pattern. Almost every plane that has ever crashed was being flown by a qualified pilot. The logic is indisputable. Qualified pilots crash planes. Therefore, we would be far safer if we were flown by people who have never even set foot in a cockpit before. It's simple common sense.'

The blanket disparagement of experts is a worrying development and should ring alarm bells for us all as veterinary professionals. It runs the risk of undermining the ethical core of our sworn undertaking to ensure the well-being of animals placed under our care.

In this issue of *Veterinary Practice Today*, our 'Comment' article warns of the tragic consequences of potential dog owners ignoring the advice of veterinary experts when choosing a puppy; and Owen Atkinson warns of the enhancement of antimicrobial resistance when cattle farmers and their advisers ignore the latest guidance from experts on the use of antibiotics.

It is all very well for people to have opinions – 'twas ever thus. But when those opinions are misinformed and reinforced by the 'post-truth' phenomenon – invariably promulgated via social media – they become dangerous and downright destructive.

David Watson

Editor

You can receive Veterinary Practice Today by registering your details at www.MRCVS.co.uk and/or www.VNonline.co.uk. Alternatively you can subscribe for £120 per year (plus postage and packing for overseas subscriptions) by emailing subscriptions@veterinarypracticetoday.com

Printed in Great Britain by Swallowtail Print Ltd, Norwich Tel: 01603 868862 www.swallowtail.co.uk

©2016 Vision Media. No part of this publication may be reproduced in any form without the written permission of the publisher. Veterinary Practice Today is a trade mark of Vision Media. All other trade marks are acknowledged.

## **Practice**Today

#### Publisher

Published six times a year by Vision Media, a department of Central Veterinary Services Ltd.

> Elmtree Business Park Elmswell Bury St. Edmunds Suffolk IP30 9HR

Tel: 01359 245310 Fax: 01359 245253 enquiries@veterinarypracticetoday.com www.veterinarypracticetoday.com

#### Editorial

Editors Maggie Shilcock maggie.shilcock@visionline.co.uk Tel: 01359 245310 David Watson david.watson@visionline.co.uk

Associate editor Sarah Kidby sarah.kidby@visionline.co.uk Tel: 01359 245310

#### Design

Graphic designers Melody-Anne Neville Gemma Baker Bradley Young Hanneke Lambert designer@visionline.co.uk

#### Production

Publications manager Clara Ashcroft clara.ashcroft@visionline.co.uk Tel: 01359 245310

#### Advertising

Media and marketing co-ordinator Carole Bloys carole.bloys@visionline.co.uk advertising@veterinarypracticetoday.com Tel: 01359 245310

Subscriptions

subscriptions@veterinarypracticetoday.com Tel: 01359 245310

#### ©2017 Vision Media

All rights reserved. Reproduction, in part or in full, is strictly prohibited without the prior consent of the publisher. The content of this magazine is based on the best knowledge and information available at the time of publication. Every effort has been made to ensure that all advertisements and editorial are correct at the time of going to press. The views expressed by the authors are not necessarily those of the publisher, proprietor, or others associated with its production. © Images used under licence from Shutterstock, Inc. and iStock.com ISSN: 2053-440X



The paper used for the publication is a recyclable and renewable product. It has been produced using wood sourced from sustainably managed forests and elemental or total chlorine free bleached pulp. This magazine can be recycled.



# Contents

## Comment

#### 6

#### COVERSION

An inconvenient truth Quality of life assessment and ethical decision-making are areas that companion animal vets must navigate regularly.



## Small animal

#### 8 COVER STORY

#### Feline tooth resorption

Feline dentistry is challenging owing to the small size of cat teeth and the fact that the oral cavity is difficult to access.





14 Why did the chicken enter the consulting room? Examining domestic fowl is no more or less complicated than examining any other animal that you may be presented with in practice.

22 Mobility clinics Mobility clinics are often one of the clinic formats that practices offer 'later down the line' or fail to promote altogether.

- 24 Nature raw in tooth and claw when animals eat other animals One of the most common enquiries received by the VPIS is the ingestion of anticoagulant rodenticides.
- 27 Insight: Matching and mismatching Why young veterinary graduates are disillusioned and what should be done about it.



## Large animal

30 "I know it is in here somewhere – keeping your car boot organised" As a 'farm vet', your car is not only your vehicle but also your office, out of which you work day and night.

34 Responsible use of antibiotics on dairy farms Looking at the social aspects of

antibiotic supply to dairy farms and practical steps to ensure more responsible use.



40 Large animal on call – a look at the logistics Being well-prepared and well-equipped allows you to concentrate on what matters most – the call!

44 Insight: Optimist or pessimist – the part played by the environment Research suggests pigs can be optimists or pessimists depending upon their environment and personality.

### Equine

**48** Equine worming protocols The damage caused by internal parasites depends on the type of worm, its life cycle, the number of worms present and the health of the horse.

#### 52 COVER STORY

**Exercise-induced pulmonary haemorrhage (EIPH)** EIPH is seen in horses performing a whole range of sporting disciplines.



## Wildlife and exotics

#### 55 COVER STORY

The role of disease risk analysis in zoo and wildlife medicine The effect of disease transmission into a conservation-sensitive species can be catastrophic.

- 60 Dealing with the common injuries of wild hedgehogs in general practice Hedgehog cases commonly presented in general practice and how to identify, triage and treat them.
- 65 Insight: What is an exotic pet? The veterinary surgeon's role in protecting exotics.

### Management

#### 68 COVER STORY

How to have the most motivated team possible

Motivation isn't *done* to someone, it's a feeling that comes from within.

- 70 Client care standards are important We are only as good as our worst employee.
- 72 Lone working and how to manage the risks Employers need to consider what

extra precautions may be required to ensure that 'lone workers' are at no greater risk than other employees.

- 76 Don't let that difficult last consult be the last one with your client too Broaching and discussing the topics of euthanasia and/or palliative care management is difficult for both veterinary professionals and owners.
- 79 Insight: Time to cut loose? The cost of veterinary medicine – daring to be different



## Industry

80 Profile Carolyne Crowe, BSc(Hons) BVetMed(Hons) MRCVS Dip Coaching, Dip Stress. Carolyne Crowe Coaching.



#### David G Parsons BVetMed MSc CertPMP NSch MRCVS

Featured

contributors

After working in mixed practice and in the Poultry Department of the Central Veterinary Laboratory. David set up his own practice

bavio set up his own practice working specifically with poultry, gamebirds and pigeons. In addition to servicing his own client base, David undertakes consultancy work (dgp@ poultryhealthcentre.com) and teaches poultry medicine at the University of Bristol School of Veterinary Sciences.



MA VetMB CertAVP(Cattle) MRCVS RCVS Advanced Practitioner in Cattle Health and Production

Carolyn graduated from Cambridge University veterinary school in 2005,

and then worked in small animal practice for two years. In 2007, she moved to New Zealand to pursue her real interest – farm vetting - spending the next three years in a mainly dairy-focused practice. Carolyn has been at Scarsdale Vets since returning to the UK in 2010, and is their senior farm assistant.



#### Emma Lloret DMV, MRCVS

Emma qualified from the University Cardenal Herrera CEU (Spain) in 2014. In pursuit of her dedication to a career in wildlife medicine, Emma has spent the last two

years working as the veterinary surgeon for the Wildlife Aid Foundation, one of the largest wildlife rescue centres in the UK.



Kirsty Ranson, BVMBVS MRCVS

Kirsty qualified in 2011 as one of the first cohort from the new University of Nottingham School of Veterinary Medicine and Science. This followed an

agriculture degree at Harper Adams University College. During this long stint of study Kirsty spent a lot of years working on dairy farms to fund her studies and spent three months on a dairy farm in New Zealand. Kirsty joined Westmorland Veterinary Group in 2011.

# An inconvenient truth



James Yeates BVSc CertWEL DWEL MRCVS

Dr James Yeates is chief veterinary officer of the RSPCA, RCVS registered specialist in Animal Welfare Science, Ethics and Law, editor of the Journal of Animal Welfare Science, Ethics and Law and previously chair of the BVA Ethics and Welfare Group and honorary secretary of the SPVS.

Euthanasia is an area of veterinary practice where quality of life assessment and ethical decision-making come to the fore, and an area that companion animal veterinary professionals must navigate regularly. In many cases, euthanising an animal that could have been a loving pet is an avoidable ethical dilemma and the hidden, tragic cost of poor socialisation.

![](_page_5_Picture_7.jpeg)

Typically, our role is to determine when an animal's quality of life is so poor that euthanasia – rather than prolonged suffering – would be the most humane and justifiable course of action; and then guide a loving owner towards an informed decision.

For most companion animal veterinary professionals, however, such decisions are not restricted to unhealthy animals. Most of us have been asked to euthanise healthy animals, which prompts different considerations about how to act in our patients' best interests, and can be a source of moral and ethical stress for veterinary surgeons and veterinary nurses.

Recent statistics from the British Veterinary Association (BVA) Voice of the Veterinary Profession survey found that almost all companion animal vets have been asked to euthanise healthy pets, with half (53%) saying this was not a rare occurrence.

Ninety-eight per cent of those who had been asked to euthanise a healthy pet cited the owner's reason as being "their pet's behaviour", supporting the finding of O'Neill and colleagues (2016) that undesirable behaviours are the commonest cause of death/euthanasia in dogs aged <3 years.

Such behaviours reported by owners include persistent barking and howling, destructive chewing and inappropriate toileting, which may all be indicators of animal stress. Aggression, towards both people and other pets, is another problem behaviour that can have serious consequences and was the most commonly reported undesirable behaviour in veterinary primary care clinics (O'Neill et al, 2016).

The PDSA Animal Wellbeing (PAW) 2015 report revealed that a third of pet owners have been attacked or bitten by a dog and we are all familiar with tragic, high-profile human deaths caused by dog aggression.

Undesirable behaviours can cause a breakdown of the humananimal bond, leading to pets being excluded from family life to the detriment of their welfare, relinquished to rehoming centres or euthanised.

#### Source of the problem

Underlying the BVA's *Voice of the Veterinary Profession* survey statistics regarding owner requests for euthanasia because of a pet's behaviour, there are regrettable and difficult circumstances. What is particularly regrettable is that reaching this point is something that, in many cases, could have been avoided by adequate socialisation during the first weeks and months of a young pet's life.

'In many cases, euthanising an animal that could have been a loving pet is an avoidable ethical dilemma and the hidden, tragic cost of poor socialisation"

#### PET OWNERSHIP

"Potential owners need to give serious thought to the animal they are about to bring into their home and into the lives of their families and seek a veterinary professional's advice..."

The socialisation period – as a recognisable developmental period with a significant influence on future temperament and behaviour – is something that needs to be provisioned for from birth. In recent months, there has been a litany of news stories about the illegal importation, breeding and trading of puppies through puppy farms. This is no way for a family pet to start life and veterinary and animal welfare organisations urge potential owners to thoroughly research where a puppy has been born and reared, including ensuring that they see a puppy interacting with its mother.

How puppies are bred and raised has lifelong effects on the puppies and their new owners. Good breeding and care can help ensure puppies have happy and healthy lives; whereas irresponsible breeding and poor care can cause health and behavioural problems in puppies, and stress and expense for owners.

#### Advice upstream

Potential owners need to give serious thought to the animal they are about to bring into their home and into the lives of their families and seek a veterinary professional's advice before acquiring it, giving consideration to the right pet for them, their lifestyle and their family. Veterinary practices should be positioned as places where people think to go soon after the idea of acquiring a pet has been mooted, rather than simply for healthcare advice once a pet has been acquired, or worse, somewhere to go only when a pet is ill or injured.

The source of the pet animal matters and owners need to be extremely careful to ensure that they know exactly the environment in which their pet has been bred and spent its first weeks of life. The Animal Welfare Foundation/RSPCA Puppy Contract and Puppy Information Pack is an important resource for potential owners and has been developed to empower puppy buyers, helping them to avoid the problems that can arise from buying a puppy from an irresponsible breeder.

Puppy buyers can use the information provided by the breeder or seller to make a decision on whether they want to buy the puppy they have seen and veterinary practices should make breeders, owners and potential owners aware of this valuable tool, which is free to download at www.puppycontract.org.uk

"Veterinary practices should be positioned as places where people think to go soon after the idea of acquiring a pet, rather than simply for healthcare advice once a pet has been acquired..." The BVA Voice of the Veterinary Profession survey highlights the importance of adequate socialisation of animals once they have found a home and at an early age. Young animals should safely encounter a variety of people, animals and everyday household sights and sounds in their first few weeks and months of age, beginning at the place where they are born and throughout their new lives with their new family. Many veterinary practices offer well-structured and well-attended puppy socialisation classes to help with this.

#### Tell it as it is

Having been interviewed by several radio stations when the BVA released these figures earlier this year, I know these statistics are a shock to members of the public. People find it hard to understand how anyone could ask for a healthy animal to be euthanised that has the potential to be a loved pet. But this is the sad reality of a failure to adequately socialise young animals.

We should also not ignore the burden that is placed on us as veterinary professionals every day when we are faced with euthanising healthy animals. None of us enters the veterinary profession wanting to euthanise healthy pets, but this is the stressful situation that many of us end up facing because of undesirable behaviours in pet animals.

Most veterinary professionals will explore all options before acceding to a client's wish to euthanise a healthy pet\* - including offering evidence-based behavioural advice, referring to accredited pet behaviourists (such as those registered by the Animal Behaviour and Training Council – www.abtcouncil.org.uk) or assisting with rehoming through reputable rehoming organisations; but sometimes these options are not appropriate, particularly where the problem behaviour makes it extremely difficult to rehome the animal.

We are not required to euthanise healthy animals at an owner's request; yet sometimes, having carefully considered all options and given the circumstances the pet finds itself in, it may be in an individual's best interests to do so.

Sound, ethical decision-making – balancing the interests of owners who are typically struggling – can help veterinary professionals who want to avoid euthanising healthy pets and prioritise the best interests of our patients, in order to reduce the moral stress that can accompany requests to euthanise healthy pets. Nevertheless, in many cases, euthanising an animal that could have been a loving pet is an avoidable ethical dilemma and the hidden, tragic cost of poor socialisation.

#### References

DG O'Neill et al (2016). Undesirable behaviours in dogs: gaining new perspectives from primary-care veterinary clinical data. Recent Advances in Animal Welfare Science V, UFAW

\*BVA members can download the Euthanasia of Animals Guide at https://www.bva. co.uk/workplace-guidance/ethical-guidance/bva-euthanasia-guide

![](_page_7_Picture_2.jpeg)

Susan Thorne BSc(Hons) BVMS MRCVS

Originally from rural Argyll, Susan graduated from the University of Aberdeen with a BSc(Hons) in Zoology in 2006, before continuing her studies at University of Glasgow School of Veterinary Medicine where she graduated in 2013. During her university vacations, she visited Africa several times, studying predators ranging from lions to great white sharks.

After some time in general practice, Susan joined DentalVets in North Berwick on a dentistry and oral surgery residency in 2015, supervised by Dr Norman Johnston.

Her hobbies range from competitive sailing in the summer to skiing in the winter.

![](_page_7_Picture_7.jpeg)

\*Suggested Personal & Professional Development (PPD)

![](_page_7_Picture_9.jpeg)

DENTISTRY

## Feline tooth resorption

Veterinary general practices and hospitals must offer quality dentistry to all their patients. Clients expect professional dental care for their pets that is of a similar standard to that involving their own teeth. There are, however, significant differences in dental care between the species.

Feline dentistry can be very different to that performed on any other species. In general practice this difference is often not addressed, with equipment settings and protocols not being altered between feline and canine patients. The power of a dental scaler, for example, should be reduced to its lowest setting to prevent postoperative sensitivity and damage to the protective enamel. Feline teeth, in addition to being smaller, have enamel that is thinner and less hard than canine teeth (Harvey, 1991).

Feline dentistry is challenging owing to the small size of cat teeth and the fact that the oral cavity is difficult to access. Instrumentation and equipment, therefore, need to be of an appropriate size to accommodate this; so ophthalmic instruments are often used in this regard.

#### **Tooth resorption**

During the last 30 years, the veterinary world has become increasingly aware of dental resorptive lesions in cats. The condition is characterised by a progressive loss of tooth substance (Girard et al, 2008) and was thought to be first identified in the 1920s by Arthur Hopewell-Smith (Southerden, 2010).

In the past, the lesions associated with the condition have been referred to as feline odontogenic resorptive lesions (FORLs), cervical line lesions and neck lesions; but the current accepted nomenclature is tooth resorptive lesions and the condition is termed tooth resorption (TR), www.avdc.org/Nomenclature/ Nomen-Teeth.html#resorption. Apart from periodontal disease, TR is the most common dental disease seen in domestic cats (Reiter et al, 2002; Southerden, 2010).

There does not appear to be a breed or sex predisposition but the incidence of TR increases with age (Gorrel & Larson, 2002; Southerden, 2010). Prevalence rates of 29 to 60 per cent have been reported in the general cat population (Gorrel & Larson, 2002; Gorrel, 2015; Harvey, 1991). This wide range is mainly a consequence of the different cat populations being studied – random cats compared to cats seen specifically for dental treatment; and the different methodology used to identify TR – radiography compared to gross clinical appearance.

Studies using radiography identified a higher prevalence of TR in cat populations than those based on gross appearance of teeth alone.

"Studies using radiography identified a higher prevalence of TR in cat populations than those based on gross appearance of teeth alone"

![](_page_7_Picture_23.jpeg)

![](_page_8_Picture_2.jpeg)

Figure 1. A visible tooth resorption lesion.

![](_page_8_Picture_4.jpeg)

*Figure 4a. Radiographic appearance of TR Stage 3.* 

#### Why does it occur?

The cause of TR is not fully clear. Research indicates that it is a complex disease with several interacting causal factors (Southerden, 2010). Histologic, physical and dietary factors have all been considered as contributing to the high prevalence of TR (Girard et al, 2008) but none has yet been proven.

#### How does it occur?

All cats are thought to develop cemental surface resorption resulting from the continual interaction between odontoclastic and odontoblastic activity in bone and other mineralised tissues. TR occurs as a result of a mainly external root

![](_page_8_Picture_10.jpeg)

Figure 2. Diagram of TR Stage 1.

![](_page_8_Picture_12.jpeg)

Figure 4b. Diagram of TR Stage 3.

resorption process when the hard tissues of the cemental root surfaces are damaged by the activity of odontoclasts (Gorrel & Larson, 2002; Gorrel, 2015).

The destruction of the tooth through odontoclastic resorption is possibly a consequence of early inflammatory resorption, possibly owing to periodontal disease (Harvey, 1991). Any factor that creates abnormal or deficient dentine or cementum could precipitate the development of TR (Gorrel & Larson, 2002; Gorrel, 2015).

TR begins in the cementum of the tooth and will usually progress into the dentine.

"All feline teeth can be affected by TR, although it appears to occur more frequently in the left and right mandibular third premolars"

![](_page_8_Picture_18.jpeg)

*Figure 3a. Radiographic appearance of TR Stage 2.* 

![](_page_8_Picture_20.jpeg)

Figure 5a. Radiographic appearance of TR Stage 4.

It progresses through the dentine, forming resorption channels, and will affect the dentine of the crown as well as the root. The peripulpal dentine is relatively resistant to resorption and the pulp is affected late in the process (Gorrel & Larson, 2002; Gorrel, 2015).

Progression into the coronal dentine increases the fragility of the tooth (Gorrel & Larson, 2002). The process extends through the coronal dentine and eventually reaches the enamel. The enamel will either be resorbed or fractured off causing the classical clinical lesion – a cavity filled with connective tissue (Gorrel & Larson, 2002). This can be seen on clinical examination (Gorrel, 2015) (**Figure 1**).

If a practice does not have dental radiography facilities, these lesions at the cementoenamel junction are the first gross evidence of TR.

![](_page_8_Picture_25.jpeg)

Figure 3b. Diagram of TR Stage 2.

![](_page_8_Picture_27.jpeg)

Figure 5b. Diagram of TR Stage 4.

An understanding of the pathological process shows how they are a form of a latestage lesion.

#### Symptoms

TR is thought to be asymptomatic when the resorptive process remains below the alveolar bone crest and does not affect pulp tissue. It can be intensely painful when lesions are above the gingival margin, open to the oral cavity and environment, when there is pulpal involvement, or when the tooth is mobile.

Classic symptoms of TR are irate chattering movements of the jaw (even when anaesthetised), anorexia, dysphagia, not eating on the affected side of the mouth, halitosis and depression (Harvey, 1991; Reiter et al, 2014; Southerden, 2010). As cats are stoical, the only way to determine how much pain a patient has been

![](_page_9_Picture_2.jpeg)

*Figure 6a. Appearance of TR Stage 5.* 

experiencing is to assess a change in demeanour before and after treatment.

#### Diagnosis

TR can be detected by a combination of visual inspection and with a sharp 'explorer' during an anaesthetised oral examination. This will only identify late-stage lesions when the crown is affected (Gorrel & Larson, 2002; Gorrel, 2015). The only definitive way to diagnose, type and stage TR lesions and to ensure no lesions are missed – is to take full mouth intraoral dental radiographs. This will detect any resorption of the entire root surfaces (Southerden, 2010).

Radiographic changes in teeth affected by TR will be seen as one or more of the following:

- loss of tooth substance
- loss or irregularity of adjacent alveolar bone
   changes in
- dental radiodensity.

#### Which teeth?

All feline teeth can be affected by TR, although it appears to occur more frequently in the left and right mandibular third premolars [307, 407] (Gorrel, 2015). The 307 and 407 can be considered sentinel teeth. If these teeth have evidence

![](_page_9_Picture_13.jpeg)

*Figure 6b. Radiographic appearance of TR Stage 5.* 

of TR, there is a 93 per cent chance that TR will be found elsewhere in the mouth (Heaton et al, 2004). When either – or both – sentinel teeth are found to be affected, full mouth radiographs are advised (Gorrel & Larson, 2002; Gorrel, 2015). A study has shown that TR can be confidently diagnosed in nine out of 10 cats by assessing the TR status in these two teeth (Heaton et al, 2004, Southerden, 2010).

#### Classification

Classification of TR is based on the severity of the lesion, known as the 'Stage' and the position of the lesion on the tooth, known as the 'Type'. Staging ranges from 1 to 5 (1 being mild and 5 being severe). There are three types of lesion, depending on their position on the tooth, and classification of each individual lesion is essential to be able to plan each tooth's treatment.

#### Staging Stage 1

Characterised by mild dental tissue, loss of the enamel or cementum, or both. This stage is difficult to diagnose, even with quality radiographs, owing to the microscopic size of the lesion (**Figure 2**).

"To date there is no definitive treatment that prevents the development, or halts the progression, of TR"

![](_page_9_Picture_21.jpeg)

Figure 7a. Radiographic appearance of TR Type 1.

#### Stage 2

Characterised by moderate dental tissue loss extending through the cementum and into the dentine, but not the pulp cavity. The tooth becomes sensitive if the dentine tubules are exposed. Stage 2 and beyond require some form of treatment, which is determined also by the type of lesion (**Figures 3a** & **3b**).

#### Stage 3

Deep dental hard tissue loss that extends through the dentine and into the pulp cavity. Most of the tooth retains its integrity. Bleeding is evident on probing and spontaneous fracture of the tooth often occurs (**Figures 4a** & **4b**).

#### Stage 4

Extensive dental tissue loss through which most of the tooth has lost its integrity. These teeth are very fragile and prone to fracture (**Figures 5a** & **5b**).

#### Stage 5

Classically, at this stage, teeth have no crown present and only remnants of root dental tissues are visible as irregular opacities. The tooth space has complete gingival covering with often a 'bulge' appearance in the gingiva (Reiter et al, 2002) (**Figures 6a** & **6b**).

#### Typing

Type 1 The tooth will have focal or multifocal radiolucency

![](_page_9_Picture_33.jpeg)

Figure 7b. Diagram of TR Type 1.

but with otherwise normal radiodensity, similar to the normal adjacent tooth (Girard et al, 2008) with a periodontal ligament space present. There is no bone replacement present. There is often a definable pulp chamber present in the intact parts of the tooth (Primer, 2014) (**Figures 7a & 7b**)

#### Type 2

There is a narrowing or absence of the periodontal ligament space and replacement by alveolar bone. These teeth will have a different radiodensity when compared to normal teeth. In late stages there will be little or no discernible root structure present (Primer, 2014) (**Figure 8**).

#### Туре З

The tooth will have features of both Type 1 and Type 2 in the same tooth (**Figures 9a** & **9b**).

#### Treatment

The aim of TR treatment is to prevent progression of pathological features, relieve pain and restore oral function (Reiter et al, 2002). To correctly plan treatment of TR, accurate staging and typing with dental radiography is essential.

To date there is no definitive treatment that prevents the development, or halts the progression of TR (Gorrel, 2015). A proof of concept study showed that alendronate, a bisphosphonate drug used to

![](_page_10_Picture_2.jpeg)

Figure 8. Diagram of TR Type 2.

![](_page_10_Picture_4.jpeg)

*Figure 10a. Image showing envelope flap to expose tooth.* 

treat osteoporosis in humans, can slow or sometimes arrest the progression of tooth resorption in cats (Mohn et al, 2009). However, administration of this drug to cats proved difficult owing to its taste and other logistical problems associated with it.

In 2011, a study associated the use of bisphosphonates with osteonecrosis of the maxilla and mandible in human and canine models. This side effect might well be a consideration for feline patients (Stepaniuk, 2011).

The current methods to treat TR are conservative management, coronal amputation with intentional root retention or conventional extraction techniques dependent entirely on radiographs demonstrating Type and Stage.

![](_page_10_Picture_9.jpeg)

*Figure 9a. Radiographic appearance of TR Type 3.* 

![](_page_10_Picture_11.jpeg)

Figure 10b. Image post coronal amputation with intentional root retention.

Conservative management consists of monitoring the lesions with repeat full mouth radiographs at appropriate intervals. This is only recommended when lesions are subgingival and not communicating with the oral cavity, TR staging is < 3 and the lesions are not visually evident but only radiographically. In general practice, most lesions are diagnosed visually, so conservative management is rarely advised as they are by definition late stage (Gorrel, 2015).

Crown amputation with intentional root retention can only be preformed safely on Type 2 TR lesions, where the periodontal ligament space is absent and the roots have fused to the alveolar bone (Reiter & Soltero-Rivera, 2014). This procedure should only be used when closed or

![](_page_10_Picture_15.jpeg)

*Figure 9b. Diagram of TR Type 3.* 

![](_page_10_Picture_17.jpeg)

*Figure 11.* Atomisation of the mandible.

open extraction cannot be accomplished on teeth with radiographic confirmation of dentoalveolar ankyloses and root replacement resorption (Reiter & Soltero-Rivera, 2014). This technique can be used successfully as it has been observed that root fragments from teeth undergoing Type 2 resorption will often continue to resorb (Reiter & Soltero-Rivera, 2014).

Crown amputation and intention root retention can only be used in teeth that meet the following criteria (Gorrel & Larson, 2002; Gorrel, 2015; Reiter & Soltero-Rivera, 2014; Reiter et al, 2002; Southerden, 2010):

- tooth is not mobile
- no periodontal ligament or pulp chamber present in the retained roots
- no periodontal disease present

- no radiographic evidence of endodontic disease or periapical pathology
- no clinical signs of stomatitis
- patient must be negative for FIV and FeLV, if tested.

The technique involves creating a gingival envelope flap around the affected tooth and performing a coronectomy (crown extraction) and alveoloplasty. The whole of the crown is then removed to the level of the alveolar crest and a slight concavity made to ensure all bone spicules or irregularities have been removed before the envelope flap is sutured closed.

The reduction of the tooth root below the level of the alveolar bone allows a blood clot to form over the remaining root tissue, into which alveolar bone can grow during healing (Reiter & Soltero-Rivera, 2014). If the envelope flap does not allow a clear view of the surgical site, one or two releasing incisions can be made and sutured at the end of the procedure (**Figures 10a & 10b**).

Conventional extraction is used for Type 1 lesions and Type 2 and 3 lesions if possible. Extraction of TR teeth can be difficult as they become brittle and the loss of normal landmarks and structure can make conventional root luxation difficult. Care must be taken to extract as much of the tooth root as possible. Pre- and post operative radiography is helpful if not mandatory. It has been shown that the most common cause of benign mandibular swelling in cats is osteomyelitis caused by retained tooth roots from resorptive lesions (Kapatkin et al, 1991).

Conventional extraction involves creating a mucogingival pedicle or triangular flap and removing the buccal bone plate using a small, round diamond bur to expose the roots, followed by sectioning of multi-rooted teeth and careful root luxation. Narrow slots can be created at the mesial and distal aspects of each root to allow for better luxator purchase, if necessary (Reiter & Soltero-Rivera, 2014).

Extraction of TR teeth can be frustrating but the clinician should never be tempted to atomise retained roots. Severe damage can and does occur to collateral structures. Figure 11 is an example of where the bur has passed through the ventral alveolar canal and, presumably, the blood vessels and sensory nerves of the mandible. Root tip luxators and root tip forceps are available for removal of small retained roots (Reiter & Soltero-Rivera, 2014).

Following treatment repeat full-mouth radiographs are recommended at appropriate intervals, usually every six to 12 months. This will identify any new areas of resorption that require treatment; and is advised because feline TR is a progressive condition that may well continue to develop throughout cat's life. The lesions will continue to develop following initial treatment in some patients and not reoccur in others.

#### Conclusion

Tooth resorption is a disease that confounds and confuses many general practitioners. This article attempts to address some of these concerns when dealing with feline teeth. TR can be easier to treat when the pathogenesis of the condition is understood, correct diagnostic imaging is carried out, and the correct treatment option is selected and performed effectively.

#### Acknowledgement

Images and diagrams by permission of the American Veterinary Dental College (AVDC) and Dr Paul Hobson BVetMed MRCVS.

#### References

Girard N et al (2008) Feline Tooth Resorption in a Colony of 109 Cats. Journal of Veterinary Dentistry 25: 166-174.

Gorrel C and Larsson A (2002). Feline Odontoclastic Resorptive Lesions: Unveiling the Early Lesion. Journal of Small Animal Practice 43: 482-488.

Gorrel C (2015). Tooth Resorption in Cats Pathophysiology and Treatment Options. Journal of Feline Medicine and Surgery 17: 37-43.

Harvey CE (1992). Veterinary Clinics of North America – Feline Dentistry. November 1992.

Heaton M et al (2004). Rapid Screening Technique for Feline Odontoclastic Resorptive Lesions. Journal of Small Animal Practice 45: 598-601.

Kapatkin AS et al (1991). Mandibular Swellings in Cats; Prospective Study of 24 Cats. Journal of American Animal Hospital Association 27(6): 575-580.

Mohn KL et al (2009) Alendronate Binds to Tooth Root Surfaces and Inhibits Progression of Feline Tooth Resorption: A pilot Proof-of-Concept Study. Journal of Veterinary Dentistry 2: 74-84.

Primer A (2014). Feline Dental Radiography and Radiology. Journal of Feline Medicine and Surgery, 16: 887-899.

Reiter AM and Soltero-Rivera MM (2014). Applied Feline Oral Anatomy and Tooth Extraction Techniques, An Illustrated Guide. Journal of Feline Medicine and Surgery 16: 900-913.

Reiter AM et al (2002). Feline Odontoclastic Resorptive Lesions An Unsolved Enigma In Veterinary Dentistry. Veterinary Clinical Small Animal Clinics 32: 791-837.

Stepaniuk K (2011). Biphosphonate Related Osteonecrosis of the Jaws: A Review. Journal of Veterinary Dentistry 28: 277-281.

Southerden P (2010). Review of Feline Oral Disease. In Practice (February 2010) 32: 51-56.

## National Veterinary Data Service

![](_page_12_Picture_1.jpeg)

## A complete lost and found service for your clients

![](_page_12_Picture_3.jpeg)

To find out more about this service please email: enquiries@nvds.co.uk or visit: www.nvds.co.uk

![](_page_12_Figure_5.jpeg)

NATIONAL VETERINARY DATA\_SERVICE

![](_page_13_Picture_2.jpeg)

David G Parsons BVetMed MSc CertPMP NSch MRCVS

In 1985, David set up his own practice working specifically with poultry, gamebirds and pigeons. This followed two years in mixed and cattle practice, four years as a research officer in the Poultry Department of the Central Veterinary Laboratory and four years as an assistant company poultry veterinary surgeon.

In addition to servicing his own client base, David undertakes consultancy work (dgp@poultryhealthcentre. com) for specialist poultry practices and pharmaceutical companies, and he teaches poultry medicine at the University of Bristol School of Veterinary Sciences.

![](_page_13_Picture_6.jpeg)

\*Suggested Personal & Professional Development (PPD)

![](_page_13_Picture_8.jpeg)

DOMESTIC FOWL

# Why did the chicken enter the consulting room?

Examining domestic fowl, now commonly referred to as chickens, is no more or less complicated than examining any other animal that you may be presented with in practice. The lack of familiarity with the species is your opportunity to confirm that your application of the basic techniques for clinical examination, combined with your knowledge of disease, allows you to assess the health or otherwise of the patient and plan a course of action.

Healthy chickens can cope with being handled and transported to shows or market. This may not be the case for the unhealthy bird that will be more susceptible to the stresses of being caught, transported and clinically examined.

Advise the owner to catch the bird as quietly and calmly as possible. Transport it to the surgery in a container that is well ventilated, maintains a comfortable temperature and provides adequate support – so, a plastic cat carrier is preferable to a cardboard box with ventilation holes.

In spite of our best efforts, the severity of the illness may have been underestimated and the additional stress may result in death whilst travelling to, at, or from the practice.

#### Initial approach

Coles (1985) reminds us that an appreciation of the knowledge, expertise and powers of observation of the owner are crucial to our decision-making. Chickens, as with other birds, are experts at disguising signs of ill health. The experienced and observant owner is more likely to present a patient that may appear clinically normal or perhaps a little under the weather. Conversely, the new owner may not notice anything untoward until the bird is very close to dying.

Obtaining a good history is essential. You need to know the purpose or purposes for which the bird(s) are kept - as pets, for food, breeding, sale or showing.

Are the birds considered to be organic? Flocks of chickens supplying organic eggs or meat will be registered with an organic association. They will be inspected annually to ensure that they meet the association's organic standards, which as a minimum will be those laid down in EU legislation (About Organics, 2016, Council Regulation (EC) No 834/2007). Three hens in a back garden and fed on organic feed may be considered to be laying organic eggs by the owner but are unlikely to be regarded as such in law. However, if

the flock is considered to be organic, then it would be prudent to apply organic withdrawal periods for any treatments administered under the Cascade.

Check that you have understood the reason for bringing a bird (or birds) to you for examination. It is not unusual for the problem to have been sporadic deaths over the last few weeks or failures to hatch. The birds and the eggs have been discarded and you are expected to determine the cause of the problem from the healthy survivors!

Other questions that you should ask are listed in the Backyard Poultry Case History

**Figure 1.** A modern plastic, insulated Eglu chicken house for three chickens in an enclosed run (1 = feeder, 2 = nipple drinker, 3 = position of nest box).

![](_page_13_Picture_24.jpeg)

![](_page_14_Picture_2.jpeg)

*Figure 2.* A standard wooden chicken house for three chickens in a very large enclosed run. (1 = drinker, 2 = nest box, 3 = bark bedding).

sheets. The answers will enable you to visualise how the patient is kept (**Figures 1** & **2**), suggest additional questions, and guide you to the potential source of the problem.

#### **Examination**

The most common reasons for bringing chickens to the practice – with the exception of euthanasia – are listed in **Table 1**, along with some possible causes.

There are many breeds of chicken, including large fowl, bantams derived from large fowl, true bantams, game, popular coloured egglaying hybrids and rehomed commercial hybrids (**Figures 3** & **4**). Your idea of a chicken may be similar to the light Sussex pullet, bright red comb, wattles and facial skin, tight sleek plumage, white skin, clean legs and four toes.

A guide to some of the variations in combs, feathering and bodyweights you may encounter are given in **Table 2**, adapted from Hams (2012). Whether you remove the bird from the carrying box, or the owner does, will depend on the circumstances. In hot weather, taking the bird from the box yourself will allow you the opportunity to gauge the temperature in the box, observe open-mouth breathing and feel how warm the bird itself is when picked up.

Allowing the owner to remove the bird gives you the opportunity to assess his or her competence as a poultry owner and a guide as to how frequently the birds are handled - and how well. In either case, always make sure the bird is removed - and placed into - the carrying box, head first. Do not pull it out by head, neck, wing or tail. Whenever possible, simply use your hands to cup the wings against the body, holding gently but firmly and place the bird on the consulting room table.

Many birds will just stand and examine their surroundings, giving you the opportunity to examine their plumage cover, carriage of the head, neck,

![](_page_14_Picture_12.jpeg)

*Figure 3.* Silkie showing crest, black skin and feathered legs.

tail, wings and breathing. Some may fly off the table but, providing you have all doors and windows shut, catching them again will not be difficult.

With the bird standing, preferably at one end of the table for ease of access, a veterinary nurse can place her or his hands over the wings with the head facing them to gently restrain them. Lift the tail and carefully insert the thermometer through the vent into the cloaca (**Figure 5**). Chickens have a high normal body temperature range, 40-42°C (**Table 3**) and a thermometer that reads up to 43.9°C will be required.

Birds have non-distensible lungs and no diaphragm. Auscultation of the thoraco-

![](_page_14_Picture_17.jpeg)

*Figure 4.* Silkie chick recently hatched – note its five toes.

abdominal contents, left and right sides and thoracic inlet, can reveal cardiac and respiratory sounds over a large area and further caudal than might be expected. Pinpointing precisely where specific sounds originate can be difficult. The relative positions of the heart, lung and viscera in a 16-week-old meat-type breeder pullet are shown in **Figure 6**.

Turn the bird around and, starting from the head, complete a thorough physical examination and fill in the case history sheet.

**Figure 7** shows the normal head of an older and moulting Brahma cockerel. Gently tilting its head back up to a vertical position will allow the mouth to be opened. Place a

Figure 5. Cloacal temperature being taken in a guinea fowl.

![](_page_14_Picture_23.jpeg)

Problem area	Description of problem	Possible causes
Abdominal/ alimentary	General: loss of appetite, picking at feed, excessive drinking, poor growth, damage to the beak and mouth, distended crop and abdomen, abnormal swellings or growths, blood in mouth, straining, pasty vent, prolapse from vent. Faeces: abnormal colour, presence of blood, frothy diarrhoea, the presence of undigested food in droppings, loose green droppings, loose white droppings, soft droppings, white diarrhoea, watery diarrhoea.	<ul> <li>Infectious</li> <li>virus: avian pox, Marek's disease, tumour viruses</li> <li>bacteria: avian tuberculosis, <i>Clostridia</i> spp. (necrotic enteritis), <i>E.coli</i> (egg peritonitis / salpingitis), <i>Enterococcus</i> spp. (endocarditis), salmonellosis, <i>Yersinia pseudotuberculosis</i></li> <li>fungi/yeast: Candida albicans</li> <li>protozoa: Eimeria spp., Histomonas meleagridis, Spironucleus meleagridis, Trichomonas gallinae</li> <li>nematodes and cestodes.</li> <li>Non-infectious</li> <li>Ascites, crop full of feed, fatty liver, feed change, foreign bodies, hernia, impactions (crop, gizzard, intestine), overgrown beak, pecking (crop, vent), pendulous crop, prolapse cloaca/oviduct, too hot/cold, tumours, vent gleet, visceral gout, vitamin deficiency.</li> </ul>
Behaviour	General: aggression, feather pecking, pecking, predation.	Infectious  • virus: tumour viruses • bacteria: <i>E.coli</i> , staphylococcal and streptococcal secondary infections • nematodes and cestodes. Non-infectious Boredom, incorrect perches or flooring, introduction of new birds, moulting, overcrowding, predators (badgers, foxes, rats, crows, seagulls), sick birds being picked on.
Integument	General: small comb, feather loss, genetic baldness, premature moulting, ruffled feathers, self- inflicted peck damage. Eye: closed, encrustations, eyelids stuck shut, watering, swelling around the eye. Beak: crossed, damaged, distorted or deformed, under or overshot. Skin: change in colour, pale, red, purple, blue or yellow, faeces and/ or urates on skin under the vent. Feet and legs: lost toenail, damaged spur, scales raised, thickening between scales, distorted or deformed nails, swollen feet.	<ul> <li>Infectious</li> <li>virus: avian influenza, avian pox, Marek's disease, tumour viruses</li> <li>bacteria: abscesses, 'bumble foot', <i>E.coli</i> (cellulitis)</li> <li>fungi/yeast: <i>Trichophyton</i> spp.</li> <li>mites/lice: feather and scaly leg mite, northern fowl mite, Red mite, body and slender lice.</li> <li>Non-infectious</li> <li>Abnormal feathers, aggression, ascites, chilling, contact dermatitis, fly strike, feather pecking, frostbite, heat stress, mating damage, moulting, overcrowding, overgrown beak, starvation, suffocation, ticks, too hot/cold, vitamin deficiency, water shortage.</li> </ul>
Locomotor	General: hunched up, reluctant to move, weakness, unable to stand, perch or fly, loss of grip, squatting, fall on side. Wing: drooping wings, fluttering, wing walking. Legs: Lame, limping, paddling, sitting on hocks, walk backwards, shaking or quivering legs when standing, twisted, splayed or bow-legged, swollen joints, digits, 'bumble foot'.	<ul> <li>Infectious</li> <li>virus: Marek's disease, Newcastle disease, tumour viruses</li> <li>bacteria: avian tuberculosis, <i>Clostridia</i> spp. (necrotic enteritis), contact dermatitis, <i>E.coli</i> (cellulitis), salmonellosis, staphylococcal and streptococcal infections, <i>Yersinia pseudotuberculosis</i></li> <li>fungi/yeast: <i>Aspergillus</i> spp.</li> <li>protozoa: <i>Eimeria</i> spp.</li> <li>mites/lice: scaly leg</li> <li>Non-infectious</li> <li>Ascites, chilling, egg bound, foot injuries, frostbite, heat stress, hypocalcaemia, incorrect perches or flooring, mating damage, obesity, osteoporosis, poisoning, predation, rickets, senility, visceral gout, vitamin deficiency, water shortage.</li> </ul>

#### Table 1. Common reasons for bringing chickens to the practice, together with possible causes

Problem area	Description of problem	Possible causes
Mortality	General: sudden death, sporadic mortality.	<ul> <li>Infectious</li> <li>virus: avian influenza, avian pox, infectious bronchitis, infectious laryngotracheitis, Marek's disease, Newcastle disease, tumour viruses</li> <li>bacteria: avian tuberculosis, <i>Clostridia</i> spp. (necrotic enteritis), <i>E.coli</i> (egg peritonitis/salpingitis/yolk sac infection/omphalitis), <i>Enterococcus</i> spp. (endocarditis), salmonellosis, <i>Yersinia pseudotuberculosis</i></li> <li>fungi/yeast: Aspergillus spp., Candida albicans</li> <li>protozoa: Eimeria spp., Histomonas meleagridis</li> <li>nematodes and cestodes</li> <li>mites/lice: red mite.</li> </ul>
		Non-infectious Aggression, ascites, cannibalism, chilling, crop full of feed, drowning, egg bound, fly strike, foreign bodies, frostbite, heat stress, impactions (crop, gizzard, intestine), mating damage, overgrown beak, pecking (crop, vent), poisoning, predation, prolapse cloaca/oviduct, starvation, suffocation, too hot/cold, vent gleet, visceral gout, vitamin deficiency.
Neurological	General: circling, falling over, lethargy, sleepiness, listlessness, convulsions and fits, head/ neck tremor, head tilt, paralysis, staggering, star gazing.	<ul> <li>Infectious</li> <li>virus: avian influenza, Marek's disease, Newcastle disease, tumour viruses</li> <li>bacteria: salmonellosis, Yersinia pseudotuberculosis</li> <li>fungi/yeast: Aspergillus spp.</li> <li>Non-infectious</li> <li>Ascites, hypocalcaemia, poisoning, predation, senility, vitamin deficiency, water shortage.</li> </ul>
Reproductive	<b>General:</b> failure to come into lay, fewer eggs, soft-shelled eggs, loss of shell colour, not hatching.	<ul> <li>Infectious</li> <li>virus: avian influenza, avian rhinotracheitis, infectious bronchitis, infectious laryngotracheitis, Marek's disease, Newcastle disease, tumour viruses</li> <li>bacteria: <i>E.coli</i> (egg peritonitis/salpingitis), mycoplasmosis, salmonellosis.</li> <li>Non-infectious</li> <li>Chilling, decreasing day length, egg bound, emaciation, foot injuries, heat stress, mating damage, moulting, not laying in nest box, poisoning, predation, senility, theft, too hot/cold, vent gleet, vitamin deficiency, water shortage.</li> </ul>
Respiratory	General: head-shaking, scratching beak/nostrils, rattling, gurgling, coughing, sneezing, 'snicks'. Head: swollen. Eye: closed, froth in anterior canthus. Nostril: clear or dirty discharge. Beak: dribbling.	<ul> <li>Infectious</li> <li>virus: avian influenza, avian pox, avian rhinotracheitis, infectious bronchitis, infectious laryngotracheitis, Newcastle disease, tumour viruses</li> <li>bacteria: avian tuberculosis, <i>Clostridia</i> spp. (necrotic enteritis), <i>E.coli</i> (egg peritonitis/salpingitis/yolk sac infection/omphalitis), infectious coryza, mycoplasmosis, salmonellosis, <i>Yersinia pseudotuberculosis</i></li> <li>fungi/yeast: Aspergillus spp., <i>Candida albicans</i></li> <li>protozoa: <i>Trichomonas gallinae</i>.</li> <li>Non-infectious</li> <li>Aggression, ammonia, ascites, crop full of feed, dust, foreign bodies, heat stress, high humidity, impactions (crop), poisoning, suffocation, too hot/cold, ventilation (poor), vitamin deficiency.</li> </ul>

 Table 2. Guide to bodyweights, together with some variations seen in chickens

Feature	Observations				
Bodyweight	Large fowl: Silkie: Bantam: Silkie: True bantam: Pekin: Commercial hybrid:	Male Male Male Male Male Male	1.8-5.9kg 1.8kg 623-1,300g 623g 500-850g 680g	Female Female Female Female Female Female Female	1.4-5kg 1.4kg 510-1,100g 510g 300-750g 570g 2kg
Comb	Buttercup, horned, pea, rose, single, strawberry, walnut or mulberry				

Feature	Observations
Skin	Silkie - black, Transylvanian naked neck - no feathers on the neck
Feathers	Crest, beards (feathers under the beak reduced or no wattles), muffs (feathers at side of beak), frizzle (feathers curve out rather than follow contour of body) and Vulture hocks (wing-like feathers extending down from the hock)
Legs	White, yellow, grey, black, with or without feathers
Toes	Feathered and fifth toe in Dorking, Faverolle, Linconshire buff and silkie

**Table 3**. Normal clinical values for fowl. *Sources: a.Avian Physiology (1986), b.Merck Veterinary Manual, cde. Souza (2015), d.Ruzal (2011), e.Personal observation.* 

Clinical assessment	Value
Heart rate (beats/min)	247 - 355ª
Cloacal temperature (°C/°F)	40.6 - 43.0 / 105.0 - 109.4 <sup>b</sup> 41.5 - 41.7 <sup>c</sup> 41.3 <sup>d</sup> Mean 41.5 (range 40.1 - 42.1) <sup>e</sup>
Respiratory rate (breaths/min)	17 - 27 <sup>b</sup>

*Figure 6.* A 16-week broiler breeder pullet showing relative positions of lungs, heart and gizzard.

![](_page_17_Picture_6.jpeg)

![](_page_17_Picture_7.jpeg)

Figure 7. Head of Brahma cockerel. (Image: Chalk Hill Poultry)

finger in the commissures of the beak to prevent closure – allowing examination of the mucous membranes, tongue (T), glottis(G), choanal cleft (C) and beak (**Figure 8**). Mucous membranes should be pink and moist, and you should suspect dehydration if the mucus is sticky.

Palpate down the neck to the crop on the right of the thoracic inlet. Gentle compression of the trachea will elicit a sneeze if there is a low-grade inflammation.

Continue to palpate the ribs, sternum and wings for swellings. Check the mobility of the wings. Lice are often easily seen on the relatively unfeathered skin under the wing. Compress the ulnar vein which should refill immediately in a normally hydrated bird.

Check the mobility of the legs and look for evidence of

![](_page_17_Picture_13.jpeg)

*Figure 8.* Oral cavity of Indian runner drake.

'scaly leg', especially as this infection is common and frequently unrecognised by the owner. **Figure 9** shows the lower leg and foot of the Brahma cockerel. The red skin colouration on the leg is normal and becomes more obvious as the cockerel comes into breeding condition.

It should be possible to feel the gizzard on palpation of the abdomen. The skin around the vent should be pink, and the feathers and vent should be clean. Palpation of the gap over the vent and between the pubic bones can indicate whether or not the hen is in 'lay'. A two or more finger gap in a large fowl is consistent with a bird in lay (**Figures 10** and **11**).

Many owners are not aware that their chickens will void two types of faeces – caecal and intestinal. The former is usually toffee-coloured and semi-solid; whilst the latter are

![](_page_17_Picture_18.jpeg)

Figure 9. Brahma cockerel leg, note bright red skin of feathered area.

![](_page_18_Picture_2.jpeg)

Figure 10. One finger space between pubic bones, consistent with large fowl not in lay.

firmer with a white urate cap. At least one caecal dropping will be passed for every eight to 10 intestinal droppings (**Figure 12**).

Chickens usually moult annually at the end of the summer or early autumn – the loss of feathers starting at the head and neck and progressing down the body, giving them a scruffy appearance. During the moult they will usually stop laying. **Figure 13** shows a hen that has a far more dramatic loss of feathers all at once!

## Assessment and action plan

The clinical examination should indicate whether the problem is primarily noninfectious or infectious - the latter can affect more than one system and is often multifactorial. At this stage, a definitive diagnosis may

![](_page_18_Picture_8.jpeg)

Figure 11. A two-finger gap between the pubic bones in this laying Ancona hen.

not have been achieved, so further tests may need to be undertaken to establish a firm diagnosis (**Tables 4 & 5**).

If a diagnosis is not achieved, then the following questions should be explored:

- do you suspect a notifiable disease (Table 6)?
- what additional steps are required to achieve a diagnosis?
- is a visit to the premises necessary?

Once these questions have been answered satisfactorily and appropriate action taken, it is worth checking

- the following:
  what management and nutritional changes can be made to improve
- the situation?will the flock benefit from
- nutritional supplements?is specific therapy required
- and can the individual,

 Table 4. Additional tests - non-infectious disease

Problem area	Tests
Behaviour	Faecal examination, visit - red mite, predators (e.g. rats and raptors)
Husbandry	Visit to assess housing, stocking density, drinkers and feeders (positioning and number), hygiene
Nutrition	Assay for vitamin A, coccidiostats, oil, protein, energy
Trauma (foreign bodies and impactions)	Ultrasound, radiography

![](_page_18_Picture_22.jpeg)

Figure 12. Top: caramel semi-solid caecal dropping; Bottom: firmer intestinal faeces with white urate cap.

System	Tests
Alimentary	<ol> <li>Faeces analysis, urine analysis wet mount, cytology, scraping, Gram stain, ultrasound, abdominocentesis</li> <li>Plasma biochemistry, haematology</li> <li>Radiology, laparoscopy</li> </ol>
Integument	<ol> <li>Scrape, feather pluck</li> <li>Biopsy, haematocrit, bacteriology, mycology</li> </ol>
Locomotor/neurological/ reproductive/respiratory	<ol> <li>Faeces analysis, urine analysis wet mount, cytology, scraping, Gram stain, ultrasound, serology, PCR, abdominocentesis</li> <li>Plasma biochemistry, haematology, bacteriology, mycology,</li> <li>Radiology, laparoscopy, biopsy, electron microscopy</li> <li>Visit air quality checks</li> </ol>

#### Table 5. Additional tests - infectious disease

rather than the flock, be treated?

- have written instructions for handling, administration and storage of products been supplied?
- what withdrawal periods should be placed on food for human consumption (Table 7)?
- has a date been fixed at which to review progress?

Table 6. Clinical signs associated with notifiable disease in chickens. Adapted from Parsons (2016)

Disease	Age	Incubation period	Clinical signs
Avian influenza	Can cause disease in any age bird	Highly pathogenic (HPAI) A few hours to nine days in individuals or 14 days in a flock Low pathogenicity (LPAI) A few hours to three days in individuals or 14 days in a flock	<ul> <li>systemic: high morbidity, mortality (100%)</li> <li>respiratory: lachrymation, sinusitis, oedema of head, anorexia, depression, cyanosis of skin, comb and wattles</li> <li>enteric: diarrhoea</li> <li>reproduction: drop in egg production.</li> <li>systemic: could be missed, depression, low but elevated mortality</li> <li>respiratory: mild respiratory signs, sinusitis</li> <li>reproduction: egg production problems.</li> </ul>
Newcastle disease (NDV)	Juveniles more susceptible than adults	Mean four to six days (range two to 15 <sup>d</sup> ); virus shed during incubation	<ul> <li>systemic: high mortality and morbidity depression, inappetent</li> <li>respiratory: beak gaping, gasping, coughing, gurgling, rattling, swelling of the tissues around the eyes and in the neck</li> <li>nervous: drooping wings, dragging legs, twisting of the head and neck, circling, complete paralysis, apparent blindness</li> <li>enteric: greenish watery diarrhoea</li> <li>reproduction: partial or complete cessation of egg production, misshapen eggs, rough-shelled, loss of shell colour, thin-shelled and watery albumen.</li> </ul>

**Table 7.** Organic versus standard withdrawal periods for poultry medications. Sources: a. Organic Food Federation Standards, b.SoilAssociation Standards

	Withdrawal period (days)		
Medication	Legal	Organic	
Homoeopathic	None specified	None	
Vaccines	None specified	None	
Nutritional supplements (herbal, vitamin, mineral, glucose)	None specified	2	
Organic Food Federation <sup>a</sup>	1-3	2x	
Soil Association <sup>b</sup>	1-3	3x	
Veterinary Medicines - Cascade milk and eggs	7	14	
Veterinary Medicines - Cascade meat	28	56	
Veterinary Medicines - Organic Food Federation	Unspecified	2	
Veterinary Medicines - Soil Association	0-2	7	
Veterinary Medicines - Soil Association	3-18	3x stated legal (9-54)	
Veterinary Medicines - Soil Association	19-28	56	
Veterinary Medicines - Soil Association	29+	2x	

#### Figure 13. Hen in a heavy moult.

![](_page_20_Picture_3.jpeg)

## **PPD** Questions

- 1. Which diseases of poultry are notifiable?
  - A. Avian influenza
  - B. Campylobacter jejuni
  - C. Erysipelothrix rhusiopathiae
  - D. Newcastle disease
  - E. Salmonella enteritidis
- What is the range of normal body temperatures for chickens (°C)?
  - A. 38 40
  - B. 39 41
  - C. 40 42
  - D. 41 43
- 3. How big a gap would you expect between the pubic bones in a non-laying chicken?
- The owner describes finding a lot of runny brown droppings. What may these be?
- 5. When do chickens normally moult?

#### References

About Organics – a guide to organic food accreditation http://www.aboutorganics.co.uk/a-guide-to-organic-food-accreditation.html accessed 4/9/16

Avian Physiology (1986).4th edn, PD Sturkie, p154.

Coles BH (1985). Avian Medicine and Surgery, Blackwell Scientific Publications, pp1-18.

de Souza JB Jr; de Morais Oliveira VR, de Arruda AM, de Melo Silva A, de Macedo Costa LL (2015). The relationship between corn particle size and thermoregulation of laying hens in an equatorial semi-arid environment. Int J Biometeorol 59(1):121-125.

Hams F (2012). The Complete Guide to keeping Chickens, Ducks, Geese and Turkeys. Hermes House, Anness Publishing Ltd, pp138-229

Merck Veterinary Manual, Normal rectal temperature ranges, http://www. merckvetmanual.com/mvm/appendixes/reference\_guides/normal\_rectal\_ temperature\_ranges.html?qt=chicken%20temperature&alt=sh accessed 31/8/16

Official Journal of the European Union Council Regulation (EC) No 834/2007 of 28 June 2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/91 http://eur-lex.europa.eu/LexUriServ/ LexUriServ.do?uri=OJ:L:2007:189:0001:0023:EN:PDF accessed 4/9/16

Organic Food Federation Production Standards (2009). http://www.orgfoodfed. com/wp-content/uploads/2016/02/Production-Standards-Jan-09.pdf accessed 4/9/16

Parsons DG (2016). A guide to recognising notifiable disease in backyard flocks. Livestock 21(2): 110-115.

Personal observation on eight clinically healthy large fowl hens over 16 weeks of age.

Ruzal M, Shinder D, Malka I, Yahav S (2011). Ventilation plays an important role in hens' egg production at high ambient temperature. Poult Sci 90(4): 856-862.

Soil Association Organic Standards Farming and Growing (2016). https://www. soilassociation.org/media/1220/sa-farming-and-growing-standards.pdf accessed 4/9/16

> Astowers 7. A&D 3. one finger 4. caecal droppings 5. end of the summer to early autumn.

![](_page_21_Picture_2.jpeg)

Emma Purnell BSc MSc RVN CertNut

Emma qualified as a veterinary nurse in 2008 and works full-time as an area sales manager for Nutravet (UK). Until recently, she was a head nurse based in Worcestershire and loves keeping in touch with practices. She also has a BSc in Zoology with Animal Ecology and a MSc in Ecology, helping to fuel her interest in more exotic species. She has a particular love of 'small furries' and nursing clinics, and has just gained a Grade A with distinction in Canine and Feline Clinical Nutrition (CertNut).

![](_page_21_Picture_5.jpeg)

\*Suggested Personal & Professional Development (PPD)

![](_page_21_Picture_7.jpeg)

**MOBILITY CLINICS** 

## Mobility clinics

Nurse clinics have a major role in practice and can be a wonderful resource to increase the services offered to your clients, as well as ensuring that the nursing team have high levels of job satisfaction.

Mobility clinics are often one of the clinic formats that practices offer 'later down the line' or fail to promote altogether; although there is actually a massive market for them. If we consider how many arthritic patients we see on a weekly – or even daily – basis, there are plenty to whom we can offer the service.

The more regularly these animals attend the practice for checks, the more rapidly we can see and address any deterioration – as well as making the animals more settled about attending the practice and more comfortable with the staff caring for them. Mobility clinics do not have to be stand-alone clinics either. They can be combined with weight clinics or senior clinics, depending on the individual.

The other way to encourage clients to attend these clinics is through veterinary surgeon referral from within the practice. This is often the best way to do it – when they are first seen during a consultation, these patients can begin any assessment and initiate regular nursing checks.

It is important we bear in mind that, as nurses, we are not permitted to diagnose any medical conditions or prescribe medications. For this reason, while we can assess changes and note our thoughts, we must work in combination with our veterinary surgeons throughout.

#### Making a start

Assessment of these patients should start the minute they

first enter the consulting room. What do we see as they come in? Some dogs will dash in, bouncing across the room; others will creep in tentatively and be visibly lame.

Cats can be assessed in a similar manner. How are they sitting in the carrier? Do they look comfortable? Do they have matting of the fur along their back indicating they may struggle to turn and groom themselves?

Just as important as our observation is obtaining a good history from the owners. Have they seen changes over time? What typical 'old age' changes have they seen? Often these changes are actually linked to health problems such as arthritis, and it is important that clients are aware of this. Make notes on all that you see or hear, because this information

"Assessment of these patients should start the minute they first enter the consulting room"

might be critical to case assessment in the future.

Having a protocol, form or card for any clinic is important to ensure that all staff follow the same line of questioning and that nothing is forgotten. Several companies offer mobility scoring cards that can be used for this purpose.

#### Some general principles

There are several key things that should be discussed during a mobility clinic.

#### Weight

More often than not, arthritic dogs are overweight – with the weight being either a long-term complicating issue or the consequence of a reduction in exercise following osteoarthritic changes. Management of diet to ensure that the pet is at its ideal body condition score is a key thing to address – but should not be the only thing discussed.

Separate weight clinics may be the way to move forward with weight management if

## "Mobility clinics are an area of untapped potential in many practices"

the mobility clinics are being taken up discussing this issue.

#### **Exercise**

This is going to vary in each case and no standard advice can be offered. All patients should still be getting some gentle exercise, because doing nothing at all will lead to stiffness and muscle wastage. It is also important to ensure the exercise is constant – doing 10 minutes every day and then two hours at the weekends will be detrimental. If in doubt, think little and often!

#### **Medication**

Medication may well have been prescribed by the veterinary surgeon, so mobility clinic appointments are a great time to check that the dose is being given correctly and its effects are progressing as well as expected. Any problems can be referred back to the veterinary surgeon who is overseeing the case.

#### Home adjustments

Making sure that the reduction in mobility and comfort are being taken into account at home can also be discussed. This should include the use of padded bedding to reduce the risk of pressure sores and arranging carpet and rugs to cover tiled or laminate flooring. These are things that can often be overlooked at home.

Cats love to sleep high up, so making sure these places are still accessible but easy to climb into - with shorter jumps - will assist their physical mobility and can help their mental well-being too.

#### Nutraceuticals

The use of chondro-protectants to support joint function and reduce any further damage is recommended and, dependant on the supplement used, significant improvements in condition may be seen.

### Other therapeutic measures

Depending on the condition and veterinary recommendation, therapies including physiotherapy, hydrotherapy and acupuncture can be considered.

Use of a scoring chart by owners to assess their pet can help to map progress

![](_page_22_Picture_17.jpeg)

by means of a standardised system for monitoring. What is really important is that the owner is the person carrying out this assessment and that the things they are looking at and marking are things to which they can relate – simply asking an owner what degree of lameness their animal is showing will not give an accurate response!

#### Conclusion

Mobility clinics are an area of untapped potential in many practices. Seeing your patients become more comfortable as your treatment plans evolve and building a bond with your clients is invaluable and can be a massively rewarding experience.

## **PPD** Questions

- 1. Which of the following is key to assessing mobility clinic patients?
  - A. accurate clinical history
  - B. visual assessment
  - C. assessing movement
  - D. all of the above.
- 2. Which of these can be an indication of a patient with a mobility problem?
  - A. being very bouncy on the lead
  - B. poor, matted coat, especially along the back
  - C. owner reporting that dog is pulling on the lead
  - D. barking out on walks.
- 3. If recommending an exercise protocol for an arthritic patient, which of these would be the most suitable?
  - A. short bursts of very intense exercise
  - B. long slow walks for at least an hour
  - C. short, gentle lead walks frequently throughout the day
  - D. a single short walk in the evening.
- 4. Which of these changes would be most beneficial at home for a stiff, arthritic cat?
  - A. preventing from it accessing high surfaces
  - B. giving it a single, padded bed
  - C. giving it steps or boxes to help it to reach favourite sleeping places
  - D. shutting it in a single room to limit movement.

Answers 1.D 2.B 3.C 4.C

![](_page_23_Picture_2.jpeg)

Jane Ellison BSc(Hons)

Jane is an information scientist who has worked for the Veterinary Poisons Information Service (VPIS) and the human poisons service at Guy's Hospital, on and off since 1984, and has also worked in the pharmaceutical industry. Jane was a founder of the veterinary service in the 1980s and has recently returned to work for the service in the 24-hour rota team.

# Nature raw in tooth and claw – when animals eat other animals

Meat is, of course, a large part of cat and dog diets, but it is subject to high degrees of quality control and assessment, with its origins being known and traceable. However, companion animals, particularly cats and dogs, are never averse to supplementing their diets or keeping their hunting skills honed – and sometimes this may have toxicological consequences.

#### Rodents poisoned with anticoagulant rodenticide One of the most common

enquiries received by the Veterinary Poisons Information Service (VPIS) is the ingestion of anticoagulant rodenticides, typically difenacoum or bromadiolone in 0.005% concentrations. These preparations are generally formulated as readyto-use baits of variable concentrations in blocks, gels, grain, pasta baits, 'throw packs' and pre-baited boxes. Many products also contain denatonium benzoate (Bitrex, Macfarlan Smith) as a bittering agent.

Anticoagulant rodenticides are readily absorbed from the gastrointestinal tract, and the liver is the main

organ of accumulation and storage (WHO, 1995). A previous article in this journal, entitled 'Anticoagulant rodenticides' (Veterinary Practice Today March/April 2015, 3(2): 30-31) looked at the toxicity of the relatively straightforward situation of an animal ingesting varying (or even unknown) quantities of rat or mouse bait. In the UK, the actives tend to be difenacoum, bromadiolone and brodifacoum, because we are considering preparations bought over-the-counter in DIY shops and supermarkets by members of the general public, as opposed to products used by local authorities or commercial contractors.

However, another less common - but still concerning - aspect of this situation, is where a companion animal eats a rat or mouse which may have been exposed to the anticoagulant rodenticide, and the necessity of determining the risk to the animal and an appropriate treatment strategy.

Some cats and dogs are inveterate mousers or ratters and this regular or chronic ingestion of pest species could be problematic if the individual rodents have, indeed, ingested bait – a situation with many variables, such as:

- how many mice/rats have been consumed?
- were those rodents exposed to the bait, or had they yet to ingest any?
- given that the 'time-to death' for the rats and mice is several days, rodents could have potentially fed on the bait multiple times before dying or being caught by a cat or dog.

Even after a single dose, the anticoagulant rodenticide can persist in the target species' liver for several days, or even weeks. Some – but by no means all – cats have been seen to eviscerate their prey before ingesting the carcass, or may not actually ingest the rodent at all; but again, none of this can be assumed if not witnessed – and even if it is witnessed, it cannot be guaranteed that this was the only event.

Studies on dogs and owls have shown that the liver retained the highest concentration of

![](_page_23_Picture_18.jpeg)

\*Suggested Personal & Professional Development (PPD)

![](_page_23_Picture_20.jpeg)

POISONS

![](_page_23_Picture_22.jpeg)

Some cats and dogs are inveterate mousers or ratters.

![](_page_24_Picture_2.jpeg)

Cats and dogs do not generally tend to eat frogs and toads.

rodenticide residue, and that this concentration appears to be largely independent of dose, which supports the evidence that, in owl livers at least, there are saturable binding sites.

For an asymptomatic animal, with a regular history of ingesting rodents, there are two main approaches: either treat with vitamin K, with an assessment of clotting factors two to three days after the last dose of vitamin K to ensure the body is once again manufacturing its own clotting factors; or advise the owner to observe their pet closely for any signs of bleeding over the next few days, emphasising that bleeding may not present in an obvious way, and may be indicated by lameness (an internal bleed around a joint), cough or dyspnoea (a respiratory bleed) or general lethargy or malaise. The development or appearance of clinical signs would then, of course, be an indication for treatment with vitamin K.

The Health and Safety Executive (HSE, 2012) has examined – and is continuing to monitor – the risk of anticoagulant rodenticides to non-target birds and mammals, and the associated risk to the environment. There are currently no bans on the use of second generation anticoagulant rodenticides, although measures are in place to ensure their safe

and effective use. In the US, however, the Environmental Protection Agency completed a safety review in 2008 (EPA 2015) and has concluded that 'non-target wildlife and pets can be poisoned if they eat rodent baits, as can predators or scavengers that consume rodents that have eaten certain poisons'. As a result of their review, rodenticide manufacturers may no longer sell consumer products containing difenacoum, bromadiolone, brodifacoum or difethialone; baits containing these substances may still be used in homes but only by pest control professionals.

#### Frogs and toads

Cats and dogs do not generally tend to eat frogs and toads, but they often lick, play with or carry them around in the mouth, which can lead to some persistent clinical effects.

There are two species of toad native to the UK – the common toad (*Bufo bufo*) which is widespread in Britain (and western and central Europe), but is not found in Ireland. It has mottled greyish brown, leathery appearing skin.

The natterjack toad (*Bufo* calamita) is, by contrast, extremely rare in the UK. It is found in the coastal dunes of East Anglia and the north-west of England and is a protected species. The natterjack is usually greenish above with darker markings and a central yellow stripe

![](_page_24_Picture_12.jpeg)

Natterjack toad (Bufo calamita).

(occasionally absent) on the back. The two toads can be distinguished from each other by the presence of a prominent yellow line down the back of the natterjack toad. In addition, the natterjack tends to run rather than walk or hop.

All *Bufo* species possess paratoid glands (not related to parotid salivary glands) on their dorsum, which secrete venom (a thick, milky liquid) when the toad is threatened. Some species have additional glands on the arms and legs. Toxicity is variable between species, although the venoms are similar. In addition, the larger the toad, the larger the parotoid glands and the greater the volume of venom secreted.

Bufo venom contains a variety of substances (Chen & Kovaíková, 1967) which include two types of cardiotoxic substances - bufagins and bufotoxins, indolealkylamines - believed to cause hallucinogenic effects; catecholamines (epinephrine and norepinephrine) that cause cardiovascular, CNS and sympathetic nervous system effects with tachycardia, hypertension, tachypnoea, convulsions, tremors and hyperthermia, in addition to gastrointestinal signs; and, finally, non-cardiac sterols, cholesterol, provitamin D, gamma sitosterol, and ergosterol. These latter

compounds do not have a significant role in toxicity. Dogs or cats that have ingested or mouthed a toad in the UK usually only develop hypersalivation – which can be profuse – with foaming or frothing at the mouth and vomiting and associated signs of distress. There may be erythematous mucous membranes, pawing at the mouth and vocalising.

Other signs which have been reported outside of the UK include disorientation, anxiety, ataxia, circling, nystagmus, dilated pupils, tachycardia or bradycardia, hyperthermia and collapse. Hypertension has also been mentioned in some studies.

Animals that have been exposed to *Bufo* species generally develop signs of oral irritation within 30 minutes. The oral cavity should immediately and thoroughly be flushed with water (unless the animal is convulsing or comatose), taking care to prevent swallowing of the irrigating fluid (risk of drowning). This should be repeated two or three times over five to 10 minutes (Peterson and Roberts, 2013).

An emetic could be considered if a toad is swallowed, but is probably unnecessary for ingestion of a UK toad because severe cases are rare.

Endoscopic retrieval of the toad could also be considered

![](_page_25_Picture_2.jpeg)

Portuguese man-of-war (Physalia physalis).

(Eubig, 2001; Osweiler et al, 2011); and if no effects other than local buccal effects occur within two hours of exposure, then serious toxicity is not expected.

Atropine is useful for hypersalivation or bradycardia or heart block (Osweiler et al, 2011) at a dosage of 0.02mg/ kg intravenously as required (Peterson and Roberts, 2013). Monitor heart rate and secretions as a guide to redosing, and note that atropine is not recommended in animals with severe tachycardia or ventricular tachycardia.

Individuals with additional signs should be monitored carefully and thoroughly with full supportive treatment as required.

It would be wise to consider the risk of lungworm when faced with an animal that has ingested a toad. The main source of lungworm infection is contact with slugs and snails (including surfaces over which the gastropods have crawled) and as frogs and toads eat snails and slugs they can become a source of infection themselves, if they are eaten by a cat or dog.

The other species of toad that companion animals may encounter is the *Bombina* species, which are kept as pets, thus leading to the potential nightmare scenario of 'when pets eat other pets'. Ingestion or 'mouthing' of a Bombina toad is likely to cause hypersalivation and, possibly, vomiting; although signs are expected to be self-limiting, and the only treatment required would be washing out the cat or dog's mouth and treating symptomatically and supportively if required.

#### Jellyfish

Although there is a tendency to think of jellyfish as a summer hazard, they are found around the coastline all year long, and dogs, with their insatiable curiosity and eye for a free meal, will almost certainly investigate a dead, dying or stranded jellyfish that has been washed up on the beach.

Jellyfish 'hunt' small prey that they capture and paralyse using the venom in their nematocysts that are held in tentacles, some of which are very long – up to 12 metres long in the Portuguese manof-war (Physalia physalis) 'jellyfish', which is not strictly speaking a jellyfish but a hydrozoan. Even after the jellyfish is dead, these nematocysts will 'fire' when in contact with skin or mucous membranes and cause pain and swelling.

When eaten the risks seem small unless, of course, the tentacles are bitten or licked.

A recent case involved a possible 'barrel' jellyfish stranded on a beach and

consequently found by a springer spaniel that decided to pick up and ingest some of the creature. Three days later, upon returning from holiday, he presented having had diarrhoea and mouth ulceration since the exposure.

We have had 25 cases reported in dogs since 2012 with skin and buccal irritation and vomiting, with or without diarrhoea commonly reported. More than 80 per cent of these dogs showed clinical effects.

Treatment of oral exposure is essentially supportive with analgesia, antihistamines and steroids and, when skin exposure occurs – less common in dogs than humans owing to their fur – the following protocol can be followed:

- remaining tentacles should be pulled off the skin (not rubbed off) with a towel or stick. Care should be taken not to expose the rescuer/carer
- the area should be irrigated with seawater not fresh water
- the area must not be rubbed with sand
- owners may have already treated the dog with one of number of chemicals, such as vinegar, alcohol, meat tenderiser, ammonia or baking soda, none of which is recommended as they may cause further discharge of the nematocysts

#### References

Chen KK and Kovaříková A (1967). Pharmacology and toxicology of toad venom. J Pharmaceut Sci 56(12): 1535-1541.

EPA (2015). Rodent Control Pesticide Safety Review.

Eubig PA (2001). Bufo species toxicosis: big toad, big problem. Vet Med 96(8): 594-599.

Health and Safety Executive (2012b) : Environmental Risk Mitigation Measures for Second Generation Anticoagulant Rodenticides proposed by the UK – Stakeholder engagement, August 2012.

Osweiler GD et al (2011). Bufo toxins. In: Blackwell's Five-Minute Veterinary Consult Clinical Companion: Small Animal Toxicology. Ames, Iowa: Wiley-Blackwell.

Peterson ME and Roberts BK (2013). Amphibian toxins. In: Small Animal Toxicology, 3rd edn. Peterson ME and Talcott PA (eds). WB Saunders Co, Philadelphia.

Rees Davis R (2013). Personal communication.

- where there is significant exposure and the dog is in distress, then hot water immersion may be beneficial

   the affected area should be immersed in hot water (about 45°C) for about 20 minutes. Obviously, this is not practical in situ and only reserved for serious cases
- pain relief should be given because the 'sting' from jellyfish tentacles is severe – antihistamines and steroids have also be given in cases reported to the VPIS
- a small drink of milk appears (anecdotally) to sooth the oral discomfort (Rees Davis, 2013)
- prophylactic use of antibiotics is not required as a secondary wound infection is a rare complication.

#### Conclusion

In summary, pets will continue to eat other smaller creatures - a minor penalty of living with carnivores.

The risks of secondary toxicity from poisoned rodents or direct toxicity from species with venomous defence mechanisms, are small in the experience of the VPIS. However, there are risks and the presentation may be 'left-field', not obvious, or potentially missed altogether.

## Matching and mismatching

A recent article in the *Veterinary Record* reported on a meeting of young veterinary graduates who gathered at the House of Lords in September to discuss the causes of disillusionment being reported by veterinary surgeons in the early years of their careers.

Last year's *BVA Voice of the Veterinary Profession* survey reported that 41 per cent of graduates said their careers had failed to match their expectations and that more than half of graduates from the past eight years were seeking a change in work.

The main points for disillusionment that came out of the September meeting were: lack of opportunities for career development and lack of management and/or support by bosses. Long working hours were also cited, as was unreasonable client expectations – in particular with regard to fees for veterinary work.

The meeting was intended to be both informative and constructive, so suggestions were monitored from delegates on how disillusionment could be counteracted. Ideas put forward included ensuring the public understood veterinary fees better and making pet insurance mandatory. There were calls for better careers advice in schools; more emphasis on selecting students with experience of public-facing work; more CPD in business, leadership and management skills; and linking better pay to career progression.

#### Short-sighted approach

It is understandable that in today's world, graduates look further than their initial degree for career opportunities. However, when there are unfilled vacancies for veterinary surgeons and while the unknown effects of Brexit hang over the profession, it seems sad that so many graduates do not wish to actually practise what they have learnt, or that they very quickly move into less 'hands-on' careers.

It is very easy for older practitioners to talk about "when they graduated" – but the fact is that times have changed, opportunities are different, horizons are greater and the concept of a job for life almost no longer exists.

When students are on a five-year – still considered vocational – course, it seems something of a waste not to practise what they have been trained to fulfil. A degree in many subjects can be seen as a stepping stone and an education in itself for working life; but degrees in the 'professions' are still different and one would hope that such a training would then be used once qualified.

With this premise in mind, the suggestions made regarding the acceptance of students on veterinary courses are very relevant. How do you choose potential veterinary students who will continue to want to practise following graduation?

#### Horses for courses

It seems counterintuitive to encourage students to spend five years studying for a veterinary degree, only to then devote more time to advising them on all the other career options they could undertake. Of course, there have always been veterinary surgeons who have moved into other areas quite quickly after graduation and this is not a negative thing, it is just that it appears counterproductive to actively encourage this. Find the right candidates for the course in the first place and, hopefully, at the other end we will have enthusiastic, committed veterinary surgeons who will be content to remain in practice and be satisfied by meeting the everyday challenges it actually offers.

New graduates do worry much more about veterinary fees to clients and there is no doubt that the costs of veterinary services continue to move in a steep upward curve. Veterinary schools have a role here to help explain costs and convince would-be vets that their professionalism and expertise warrant the price put on each consultation or operation. It may be expensive for clients to take their pet to the veterinary surgery, but it is their choice to own a pet; and veterinary professional fees compare very favourably with those of most, if not all, of the other professions.

Newly qualified vets also worry about making mistakes and being sued – understandably so, because there is far more that can go wrong today than even 20 years ago. Client expectations are higher and society moves evermore towards a culture of litigation. This being the case, the new veterinary surgeon needs much more help and advice before and after graduation so that he or she feels they will be fully supported if and when such situations occur.

With regard to long hours and weekend work, this was simply taken for granted as being the norm by previous generations of veterinary professionals. That may have been good or bad, but it is certainly not the case today – and whatever we may think, this is not going to change. So veterinary practices need to accept that this new generation of veterinary surgeons are looking for a different lifestyle and work-life balance from their forebears.

#### **Misguided choices**

The image of being a veterinary surgeon is a romantic one in the eyes of many schoolage students, encouraged by the plethora of rose-tinted TV programmes; and it is probably fair to assume that it is only when they start to see for real what being a full-time vet means that the sparkle begins to fade. This problem needs to be addressed at source, back in the school room and with career advisers.

Perhaps veterinary schools also need to rethink their high requirements for student entry. It is not always the most academically able who have the practical problem-solving and people skills required by the veterinary profession. High academic prowess is often more suited to study and research which – whilst important in some sectors of the veterinary industry – is not necessarily a frontline criterion for the work on the ground in first-opinion practice.

How sad that we are producing highly qualified and skilled individuals who within only a few years are so disillusioned with their profession that they consider completely new careers. Something is wrong and it is reassuring that the profession is now having the sort of meeting described above. One hopes that this means that we are at the beginning of not only addressing, but also solving, the problem.

References

Veterinary Record October 15 2016 www.vetfutures.org.uk

# Working in partnership

As caring practitioners, we all want to provide the very best treatments and services for pets and their owners. This is not normally a problem with routine cases, until things become more complex and begin to require additional expertise or expensive, sophisticated equipment.

The newly formed NVRS veterinary referral and outpatient service has been created to help practices with the provision of such services to their clients.

![](_page_27_Picture_5.jpeg)

Veterinary practices can choose how they wish to work with NVRS on a case-by-case basis.

aunched in East Anglia, NVRS services are provided across a number of veterinary centres interconnected by the latest computer technology and managed from its central hub in Ipswich.

By sharing expertise and facilities with first-opinion practices, NVRS complements the skills and facilities of these practices and adds to the mix of skills already present in their veterinary and nursing teams. There are times when very serious or complicated cases require referral and there are also situations where cases require more detailed investigations and procedures than the practice can provide. In both these instances, NVRS may be able to provide additional support to the practice and enhance patient care, quality of life and outcomes.

NVRS opens up a new dimension in veterinary care by working in partnership with veterinary practices to provide

what is the most appropriate treatment for the sick or compromised pet. This benefits the practice, its clients and their pets.

Our service is staffed by experienced veterinary professionals across a number of disciplines providing a broad range of healthcare options for pets. It offers veterinary practices and their clients access to the latest developments in clinical services and technology, including:

#### **Advanced Diagnostic Imaging**

- CT Scanning
- Endoscopy
- Ultrasound
- X-ray

#### **Dentistry and Oral Surgery**

- Dental X-ray
- Root Canal surgery
- Dental Discolouration
- Dental Decay
- Malocclusions

#### **Orthopaedics**

- Total Hip Replacements
- TTA
- TPLO

#### **Oncology Services**

- Rehabilitation
- Hydrotherapy
- Physiotherapy

#### **Behaviour and Training**

![](_page_28_Picture_23.jpeg)

![](_page_28_Picture_24.jpeg)

![](_page_28_Picture_25.jpeg)

![](_page_28_Picture_26.jpeg)

Practices using this comprehensive service are able to expand diagnostic and treatment options available to their clients.

## If you would like to know more about NVRS and the services it can offer you, visit **www.nvrs.co.uk** or contact **enquiries@nvrs.co.uk**

![](_page_29_Picture_2.jpeg)

Kirsty Ranson BVMBVS MRCVS

Kirsty qualified in 2011 as one of the first cohort from the new University of Nottingham School of Veterinary Medicine and Science. This followed a Degree in Agriculture at Harper Adams University College. During this long stint of study, she spent many years working on dairy farms to fund her studies and spent three months on a dairy farm in New Zealand. Kirsty joined Westmorland Veterinary Group in 2011.

![](_page_29_Picture_5.jpeg)

\*Suggested Personal & Professional Development (PPD)

![](_page_29_Picture_7.jpeg)

ORGANISATION

## "I know it is in here somewhere." Keeping your car boot organised

As a 'farm vet', your car is not only the vehicle that gets you from A to B, but it is also your office out of which you work day and night. Keeping to hand things such as Ordinance Survey maps for when you are lost, and essential pieces of paperwork, such as TB sheets and emergency slaughter forms, all make life less stressful on a busy day. Having everything you need in your car also makes you much more efficient as you can progress from call to call without having to go back to the practice for missing items.

I find there is nothing more frustrating than requiring something urgently in the middle of the night and not being able to find it without up-ending the entire contents of your car all over the floor – whilst covered in calving slime!

In practical terms, the answer to this is knowing where everything lives; but, it also involves putting it back in its place after use – which is always a challenge when in a hurry! It is also useful to be able to direct a student or farmer to find something in your car mid-operation; and that can only be done if you have a clear idea in your own mind's eye of where it will be.

After many frustrating evenings spent grappling about for an eye hook or the embryotomy handles so desperately needed for the calving I was half way through, I emptied my car completely and decided a bit of order was needed to make things easier.

#### Grouping items together

Firstly, group items together as you would use them (**Figure 1**). So, for example, all the needles and syringes should be together and in an accessible place because you need them on a regular basis – and make sure the flutter valve lives with the calcium and magnesium so you are not hunting for it in a hurry.

"Firstly, group items together as you would use them"

![](_page_29_Picture_17.jpeg)

*Figure 1.* It is a good policy to have medicines grouped together as you would use them.

All sampling items, such as blood tubes, milk sample pots, faeces test kits and BHB strips live in one drawer together. Bandaging items, plaster cast, drip fluid and giving sets live in the bottom draw behind my everyday things.

Items such as foot-trimming gear that I use less regularly and is not needed in a hurry can be pushed to the back, out of reach. Anything that has a tendency to leak – disinfectant and lubricant – lives in the plastic container my welly bucket lives in and then the mess is contained when a leakage occurs! Wet and dirty waterproofs also go in this box out of the way (**Figure 2**).

So, all in all, the most accessible things in my car are my medicines box, welly bucket, scanner and carry tray which has the essentials in for most calls (**Figure 3**) – arm length gloves, lubricant, fertility medicines, syringes, needles and my BHB meter (in a little waterproof pot to prevent the inevitable 'drowned' BHB meter after a wet day!).

Behind this I have some stacking drawers with items grouped. All the bolus guns, calf twister bar and the like

![](_page_30_Picture_2.jpeg)

*Figure 2.* Anything that has a tendency to leak – disinfectant and lubricant – lives in the plastic container in which my wellies live.

live down the left-hand side of the medicines box with my clean waterproofs on top.

#### **Medicines**

Medicines and stock control is a common source of discussion amongst farm animal veterinary surgeons. At Westmorland Veterinary Group, we are fortunate enough to use an automatic re-ordering system so that when we have booked medicines out they can be replaced on request.

Prior to this, I found having my medicines all together in one place in my car – in a logical order – meant it was easy to identify anything I was running low on and to make sure that I topped up when next at the surgery. There is nothing worse than being on farm and advising a farmer to use X and then going to the boot of the car to find you have none!

Also, for a new graduate, having the medicines grouped together in categories can be useful in helping them with their decision-making when on farm in the first few months. The medicines in my car are grouped as follows (**Figure 4**):

- first-line antibiotics
- second-line antibiotics
- non-steroidal antiinflammatories and steroids

 others - GI stimulants, antispasmodics, respiratory stimulant and sedatives.

Reducing the amount of stock that goes out of date is important to the practice. By keeping all medicines together in one place, it is easier to ensure you are not overstocking one product, thereby reducing the risk of things going out of date. Additionally, we maintain a monthly list in our cars of items that are close to going out of date to allow us to manage this. I also rotate the stock in my car by putting the new stuff coming into my car behind older product, which is definitely not fail safe but does help.

#### **Refrigerated items**

Essentially, all veterinary professionals should have a small refrigerated box in their cars for these items – although, in reality this doesn't happen. I tend not to carry any refrigerated items on a regular basis and only take them from the practice when needed.

In these situations, we transport them in small cool bags with ice blocks. For peace of mind and ensuring medicines stay at the correct temperature, best

![](_page_30_Picture_17.jpeg)

*Figure 3.* The most accessible things in my car are my medicines box, welly bucket, scanner and carry tray, which contains the essentials for most calls.

![](_page_30_Picture_19.jpeg)

*Figure 4.* Having the medicines grouped together in categories can be useful in helping with decision making on farm.

"It is paramount that we are seen as being responsible about biosecurity and not perceived as a risk for the transfer of disease" practice would be to have a refrigerated cool box.

#### Surgical kit

To make things easier when performing surgery, I have made up a tool box that contains everything required for an operation, in one place. The box contains: clippers, Hibiscrub, surgical spirit, swabs, surgical kits, suture material, sedative, local anaesthetic and commonly used antibiotics and antiinflammatories, along with needles and syringes.

This means I don't have to keep running back to the car and can get on quickly and efficiently. Having everything together makes it easier to identify when you are running low on something and ensures you don't run out.

#### Security of medicines

Security of medicines is a big concern for the veterinary profession; and not an easy one to overcome. A common sense approach – such as making sure the parcel shelf is in or medicines are not on show – and locking your vehicle is a good starting point. In terms of dangerous medicines, try to minimise what you are carrying and think carefully about where you put them in your car.

In an ideal world we would all have a lockable safe compartment for dangerous medicines but it doesn't often happen. My dangerous medicines are stored separately – the pentobarbital is stashed under my foot trimming gear, and the xylazine is in the surgical kit box.

#### **Rubbish and waste**

Having a small rubbish bin and 'sharps' bin in the boot of your car helps keep things tidy and organised, as the tray used for calls can easily be emptied between farms. Additionally, having a 'sharps' bin handy means needles are disposed of correctly straight away, thereby reducing the risk of needle-stick injuries.

Bottles and general waste is then sorted and disposed of in the correct manner back at the practice. I try to reduce any biosecurity risk by leaving any general rubbish, such as gloves, on farm, and particularly things such as disposable aprons.

#### Biosecurity

It is paramount, in order to maintain our professional reputation within the agricultural industry, that we are seen as being responsible about biosecurity and not perceived as a risk for the transfer of disease. Making sure your wellies and waterproofs are always clean when stepping on farm should be of high priority.

I have found wearing disposable coveralls for routine work has helped me keep waterproofs underneath a lot cleaner and easier to disinfect at the end of a visit. Wearing my scanner underneath this coverall also means it remains uncontaminated and only the probe needs cleaning.

Additionally, we should make a conscious effort to disinfect any other equipment used at the end of a visit before putting it back into our cars. Not only does this reduce the foetid smell 'farm vet' cars tend to carry, but it is also one less job to do back at the practice. I try to carry a couple of towels too for drying my hands and any other kit before it goes back in.

#### Summary

All in all, organising your car boot and having a logical system that you can adhere to even on a busy day will make your life easier, keep your car stock up to date more easily and reduce wastage through out-of-date medicines and materials. "In terms of dangerous medicines, try to minimise what you are carrying and think carefully about where you put them in your car"

![](_page_32_Picture_0.jpeg)

Central College of Animal Studies

# Veterinary nurse training in a professional clinical environment

Training campuses nationwide, talk to us about excellence in veterinary nursing

Veterinary Nursing Assistant > Diploma in Animal Nursing > Diploma in Veterinary Nursing

For more information on nurse training and an application pack T: 01359 243 405 or E: enquiries@ccoas.org.uk

## www.ccoas.org.uk

![](_page_33_Picture_2.jpeg)

Owen Atkinson BVSc DCHP MRCVS

Owen is a farm animal vet who worked for over 20 years in clinical farm practice before establishing Dairy Veterinary Consultancy, based in Cheshire but covering the whole UK – and occasionally overseas. He provides strategic health advice and tailor-made training to ruminant and dairy agri-businesses, as well as veterinary practices and primary producers. He also offers a second-opinion and referral service for practices.

Owen was awarded the Diploma in Cattle Health and Production in 2013 and is an RCVS Recognised Specialist in Cattle Health and Production, and a CowSignals master trainer. He has particular professional interests in bovine lameness, youngstock management, building design, rumen health (nutrition), herd fertility, transition cow management and responsible use of veterinary medicines. He can be contacted at owen@ dairyveterinaryconsultancy.co.uk

![](_page_33_Picture_6.jpeg)

\*Suggested Personal & Professional Development (PPD)

![](_page_33_Picture_8.jpeg)

THERAPEUTICS

# Responsible use of antibiotics on dairy farms

This is a hot subject, so let's not rake over old ground. You will already, no doubt, understand the mechanics of resistance; how penicillin was discovered by accident only 70 years ago but has changed medicine indescribably; and the cataclysmic consequences that could result from widespread resistance. Let's not delve here into the 'whys' and 'wherefores' of whether this is a problem of veterinary medicine, human medicine, or both. You can read all those debates elsewhere.

Instead, let us consider the social aspects of antibiotic supply to dairy farms and some very practical steps we can take to demonstrate their more responsible use.

![](_page_33_Picture_13.jpeg)

Antibiotic resistance is a social problem. Veterinary professionals and medics are at the hub because we are gatekeepers to their supply. That makes us pretty special and our roles are under scrutiny.

We are where we are with imperfect use of antibiotics on dairy farms (**Table 1**), but I think it is clear we are on a journey to somewhere different. None of us can predict exactly what that journey will look like. But we must consider how we ensure cows' well-being and health is safeguarded, whilst balancing our social responsibilities. And also how we can bring our farm clients along with us on that journey.

#### Whose responsibility?

And there lies the first conundrum - do we need to bring farmers along, or are farmers already leading us? Perhaps a bit of both, depending on where you look. A recent Royal Association of British Dairy Farmers/University of Bristol survey indicated that 97 per cent of farmers regard the current antimicrobial resistance (AMR) crisis as something they need to play a part in tackling (RABDF, 2016). Yet only 52 per cent of the same farmers had received recommendations from their veterinary surgeon on reduction in antibiotic use.

Whose responsibility is it, actually, to ensure antibiotics are used responsibly on dairy farms? The veterinary surgeon should be the one in charge of treatment decisions because he or she decides what medicines a farmer can use. For example, only the veterinary surgeon can decide if a medicine can be used under the Cascade ('off-label').

The farmer has a responsibility to follow the veterinary surgeon's instructions and ensure the correct withdrawal period is followed. But how should a farmer know what is risky for antibiotic resistance if the Table 1. Some examples of antibiotic use on dairy farms where we might score 'could do better'

Example	Person responsible	Illustration	
Lax prescribing behaviour	Vet	Farmers buying antibiotics without specific authorisation and without the vet knowing the exact purpose. It is common practice for farmers to have a free access to purchasing antibiotics and other medicines through their vet practice.	
Inappropriate use of the Cascade ('off-label')	Vet	For example, use of antibiotics for foot baths. There are no antibiotics licensed for this and justification is very questionable under any circumstances. Another example would be use of home-made intramammary concoctions for treating mastitis.	
Absence of appropriate treatment protocols	Vet	Either no treatment protocols in place or treatment protocols are devised that do not follow the product's SPC (Summary of Product Characteristics).	
Unauthorised use	Farmer	For example, farmers 'double-tubing' for mastitis cases; using home-made intramammary infusions; or using antibiotics not following the SPC without specific instruction from the vet following Cascade regulations.	
Failure to follow treatment protocols	Farmer	This is the same as 'unauthorised use', but includes the common practice of extending treatment durations, failure to complete a course and incorrect treatment intervals. An unknown proportion of mastitis treatments come under this category – possibly the majority.	
Poor medicine storage	Farmer	For example, not disposing of unused or out-of-date antibiotic and then using the same antibiotic at a later date for a purpose for which it was not intended.	
Incorrect dosing/ under-dosing	Farmer (usually)	For example, inaccurate estimation of weight.	
Prophylaxis	Vet & farmer	Blanket dry cow antibiotic therapy is the classic example on dairy farms. This can no longer be justified in many cases and a large mindset change is underway on this issue. A less frequent, but important, example is illegal use of prophylactic in-feed antibiotics for calves.	
Inappropriate use of 'critically important' antibiotics	Vet & farmer	Critically important antibiotics such as 3rd and 4th generation cephalosporins and fluoroquinolones should be retained for when other antibiotics have failed; or not used at all. Yet these antibiotics are first-line treatments for some farms.	
Stockpiling medicines	Vet & farmer	A combination of lax prescribing behaviour and failure of compliance results in unused medicines accumulating on farm. At a later date, ill-informed treatment decisions using these antibiotics may be made by farmers or their workers.	
Allowing unnecessary exposure to antibiotic	Farmer	The main example on dairy farms is feeding waste (under antibiotic withdrawal) milk to either beef or dairy calves.	
Unnecessary recourse to antibiotic	Vet & farmer	A common farmer example of reaching for antibiotic where it is not needed is to treat lame cows suffering from claw horn disorders (sole ulcer, white line disease, bruising) instead of lifting the foot, trimming, applying a block and using NSAIDs. Another example is routine use of antibiotics to treat calf scour of viral, nutritional or protozoan origin. A vet example might include use of antibiotics as substitute for better asepsis during	
		minor surgery.	
'lf in doubt, jab' attitude	Farmer & vet	Similar to above, but this specifically refers to a situation that can commonly develop particularly on larger farms, whereby stock persons may feel under pressure lest something dies/becomes ill on their watch. This can lead to unnecessary use of antibiotics for nonexistent infections, or unnecessary polypharmacy (the 'belt and braces' approach of injecting every antibiotic available) or prolonged treatment courses. Particularly common for mastitis treatments and fresh-calved cows.	
Failure to record and/or audit medicine use	Vet & farmer	Many instances of farmers 'going off piste' with their treatments or simply over-using antibiotics could be detected if regular periodic medicine audits were conducted for each farm. Whilst some practices do this, it is far from universal.	

veterinary professional has not educated them?

The RABDF/University of Bristol survey indicates that not all veterinary surgeons are meeting their dairy clients' needs for advice and information to reduce antibiotic use.

### Attitudes to risk and social responsibility

As is the situation with climate change, there are 'believers' and 'detractors' with respect to the risks of antibiotic resistance. Whether we rate the risk as high or more 'real' is likely to affect our prescribing behaviour. Similarly, farmers' attitudes to risk are likely to affect how prudent they are with the antibiotics they use.

Dairy farmers and veterinary surgeons - simply as a consequence of the disproportionate amounts of antibiotics they are responsible for using/prescribing - will make a far greater contribution to the likelihood of antibiotic resistance developing than the average citizen. So the behaviours of 'the few' could have far-reaching effects on 'the many'; and we need to grasp the reality that our own private attitudes to risk are a concern for society as a whole.

Veterinary professionals should be sensitive to this and also encourage our farm clients to see the issue from this perspective too. I often hear resistance to legislation and farm assurance guidelines disparaging references to the "nanny state"; "interfering in our business", and so on - but the fact is that being in a privileged position means that we farmers and veterinary surgeons must take that responsibility seriously, putting the concerns of others before our own beliefs, especially if they are out of kilter.

Even from a business perspective, putting the customer – the dairy product consumer – first is a given. To give you an analogy – when I am a passenger in a car, I want the driver to stick to the speed limits and not send or receive texts; because even if he or she believes their driving is safe, I don't!

#### **Decision making**

Going back a step further, how do any of us assimilate all the information to make correct decisions regarding the use of antibiotics? What informs our attitude to risk? In particular, how well informed is the average dairy farmer? In my own experience, it is very common for dairy farmers and stock persons to totally misunderstand what antibiotic resistance means - believing, for instance, that it is the animal that becomes resistant to a particular drug, not the bacteria.

Furthermore, it is a rare farmer who understands how resistance occurs and, therefore, which behaviours are particularly risky. And finally, it isn't uncommon for farmers to even misunderstand which of the medicines they have on their shelves are actually antibiotics!

Veterinary education will necessarily ensure that the profession is normally better informed than most, but a uniform approach to decision making is far from assured. Research into over 3,000 European veterinarians' prescribing behaviours indicates that decisions are based on a multitude of factors (De Briyne et al, 2013). 'Responsible use' factors compete with 'convenience factors', 'economic factors', 'society factors' (such as, owner demand) and 'professional judgement factors'. On the whole, farm animal practitioners placed marginally less emphasis on 'responsible use' than their companion animal colleagues. But overall, all factors were considered

"The RABDF/University of Bristol survey indicates that not all veterinary surgeons are meeting their dairy clients' needs for advice and information to reduce antibiotic use"

similarly important by veterinary surgeons across different sectors and from different countries; professional judgment and responsible use factors were slightly more important than the others.

Significantly, although in theory the veterinary surgeon should be in charge of which antibiotics are used and under what circumstances, in practice these decisions are often taken by farmers. This is a two-fold issue:

- firstly, veterinary professionals are not taking control of treatment protocols and maintaining tight prescribing behaviours
- secondly, a lack of compliance results in farmers making their own treatment decisions.

In the UK there are no reliable data available for actual use of antibiotics on dairy farms – both in terms of overall amounts and certainly in terms of specific circumstance. The Veterinary Medicines Directorate has challenged the cattle sector to put in place systems to correct this, and the Cattle Health and Welfare Group (CHAWG), with British Cattle Veterinary Association (BCVA) representation, is working on solutions.

### What happens in other countries?

In the UK, we have a relatively trusting legislative framework when it comes to supply of medicines to dairy farms and devising treatment protocols. That is to say, veterinary surgeons are trusted to prescribe and sell medicines to their clients and not to prescribe unnecessarily. They are also trusted to devise the best treatment protocols – including Cascade (offlabel) use – where they deem it appropriate. Meanwhile, farmers are trusted to administer treatments as per veterinary instructions and to keep some prescribed medicines on the farm.

This isn't necessarily the case elsewhere. For example, in Japan, the state veterinary service specifies the treatment for every condition and this must always be adhered to. In many Scandinavian countries, the veterinary surgeon must examine every individual animal before treatment can be given. In some instances, veterinary surgeons are not permitted to sell medicines at all and nor are farmers allowed to keep any medicines on farm. Some countries have more restrictive access to certain classes of antibiotics than in the UK too.

Or ... veterinary surgeons sit in a dispensary all day and sell to farmers whatever they ask for. However, that tends to be in less developed countries and represents the opposite end of the scale.

The 'elephant in the room' is that UK veterinary practices make a significant part of their income from the sale of medicines, including antibiotics. Therefore, it can be argued that we have a direct financial incentive not to reduce antibiotic use. A Dutch report into the potential consequences of decoupling 'prescription' from 'sale' of veterinary medicines, concluded that
Action	Detail
1. Ask: is antibiotic really necessary?	For example, do not treat calf scour with antibiotic unless specifically indicated; in particular avoid the use of the 'critically important' antibiotics.
2. Use the correct antibiotic at the correct dose	Devise treatment protocols with the farm vet and follow them. Know the weight of animals being treated.
<ol> <li>Avoid mass medication of antibiotics to healthy animals (prophylaxis)</li> </ol>	Practise selective dry cow antibiotic therapy. Avoid in-feed antibiotics for calves.
<ol> <li>Avoid unnecessary exposure of antibiotics to animals not requiring treatment</li> </ol>	Discard waste (antibiotic withdrawal) milk; do not feed to either dairy or beef calves.
5. Reduce the need for antibiotics	Follow veterinary herd health protocols; work with your vet to identify improvements to management, nutrition and housing which will result in a more healthy herd.

the loss of medicine sales would significantly adversely affect the financial viability of veterinary practices but make very little financial difference to farms (Beemer et al, 2010). Decoupling was introduced by legislation in Denmark in 1995, and it was credited by the Danish government with a 40 per cent reduction of antibiotic use in the agricultural sector, within 12 months. More than 15 years later, the number of farm vets in Denmark has not reduced, although their income has. Unfortunately, however, the amount of antibiotic use has steadily increased again and substantial illegal imports onto farms are thought to be an additional problem (Beemer at al, 2010).

In the Netherlands, since 2012, antibiotic use in cattle is monitored at species, veterinary and farm levels (De Briyne, 2016). It is also compulsory that every dairy farm has specific farm treatment plans that are devised by individual named veterinarians each year and farmers are not allowed to deviate from these protocols. Both individual veterinary surgeons and farms are benchmarked on their antibiotic use by regulators, and these measures have seen a significant reduction in antibiotic use year on year (Jan Hulsen, personal communication).

It is debatable how well our British system functions. A more 'hands-off' approach by our government does rely on everyone 'playing the game' and doing things right. Self-regulation is favoured in the UK and veterinary professionals here have an opportunity to shape that whilst tightening up our act. Some more forward-thinking veterinary practices carry out periodic reviews and benchmarking of medicine use of their dairy clients; but this is far from universal.

### The three Rs

The Veterinary Medicines Directorate (2016) has suggested that a three Rs framework is used to apply consistency across any antibiotic stewardship plans

"The 'elephant in the room' is that UK veterinary practices make a significant part of their income from the sale of medicines, including antibiotics" that are developed across the agricultural sectors. These are:

- Replace the need for the use of antibiotics in animals where possible with evidence-based and sustainable solutions to prevent diseases, and protect animal health and welfare
- Reduce the annual usage of antibiotics in animals, whilst preserving animal health and welfare
- Refine the use of antibiotics in animals, by ensuring the responsible and informed selection and correct administration of products to animals that have a clinical indication for treatment.

A number of organisations in the dairy sector have some kind of stewardship plan in place. Probably, the direct-supply supermarket contracts are leading the way on this. For example, veterinary surgeons who deal with members of the Tesco Sustainable Dairy Group (TSDG) and the Sainsbury's Dairy Development Group (SDDG) should be familiar with the aspirations for more responsible antibiotic use, including a reduction in use of the 'critically important' antibiotics. These include 3rd and 4th generation cephalosporins and fluoroquinolones, and are the ones which the World Health

Organisation have deemed to be particularly important to safeguard against antibiotic resistance owing to their value in treating difficult infections encountered in human medicine.

### MilkSure

In October 2016, Dairy UK launched the MilkSure initiative, which was developed in conjunction with the BCVA. This is a training course for farmers (delivered by their own vets) to reduce the risk of medicine residues in milk. Whilst responsible use of antibiotics and antibiotic resistance are not the only drivers for this scheme, they are important components.

Two short cartoon videos are available to view and share freely – both on the MilkSure website (www.milksure.co.uk) and to BCVA members on the BCVA website (www.bcva.eu). These are suitable for farmers and explain how antibiotic resistance develops and what the main steps are for dairy farmers to take to reduce the risk of this happening on their own farms.

Table 2 indicates five areas for<br/>dairy farmers to pay attention<br/>to in order to use antibiotics<br/>responsibly. These areas are<br/>consistent with the Replace,<br/>Refine, Reduce message.<br/>These messages and the<br/>MilkSure training initiative

are very valuable resources for dairy vets to:

- ensure the medicines they prescribe are being used as intended, and
- fulfil a responsibility for reducing the risk of antibiotic resistance developing on clients' farms.

MilkSure accreditation is on a farm and individual operator level and is valid for one year. Accreditation is by completion of the training course and passing an online test. This allows dairy producers to demonstrate that they:

- understand the issues around both antibiotic resistance and the production of safe milk, free of residues, and
- have developed a tailored plan with their veterinary practice to reduce the risk of medicine residues in milk.

#### Summary

Owning responsibility for a problem is the first step towards solving it. There is some way to go yet to ensure that antibiotics are used responsibly on dairy farms in the UK. To pretend otherwise is to bury one's head in the sand.

However, there are several individual and national initiatives that either have been developed or are in the process of development. Engaging with these is one clear way for veterinary professionals to demonstrate leadership in improving the responsible use of antibiotics. And showing strong leadership is definitely going to help our cause in the long run.

"Whilst responsible use of antibiotics and antibiotic resistance are not the only drivers for this scheme, they are important components"



#### References

Beemer F et al (2010). What would be the effects of decoupling prescription and sale of veterinary medicines by veterinarians? Report for Dutch Government. Berenschot Consultancy.

De Briyne N (2016). Veterinary attitudes towards antimicrobial resistance (editorial). Veterinary Record 179: 66-67.

De Briyne N et al (2013). Factors influencing antibiotic prescribing habits and use of sensitivity testing amongst veterinarians in Europe. Veterinary Record 173(19) 475-481.

RABDF (2016). Antibiotic use in dairying – state of the sector survey. RABDF/ University of Bristol Press Release, October 2016.

Veterinary Medicines Directorate (2016). Summary Note of the Second Antibiotic Resistance Summit. 29th February 2016, Nobel House, Westminster, London.





Talk to us about the benefits of integrating Digital X-rays, Ultrasound, MRI and CT within your practice management system.

iris@vetsystems.com | 01359 243400 |







Carolyn Baguley MA VetMB CertAVP(Cattle) MRCVS RCVS Advanced Practitioner in Cattle Health and Production

Carolyn graduated from Cambridge University veterinary school in 2005, and then lived in London for two years, working in small animal practice. In 2007, she was bitten by the travel bug, and moved to New Zealand to pursue her real interest – farm vetting. She spent the next three years learning to do things the 'Kiwi way' in a mainly dairyfocused practice.

Carolyn has been at Scarsdale Vets since returning to the UK in 2010, and is their senior farm assistant. She lives in Derbyshire with her husband, baby daughter and two cats.



\*Suggested Personal & Professional Development (PPD)



LOGISTICS

# Large animal on call – a look at the logistics

The phone chirps and buzzes, rudely destroying the 3am peace. Bleary-eyed, you reach across to see what awaits. 'Mr Smith. Bleak Ridge Farm. Cow can't calve.' Then the all-too-familiar insistent beeping of the pager begins, shattering any hopeful illusions that the text was just a dream. You roll out of bed, painfully aware that those few words signify a lengthy journey and an arduous task ahead. Sleep is over for the night.

According to the 2014 RCVS Survey of the Veterinary Professions (Robinson et al, 2014), veterinary surgeons in farm or production animal practice are on call for 20 hours during an average working week, 18.7 of which are off the premises. While many of these hours may well be spent at home waiting for the phone to ring, large animal veterinary professionals do spend significant amounts of time out-and-about on call.

To make this time as efficient and unproblematic as possible, systems must be in place to enable good communication between the farmer, the answering service and you, the veterinary surgeon; your car must be well-stocked and reliable; and help must be at hand when necessary. There are eight key aspects of managing the logistics of large animal on call, especially when the distances involved may be long, the hours may be unsociable and there may be multiple calls to juggle.

### 1. Keep in touch

Gone are the days when job adverts could specify that the applicant must have a wife to answer the phones. It is rare for on-duty veterinary professionals to handle calls directly, and many practices now use a dedicated out-ofhours answering service. This has made life easier in many respects, although some clients lament the loss of the familiar tones of a practice receptionist or veterinary surgeon's spouse if they call after-hours.

It is a good idea to communicate with the answering service if you know you will be in an area with a poor phone signal - although many practices also use pagers which often work where phones don't (**Figure 1**) – or if you know you will be unable to answer the phone for a certain period of time. There are few things more annoying or stressful than the phone ringing constantly while you are scrubbed into a surgery, and the farmer is too busy holding the animal or helping you to answer it on your behalf.

Depending on the number of veterinary surgeons onduty, calls may have to be prioritised. For example, a uterine prolapse (**Figure 2**) would take priority over a downer cow, which would



**Figure 1.** The phone and pager – your constant companions! Keep them well-charged, and make sure you have the phone numbers of other vets, practice nurses, the local knacker man, and anyone else you may need to call on for help or advice.



Figure 2. A uterine prolapse – always a priority.

in turn take priority over a goat that had been showing vague signs of lethargy for a few days. The answering service may be able to help communicate with – or placate – clients who have to wait to be seen, or may be able to pass on messages to clients you have been unable to contact.

Keep in touch, too, if you are asked to go to a client you don't know or have concerns about - perhaps because they sound aggressive, unstable or inebriated. Your safety is paramount. There are various lone worker monitoring systems available, which practices may invest in, or you could simply ask someone to accompany you. At the very least, it is wise to tell the answering service and/ or a trusted friend, partner or colleague where you are going and how long you expect to be.

### 2. Have help at hand

If conditions are favourable, it takes just over 90 minutes to drive between Scarsdale's northernmost and southernmost farm clients. This means that if, for example, two cow Caesareans came in at once at opposite ends of the practice boundary, it would be a minimum of three hours or so before a veterinary surgeon attending one call could get to the other. For this reason, we have two farm veterinary surgeons on call at any one time - one as first responder and one as backup.

Having another colleague on call can also be very helpful if an extra pair of hands is needed for, say, a tricky Caesarean or awkward gut surgery. Sometimes I will ask farmers to scrub in at critical moments to grasp a uterus or hold abdominal contents out of harm's way, but if things get complicated it can make all the difference to be assisted by someone with surgical knowledge and experience. If the backup is already at another call, or if there is only one vet on duty, it can be useful to have other options available for assistance, since farmers may be unsuitable, unable or unwilling to help. Some farmers make excellent surgical assistants, others less so – a squeamish farmer with dirty hands and no understanding of aseptic technique would be a poor choice!

Practice nurses, off-duty vets, technicians, paraprofessionals or veterinary students living locally, or seeing practice with you, may be able to assist. Check with them beforehand, and have a list of phone numbers ready. Improvise if necessary - a colleague of mine once enlisted workmen from nearby road works to help with a calving, when her calving jack had broken. They were somewhat bemused, but happy to lend a hand! Even if willing assistants are available, unless they have travelled with you, there will be a delay before they arrive.

One of the downsides of being a farm veterinary surgeon on call is this having to work alone, or at least be in sole charge of a situation, without the reassuring presence of other veterinary professionals who can immediately come running to give help or advice in an emergency. This can be very stressful, especially when the client is hostile. Being able to contact senior colleagues, even without their actually attending the call, can help tremendously and practices may wish to consider making this standard practice for less experienced or less confident vets.

In contrast to some, particularly mixed, practices, Scarsdale does not require the 'farm vets' to stay at the clinic overnight. However, we often have hospitalised patients that require night checks and/or intensive care, and these can be very timeconsuming and difficult to fit in around other calls. In these situations, help from the



*Figure 3. My basic in-car library* – Bovine Surgery and Lameness (*Weaver et al, 2005*); A Handbook for the Sheep Clinician (*Clarkson and Winter, 1997*); *and a set of laminated 'cheat sheets'*.

equine vets and duty nurses can be invaluable.

### 3. Carry some reference material

During the day, there should be people available to give clinical advice if necessary, but help can be less forthcoming at night. When I was a new graduate, I found my set of 'cheat sheets' - basic instructions and equipment lists for common emergency procedures - indispensable. Years later, I still refer to them if I've not performed a particular procedure for a while or am especially tired and in danger of forgetting vital steps. I also keep two books in my car - one for cattle, one for sheep - that I wouldn't be without, and often give myself a quick refresher before going to a call (Figure 3).

### 4. Keep good company

Being on call can get lonely at times and it's good to have some company, even of the canine variety (**Figure 4**). Many large animal veterinary surgeons will also take willing partners or interested friends and relatives along sometimes and, as long as they're comfortable around animals and not too squeamish, they can be very helpful. Veterinary students are often great company, and I find their boundless enthusiasm



Figure 4. 'Beanie', the Border terrier – good company on those long nights.

and incessant cheerfulness particularly welcome in the middle of the night!

As well as assisting you practically, other people can help you stay awake. Everyone who's used to being on call at night will know how tempting it can be, when driving along those long roads, to give in to heavy eyelids and tired minds. If you're on your own, find ways of remaining alert. For me, a loud radio and open window do the trick.

### 5. Keep a well-stocked car

A large animal veterinary surgeon's car is their office, and this is never truer than when on call – when the

### CHECKLIST

- stethoscope
- thermometer
- syringes
- needles
- medications (especially for surgeries, metabolic disorders and euthanasias)
- charged clippers with spare blades
- surgery kits x 3
- scalpel blades
- suture material
- surgical scrub
- drapes
- forceps/clamps (various sizes)
- Iubricant
- calving ropes
- calving jack/pulley
- guarded blade
- embryotomy wire
- introducer
- bloat trochars
- stomach tube
- two litres sterile salineblood transfusion kit
- gloves
- spare waterproofs.

Table 1. An on-callclinical checklist

days or nights can be long and there might be little opportunity to restock. Carry plenty of clinical equipment - arriving ill-equipped for calls is embarrassing and unprofessional, and wastes time. Take a few minutes the day before to go through a mental or written checklist of what you might need, especially for consumables that might run low. My basic 'on-call checklist' is shown in **Table 1**.

Know where your equipment is too – fumbling around for what seems like forever, trying to find the appropriate item, can make the farmer impatient and you agitated.

Keep the geography and season in mind when stocking up – for example, if nitrate poisoning is common in the area and it's the right time of year, carry methylene

ALLTIMES	PLUS IN WINTER
<ul> <li>'jump' leads</li> <li>tow rope</li> <li>towing eye</li> <li>spare oil, water and screenwash</li> <li>warning triangle</li> <li>'hi-vis' vest</li> <li>fre extinguisher</li> </ul>	<ul> <li>de-icer</li> <li>scraper</li> <li>snow chains</li> <li>salt</li> <li>shovel.</li> </ul>
<ul><li>warning triangle</li><li>'hi-vis' vest</li><li>fire extinguisher.</li></ul>	shovel.

#### Table 2. Car maintenance - what to carry



Figure 5. Car maintenance items.

blue; and on a rainy spring weekend, have plenty of magnesium sulphate on board.

### 6. Think laterally when supplies run low

Even the best-organised veterinary surgeons with the best-stocked cars cannot carry enough equipment to cover every eventuality and, if there are several calls in one area, it may be impractical to return to the practice between calls to stock up, meaning supplies can run out. There are often alternatives available for treatments and procedures that mean a job can be completed even without the tools that would usually be required, and it's worth making a mental list of as many of these as possible.

For example, cooking oil can be used for frothy bloat, sodium bicarbonate dissolved in tap water for acidosis,



Figure 6. My maps – well-used and very necessary. If possible, don't forget to check the travel news before setting out on major roads.

scalpel or razor blades for clipping hair prior to surgery, and home-made fluids and giving sets for intravenous fluid therapy – see Grove-White (2007) for some very useful tips on this.

### 7. Get to know your vehicle

Large animal out-ofhours work is impossible without transport, and that transport must be as reliable as possible. The better you look after your vehicle, the better it will look after you. Knowingly starting a weekend on call with no fuel, or with badly worn tyres, is a recipe for disaster!

Don't forget the basics. Check the lights, tyre pressures, oil and water regularly, and keep the fuel tank nice and full too – fuel stations that are open for business in the middle of the night or late on bank holidays can be few and far between. A basic knowledge of car maintenance may come in very handy. Know where the spare tyre, jack and locking nut are, and how to use them! **Table 2** contains a list of useful items to carry, some of which are shown in **Figure 5**, and practices will often provide at least some of these. It is also helpful to keep your car manual close by.

Last year the mechanism on my boot lock failed and, much to the amusement of my clients, I had to climb into the boot from the back seat to open it from the inside. I wouldn't have known how to do this – or even that it could be done – without the manual, and would have been very unpopular having to call out another veterinary colleague at 1am because I couldn't access my equipment.

Obtain breakdown cover, and keep the number in your phone. It is a good idea, too, to have thought through contingency plans if your vehicle breaks down completely. Depending on job contracts and on vehicle ownership, some practices will have a spare car that can be used in emergencies, while others will expect you to borrow or hire a car, or swap duties with a colleague.

#### 8. Pack the essentials

As well as clinical equipment and a car maintenance kit, there are a few other essentials to keep on board. **Table 3** shows my 'top 10' list of things I cannot do without.

Being on call as a large animal veterinary surgeon can be daunting enough, without the added stress – for both vet and client – of running out of fuel, attending a Caesarean without a surgical kit or being unable to get hold of anyone to help, if necessary. Being wellprepared and well-equipped frees you from worrying about the logistics and allows you to concentrate on what matters most – the call!

Essential item	Comment
Food and drinks	It's a good idea to carry at least one litre of water and one, if not two, spare meals. Don't skimp on food – you need to keep your energy levels up.
Money	Fuel, emergency snacks, a coffee stop – forgetting your wallet can make a bad night on call a whole lot worse!
Light	An absolute must. It's useful to carry a selection of torches, including at least one head torch (surgical assistants will appreciate a spare). Carry some spare batteries too.
Maps	'Satnavs' are good at getting you somewhere in the vicinity of the farm, but rarely deliver you to the door. A combination of Ordnance Survey and street maps, preferably with farms marked on, can be invaluable ( <b>Figure 6</b> ).
Pen and paper	Vital for scribbling directions before a call and details of drugs used/time taken afterwards.
Clothing layers	The exertion of a calving, or perhaps running around a field after a sup- posedly recumbent patient, can make even the coldest of winter nights feel surprisingly mild. The thermal vests, fleeces and body warmers that seemed so sensible when leaving the house can quickly become very uncomfortable, and quick and easy removal makes a big difference. I always carry a hat, too, for rain or shine.
Old towels	Without towels to mop up spills, rainwater and cow 'slobber', the inside of my car boot very quickly starts to resemble a swamp.
Treats	Whether you're into classical music, popping candy, heated seats or luxury hand cream, treat yourself to a pick-me-up. When I'm on my way to a call that I am not looking forward to, it helps to know that, in two or three hours' time, I'll be back in my car munching chocolate peanuts and singing along with Freddie Mercury.
Deodorant/tissues/ wipes	Freshen up and look in the mirror before you go to that shop/new client/ important meeting/breakfast with an elderly aunt. Being confronted with someone covered in blood, or worse, can be very off-putting for those you meet.
First aid kit	You might be able to stitch up an entire rugby team with the equipment you carry in your car, but a small first aid kit for yourself – and those with whom you come into contact – is still a good idea.

#### References

Clarkson MJ and Winter AC (1997). A Handbook for the Sheep Clinician. 5th edn. Liverpool University Press.

Grove-White D (2007). Practical intravenous fluid therapy in the diarrhoeic calf. In Practice 29: 404-408.

Robinson D et al (2014). RCVS Survey of the Veterinary Professions 2014 Synthesis Report [online]. Available at: https://www.rcvs.org, uk/document-library/2014-rcvssurvey-of-the-veterinary-professionssynthesis-report [Accessed 16 September 2016].

Weaver D et al (2005). Bovine Surgery and Lameness. 2nd edn. Oxford: Blackwell Publishing.

Table 3. Top 10 essentials to carry in the car

### **PPD Questions**

- 1. How many hours do farm or production animal vets spend on call during an average working week, according to the 2014 RCVS *Survey of the Veterinary Professions*?
- 2. Which metabolic product might it be particularly useful to stock up on before a wet spring weekend on call?
- 3. What basic vehicle checks should be performed before a night or weekend on call?
- 4. List five 'car maintenance' items that are useful to carry in winter.
- 5. Apart from car maintenance and clinical items, what else is it essential to carry?

towels, treats, deodorant/tissues/wipes, and a first aid kit.

4. de-icer, scraper, snow chains, salt and shovel 5. each individual will want to make their own list, but for me it's the 10 things in Table 3 – food and drinks, money, lights, maps, pen and paper, clothing layers, old

fuel, oil and water levels; lights; tyre pressures
 device: scraper, snow chains, salt and shovel

2. magnesium aulphate

1. 20 hours, 18.7 of which are off the premises

Answers

### Optimist or pessimist – the part played by the environment

It would seem that humans are not the only species that suffer from mood swings as new research suggests pigs can be optimists or pessimists depending upon their environment and personality.

A study published in *Biology Letters* - and subsequently reported on *MRCVSonline* - has suggested that, just as is the case with humans, pigs living in poorly enriched environments are more pessimistic, and those in a more enriched environment, more optimistic. The researchers concluded that decision making in some non-human animals is similar to humans, incorporating aspects of stable personality traits and more transient mood states.

In the study, scientists at the University of Lincoln offered 36 pigs bowls filled with chocolate or coffee beans. Dr Lisa Collins, who led the study, considered the pigs 'optimists' if they investigated a third, empty bowl, that was placed between the filled bowls.

The 36 pigs were divided equally between a highly enriched environment and a lesser enriched environment. Both environments had solid floors, a slatted area and wooden blocks on chains; but the more enriched environments had deep straw and a larger space allowance.

Pigs are known to be some of the animals most sensitive to environmental stress – microclimate, transport, noises and so on – and this study showed that the environment impacted on the mood of the tested animals.

The team found that the reactive pigs were more influenced by their housing environment. Those living in the lessenriched environment were more pessimistic and those in the more enriched environment, more optimistic.

### Wider perspective

The welfare of an animal includes its physical and mental state. Good animal welfare should include both fitness and a sense of well-being. Any animal kept by humans, has the right to be protected from unnecessary suffering and this study highlights the fact that at least one of our farmed species is, perhaps, more sensitive to their housing conditions than we may have realised.

The 'Five Freedoms' state ideals rather than specific standards for animal welfare. These are:

- freedom from hunger and thirst
- freedom from discomfort by providing an appropriate environment including shelter and a comfortable resting area
- freedom from pain, injury or disease
- freedom to express normal behaviour
- and company of the animal's own kind freedom from fear and distress.

The second 'freedom' addresses the animals' environment and, although the different environments in which we keep pigs (outside free range, inside in pens/stall/straw) all, hopefully, fulfil the freedom 'needs', it is becoming clear that the quality of the environment matters a great deal. We have a moral obligation to our livestock to provide as natural an environment as we can.

This applies to all housed animals. Studies have shown that horses do not like to be stabled individually while cattle – although herd animals – still need adequate individual space when housed inside. We clearly have much more to learn.

Professor John Webster from the University of Bristol commented during a session on the welfare of food-producing animals at the BVA Congress last November: "Consumers have much more potential for improving animal welfare than pure legislation; but it needs to be informed and based on what the animal actually wants."

So are pigs rolling in muck really happy? Or are they just making the best of a bad job and trying to keep cool on a hot day?

#### **Serious obligation**

It is interesting to draw the parallels between the porcine environment study from the University of Lincoln and our own reaction to the environment in which we may find ourselves. The environment we live in can increase or reduce our stress, which in turn impacts our attitudes in addition to our physical well-being. What you are seeing, hearing or experiencing at any moment can change not only your mood, but also how your nervous, endocrine and immune systems are working.

The stress of an unpleasant environment can cause anxiety, sadness and helplessness leading to depression. Those who have suffered from a depressive state of mind would certainly not wish it on any other human, and perhaps we should also extrapolate this to our farmed livestock to whom we owe as comfortable and stressfree life as possible.



## Complete access wherever you are

INTERNET

## SPECTRUM DDS<sup>™</sup>



## Spectrum Practice Management System

enquiries@vetsystems.com | 01359 243 400 |

Designed & produced by



Business Feature



# Flick the switch

Illuminate your consultations by using a fully integrated workstation.

### New dimensions of imaging possibilities

The pressure is on for surgeries to provide clients with accurate and detailed visual accompaniments during consultations. This not only increases the demands on the busy veterinary surgeon, but also on your practice management system and associated hardware.

Picture archiving and communication systems (PACS) are essential for the forward-thinking veterinary practice, supporting the progressively complex and exciting field of veterinary imaging.

### So, we're extending our imaging possibilities ... now what?

Your PACS solution should be DICOM-compliant.

DICOM files are the industry standard way of combining information gathered from digital imaging equipment with patient ID – in order to unify your existing hardware and software, servers, workstations and printing devices to produce records that have your patient IDs embedded within them. DICOM storage solutions are cost effective, scalable and flexible, giving surgeons the ability to communicate digital images – either across practices or to referring surgeons – quickly, securely and reliably.

Developed to store DICOM files together with clinical and patient records, text notes, lab reports and photos, the IRIS Workstation enables you to walk your clients smoothly through the diagnostic process. And data transfer across the network has been configured to optimise speed and reliability.

### The space-time continuum

Empower your staff by providing one-stop, reliable equipment that addresses all their clinical needs in one place. An integrated PACS and practice management system terminal can serve to transform your consultations, client and clinician experience; so consider and discuss your requirements for an integrated solution, based on your current caseload and equipment.

When time is of the essence, an IRIS solution in a busy practice is invaluable in improving efficiency and organisation.

### Confessions of a busy veterinary surgeon

### "I stick all my diagnostic images on the workstation in whichever room I am working from"

This all-too-common, quick-fix solution may seem like the best time-saving option during a hectic day. However, the long-term and ongoing problem of lost files, misplaced client information and resulting disjointed communication carries further issues. Often not DICOM compliant, these scattered and disorganised files are vulnerable to viruses and can cause great confusion when handing cases to other staff members or referring surgeons.

### **The WOW factor**

Professional, impressive and diagnostically advanced, digital imaging can reflect a forward-thinking and modern diagnostic attitude that clients can both relate to, and be reassured by. High-performing IRIS workstations will instantly enhance your client's experience and understanding by generating a compilation of images of their pet that can be displayed in 2D or 3D.

IRIS Workstations at multi-site practices will enable clients to view the images at a branch of their convenience, particularly if vets work between multiple locations. For mobile vets, PACS can be taken on the road and records can be accessed from laptops, smart devices or other webenabled hardware.

### An eye to the future

The development team responsible for the IRIS Workstation at AT Veterinary Systems ensure that it is ground-breaking, fully integrated and continually evolving with the times. Imaging may ultimately allow us to drastically limit the level and frequency of exploratory surgery we need to perform – so developed with a vision of the future in mind, IRIS supports 3D and 4D imaging possibilities.









### iris@vetsystems.com | 01359 243 400

Designed & AT VETERINARY produced by SYSTEMS



Marie Rippingale BSc(Hons), REVN, clinical coach, G-SQP, DipHE CVN, DipAVN(Equine)

Marie is head equine nurse and a clinical coach at XLVets practice Scarsdale Vets in Derby. Marie is also a lecturer on the veterinary nursing diploma course at Bottle Green Training, Melbourne, Derbyshire.



\*Suggested Personal & Professional Development (PPD)



WORMING

## Equine worming protocols

Equine internal parasites can present in various forms, shapes and sizes. Many cause a significant threat to the health of horses. Registered veterinary nurses (RVNs) or suitably qualified persons (SQPs), carry a particular responsibility to educate clients about the dangers of internal parasites, and to teach management strategies to help control them.

### **Equine internal parasites**

There are many endoparasites that use the horse as a host. The degree of damage to the horse depends on the type of worm, its life cycle (whether it remains inside the gut or migrates around the body), the number of worms present and the health and immune status of the horse.

### Small redworm (Cyathostomes)

Small redworms are the most common internal parasite of the horse, with a prevalence rate that can reach 100 per cent of horses (Elsheikha, 2016). Some individuals may be infected with as many as a million of these worms.

The normal life cycle takes place over a few weeks from ingestion of larvae to adult egg-laying worms; however, these worms have the ability to 'hibernate' within the gut wall in small cysts. The emergence of large numbers of larvae all at the same time (usually during the late winter) can cause huge damage to the gut lining, with inflammation, diarrhoea, colic and death in up to 50 per cent of affected horses (Elsheikha, 2016).

This condition is known as cyathostominosis.

### Large redworm (Strongyles – Strongylus spp.)

Owing to improved worming regimens and effective treatments, this parasite is not as common as it used to be. The larval stage of the life cycle of *Strongylus vulgaris* is of most concern, because it migrates through blood vessels to develop within the major artery supplying blood to the intestinal tract. This migration not only damages the blood vessel walls, but can also lead to blood clots and a weakening of the blood vessels. Some species damage the liver and other internal organs (Elsheikha, 2016) with disruption to the blood supply that can cause colic and, in rare cases, death.

### Large roundworms (Ascarids – Parascaris equorum)

Adult large roundworms can reach up to 50cm in length (Figure 1). Large roundworms typically only affect foals and young horses, as older horses develop an immunity to them (Elsheikha, 2016). Adult ascarids and migrating larvae can cause poor growth, digestive and respiratory problems and, occasionally, fatalities. The eggs of large roundworms can survive in the soil and in stables for many years; with young horses becoming infected by ingesting these eggs from the pasture and their surroundings.

### Pinworms (Oxyuris equi)

Pinworms inhabit the colon and are not thought to be harmful. However, pinworms can cause perianal pruritus induced by the egg-laying behaviour of the female worms and by their sticky egg masses in the region, which may result in scratching and damage to the tail. Because pinworm eggs are not normally found in dung samples, diagnosis is usually made by microscopic examination of sticky tape preparations taken from around the anus (Elsheikha, 2016).

### Lungworms (Dictyocaulus arnfieldi)

Donkeys are thought to be the natural host of this parasite; but horses can also be infected with lungworms. This infection is likely to occur when horses share the same grazing as donkeys – the latter can tolerate a large infestation of lungworms without any obvious signs, whereas infected horses show obvious respiratory signs, such as persistent coughing.

Horses and donkeys can live together safely as long as an appropriate worming programme is in place.

### Tapeworm (Anoplocephala perfoliata)

Tapeworms are located in the gastrointestinal tract of the horse and congregate around the narrow junction of the small intestine and the caecum – the ileocaecal junction. The presence of large numbers of worms here can cause an impaction to occur and the horse to display colic symptoms. Severe tapeworm infections can cause digestive disturbances, loss of condition, colic and death.

It is advisable, therefore, to carry out either an antibodybased blood test (ELISA) or the relatively new salivabased test - they both have comparable sensitivity and specificity and can be used to determine the level of exposure in individual horses. The saliva test (EquiSal Tapeworm, Austin Davis Biologics) has only recently become available on the veterinary equine market (Elsheikha, 2016).

### Bots (Gastrophilus intestinalis)

Bot flies are a common irritant to grazing horses during the summer months. The female flies lay their small, sticky yellow eggs on the coat of the horse, typically on the forelegs, shoulder and abdomen. As the horse licks itself, or is groomed by another horse, the eggs hatch and the larvae are transferred into the mouth of the horse, where they burrow into the tissues of the tongue and mouth before being swallowed.

Once in the stomach, the larvae attach themselves to the gut lining to continue their development through the winter – the 'bots' eventually detaching to continue unharmed through the digestive system to be passed out in the faeces. After pupating in the ground, they emerge as a new generation of flies.

Advising clients to remove the eggs from the horse daily with a 'bot knife' can help to disrupt the life cycle.

### Worming strategies Interval dosing

This is the administration of a specific drug at the time interval (usually annually) recommended by the wormer manufacturer (Snalune, 2008).

Interval dosing encourages increased use of anthelmintics at lower risk times, such as winter periods, when horses spend increased amounts of time stabled. This is expensive, often unnecessary, and many horse owners also use anthelmintics at inappropriate intervals. The main disadvantage of this strategy then is that horses may be dosed unnecessarily, which may encourage the development of resistance (Snalune, 2008).

Resistance occurs when parasites become tolerant to a drug designed to kill them. It is an inherited trait that develops in response to selection pressure favouring survival of worms with the genetic ability to survive chemotherapy (Elsheikha, 2016). For this reason, it is essential that horses are dosed accurately according to their bodyweight. Using too low a dose of wormer may speed up the development of resistance; on the other hand, frequent, unnecessary worming may also increase the potential for the development of resistance.

### Strategic dosing

This is the use of drugs at specific times of year to disrupt the seasonal cycle of transmission (Snalune, 2008).

This helps to disrupt the seasonal cycle and transmission of parasites by reducing parasite egg output by horses. This also prevents the build-up of larvae on the pasture. However, problems can arise as a result of abnormal weather patterns - for example, wet, warm summers can lead to early or late peak pasture larval burdens (Snalune, 2008).

### Targeted strategic dosing

Faecal worm egg counts (FWECs) are measured prior to dosing so that only horses with FWECs between 200 to 500 eggs per gram (epg) are wormed (Snalune, 2008). This is the strategy best suited to minimise the problem of resistance to wormers.

FWECs should be performed every eight to 10 weeks. However, diagnostic limitations mean that negative FWECs do not guarantee that a horse is parasite-free because, for example, it may be harbouring immature parasites that have not yet started to produce eggs. Also, small redworms developing in the gut wall cannot be detected by this method.

For these reasons, it is recommended that an anthelmintic capable



Figure 1. Roundworms mainly affect foals and young horses.

of treating encysted cyathostomes is administered to the horse in late autumn/ early winter time (Snalune, 2008). Tapeworms are not detected by routine FWECs, so a tapeworm antibody ELISA (blood) test or the new tapeworm saliva test should be carried out in the spring and autumn (Elsheikha, 2016).

Targeted strategic anthelmintic treatment protocols for horses were first recommended over two decades ago, but their implementation in the field has been slow (Lester & Matthews, 2013). Furthermore, horse owners may perceive that targeted strategic treatment approaches are labour intensive and more costly.

In the latter respect, a recent cost comparison analysis of targeted treatment protocols in horses in the UK identified that anthelmintic use was reduced by 82 per cent and, on average, a saving of £294/year per yard could be achieved when compared with a typical interval treatment programme (Lester & Matthews, 2013).

For these reasons, the cost associated with performing regular faecal worm egg count (FWEC) analysis should be viewed as a fundamental part of evidence-based worm control in horses.

### Types of wormer

The different types of wormer available, along with indications for their use are detailed in **Table 1**. It is important to encourage clients to embrace a targeted strategic worming protocol, but also to remember that each horse is an individual. A number of studies have shown that a relatively small number of horses are

Drug name	Active against	Dosing	
Ivermectin	Large redworms, small redworms (not the larval stages), pinworms, large roundworms, lungworms, intestinal and neck threadworms and bots.	According to results of FWEC. Resistance to this wormer has been reported.	
Praziquantel	Tapeworms	ose in spring and autumn or dose based on the results of ELISA ood sample test or the new tapeworm saliva test.	
Ivermectin and praziquantel	Large redworms, small redworms (not the larval stages), pinworms, large roundworms, lungworms, intestinal and neck threadworms, bots and tapeworms.	Single dose in spring and autumn for roundworms and tapeworms. Use in conjunction with FWEC, tapeworm ELISA c the new tapeworm saliva test.	
Moxidectin	Small redworm including encysted stages, large redworm, pinworms, large roundworms, intestinal threadworms, and bots.	Use in conjunction with FWEC. One single dose required in late autumn/early winter to treat encysted small redworms.	
Moxidectin and praziquantel	Small redworm including encysted stages, large redworm, pinworms, large roundworms, intestinal threadworms, bots and tapeworms.	Use in conjunction with FWEC and tapeworm ELISA test or the new tapeworm saliva test. One single dose required in late autumn/early winter to treat encysted small redworms. This is the newest equine wormer on the market. It must be used carefully and strategically to help to lower the risk of resistance developing.	
Pyrantel	Large redworms, small redworms, large roundworm and pinworms. Tapeworms at elevated dose rate (double dose).	Single dose in spring and autumn. Use in conjunction with FWEC and tapeworm ELISA test or the new tapeworm saliva test.	
Fenbendazole	Large redworms, small redworms including encysted stages at elevated dose rates, pinworms, large roundworm, intestinal threadworms at elevated doses.	Five-day course can be used against inhibited mucosal stages of small redworms. Use in conjunction with FWEC. There is widespread resistance to this wormer group against small redworms.	

Table 1. Different wormers and indications for their use [Sources: British Horse Society (2009), Kaplin & Nielsen (2010) and Elsheikha (2016)]

responsible for shedding the majority of nematode eggs into the environment. This is commonly referred to as the '80:20 rule', whereby approximately 80 per cent of strongyle egg shedding in horses is observed in around 20 per cent of the total population (Lester & Matthews, 2013).

By identifying the critical 20 per cent of the population on a yard that shed a higher number of worm eggs, sustainable control via targeted strategic anthelmintic therapy can be initiated. Horses that contribute significantly to pasture contamination (socalled 'high shedders') can be identified by FWEC analysis at the appropriate time of year (spring through summer in the UK) and can then be targeted with effective anthelmintics

to reduce egg shedding and pasture contamination (Lester & Matthews, 2013).

#### **Educating horse owners**

The National Equine Health Survey (NEHS) 2015 results showed that many horse owners were not worming correctly. About one third of people who thought they had treated for encysted cyathostomes had used an unsuitable product; while around seven per cent used a product against which resistance had already been reported - indicating that some horse owners still did not know how to control worms effectively (Elsheikha, 2016).

This is an area where RVNs and SQPs can play an important role in communicating best practice in parasite control guidelines. Once a worming protocol has been selected, it is important to advise clients on how to estimate the dose of the wormer accurately. Underdosing horses with wormers can contribute significantly to anthelmintic resistance; conversely, overdosing horses with wormers can cause some unpleasant side effects.

The simplest way to encourage clients to assess the bodyweight of their horse correctly is by the use of a weigh tape. These are cheap to purchase and easy to use. Ideally, an electronic weighbridge could be used to gain a more accurate weight for each horse, but this is not always possible owing to transport limitations. Some practices/feed companies will take a weighbridge out to yards and offer 'weighbridge clinics', that can also be a very useful service for clients.

It is important as an RVN or SQP that you make clients aware of all the options available, so that they can make an informed choice.

#### **Pasture management**

A rigorous pasture management programme will make a major contribution to effective worm control. Clients should be made aware of the following guidelines (Snalune, 2008, Elsheikha, 2016):

do not overstock
 pastures. As a guide, the
 recommended ratio is
 two horses per hectare
 on permanent grazing
 (1-1.5 acres per horse).
 Overstocking results
 in pasture with a high
 concentration of faeces and,
 therefore, great potential
 to infect the grazing animal
 if these faeces contain
 parasites or eggs

 overgrazed paddocks can become 'horse-sick' (Figure 2) and horses may be forced to graze closer to faeces, increasing the risk of ingesting higher levels of worm larvae.

Ideally droppings should be removed from the pasture daily, although twice per week is also considered effective. This will help prevent the development of latrine areas and remove the source of new worm eggs.

Where possible, sub-divide the grazing area into smaller paddocks and rotate the horses around the paddocks at regular intervals. For this to be effective, it is important that all horses grazing together in the paddocks are on the same worm control strategy.

From late summer until the following spring, allow pasture to rest where possible. This aids worm control because most of the larvae on the pasture will die-off over the winter. However, the eggs of certain species, such as large roundworms, can survive in the soil for years.

Mixed-species grazing (cattle and sheep) is extremely useful to decrease pasture contamination. These species act as 'biological vacuum cleaners' by eating eggs and larvae that cannot survive in species other than the horse – an exception being *Trichostrongylus axei*.

Tractor harrowing to scatter faeces, together with infective eggs and larvae, is sometimes recommended. This is effective in countries with hot, dry weather, as these conditions will dry out eggs and larvae and kill them. However, in our mild, wet climate, this only serves to spread infective larvae, making horses more likely to ingest them and build up their worm burden.

#### Conclusion

There is a great deal to consider when developing equine worming protocols. Each horse should be assessed as an individual and a targeted strategic worming protocol should be put into place. RVNs and SQPs are in a unique position to advise and support clients to successfully implement and follow the chosen protocol. Diagnostic tests such as FWECs, tapeworm ELISAs and the new tapeworm saliva test, are useful in developing the worming protocol. Weighing the horse correctly and managing the pasture to an acceptable level will also contribute to the success of the worming protocol and improve the overall health of the horse.



*Figure 2.* A 'horse-sick' paddock. This may cause horses to graze closer to faeces, which increases the risk of their ingesting higher levels of worm larvae.

### **PPD** Questions

- 1. The donkey is the natural host to which equine internal parasite?
- 2. What is strategic anthelmintic dosing?
- 3. Which three diagnostic tests should be used in conjunction with targeted strategic anthelmintic dosing?
- 4. What small piece of equipment can be used by a horse owner to more accurately estimate their horse's bodyweight?
- 5. Ideally, how often should faeces be removed from pasture?

2. the use of drugs at specific times of year to disrupt the seasonal cycle of transmission
3. FWECs, tapeworm ELISAs and the new tapeworm saliva test
4. a weigh tape
5. daily.

Lungworm, Dictyocaulus arnfieldi
 Lungworm, Dictyocaulus arnfieldi

S19W2IA

#### References

British Horse Society (2009). Worm Control, Available at: http://www. bhs.org.uk/welfare-and-care/ horse-health-and-sickness/wormcontrol-and-worming. [Accessed: 9th October 2016].

Elsheikha H(2016). 'Equine internal and external parasites: identification, treatment and improving compliance', Veterinary Times Equine 2(2): 4-6.

Kaplin RM and Nielsen MK (2010). 'An evidence-based approach to equine parasite control: It ain't the 60s anymore', Equine Veterinary Journal 20(6): 306-316.

Lester HE and Matthews JB (2013). 'Faecal worm egg count analysis for targeting anthelmintic treatment in horses: Points to consider'. Available at: http://onlinelibrary. wiley.com/doi/10.1111/evj.12199/ epdf. [Accessed: 9th October 2016].

Snalune K (2008). 'Equine internal parasites; their types and management, VN Times (7) pp8-10.



Colin Roberts BVSc FRCVS RCVS Recognised Specialist in Equine Internal Medicine MRCVS

Colin is the Director of Studies in Veterinary Medicine at Sidney Sussex College. He is a member of the Federation Equestre Internationale's (FEI) Veterinary Committee and an FEI Official Veterinarian and a member of the Scientific Advisory Group of the British Equestrian Federation. In 2012, he became a Fellow of the Society of Biology. He is an author of many scientific papers and has acted as a treating veterinarian at many top-level horseracing, show jumping and eventing competitions.

His professional areas of interest include equine internal medicine, disorders of the equine upper airway, equine welfare and performancerelated disorders.



\*Suggested Personal & Professional Development (PPD)



### Update on exercise-induced pulmonary haemorrhage

It has long been recognised that epistaxis occurs in a small proportion of horses, particularly racehorses, following strenuous exercise.

The Thoroughbred stallions, Bartlet's Childers, also known as 'Bleeding Childers' (foaled in 1716) and Herod the Great (1758-1780) were just two highly influential breeding animals that have been recorded as showing this condition.

It was believed for many years that the source of the blood in affected horses was the upper airways and only as recently as the 1970s was it recognised that the site of bleeding is actually the lungs (Cook et al, 1974) and, typically, the dorsocaudal region of the lungs.

Only a relatively small proportion of Thoroughbred racehorses show visible epistaxis associated with exercise; but from the 1980s onwards numerous post-race surveys around the world showed that a far greater proportion had endoscopic evidence of haemorrhage in the form of visible free blood in the trachea when examined shortly after racing. Indeed, between 40 and 75 per cent of racing Thoroughbreds are generally found to have bled at this time.

It was following the earlier of these surveys that the term exercise-induced pulmonary haemorrhage (EIPH) was coined to describe this condition. It appears that the optimum time to examine horses endoscopically to ascertain whether lung haemorrhage has occurred is 30 to 90 minutes after racing.

### Perspectives on the problem

Exercise-induced pulmonary haemorrhage is seen in horses performing a whole range of sporting disciplines besides Thoroughbred racing. It has been reported in racing Standardbreds, Appaloosas and Arabian horses, as well as in polo ponies, eventers and showjumpers. In fact, the only discipline that has been looked at in which EIPH appears to be a relatively uncommon event is endurance racing.

Numerous studies have shown that the prevalence of EIPH in racehorses increases with age, at least in the range two to four years - for example, Roberts et al (1993) found a prevalence of 40 per cent in two-yearold racehorses, 65 per cent in three-year-olds and 82 per cent in animals aged four and over. More recent work has suggested that it is not actually the horse's age that is the risk factor, but the number of races that the horse has had and this will obviously increase with increasing age (Hinchcliff et al, 2015).

The relationship between EIPH and performance is still somewhat unclear some surveys having found a negative relationship between the occurrence of the condition and finishing position; some finding no relationship; and, one group finding that horses were more likely to be highly placed if they did have EIPH. What nearly everyone does agree on though, is that the horses in which EIPH is most marked and which manifest bleeding at the nostrils do show impaired performance, although the mechanism for this reduced performance is uncertain.

For some time now, racehorse trainers in the UK have been able to request that their horses undergo an endoscopic examination after racing, with the express purpose of determining whether they show evidence of EIPH. These examinations - which specifically exclude an assessment of upper airway function - are carried out frequently on racecourses around the country and the author is currently analysing trends in the results of these examinations.

Preliminary data suggest that poorly-performing horses that are presented for post-race endoscopy are no more likely to demonstrate endoscopic evidence of EIPH than animals of the same age drawn from a random population of racehorses (Roberts et al, 1993). It is the author's opinion that the danger of post-race endoscopy for the detection of EIPH is that it may often result in the incorrect assumption that mild EIPH has been responsible for a horse's poor performance and preclude a more indepth investigation that might well throw light on the genuine cause of the animal's disappointing performance.

### Perspectives on pathophysiology

The cause of EIPH is still uncertain, but many believe it to be a consequence of the phenomenon of pulmonary capillary stress failure as suggested by West et al (1993). During exercise in the Thoroughbred horse, pulmonary vascular pressures rise tremendously – pulmonary arterial pressure can exceed 100mmHg, from a resting mean value in the low twenties; whilst pulmonary artery 'wedge' pressure (a measure of pulmonary venous pressure) also increases dramatically.

West et al (1993) demonstrated that these pressures are sufficient to result in bursting of pulmonary capillaries. Furthermore, the transmural pressures exerted on the pulmonary capillaries may become even greater during inspiration owing to the addition of the negative intraalveolar pressure that occurs during this stage of respiration.

As well as the fact that high enough pulmonary capillary transmural pressures to cause EIPH have been demonstrated in exercising ponies (West et al, 1993), a couple of other findings support this theory. Firstly, the fact that the diuretic agent frusemide reduces the severity of EIPH might be taken as evidence in favour of pulmonary capillary stress failure since frusemide has been shown to reduce pulmonary vascular pressures, both at rest and during exercise.

Additionally, it is well documented that epistaxis is seen quite frequently in horses suffering from atrial fibrillation - a condition in which increased left atrial pressure might be expected to result in increased pulmonary capillary pressure.

Other theories have been put forward to explain the occurrence of EIPH. Schroter et al (1998) suggested that the condition occurs as the result of impact forces when the galloping horse's forelimbs strike the ground, which they suggest results in transmission of forces that might cause EIPH - into and across the thoracic cavity. However, there is no convincing evidence to support this hypothesis and it does not explain the fact that epistaxis is quite frequently seen in swimming horses that do not experience the same forelimb impact as the running horse.

Changes in the pulmonary vasculature have been reported in association with EIPH. O'Callaghan et al (1987) reported that areas of the lung affected by EIPH had undergone revascularisation by bronchial vessels – by vessels from the systemic rather than the pulmonary circulation.

More recently, Williams et al (2008) reported veno-occlusive remodelling associated with fibrosis and local haemosiderin

accumulation, particularly in the dorsocaudal lung field, in seven Thoroughbreds that had a history of EIPH involving at least one episode of epistaxis each during racing. These workers pointed out that such changes in humans may occur as a result of pulmonary venous hypertension, which is seen in equine EIPH. Venoocclusive remodelling would be likely to increase pulmonary capillary pressure, thus increasing the likelihood of stress failure in the pulmonary capillary bed.

It is uncertain whether these vascular changes are the cause of EIPH or secondary to the condition. However, they do suggest a possible explanation for the fact that horses show EIPH more frequently and more severely the more that they race.

The influence of both upper and lower respiratory tract disease on the occurrence of EIPH is still uncertain. Disorders of both parts of the respiratory tract can cause an increase in the intrapulmonary pressure, swings during breathing and an increased negative intra-alveolar pressure during inspiration, which would be expected to increase pulmonary capillary transmural pressure. At this stage, however, convincing evidencebased associations between other respiratory disorders and EIPH are not available.

#### **Treatment options**

The treatment of EIPH is a controversial issue. As mentioned previously, treatment of horses before exercise with the diuretic agent frusemide – more commonly known in racing circles by its trade name of 'Lasix' – typically administered at a rate of 0.5-1mg/kg four hours before racing – has been found to reduce the severity of EIPH whilst not preventing its occurrence.

There is some evidence that frusemide may also improve

racing performance and its use is prohibited during racing in the United Kingdom. The evidence for other prophylactic treatments for the prevention of EIPH was assessed as 'low quality' or 'very low quality' in a recent American College of Veterinary Internal Medicine (ACVIM) consensus statement on EIPH (Hinchcliff et al, 2015).

In the UK, it is common practice to administer frusemide before strenuous training gallops in the hope that this will reduce the risk of EIPH both then and during later races; there is no compelling evidence, however, to demonstrate a value of this practice.

Tobin et al (2012) reported that since the administration of frusemide before racing was permitted in New York State, the prevalence of epistaxis in horses racing there has fallen by 80 per cent. These authors went on to suggest that the use of Lasix is likely to reduce the prevalence of sudden horse deaths during racing. However, the ACVIM consensus statement on EIPH concluded that, 'There is low quality evidence that EIPH is causally associated with sudden death in race horses and we could locate no evidence of increased risk of sudden death in horses with EIPH' (Hinchcliff et al, 2015), and this must throw into some doubt the conclusion of Tobin and others at this stage.

#### Summary

Whilst it is clear that EIPH occurs frequently in racing horses, there are many questions still to be answered concerning the pathophysiology of the condition, its effects on the health and performance of horses and the optimum means of managing it.

#### References

Cook R (1974). Epistaxis in the racehorse. Equine Vet J. 6: 45-58.

Hinchcliff K et al (2010). Risk factors for exercise-induced pulmonary haemorrhage in Thoroughbred racehorses. Equine Vet J. 42(Suppl 38) 228-234.

Hinchcliff K et al (2015). Exercise induced pulmonary haemorrhage in horses: American College of Veterinary Internal Medicine consensus statement. J Vet Intern Med. 29: 743-758.

O'Callaghan M et al (1987). Exercise-induced pulmonary haemorrhage in the horse: results of a detailed clinical, postmortem and imaging study. VIII. Conclusions and implications. Equine Vet J. 19: 428-434.

Roberts et al (1993). Exerciseinduced pulmonary haemorrhage in racing Thoroughbreds in Great Britain. Proceedings International EIPH Conference, Guelph, Ontario. p. 11.

Schroter R et al (1998). Exerciseinduced pulmonary haemorrhage (EIPH) in horses results from locomotory impact induced trauma – a novel, unifying concept. Equine Vet J. 30: 186-192.

West J et al (1993). Stress failure of pulmonary capillaries in racehorses with exercise-induced pulmonary haemorrhage. J Appl Physiol. 75: 1097-1109.

Williams K et al (2008). Regional pulmonary veno-occlusion: A newly identified lesion of equine exerciseinduced pulmonary haemorrhage. Vet Pathol. 45: 316-326.





Quality assured professional qualifications

www.cqual.org



Steve Unwin BSc BVSc DipECZM(ZHM) MRCVS

Steve graduated from Massey University in New Zealand in 1993 with a science degree majoring in physiology and ecology; and then, in 1998, with a veterinary science degree. Between 1997 and 2003, he worked in several zoos, wildlife rehabilitation centres and conservation projects in Australia, Thailand and Cameroon. Since 2003, he has been a veterinary officer in the Chester Zoo animal health team.

Steve is a recognised specialist in Zoo Health Management as a Diplomate of the European College of Zoological Medicine. He was the veterinary coordinator for the Pan African Sanctuary Alliance veterinary programme and is currently co-facilitator for the Orangutan Veterinary Advisory Group. Both these organisations focus on and promote capacity building of local primate and wildlife veterinarians.



\*Suggested Personal & Professional Development (PPD)



**RISK ANALYSIS** 

# The role of disease risk analysis in zoo and wildlife medicine

The goals of any preventive health care programme are to prevent disease entering the animal population, to maintain the health of that population and to prevent dissemination of disease to other populations. With the logistical difficulties associated with zoo and wildlife medicine – from access to patients beyond remote capture techniques, to large data and knowledge gaps in wildlife epidemiology – we must be more proactive than reactive in our approach.

### Preventive healthcare programmes, disease risk analysis and One Health

The effect of disease transmission into a conservation-sensitive species can be catastrophic; not only for that species, but it can also have a severe deleterious effect on the biodiversity of any environment.

Our system needs to be:

- science/evidence-based
- able to highlight data gaps
- able to accurately assess cost-benefit
- able to improve communication to improve understanding of all parties and thus improve compliance.

The modern zoo and wildlife veterinary surgeon is well placed to utilise and develop the area of wildlife disease risk analysis - both in a zoo setting and in the field. Procedures exist to guide practitioners through this process. Figure 1 and Figure 2, taken from the Manual of Procedures for Wildlife Disease Risk Analysis (Jakob-Hoff et al, 2014), provide an overview of the process and the tools available to assist veterinary professionals and animal managers to create bespoke programmes for their institutions or field projects.

We need risk analysis processes because humans are notoriously bad at assessing risk.

Risk is a combination of the likelihood of a hazard interaction and the consequences of that interaction. Our brain has



Figure 1. A disease risk analysis process (Jakob-Hoff et al, 2014).



Figure 2. A 'tool box' of risk analysis procedures (Jakob-Hoff et al, 2014).

evolved to make rapid decisions in the face of a risk. So we are more likely to focus on the consequences of something happening, and put less emphasis on the likelihood.

Risky situations are often uncertain and uncertainty makes people anxious and prone to jump to the wrong conclusion. Risk analysis is a tool to provide evidence for decisionmaking under uncertainty.

A risk analysis adds science to policy decision-making. It is a transparent method to organise, assess and study a problem/question/issue allowing successful project succession planning by:



*Figure 3.* By its multidisciplinary nature, risk analysis follows the One Health paradigm. (www.onehealth.se/ohs)

- identifying data gaps and research needs
- providing a visual representation of plans
- identifying relationships that may not be immediately obvious
- identifying critical control points for management
- identifying areas of uncertainty.

In zoo and wildlife medicine, disease risk analysis has been utilised as a management tool in animal translocation and release programmes, in disease outbreaks or surveillance within zoos and wildlife parks and providing data for general animal centre operations.

By its multidisciplinary nature, risk analysis follows the One

Health paradigm - that is the collaborative efforts of multidisciplines working locally, nationally and globally to attain optimal health for people, animals and our environment (**Figure 3**).

One Health is an attempt to increase emphasis on adaptive risk assessment and mitigation with effective risk communication and trust between professionals to improve resolution of disease ecology issues. It is a comprehensive approach to health that focuses on:

 improving health and well-being through the prevention of risks and the mitigation of the effects of crises (emerging diseases) that originate at the interface among people, animals and their various environments, and

 promoting cross-sectoral collaborations and a 'whole of society' treatment of health hazards, as a systematic change of perspective in the management of risk.

### Utilising disease risk analysis principles in a zoo setting

At Chester Zoo, we use disease risk analysis principles as part of a preventive healthcare programme to mitigate disease risk. In brief, we ask the following questions:

- what question(s) are we trying to answer? (problem description)
- can we interpret from

the data we get? (risk assessment)

- how are we going to manage health situations? (risk management and implementation)
- how are we going to learn from what we find in order to improve the situation into the future? (risk communication, review and change problem description)

The importance of the involvement of the whole animal management team – animal health, curatorial and keeping, science and research – in the data gathering and decision-making process of disease mitigation cannot be overstated. So there are a number of different specialists involved in this procedure. Figure 4. (a) Histopathology slides showing: syncytial cells. (b) S. pneumoniae in lung tissue. (c) The species of interest, Pan troglodytes verus, the Western Chimpanzee. Photo: Chester Zoo.



Figure 4a.



Figure 4b.



Figure 4c.

#### **Stock selection**

The risk of importing pathogens of concern is minimised by using pre-import testing requested as per British and Irish Association of Zoos and Aquariums (BIAZA) and Chester Zoo guidelines; requesting medical/diet/ reproductive history; through a weekly meeting with curators to discuss imports and exports; and trust between parties on reasonable import requirements and the ability to refuse imports based on pre-import findings.

### Quarantine and biosecurity procedures

These minimise the risk of pathogen transfer for imports and isolation of resident sick animals. Procedures are agreed upon jointly by veterinary surgeons and senior animal husbandry staff ahead of a disease outbreak, with dedicated staff to lead quarantine implementation, enhance communication with all staff involved and biosecurity enforcement. These procedures are integrated with zoonotic disease control and an employee health programme.

### Monitoring of health and welfare

Keeper observation of the collection is critical to this activity and daily reports are copied to the animal health centre. Regular discussion of current and potential health issues is undertaken with keeping and curatorial staff, including a weekly clinical briefing with the latter.

## Health screening and routine/preventive treatments

At Chester Zoo, we have an infectious disease surveillance programme, based on species susceptibility, and informed by regional and on-site pathogen findings. This embraces opportunistic health screening protocols – including clinical pathology and post-mortems on 95 per cent of the deaths within the collection. Surveillance is based on risk principles of likelihood and consequence.

### Quarterly husbandry, health and welfare audits

External experts from Liverpool and Nottingham Universities, as well as exotic and zoo specialist veterinarians join with Chester Zoo directors, veterinary staff, curators and scientists to help prioritise actions to continually improve health and welfare. This may be through changes in husbandry practices and/or alteration in facilities.

This committee maps clinical, pathological, dietary and behavioural trends to highlight health and welfare issues and recommendations are made on the risk management of diseases of strategic significance, as required. The quarterly summary and minutes of the committee meeting forms a written record of the health, welfare and husbandry status for the archives. It also forms the basis for a report to keepers summarising any health issues on their sections.

By combining these processes, we are able to spot potential poor health and welfare issues in species and enclosures early and respond in a co-ordinated, timely multi-departmental fashion.

#### Case history

The application of the disease risk analysis principles discussed above can best be demonstrated in a real clinical situation involving the presentation and management of a severe respiratory tract infection of human respiratory syncytial virus (RSV) and *Streptococcus pneumoniae* in a single group of 30 chimpanzees (Unwin et al, 2013).

This case series was managed in a risk analysis framework. The area that we found most novel and successful was in the communication sections

### **CASE HISTORY**

#### Scenario

Thirty chimpanzees were housed in a 25-year-old enclosure consisting of 'off show' indoor pens (96m<sup>2</sup>), an indoor yard (110m<sup>2</sup>) and an outdoor area (1,870m<sup>2</sup>), enclosed by a water-filled moat. This had been a closed group of chimps for the last 15 years with no imports and surveillance testing for a variety of diseases was conducted, focusing on respiratory and gastrointestinal pathogens.

Prior to this outbreak of respiratory disease, the chimp group had been relatively clinically uneventful in terms of infectious disease; however, there had been a case of *Streptococcus pneumoniae* septicaemia and fatal meningitis in a juvenile chimpanzee in October 2006, indicating the presence of this bacterial pathogen in the collection.

The closest air space to which members of the public have access is approximately seven metres in the outdoor part of the enclosure – indoor viewing is behind glass. There are six 'off show' indoor dens through which the chimps distribute themselves randomly. There is a squeeze cage here to administer intramuscular and subcutaneous injections.

All 30 chimps were affected and three died over the course of 17 days.

#### Hazard identification

The hazard was identified as primary RSV pneumonia, with secondary *Streptococcus pneumoniae* infection, which presented enclosure issues for treatment administration.

### **Risk assessment**

The following risk assessment factors were taken into account:

- RSV peaks in the human population in the UK in November (HPA report, 2009). Epidemiological studies on this virus have clearly established it as the most important cause of serious respiratory tract infection in infants and young children in the UK
- known S. pneumoniae carriers in this group (Internal CZ clinical reports, 2005-2010)
- RSV synergy with S. pneumoniae (Hishiki et al, 2011, Hament, 2005). In co-infected mice, the RSV actually enhances S. pneumoniae adherence and invasion of bronchial epithelial cells making the resulting infection and bacteraemia of greater intensity
- in humans, combined infections with RSV and secondary bacterial pneumonia are frequent, with *S. pneumoniae* representing the second most common bacterial infection of duel cases, after *Haemophilus influenziae*
- ability to confirm PCR within 48 hours
- why did three die were they more susceptible? Age; social position, immunosuppression? Was Enterobius concurrent
  infection a contributing factor? Enterobius vermicularis in chimpanzees can be fatal and fatal combined infection of
  enterobiasis and pneumococcal meningitis has been documented (Murata et al, 2002)
- risk management, communication and integrated prevention sequence
- vets suspect or confirm a zoonotic disease in the animal collection
- vets refer to RSV disease fact sheet or pull one together if not already done
- hygienic measures barrier nursing, for example put in place to minimise risk of further transmission
- staff in contact with this species including those working in the enclosure given a verbal briefing and, if one has already
  been produced and audited by health advisers, a fact sheet about the disease in question, what to look out for and what
  additional hygiene measures they should take
- health advisers informed and provide advice on any additional information to be given to staff/their own general
  practitioners and whether any screening or prophylactic treatment is recommended
- health advisers to assist with fact sheet production, if not already prepared
- update risk assessment to staff working with primates.

in preventing such incidents in the future, and we use this as a model for other areas of our clinical work, especially in disease outbreak situations.

Duel infections with these two synergistic human pathogens have been recorded to cause sometimes fatal clinical disease in both wild and zoo-housed chimpanzees (Köndgen et al, 2008; Szentiks et al, 2009), yet documented cases with these combined infections are still relatively few (Figure 4).

### **PPD** Questions

- 1. Following the IUCN and OIE disease risk analysis process, when conducting a disease risk analysis, which part of the process applies throughout all of the other DRA steps?
  - A. problem description
  - B. implementation and review
  - C. risk communication
  - D. risk assessment.
  - E. risk management.

- 3. By following disease risk analysis principles, the pathway of risk communication in the current case was:
  - A. veterinary disease fact sheet inform health advisors verbal staff briefing-staff disease fact sheet - update risk assessment for disease surveillance
  - B. veterinary disease fact sheet verbal staff briefing-staff disease fact sheet inform health advisors - update risk assessment for disease surveillance
  - C. veterinary disease fact sheet update risk assessment for disease surveillance verbal staff briefing-staff disease fact sheet - inform health advisors
  - D. verbal staff briefing-staff disease fact sheet veterinary disease fact sheet inform health advisors - update risk assessment for disease surveillance
  - E. inform health advisors veterinary disease fact sheet verbal staff briefing-staff disease fact sheet - update risk assessment for disease surveillance.
- 4. Which of the following pathogens can be fatal on its own in chimpanzees? A. respiratory syncytial virus
  - **B**. Rhinovirus
  - C. Haemophilus influenziae
  - D. Strongyloides fuellebornii
  - E. Enterobius vermicularis

#### 4. E. Enterobius vermicularis. assessment for disease surveillance

3. B. Veterinary disease fact sheet – verbal staff briefing-staff disease fact sheet – inform health advisors – update risk

2. a combination of the likelihood of a hazard interaction and the consequences of that interaction 1. C. risk communication

#### **Answers**

Hament JM et al (2005). Direct binding of respiratory syncytial virus to pneumococci: a phenomenon that enhances both pneumococcal adherence to human epithelial cells and pneumococcal invasiveness in a murine model. Pediatr Res 58: 1198-1203.

Hishiki H et al (2011). Incidence of bacterial coinfection with respiratory syncytial virus bronchopulmonary infection in pediatric inpatients. J Infect Chemother 17: 87-90.

Jakob-Hoff R et al (2014). Manual of Procedures for Wildlife Disease Risk Analysis. World Organisation for Animal Health, Paris, 160pp. Published in Association with the IUCN and the SSC. http://www. cbsg.org/content/iucn-manualprocedures-wildlife-disease-riskanalysis

Köndgen S et al (2008). Pandemic human viruses cause decline of endangered great apes. Curr Biol 18(Suppl 1): 1-5.

Murata K et al (2002). Fatal infection with human pinworm. Enterobius vermicularis ,in a captive chimpanzee. Journal of Medical Primatology. 31(2): 104-108.

Szentiks C et al (2009). Lethal pneumonia in a captive juvenile *chimpanzee (Pan troglodytes)* due to human-transmitted human respiratory syncytial virus (HRSV) and infection with Streptococcus pneumoniae. J Med Primatol 38: 236-240

Unwin S et al (2013) Management of Severe Respiratory Tract Disease Caused By Human Respiratory Syncytial Virus and Streptococcus pneumoniae in Captive Chimpanzees (Pan troglodytes) Journal of Zoo and Wildlife Medicine 44(1): 105-115.

www.hpa.org.uk/ProductsServices/ InfectiousDiseases/ LaboratoriesAndReference Facilities/Respiratory AndSystemicInfectionLaboratory/ StreptococcusDiphtheria ReferenceUnit/cfi rsil Pneumococci/ 2009

<sup>2.</sup> Define risk.



Emma Lloret DMV, MRCVS

Emma Lloret qualified from the University Cardenal Herrera CEU (Spain) in 2014. In pursuit of her dedication to a career in wildlife medicine, Emma has spent the last two years working as the veterinary surgeon for the Wildlife Aid Foundation, one of the largest wildlife rescue centres in the UK.



\*Suggested Personal & Professional Development (PPD)



HEDGEHOGS

## Dealing with the common injuries of wild hedgehogs

The hedgehog (*Erinaceus europaeus*) is one of Britain's most iconic animals and, simultaneously, one of its most endangered. Human interventions – such as road traffic accidents, poisoning, entanglements, strimmer injuries, dog attacks and habitat loss – are the most prominent reasons for the decline in numbers.

In this article, we are going to explore hedgehog cases commonly presented to us in general practice and how to identify, triage and treat them.

At the Wildlife Aid Foundation (WAF), we admit and treat hundreds of hedgehogs every year – from orphans to sick or injured adults. Owing to the increase in human-wildlife conflict, this number has risen by an alarming 22 per cent over the past three years and 41 per cent over the past decade, according to our records.

We have a success rate of around 50 per cent when it comes to returning orphaned and injured hedgehogs back to the wild. Unfortunately, however, in many cases the patient's injuries are too severe, which results in euthanasia on admission; and because our patients are wild animals, it is hard to know exactly what has caused certain injuries, as we never have the full history behind each admittance.

### Gardening accidents

Activities such as strimming and mowing commonly present a very serious hazard to hedgehogs. You can encounter very lucky cases, where the hedgehog merely has a few trimmed spines, to severe injuries typically involving the face, skull and hind legs (**Figure 1**).

#### Entanglements

Hedgehogs will often become trapped in fences or tangled in different kinds of netting – football nets, cricket nets and fruit nets, for example. The animal needs to be cut free as soon as possible and then held in captivity for a few days, so the wounds can be inspected daily. Constriction wounds can take days to develop and may become necrotic. In many cases, hedgehogs will need to be anaesthetised to remove bits of netting from the abdominal area, legs or neck (**Figure 2**).

### **Burn injuries**

Unlit bonfires provide an ideal resting place for hedgehogs during the day, but, naturally, pose a considerable risk once lit. Affected hedgehogs can present with only a few burnt spines or, much worse, with third degree burns (**Figure 3**). Fume inhalation is also a risk to consider.

The clinician must contemplate the depth, extent and location of the injury before settling on a treatment or considering euthanasia. Fluid therapy for a minimum of 10 per cent dehydration for three consecutive days is recommended.

#### **Fractures**

In the case of a suspected fracture, the animal needs to be thoroughly examined under general anaesthetic and will require radiological diagnosis to confirm and decide on the best approach for treatment - orthopaedic surgery, splint and bandage or, if too severe, euthanasia. Some indications of fracture include an inability to curl up completely (with the hedgehog's legs protruding from its otherwise curled-up state), dyspnoea, bleeding and neurological signs.

Commonly found fractures are of the maxilla and palate,

limbs, spine, skull and pelvis. The prognosis is generally very poor, but either conservative treatment or orthopaedic surgery are possible considerations, depending on the circumstances (**Figure 4**).

### Dog attacks

Dog owners will report witnessing the attack, which usually causes large wounds and/or fractures (**Figure 5**). Often, however, it is the dog that will be injured and you may find traces of the dog's blood on the tips of the hedgehog's spines, while the hedgehog itself remains unharmed.

#### **Myiasis**

Warm weather predisposes wounds, or very debilitated animals, to flystrike (fly eggs and maggots). Flystrike can also be found in collapsed or very weak animals with no wounds, near or inside natural orifices (mouth, ears, nostrils and anus), and can easily be removed with a fine comb or a suction machine.

After this, it is recommended to spray the area with a topical infection control product to ensure the eggs don't hatch and any maggots die.

#### Ringworm

This is a fungal disease, usually caused by *Trichophyton erinacei* and identified by crusty skin on the face and the tips of the ears. Hair loss – and spine loss in severe cases – may also occur. These animals must be kept in isolation and zinc powder supplementation



Figure 1. Activities such as strimming and mowing commonly present a very serious hazard to hedgehogs.



Figure 2. Hedgehogs will often become tangled in different kinds of netting.



*Figure 3.* Hedgehogs can present with only a few burnt spines or, much worse, with third degree burns.



Figure 4. Fractured tibia and fibula stabilised using and external fixator.



Figure 5. A deep skin wound before and after surgery.



**Figure 6.** Hedgehogs that are missing hind legs are unable to groom or scratch their ears and are highly prone to parasite infestations – involving ticks, mites, fly eggs, maggots – and severe ipsilateral ear infections.



in the diet can aid in hair and spine regrowth.

It is very important to wear disposable gloves every time we examine wild hedgehogs, as some of them are asymptomatic carriers and can transmit the infection.

As is the case with any domestic animal, each one of the injuries or conditions described in this article will require specific treatment depending on its cause, severity and the condition of the hedgehog; and, of course, in accordance with the clinician's remit to return the animal to the wild in full health.

**Table 1** shows species-specificdoses of drugs commonly usedin wild hedgehogs.

### **Euthanasia**

Euthanasia is, sadly, a necessary consideration within the work of any wildlife hospital, primarily because a patient has to go back to the wild 100 per cent fit and capable of leading a functional and independent life. It must be able to find its own food, move freely, demonstrate normal behaviour, reproduce and interact with its own kind, because we can't book a follow-up appointment to check on it!

At the WAF, we have a strong ethos surrounding euthanasia - when it comes to animal welfare, we strongly believe that wild animals must be returned to the wild, where they belong, and not spend their whole lives kept captive in a cage. This is why, if an animal cannot successfully be released, it is euthanised.

Examples that illustrate the pragmatism of our decisions include:

### **Missing legs/feet**

Our policy is to euthanise, on arrival, any hedgehog with limbs that are missing or damaged beyond repair. Hedgehogs that are missing hind legs are unable to groom or scratch their ears and are highly prone to parasite infestations – involving ticks, mites, fly eggs, maggots – and severe ipsilateral ear infections (**Figure 6**). Respectively, hedgehogs missing front legs are likely to be unable to dig to find food.

### Missing one eye

Hedgehogs use a keen sense of smell and acute hearing to locate food. This is why we will frequently perform enucleations of a badly damaged eye, provided the remaining eye is completely functional. In our experience, one-eyed hedgehogs appear to cope well once returned to the wild.

In order to facilitate the decision-making process, we recommend the application of a consistent protocol approach to the examination of any hedgehog presented to a veterinary practice (Figure 7).

### How to euthanise a hedgehog

Our preference is to perform all hedgehog euthanasia via intracardiac or intravenous injection (saphenous or cava vein) using pentobarbital, under general anaesthesia. Hedgehogs can be very easily anaesthetised by the administration of isoflurane via a mask or in an oxygen chamber. Avoid the intraperitoneal route, as the drug will take longer to act and it can be painful and distressing for the animal.

### Conclusion

It is the veterinary community's responsibility to communicate possible detrimental and harmful situations to the general public, to make them understand the vital role that each one of us plays in avoiding unnecessary suffering to wild creatures. Making a little effort, every day, can make a huge difference, not only to hedgehogs, but to the wildlife population as a whole.

It is the wildlife centres' responsibility to communicate and share knowledge with veterinary professionals in general practice. Through our conservation efforts we try to improve the care and treatment of wildlife in need, by re-balancing and redressing the damage done to it through ignorance and wilful habitat destruction.

Here at the Wildlife Aid Foundation, www.wildlifeaid. org.uk, we are always happy to offer advice to veterinary practices on the treatment and care of wildlife, especially hedgehogs, and are eager to take on veterinary surgeons, veterinary nurses or students as volunteers.



Table 1. Species-specific doses of drugs commonly used in wild hedgehogs

Drug	Dose commonly used	Route	Notes		
Analgesics and anti-inflammatories					
Buprenorphine (0.3mg/ ml)	0.1ml/kg	SC or IM	For severe pain associated with trauma or after surgery		
Dexamethasone (2mg/ ml)	0.45ml/kg	SC	Short-acting corticosteroid		
Meloxicam (5mg/ml)	0.04ml/kg	SC	Analgesia and anti-inflammatory effects		
Antibacterials					
Clavulanate potentiated amoxycillin	0.7mg/kg	SC	Broad spectrum		
Enrofloxacin (2.5% inj)	0.4ml/kg	SC b.i.d.	Broad spectrum; but do not use in young animals		
Antifungals					
Enilconazol	Dilution: 10ml in 500ml of water	Topical	For ringworm treatment, spray for two weeks		
Ectoparasites					
Fipronil	Spray: only one or two 'pumps'	Topical	Don't spray near face and ensure good ventilation		
Miscellaneous					
Bromhexine (Bisolvon, Boehringer)	1ml/kg	SC	Mucolytic		
Vitamin B12 inj (250µg/ml)	1ml/kg	SC	Appetite stimulant		

>>

#### Before transferring any hedgehog to a wildlife hospital

Obtain as much information as possible from the person who found the animal, including the exact location/address where it was found, why it was picked up, the circumstances it was in and for how long, as well as a contact number in case it is necessary to call back for more details.

Give first aid care - keep the animal warm, administer fluid therapy (PO, SC, IP) when necessary and contact a wildlife centre for advice on treatments and subsequent care. It is very important that stress is kept to an absolute minimum; so avoid unnecessary handling, perform short examinations and keep the hedgehog in the quietest part of the hospital. Remember, they are wild animals and are not used to human contact or proximity to domestic animals.

Examination - hedgehogs curl up as a defence mechanism, making conscious examination impossible. For this reason, it is nearly always necessary to perform a general anaesthetic with isoflurane. In some cases - babies/young or very debilitated individuals - this is not necessary and examination can be performed while conscious.

Record as much detail as possible - weight, sex, age, if it has any injuries, location of injuries, if it had any treatment, fluids etc.

Housing in the practice - adult hedgehogs can be housed in a dog carrier with newspaper lining the bottom, in addition to some stripped newspaper to provide somewhere to hide. Ensure the cage is properly secured, because hedgehogs can easily escape if this is not the case.

For youngsters (100g-350g), use the same carriers, but with towels instead of newspaper, and provide a safe and constant source of heat. For babies (< 100g), provide a small pod with cosy fleeces and, again, a source of heat.

Always keep these animals in a quiet environment.

Feeding in the practice - canned dog or cat food, as well as biscuits, are the easiest options for adults. Do not feed them dairy products.

Contact a wildlife centre for further advice - we are aware that some veterinary practices are not always keen to deal with wildlife admittances and, in this instance, they can perform an initial triage and then call their local wildlife hospital to transfer the patient.

Figure 7. Advice for veterinary professionals in general practice, before transferring any hedgehog to a wildlife hospital.

### **PPD** Questions

- 1. What trace element can be beneficial to add to the food of hedgehogs to enhance the hair/spine regrowth?
- 2. Name three conditions/injuries commonly presenting in wild hedgehogs.
- Why do hedgehogs with missing or severely damaged limbs need to be humanely euthanised?
- 4. What is the best protocol to euthanise a wild hedgehog?
- 5. Why is it important to wear gloves when examining a wild hedgehog?

including ringworm and mange.

5. wild hedgehogs can carry and transmit a number of zoonotic diseases, to inject pentobarbital

chamber. Secondly, use the intracardiac or intravenous route (saphenous or cava) 4. firstly, anaesthetise the hedgehog with isoflurane via a mask or an oxygen of the ipsilateral ear

3. because of the high risk of infestation from external parasites and/or infection 2. fractures, burns, entanglements Juiz .

Answers

#### References

BSAVA (2003) Hedgehogs. In: BSAVA Manual of Wildlife Casualties, 1st edn., Ed: Mullineaux E; Best D; Cooper J.E, British Small Animal Veterinary Association, Gloucester. pp 49-65.

BSAVA (2012) Mammals. In :Exotic Pet and Wildlife Nursing, 1st edn., Ed: Varga M; Lumbis R; Gott L, British Small Animal Veterinary Association, Gloucester. pp 54-55.

Carpenter J.W (2013) Hedgehogs. In: Exotic Animal Formulary, 4th edn., Ed: Marion C.J, Elsevier, Missouri. pp 455-516.

## What is an exotic pet?

There is much discussion in both the veterinary – and sometimes general – press about exotic pets; and, in particular, how more and more of them are being abandoned once owners realise the complexities of caring for them.

A wildlife sanctuary in Staffordshire recently reported that the number of exotic pets being abandoned has reached 'epidemic' proportions. It now has a waiting list to help it cope with a surge in referrals as owners realise they cannot cope with their animals.

This small sanctuary cares for exotic animals and birds of prey and is home to more than 30 species of primate, bird of prey, reptile, invertebrate, racoon, cat, and more. The abandoned pets included monkeys, a hybrid wolf and a barn owl – all of which were bought as 'pets' and given up by their owners.

There is growing concern among all the welfare charities about owners who purchase animals that have complex husbandry needs but, having done little or no research, then abandon them when they realise how difficult they are to look after.

### **Epidemic proportions**

Over 1,000 calls about abandoned exotic animals were received by the RSPCA in 2016. The charity says that many of these calls related to abandoned reptiles – in particular, corn snakes, leopard geckos, bearded dragons, terrapins and royal pythons.

Nicola White, the RSPCA's senior scientific officer in exotics and trade, commented that exotic pets – particularly reptiles, such as bearded dragons – have increased in popularity and the number of related 'call-outs' has risen by over 100 per cent in 10 years. She felt that the lack of knowledge on how to care for the exotic species, the cost of veterinary bills and the inability to cope with the commitment of caring for an exotic animal were major contributing factors to these animals being abandoned.

A recent report by a coalition of animal welfare charities – including the RSPCA, Born Free Foundation, British Veterinary Association, Captive Animal Protection Society, Four Paws, One Kind and Wild Futures – suggested there are around 5,000 primates being kept as pets across the UK, many of which are suffering as owners fail to meet their social, dietary and environmental needs. It is the belief of the coalition that the complex needs of these species are extraordinarily difficult to meet in the home, and keeping primates as pets should, therefore, be banned.

### So what exactly is an exotic pet?

The definition of exotic means 'foreign, not native, strange or different in a way that is striking or fascinating'. This can certainly be the case with some of the more unusual exotic pets in question. The following list contains just some of the huge variety of animals kept by the general public and which may be described as 'exotic': frog, salamander, eagle, falcon, goose, hawk, ostrich, owl, parrot, songbird, fox, wolf, mink, raccoon, seal, weasel, bob cat, lion, lynx, panther, tiger, primates, mole, shrew, bat, ferret, hedgehog, mouse, squirrel, sugar glider, bear, brown rat, opossum, alligator, crocodile, lizard, snake, turtle.

When we remove exotic species from their natural habitat and place them in an artificial one, we are under an obligation to meet their requirements in order for them to survive and thrive. These often delicate – and sometimes endangered – species are totally dependant on us for all their needs, so it is vital that anyone who considers keeping such animals really has done their research and fully understands how to look after them.

Not only do we, as veterinary professionals, have a moral and ethical duty of care to these species, we also owe it to them to discuss with their owners – and even better potential owners – their absolute needs in terms of:

- environment many exotic animals require a carefully controlled environment; e.g. specialised heating and lighting, that must allow for natural behaviour, such as burrowing, climbing or basking
- longevity how long they'll live and how large they'll grow; which, in some cases will be a long time and very big!
- nutrition what is their natural foodstuff, how much do they need and how often; and how easy is it to obtain?
- housing how big an enclosure will they need and will this need to be altered or enlarged as they grow?
- social aspects will the animal be best kept alone or should it be housed with

others for companionship. Either way, a lonely animal or one kept too closely with others can suffer significantly from stress

- lifestyle will the animal's behaviour fit in with the owner's lifestyle:
   e.g. will they be active at night or during the day?
- veterinary care is there a specialist veterinary professional for the species nearby who can offer specific advice and treat the animal if it becomes sick?
- legal aspects some exotic species require a licence and other ongoing legal paperwork to be kept in an owner's home.

### Unequivocal message

The clear and responsible message to the owners – and, especially, potential owners – of exotic species is to think very carefully about what they are doing. Keeping an exotic pet is not simple and often requires a great deal of time and dedication.

It would be easy to simply say, "Don't keep an exotic pet", and to try to dissuade all pet owners from doing so. This might be the ideal situation and is certainly a long-term goal towards which we should all strive. However, we all know that life is far from ideal. If all we do is to say, "Don't keep an exotic pet", some people will still go out and buy a bearded dragon or baby alligator from a dubious pet shop or the internet; and without our help and direction either follow misguided information – or worse.

Our overriding concern must be for the individual animal. So, much as we may not wish to condone their misguided activity, while people still seek to own exotic pets, we need to be helping them to care for them in the very best way possible.



# Methods of the past employed for a greater future

### Communication and multimedia in the veterinary industry

ccording to a BBC report, overcoming the frustrations of half a century of communist rule and US trade embargoes, the young and media-thirsty in Havana, Cuba, have innovated a novel solution to stay connected and contemporary with the wider world.

So, on a hot afternoon, 24-year-old Ana Lauren is awaiting her weekly 'fix' of The Paquette from a man on a bicycle. With little regard for international copyright law and the heavy restrictions in place by her own government, her weekly subscription charge to The Paquette allows her to freely download the best of the week's multimedia to her computer.

The man unplugs the hard drive, and moves on to the next property, spreading the gift of information and communicating the outside world via a precious terabyte. El Paquette is an invaluable gateway for revealing realities and unlocking potential.

### **The Web**

Tim Berners-Lee is attributed with the 'invention' of the World Wide Web in 1990. Twenty-six years later, no industry, country or region has been left untouched and unchanged by the power of multimedia communication. By



bike, wire, satellite or 'magic', the evolution and progress of community and business is driven by the globalisation of communication and technology.

The veterinary industry is no exception, and the introduction of multimedia information systems has not only kept the industry developing in line with other medical professions, but also enhanced the way in which information can be accessed and shared. Enter Vision Media.

### **Birth of a Vision**

Two decades ago, we recognised the need to capitalise on these new ways of sharing information across the industry. The team at Vision Media developed a CD-ROM system that would provide the veterinary profession with information hubs that addressed the needs of the forward-thinking veterinary practice.

Sent out, free of charge, to practices across the nation, the disk was the 'go-to' resource – intended to empower practices with up-to-date knowledge, and moving the profession gradually and comfortably into the technological explosion of the early Noughties.



In the same way that the man on the bike endeavours to provide the Cuban community with the weekly benefits of El Paquette, the team at Vision Media have harnessed the available technology to provide the veterinary industry with a rapidly evolving communication service.

Serving up both bespoke practice intranet systems and opening up access to the wider veterinary community through the internet, Vision Online has reinforced these communication lines. What began as fingertip access to stored information, soon transformed into a national – and, ultimately global – professional community.

Compiled by a team of veterinary professionals, writers, designers and engineers, Vision Online continues to reinvent the way the industry interacts internally and with the wider community. Tailored to enhance both professional development and practice profitability, Vision Online addresses personal and business needs to help keep the industry at the forefront of communication and to maintain a significant veterinary global footprint.

Our intricate technology, interlaced with intuitive design, continues to provide veterinary practices with crucial industry-specific features including internal email, breed specifications, and access to medicine specifications and poisons guidelines.

Information technology and business are becoming interwoven. I don't think anyone can talk meaningfully about one without talking about the other



Bill Gates

### **Expanding horizons**

The natural desire to access breaking news and current affairs is particularly relevant to the veterinary profession, and the team at Vision continually strives to provide cutting edge news stories as they break, via their MRCVSonline and VNonline industry websites.

In addition to this, the editorial team – comprising established and experienced writers and industry experts – delivers a bi-monthly professional journal, *Veterinary Practice Today*, and a consumer pet magazine, *PetFocus*, providing practices with a valuable dual resource for both themselves and their clients.

Digital copies of *Veterinary Practice Today* are free and offer a comprehensive professional development resource for vets, nurses and practice managers, seamlessly interwoven with an accompanying interactive website and professional hub, VetCommunity.com

So engaging with the world has never been easier. Vision has opened up for you communication vehicles and channels to suit all your professional needs and personal preferences – be they digital, macro or micro, or simply print media.

And there's certainly no need to wait any longer for a man on a bicycle to call.

### vetcommunity.com





Jacky Macqueen BVetMed MRCVS



lan Macqueen VetMed CertSAO MRCVS

Jacky and Ian Macqueen run the Veterinary Centre in Devizes, Wiltshire. It is a smallanimal and referral hospital employing 42 members of staff. When it opened in 1990, Jacky and Ian realised that, as they would be spending a large proportion of their life at work, they were determined to build a happy and positive environment. They wanted a practice where all members of the practice team could develop their careers throughout their working lives and to be able to have a family life too.



\*Suggested Personal & Professional Development (PPD)



MOTIVATION

# How to have the most motivated team possible

"Most motivated team possible!" was a comment from the RCVS inspector following his three days visiting our practice for the 'Hospital and Awards' assessments. This new awards process focuses on the whole practice team and looks at culture and behaviours. How did our practice impress him so much? Because the motivation comes from the heart.

### How do you motivate your team?

The answer to that is, you can't!

Motivation isn't done to someone, it's a feeling that comes from within. A team becomes motivated if they have the desire to achieve things. In our profession that should be easy - most practices are full of veterinary surgeons, nurses and receptionists who want to help sick pets and their owners. But the reality of life today is that the inherent motivation is often lost in the daily challenges of staff shortages, long hours, competing practices, internet pharmacies and client expectations - all of which can lead to low morale.

Our approach is multifaceted.

### Create a positive culture

This should come from the top. Like it or not, if you run a practice you are the leaders; and the most effective way to encourage others to follow, is to show enthusiasm for the goals to which you aspire. As practice owners, we are fortunate to enjoy what we do, both clinically and in running a practice. So, first up, go into work every day mindful that you will focus on improvements and solutions to problems, rather than on whatever has not gone well.

A positive approach should be consistently lived every day to have integrity and to truly inspire others to share your vision. It is important to be self-aware and, if you are having a 'low energy' day, keep it to yourself or trusted confidants.



### Have a strong commitment to health and well-being

Working in a veterinary practice has many potentially stressful aspects. We have a standard maximum eighthour day and an hour's lunch break. Out-of-hours working is closely monitored, and rest days are given in lieu to ensure recovery time.

We are alert for signs of stress or friction between staff members; we support pregnant employees and encourage them to return to part-time roles as fits in with their childcare. Personal development and fitness is encouraged, as is mindfulness. We have innovative Christmas parties, lots of cake and healthy fruit.

### Take leadership and management seriously

It is just as important to study this topic as it is to take the latest medicine and surgery CPD. There is a great deal of fascinating learning to be done. Books about emotional intelligence, quiet leadership, the habits of dysfunctional teams and, above all, the 'Chimp Paradox' are personal favourites, although there are many more. As you introduce team members to management roles, ensure that they too are provided with management CPD and supported as they develop these new skills. Seek first to view every member of staff as an individual and look to develop their full potential – both professionally and personally.

### Set challenging goals

The practice goals we set are all about improving client and patient care. Managed and budgeted correctly, the financial returns should follow. We monitor and share financial data with the team, but do not believe that financial targets alone are, in themselves, inspiring to most veterinary professionals.

Working with Vet Dynamics means we have close regular contact with other practice owners who are working to develop their practices. This provides us with a host of new ideas, expertise and encouragement to take on new projects. We encourage team members to set personal goals – from studying a certificate and public speaking to climbing to Machu Picchu.

### **Continuous improvement**

The practice has a clear vision to be the best practice we can

be and each January we set out our plans for the coming year. Progress may not always be apparent, but like an allterrain vehicle, we are still going in the right direction, even if underwater!

We have an active 'continuous improvement system' – any suggestions are put on to a card and discussed at fortnightly practice meetings and actioned by the team themselves. Everyone is encouraged to take further training, qualifications and to attend conferences on clinical, client care and management topics and to share what they learn with the team. This approach has contributed to:

- genuine loyalty and enthusiasm for the practice throughout the team
- a wonderful framework of long-service employees with a very positive attitude and open mindsets, who act as role models and coaches.
   We have 16 qualified nurses (eight part-time) of whom 10 have been with the practice for between 10 and 20 years
- a strong practice culture of continuous improvement in all areas
- confidence that all members of the team make a valuable contribution and new ideas will be welcomed and actioned – new recruits are encouraged to share their experiences towards improving the practice
- trust in the practice culture and values, and that fellow team members will provide support when taking on new challenges.

#### Organisation of the nursing team Health and wellbeing

Our nurses have a working day of eight hours with an hour's lunch break. Overtime is paid for shorter breaks and extra hours, and out-of-hours and weekend work is shared fairly with the whole team with good remuneration and compensatory time off. Overtime is monitored carefully, with staff levels and shift patterns kept under constant review. The engagement of part-time employees – who can work flexible hours – means that holiday, sick and maternity cover is usually covered by the practice team.

### Share management responsibilities

We have no single head nurse, because all our nurses love nursing! Members of our senior nurse team work together to manage and improve the practice - we have a senior surgical nurse, senior ward nurse, senior clinic nurse, senior referral nurse, client care manager and pharmacy nurse. They work closely with us to manage their teams and develop standards in their area. They are provided with training in management and emotional intelligence.

### **Develop leadership skills**

The day-to-day running of the surgical teams is carried out by all the nurses in turn, including the students. The 'nurse of the day' works the '8am till 4pm' surgical shift, and liaises closely with the two surgical veterinary surgeons on the overall organisation of the day. She is the 'go-to' person and manages the operating schedule, nurse admissions, 'premeds', lunch breaks, emergencies and visiting specialists.

### Additional areas of responsibility

All nurses take on extra, specific, responsibilities – such as dentistry, infection control, quality of radiographs, anaesthetic equipment maintenance and audit of 'post-op' complications.

### Motivation provided by the Awards process itself

Even a practice with apparently clear goals – such as to become the 'Best Practice in the World'! – can have difficulties defining 'best'. The Awards structure sets out clear guidelines for RCVS Recommended Practice in all areas and gives suggested resources. This meant that the leaders in each area could see what was required to satisfy each section.

It was easy, therefore, at our regular review meetings, to see what was left to complete and if extra time or resources were needed. It was very encouraging for everyone to see how progress was being made and a source of pride to all team members – they all wanted to achieve the highest standard possible in each area and worked together to achieve this.

### What to do when energy is low

Listen to your team – have sensitive team players who can share grass roots concerns with you. Ask for their suggestions, and give your time and attention to the answers. Discuss the challenges and look at the processes involved in the 'change cycle' – understanding that feelings of anxiety and doubt are natural, but when that is overcome, mastery will follow.

Be aware of the 30:50:20 rule - that is, for any project, the best you can expect is 30 per cent keen supporters, 50 per cent happy to go along with the flow and 20 per cent not interested. So focus on the first 80 per cent!

Value the time people spend on extra projects – either by giving them 'working-at-home' days, or days off in lieu of outof-hours work. And do offer support when it is needed or requested; but do not take over the project!

### On inspection day

The inspector spent time with the leader for each module, who was proud to show him how each requirement was satisfied. He then spent time on the 'shop floor' discussing individual standards with several members of staff. Yes, they were nervous, but they were also confident that the practice was genuinely working at the level described.

When it was all over, and he had announced our success in all areas, there was general euphoria and celebration. One of my most treasured comments was a text received from pharmacy nurse, Lynn ... 'Wonderful. Well done Jacky – u believed we cd do it & we did!'

### So what happened next?

The pride and boost in confidence experienced by the team has remained and the changes brought about through the preparation for the awards are now routine. We adopted the maxim 'Awards are for life and not just for inspections' and produced a 'This is the way we do things now' manifesto - which we all live by.

This reminds us of the continuous system of audit and documentation that needs to be maintained. We have had some changes in staff, but we have found that the new team members are providing further energy and enthusiasm to improve. We are having 'a little rest' at the moment, but next year ... after completing the building work, we will apply for 'Cat Friendly Practice' status and develop a 'Support Programme for Companion Pets to the Elderly'.

### In conclusion

To have a motivated team, choose the right people, look after them well and give them responsibility. Be interested in each as an individual and encourage them to develop their own unique talents.

Work together as a team – understanding each other's particular strengths – to develop interesting and challenging projects. Support one another when it gets tough, and above all, have plenty of fun along the way.



Maggie Shilcock BSc(Hons)Zoology

Maggie, a zoology graduate and past president of the VPMA, was practice manager in a 12-vet mixed practice for 10 years and a similar length of time for Animus-4-Vets as a course provider and adviser on veterinary management and training. She now works for Vision Media as one of the editors of Veterinary Practice Today.

> She has written two management books and is the co-author of Veterinary Practice Management – A Practical Guide.



\*Suggested Personal & Professional Development (PPD)



**CLIENT CARE** 

### Client care standards are important

We are only as good as our worst employee; and be warned, it is he or she who will set the standard of our client care if we do not do it first.

### So what is exactly is client care?

There are two aspects to the business of veterinary practice - clinical care and client care. Most of the time there are not many 'brownie points' to be gained from providing clinical care, however good it may be, because clients are unable to measure how good it is. For the majority of clients a cat spay is a cat spay and they would expect any veterinary practice to deliver this service.

A practice makes its real 'impression' on clients mainly through its client care and it is these 'people factors' that make the difference to a client's perception of service. Everyone is involved in providing client care. They may be delivering it in different ways and circumstances and in different areas of the practice, but they are all in some way having to relate to clients and their needs.

It's easy to say that staff must provide good client care and we probably all know the basics – such as, acknowledging clients, making eye contact, knowing their names, showing interest in them and their pet and so on. But 'care' is somewhat of an abstract concept until it is pinned down in specific terms. How does an owner/ manager know that their staff are providing good client care? How do staff know that they are providing good client care?

In reality, providing really first-class client care can only be achieved if there are set

standards to meet. Having client care standards in the practice is an excellent way of helping staff to understand what is expected of them and keeping the level of client care at a maximum.

### Defining the standards

Setting client care standards is quite an undertaking and will not be achieved overnight or without the input from the whole practice. However, before you as an owner/ manager can embark upon this, you need to be certain about what sort of practice you want to be, what kind of image you wish to create, what kind of service you want to provide. It is only then that you can start to look very carefully at the client care already provided in the practice and decide where improvements need to be made.

Involving staff in setting the standards will provide you with a great deal more information on what clients really want and appreciate – remember, it is your staff who are the people who talk to clients and receive the most feedback. Involving staff will also make them feel part of the process and ensure that they are more likely to follow the standards they have had a part in setting.

How you encourage staff to put forward their ideas depends on what works best in your practice. It might be at a 'brainstorming' session, a team meeting or, perhaps,

"Most of the time there are not many 'brownie points' to be gained from providing clinical care, however good it may be ..." **Table 1.** An example of an agreed standard and how it could be managed

Standard	How it will be achieved	Staff responsible	Date to be in place
All staff will use the same telephone greeting which will be	<ul> <li>greeting included in practice policy</li> <li>information included in staff newsletter</li> <li>heads of departments will inform their teams</li> </ul>	<ul> <li>practice manager</li> <li>newsletter editor</li> <li>heads of departments</li> </ul>	March

by asking them to complete a suggestion form for client care standards. And having received this input, it is important that you discuss the suggestions together, assess the practicalities of the ideas and agree the standards you want to set and achieve.

Make the standards very specific so that there are no misunderstandings. For example:

- clients will always be greeted by their title; e.g. Mr, Mrs, Miss
- pets will always be greeted by the veterinary surgeon when calling them in for consultation by their name and then the owners name; e.g. 'Bonzo' White.

It is likely you will find that you have agreed on a very large number of new practice standards. This is great, but if you try to implement them all at once you will be heading for disaster, so prioritise the standards by deciding:

- which are the most important?
- which will have the most impact?
- which are going to be quite easy or quick to set in motion?
- which will require more time and/or financial input?
- what would you simply like to do first?

Having set and agreed the standards the next step is to plan how they will be achieved. A good way to do this is to create a planning chart that looks at what the standard is, how it is to be reached, who has responsibility for this and, of course, when will it come into operation (**Table 1**).

### Owning the standards

Make sure that staff are involved during the process of determining how the standards will be achieved, such that they feel they have ownership of them and work harder to achieve them.

The standards agreed need to be recorded and written down. This may be in a separate practice standards document or you may include all practice standards in the practice manual or other practice documentation. The important thing is that all staff have copies of these standards, are fully aware of what they entail and the role they will play in achieving them.

It is no good setting client care standards if you don't know whether or not they are being reached and maintained. There are three main ways of measuring success.

### **Keep records**

Where practical, keep records that will enable you to measure how successfully a particular system is working. This may be recording – on an occasional basis – how long clients have had to wait for appointments to be fulfilled or asking receptionists to record how many clients had to be put on hold each day for a week and so on.

"Make sure that staff are involved during the process of determining how the standards will be achieved..." "In reality, providing really first-class client care can only be achieved if there are set standards to meet"

It's important to explain to staff why the records are being kept so that they don't see this as a witch hunt, but as a positive way of assessing client care and sorting out any difficulties that may be exposed.

### Ask staff

This may be on an informal basis or perhaps at team meetings. It will only give an impression of how successfully standards are being met but, if used in conjunction with other records, will provide a reasonably clear picture of how things are going.

### Ask clients

The occasional client survey will be quite helpful as long as it is kept very specific. So if you want to know what clients think about the practice telephone answering then only ask about that. There will also be feedback from clients on an informal basis – comments made to receptionists, nurses and vets. These are worth recording for future reference.

### And finally...

Clients' expectations change, as do practice procedures and services. This means that the practice standards need to be reviewed and revised on a fairly regular basis. Look at your standards at least annually and consider if these are still relevant or, indeed, the ones you still want.

The standard of client care provided by the practice is the main means by which most clients judge the practice. Client care standards enable staff to understand exactly what is expected of them; but they must be agreed, realistic and achievable at the busiest times in the practice if they are really going to succeed.





#### Natalie Sheppard

Natalie has worked as a health & safety consultant for over 10 years, in both the public and private sector. She began her career working for local authorities, during which time she completed the Nebosh Certificate in Safety, Health and Environment and the Diploma in Safety, Health and Environmental Management. She is also a chartered member of the Institute of Occupational Safety and Health (IOSH).

> Natalie currently works as a health & safety consultant for Citation, www.citation.co.uk/vets, providing support and guidance to the veterinary sector.



\*Suggested Personal & Professional Development (PPD)



WORKING PRACTICES

# Lone working and how to manage the risks

It is not out of the ordinary for someone to find themselves working alone for a period of time and it is often safe to do so. For this to be the case, however, employers need to consider what extra precautions may be required to ensure that 'lone workers' are at no greater risk than other employees. This article will discuss the issues associated with working alone and outline what can be done to reduce the risk.

Managing the risks associated with working alone is a requirement under the Health and Safety at Work Act 1974, which places a general duty on employers to ensure the health and safety of those at work and others who may be affected by their work, such as visitors and members of the public. Section 2(2) requires employees to be given adequate information, instruction, training and supervision in order to work safely.

Employers also need to carry out risk assessments as required by the Management of Health and Safety at Work Regulations 1999.

The risks associated with working alone have been recognised by the Royal College of Veterinary Surgeons. The RCVS *Code of Professional Conduct* (RCVS, 2015) states that all veterinary surgeons in practice must take steps to provide 24-hour emergency first aid and pain relief to animals – and its supporting guidance makes reference to how personal safety risks can be managed whilst delivering this service.

The term 'personal safety risks' relates to the risk from violence and aggression. It is important to be aware that, in addition to personal safety, there are other hazards associated with working alone and these will be described later.

### Who are lone workers?

There is no legal definition of 'working alone' or 'lone working'; however, the Health and Safety Executive (HSE) defines lone workers as 'those who work by themselves without close or direct supervision' (HSE, 2013).

Within the veterinary sector, lone workers could be:

- working remotely; e.g. visiting a farm or an animal's home
- working on site outside normal working hours
- working on site during normal working hours; e.g. receptionist, nurse or site manager responsible for opening and closing a practice
- drivers of pet ambulances, food delivery or pet transport services.

### Developing a lone worker policy

Although it is best to avoid lone working altogether, this may not always be possible. Not all veterinary practices will have employees who are lone workers on a regular basis or for long periods of time and it's essential to determine whether a practice has lone workers or not.

For those who provide an out-of-hours or emergency service, it is more likely that lone working may occur. In any case, a risk assessment is needed to identify hazards and risks and consider what precautions can be put in place. A lone working policy can then be implemented which should include the agreed safe working arrangements and reference to how lone workers will be communicated with and monitored (albeit remotely). It should also include emergency procedures. All employees should then be provided with information, instruction and training about the policy and arrangements.

It might be the case that a lone worker policy is needed but will only be applicable in exceptional circumstances. This could apply to a practice that does not generally have lone workers but has considered that it might be necessary on occasions where there is a need for urgent care and the usual protocols are not appropriate.

During a recent visit to a practice providing a 24-hour service to their own clients and an 'out-of-hours' service to other practices, I learnt how lone working on site has been avoided altogether. Veterinary surgeons are always accompanied by a nurse and each night four

"For some practices, outsourcing emergency and 'out-of-hours' care could help to reduce the need for lone working..."
employees are on site, including a veterinary surgeon who sleeps on the premises. The practice does have a lone worker policy and procedure for exceptional circumstances, where a home visit is required for an animal that would suffer unnecessarily by being moved. Such a policy is required to be presented during an RCVS inspection and a health and safety audit or inspection.

For some practices, outsourcing emergency and 'out-of-hours' care could help to reduce the need for lone working and there are many practices providing this service across the UK. In such cases, the practice outsourcing their service would not need their own lone worker policy; but they would need to assess their provider's competence in managing health and safety risks.

# Is there anything wrong with working alone?

There are certain activities that carry a greater risk if performed alone. In the veterinary sector, these include:

- manual handling of animals, equipment and supplies
- violence and aggression from animals and owners
- exposure to hazardous substances, including biohazards
- operating equipment, such as X-ray and ultrasound
- driving.

A frequent lone worker may be at greater risk of poor mental health and may suffer from conditions such as anxiety and depression. Lone working should be considered as part of a specific risk assessment for new or expectant mothers and employees with disabilities or health conditions. If sufficient extra precautions cannot be put in place, they should not work alone. Students on placement and young

persons under the age of 18 should never work alone.

The level of risk associated with lone working will vary depending on factors such as the services being provided and the location of the practice. For example, practices in remote areas may carry out site visits to farms or stables located some distance away. The likelihood of driving-related risks leading to injury from road traffic accidents is greater in these circumstances and more precautions will be needed to reduce the risk. A practice located in an area with a high incidence of burglary and drug use will be at greater risk from violence and aggression on site.

Manual handling, operating equipment and exposure to hazardous substances are possible hazards in every practice. Employers are under an obligation to provide suitable equipment and training in its use under the Provision and Use of Work Equipment Regulations (PUWER) 1998 and the Lifting Operations and Lifting Equipment Regulations (LOLER) 1998. In the case of heavy lifting larger animals, for instance - working alone may only be practical if employees can make use of mechanical lifting aids. Equipment should be maintained and in good working order.

Ensuring that a good standard of housekeeping, monitoring fire precautions and employee welfare - in terms of heating, lighting, ventilation, first aid and rest facilities - is adequate will also contribute to the safety of lone workers. It is advisable to ask lone workers to complete a health screening questionnaire, thereby giving their employees the opportunity of informing their employer of pre-existing health conditions - heart conditions and epilepsy, for example - that may affect



### "Lone working should be avoided altogether and for many veterinary practices it is possible to do so"

the ability of the employee to work alone.

Whether working alone or not, any employee required to work at night can be requested to complete a health screening questionnaire that takes the health effects of night work into consideration – the effect on sleeping patterns and anxiety or depression. Being proactive in monitoring the health of lone and/or night workers will help to ensure their safety and can lead to a reduction in time off work owing to ill health.

Overly cautious and unworkable control measures will be not be effective, so precautions should be proportionate to the level of risk. By thinking about the hazards and the level of risk they present, and taking into consideration the work activities, location of the practice and services provided, a suitable policy and protocol can be devised.

### Making lone working safer

The case studies below describe what can be done to make lone working safer.

### CASE STUDY 1

A small rural practice wanted to carry out site visits. There was little in the way of pet transportation services available in the area. They decided that driving and transporting drugs was a hazard, along with the risk of violence and aggression from owners or members of the public. To tackle these, a checklist was developed to use when assessing whether to attend a site visit or not, along with a procedure for checking driver documentation.

They were aware that the RCVS supporting guidance to the *Code of Professional Conduct* states that veterinary surgeons are not obliged to attend away from the practice (RCVS, 2015), but must use their professional judgement and they wanted to make sure unnecessary site visits were avoided.

The checklist questions covered:

- the location and state of the animal
- the availability of transport for the owner to attend the practice instead
- availability of another person to attend with the surgeon
- weather conditions and personal circumstances of the owner.

The practice also limits the quantity of drugs transported, keeps an inventory, provides a first aid kit in vehicles and requires visit details to be recorded. Taking the above into account, the veterinary surgeon – in conjunction with the practice manager – must then decide whether the site visit can go ahead.

Employees have attended personal safety training (Suzy Lamplugh Trust) and have used the training to develop an emergency procedure. The practice is also considering the use of one of the personal safety mobile phone applications available on the market which transform mobile phones into personal safety alarms using GPS software and provides access to a manned incident management centre.

### CASE STUDY 2

A practice, situated in a busy town and providing 24-hour and emergency services, carried out a review of site security. Their receptionist and site manager sometimes work alone or in isolation. They have a lone worker policy and emergency procedure in place, but their risk assessment identified issues with the security of the premises.

They implemented the following improvements:

- CCTV installed at the front entrance and reception area
- remote door lock with intercom for controlled entry and buzzer to alert staff that someone has entered the premises
- keypad control on internal doors leading to treatment and recovery rooms
- cash held on site is limited and banked at different times each day
- provision of lockers for employees to store personal belongings
- 'buddy' system for those working alone on site involving mutual contact with a colleague, family or friend (when out of hours) with agreed 'contact' intervals
- emergency procedure for incidents of violence and aggression, to include the use of a 'code word' to alert colleagues during a difficult situation with a client
- employees reminded of incident reporting procedures.

The practice also endeavours to ensure that clients are fully aware of the service and costs through the provision of signage, leaflets, verbal and written information. This helps to set expectations with the aim of reducing the risk from violence and aggression.

#### Summary

Lone working should be avoided altogether and for many veterinary practices it is possible to do so. Where it is not possible, however, lone working can be safe if employers take time to consider the risks associated with it and put adequate measures in place.

**Note.** This article has not considered the management of driving at work and personal safety, in full. Further advice can be obtained from the Royal Society for the Prevention of Accidents (RoSPA) and the Suzy Lamplugh Trust.

### References

HSE (2013) Health and Safety Guidance on the Risks of Lone Working. INDG73(rev3):1 http:// www.hse.gov.uk/pubns/indg73.pdf

Lone Working Device Directory http://www.suzylamplugh.org/ personal-safety-tips/app-directory/

RoSPA (Royal Society for the Prevention of Accidents) Road Safety Resources for Employers http://www.rospa.com/roadsafety/resources/free/employers/

Royal College of Veterinary Surgeons (2015). 24-hour emergency first aid and pain relief. Supporting Guidance chapter 3 part 2 3:41 http://www.rcvs. org.uk/advice-and-guidance/ code-of-professional-conduct-forveterinary-surgeons/supportingguidance/24-hour-emergency-firstaid-and-pain-relief/

Royal College of Veterinary Surgeons (2015). 24-hour emergency first aid and pain relief. Supporting Guidance chapter 3 part 2 3:39 http://www.rcvs. org.uk/advice-and-guidance/ code-of-professional-conduct-forveterinary-surgeons/supportingguidance/24-hour-emergency-firstaid-and-pain-relief/

Suzy Lamplugh Trust. Personal Safety Training delivered by the Suzy Lamplugh Trust http:// www.suzylamplugh.org/training/ bespoke-in-house-training/

# Interested in Companion Animal Behaviour training?



We have a wide range of courses available that enable you to:

- Start at a time that is convenient to you
- Study while you work
- Learn from leading practitioners



### Talk to us about developing the skills to succeed in your professional career



Central College of Animal Studies For more information and an application pack T: 01359 243 405 or E: behaviour@ccoas.org.uk

www.ccoas.org.uk



Alison Lambert BVSc MMRS MRCVS

After qualifying as a veterinary surgeon from the University of Liverpool, Alison worked in small animal practice for several years before pursuing a business career. She worked with Hill's Pet Nutrition and MARS before founding Onswitch, www.onswitch. co.uk. Alison is a visiting lecturer at the University of Nottingham School of Veterinary Medicine and Science, covering customer understanding.



\*Suggested Personal & Professional Development (PPD)



COMMUNICATION

# Don't let that difficult last consult be the last one with your client too

It is hard for everyone involved when a much-loved pet comes to the end of his or her life. Broaching and discussing the topics of euthanasia and/or palliative care management is difficult for both veterinary professionals and owners, not to mention carrying out the final act itself.

All too often the whole experience is so upsetting that owners simply cannot bring themselves to set foot in the practice again – even when the process is handled sensitively, there may simply be too many sad memories and associations. Yet with care and planning it is possible to turn this most difficult of vet-client interactions into an experience that can bond the client to the practice and lead them to recommend you to many other potential clients.

### Cradle to grave care

Recruiting new clients can be a costly business, so it makes good sense to catch them when their pets are young and provide routine preventive care - along with any unforeseen treatments that occur along the way throughout their entire lives. To this end, many practices spend considerable time, effort and money in attracting puppies and kittens with marketing initiatives, such as health plans, puppy clubs and vaccination offers.

Conversely, relatively few practices spend time and energy helping owners of older pets adjust to their changing needs and to prepare for the inevitable end. Making an active decision to abandon this group of clients is ultimately very short-sighted, not only as many of them will go on to get another pet in the future, but also because every one of them will have plenty to say about their experience at your practice with their friends, families and all the other pet care businesses they use - groomers, catteries, pet shops and so on. Good news travels fast. Bad news travels even faster.

Attracting new clients is certainly important for businesses to remain profitable – after all, the



"The fact is that, without a positive customer experience, clients will switch their allegiance – just as they do in every other aspect of their lives, with phone providers, car insurers and supermarkets"







*Figure 3.* Data gathered from 500 owners who had previously lost pets.

average practice loses around 25 per cent of its active client base every year through switching, moving away and the death of either the client or pet. However, it is equally important to work on retaining the clients you already have.

In the old days, pre-internet and when most towns had only one practice, owners didn't shop around, ask their friends for recommendations, research options online and have a selection of other options for their pet's health care conveniently close by. Now they do all of these things routinely and so it's dangerous to assume that clients will stay with you just because they have always done so before. The fact is that, without a positive customer experience, clients will switch their allegiance - just as they do in every other aspect of their

lives, with phone providers, car insurers and supermarkets. And remember that the customer experience extends to every single interaction your clients have with you - be it insensitively written euthanasia advice on your website, brusque receptionists asking for credit card details immediately the client comes out of the consult room having just watched their companion slip away, or vaccination reminders being sent for pets that passed away months ago. How you handle the end-oflife stage is crucial, and the evidence shows that many practices aren't handling it very well at all.

#### Quantifying telephone customer care and the end of life conversation

In October 2014, experienced Onswitch mystery shoppers called a random sample of practices across the UK using



Figure 2. Services and facilities offered by practices.



Figure 4. A third of owners did not go on to find another pet.

the scenario, "I think it is time to have my old dog put to sleep. I have not been through this before, what happens and what does it cost?"

Data collected show that whilst half of practices asked to register the caller, just 10 per cent asked the pet's name - remember this call concerns a difficult time concerning a much-loved member of the family – and 17 per cent of practices offered to make an appointment for the caller (**Figure 1**).

When it comes to going the extra mile for clients at what is clearly a very upsetting time, few practices demonstrated services or facilities designed to help make the process a little easier – 16 per cent mentioned specific appointment times whilst just six per cent spoke of a 'quiet room' being available (**Figure 2**). Callers reported that whilst practice staff were efficient, there was often little emotional connection with the situation or the caller. This 'disconnect' was explored further with a separate quantitative study carried out by Onswitch at the end of 2014, in association with The Ralph Site, gathering data from 500 owners who had previously lost pets.

All but 6.2 per cent had had a pet euthanised, and for the vast majority (77.3%) this had taken place at the practice, with 16.6 per cent of respondents reporting that the veterinary surgeon came to their home. Owners reported losing their pet across a wide spread of ages (**Figure 3**); and who is to say that it is any harder to lose a cat after 18 years than it is to say "goodbye" to a puppy after 18 months? A third of owners had not gone on to find another pet (**Figure 4**). Crucially, a significant number of those who did acquire another pet - almost a fifth, equating to roughly 100 owners - chose to use a different practice than the one that had undertaken the euthanasia (**Figure 5**).

And for a quarter of these owners, the reason was simply that they couldn't face entering the practice again (**Figure 6**).

## Helping owners through bereavement

There is a great deal of support available for owners finding it hard to cope with the outpouring of emotion associated with the loss of their pet, although it seems that relatively few practices actively provide clients with information about helpful organisations and charities such as The Ralph Site or the Blue Cross Pet Bereavement Service.

Owners say that they appreciate the practice team being supportive and understanding, and this can be brought to life through practical steps such as:

- offering euthanasia planning consultations, in a quiet room where there are no time pressures
- placing plenty of advice and information on the practice website for owners to digest at home
- training the team to develop effective communication skills in difficult situations
- offering home visits
- developing leaflets explaining the options and practicalities around euthanasia and cremation, written in a tone and style that is empathic and caring.

# Customer-centred practice keeps customers with your practice

Ultimately the aim when managing these difficult endof-life discussions is to make the entire experience as easy as possible for the owner, rather than the practice. An efficient process can come across as cold and unfeeling to the owner; whereas taking a few extra minutes to provide a quiet space, a box of tissues and a reassuring hand on the arm will comfortably pay back what is momentarily lost in productivity – through the client staying with your practice with future pets, and recommending your sensitive service to family and friends.

Remember first impressions count. Last impressions endure.



Figure 5. Nearly a fifth chose to use a different practice.





Figure 6. A quarter of owners couldn't face entering the practice again.

# Time to cut loose?

Every now and again we read in the newspapers how vets are overcharging, or 'ripping off' (their words) clients; or how medicines can be obtained so much more cheaply from the internet.

An article in the *Guardian* (9 April 2016), which reported on a survey of veterinary fees, asked the question: 'Are vets routinely overcharging animal lovers?' and commented that prices for basic procedures around the country can vary by as much as 100 per cent. This was a reasonably argued article and asked the opinion of both the Royal College of Veterinary Surgeons and practising vets - yet it still made uncomfortable reading and did nothing to endear the veterinary profession to the public.

Two years ago, a similar article in the Sunday People (April 2015) was much harsher and went something like this - 'Vets are ripping off people with sick pets by charging hefty fees for medicines they could buy for a fraction of the price online'. Apparently they were 'tipped off' about the 'scam' by a 'trainee vet' who was 'outraged that larger veterinary groups were hiking up their prices to unsuspecting consumers'. Rip off and scam and outrage are very emotive words used purposely to turn the findings into an 'exposure'.

### Lack-lustre response

Robin Hargreaves, the then senior vice-president of the British Veterinary Association, defended the profession against these claims by giving the usual answers - smaller practices cannot obtain medicines as cheaply as they are being sold online direct to pet owners and that a huge 'mega-pharmacy' inevitably has a greater buying power and can gain the maximum discounts. What wasn't mentioned, however, was that online pharmacies actually make a tiny profit on their drugs and it's because they sell so many that they stay in business. Tesco versus the corner shop might have been a reasonable analogy.

The only real plus side to the article was that it did include a warning against bogus online pharmacies. But here was another article doing the veterinary profession no favours.

As members of the profession that is being hammered, we see these articles - that invariably come in little flurries and then die down for a few months - as very unfair and often very one-sided.



They make us angry; and then we dismiss them as scaremongering or divisive. However, what we should never forget is that these newspapers – particularly the more sensationalist 'red tops' – are read by millions of people; and for many of them, anything that is in their newspaper simply must be true – especially if it serves to reinforce ingrained prejudices and preconceptions.

We ignore these media at our peril. But how do we counteract the negative press?

There are the usual methods of explaining the position of the small business set against a huge online organisation. Prices can be discussed in the context of the costs of running a business and the oft-used: "We provide much more than just the drugs". But, in reality, the vast majority of clients simply do not want to know all this. They are really not interested. What interests them is the cost of veterinary care for their pet.

### Dare to do differently

So perhaps we need to take another tack? Maybe, once we have diagnosed the problem or discussed the appropriate healthcare programme and charged for our consultation, we should send dissenting clients down the internet pharmacy route and tell them that it is likely they can obtain the necessary medication more cheaply this way. We can provide them with a prescription - to a maximum of six months at a time - and they can obtain their pet's medication elsewhere.

Of course, we can also point out that they are unlikely to receive much helpful advice

that way and that if things don't appear to be going too well, we will always be here to pick up the pieces. Otherwise we will be glad to see them for a consultation in six month's time; and, if appropriate for case management, at one of our nurse clinics in between times.

Does it really matter to us that we do not actually sell the drugs? How much will practices really lose if they adopt this approach? If we hold fewer products on our shelves, we have less money tied up in them; and we do not have to dispense them, so we may save a little on staff costs and time. And it might be an appropriate time to nudge up our fees in recognition of the added value of our advice anyway and to balance out any possible shortfall in drug revenue.

We may even find that, after a while, the personal service that we provide as part of the extra 'cost' of obtaining medicines from us on a convenient one-stop basis becomes more evident to these reluctant clients. On the other hand, if in the eyes of some clients we can't compete on prices, then maybe the best answer is not to try, but rather to focus on providing the professional service which cannot be provided by anyone other than a veterinary practice and charge accordingly for that.

We simply have to accept that, in these cases, no matter what we do, we will always be criticised by some of our clients for being too expensive – it's all part and parcel of the double whammy of providing a private health service for pets in the face of a nominally 'free' health service for humans.

# Industry Profile



Your name: Carolyne Crowe BSc(Hons) BVetMed MRCVS Dip Coaching, Dip Stress Position: Owner, performance and well-being coach Company: Carolyne Crowe Coaching, www.carolynecrowe.co.uk



# You worked originally as a full-time equine vet. What were the major reasons for you changing track and starting your own business?

I really enjoyed my clinical work but wanted a new challenge – and I knew I had skills that weren't being used in practice. Being an equine vet was my dream job in so many ways; however, I became more and more interested in us as people, our motivators, expectations and what drives our behaviours.

My husband – also an equine vet – and I have lost 10 friends and colleagues to suicide, and know many more with poor mental health or well-being, or who aren't enjoying practice. These sobering experiences fuelled my passion and determination to do something positive for the people in the profession that I love. We each have one life – my aim is to help support, empower and inspire others to get the most out of theirs. Coaching and training make this possible.

So, in 2012, I trained as a personal performance coach, initially alongside my clinical work. A year later – and with a couple of clients – I stopped clinical work to concentrate on my coaching and training business. Since then I have invested heavily in my own training – becoming a Master trainer in DISC behavioural profiling, an accredited Resilience trainer, a stress management and well-being trainer and a Mental Health First Aider.

I have a Masters degree in Workplace Health and Well-being and am currently doing a PhD in workplace stress within the veterinary profession, with The University of Nottingham. I'm an honorary lecturer at the University of Liverpool and also lecture at the RVC. The business has grown considerably but I love it and it doesn't feel like work.

### Do you carry out any clinical work now, if so what, and how much, and how do you fit it in with your business commitments? If not, do you miss it?

I don't do any clinical work and I don't actually miss it – having simply replaced one love with another. I am inspired every day by those with whom I work and really enjoy the variety – coaching and mentoring individuals over the phone or via Skype across the world, holding workshops in individual practices and at regional meetings or speaking at conferences. No two days are the same, so it's very similar to practice life!

What I have missed is being part of a team. However, I have worked hard and developed a strong support network of family and fellow professionals – including my own coach who continues to stretch me – and 2017 is an exciting year as I now develop my own team at The Veterinary Well-being Project.

## Can you explain the importance of coaching and how those clients you coach benefit?

Ultimately, coaching helps people to fulfil their potential – athletes have coaches, not because they are failing or showing weakness, but because they want to perform at their best. Coaching isn't about telling someone what to do; it empowers people to find the solutions in themselves and teaches skills they need to manage and overcome daily pressures and be the best version of themselves. I witness it making a huge difference both to individuals and also to practice owners who benefit from a more motivated, dedicated, productive and profitable team.

The majority of my work is within the veterinary profession. I also work with doctors, dentists, nurses, farmers and I'm a coach for the Dame Kelly Holmes Trust. It doesn't matter who you are or what role you have, at the end of the day we are all just people. It is important to ensure you are in control of the direction of your own life and are doing the things that are important to you – its all too easy to be on the 'hamster wheel', busy but not fulfilled. Coaching helps people identify what they want and then creates a practical strategy to move forward from where they are now to where they want to get.

### You won Life Coach of the Year 2015 at the International Coaching Awards and are a finalist in the Women in Business 2016 Awards. What do these sort of awards mean to you?

I'm very proud and honoured to have won these accolades; but whilst it's great to have external validation, to be honest, the real reward comes from the feedback I gain from those with whom I work. Making positive, practical differences to people's personal and professional lives is incredibly important to me. I'm humbled and inspired by everyone I work with – empowering clients to take action, take back control and help themselves is reward enough.

# You give a lot of presentations/lectures at major veterinary conferences. How does this compare to providing a service to practices?

Conferences and lectures are great places to inspire and communicate different ways of working – sharing strategies to change perspectives and mindsets. The challenge can be putting these into action back in practice, and I do a great deal of bespoke work with practice teams across the country.

Every business and team is different, so I spend time assessing the environment, personalities and issues in play and create tailored programmes of training and development to suit.



It's incredibly important to recognise that one size *doesn't* fit all. Health, well-being and people can't be approached with a checklist. There is no quick fix; but with training and development, positive practical progress can be made to benefit everyone.

### As the veterinary profession becomes more female dominated do you see job diversification increasing to meet the needs of working women?

I do see more job diversification in the future, although this is down to an increased need for balance and is not defined by gender. I think practices need to embrace more flexibility, along with more lateral thinking.

In terms of experienced female vets taking time out to have families, we should be focusing on how we can develop, motivate and retain all the individuals in whom we've invested time, effort and money. Practices that are thinking differently and offering flexibility are already reaping the benefits and becoming known as an employer of choice.

### It's good to use your skills and training to develop other career paths, but if too many graduates look at their veterinary training simply as a starting block to other careers (sometimes non-veterinary) will this impact the provision of general working vets and what can we do about it?

If this is the case, then as a profession we need to make being a clinical vet in practice a more attractive option. Every year the UK has a cohort of incredibly motivated, intelligent and passionate veterinary surgeons entering the profession (mostly in the clinical setting) and yet five years in, we have lost many of them from practice, or they have become disengaged or disillusioned. What's gone wrong? Shouldn't we be selling the *reality* of working as a clinical vet? It's a great place to work, it's practical, it's dynamic, it's unpredictable, it's routine, it's pressurised, it's emotional, it's rewarding, and it's 95 per cent about working with people.

Perhaps we need to look at the skills that are needed to be a practising vet and recruit students with these particular skills – or, at the very least, teach them. Do clinical vets all need to be academic perfectionists with fixed mindsets who are taught to be surgically brilliant? What about recruiting for – and developing – the communication and management skills needed to do a job that is essentially about dealing with people? Some universities are doing this well and you can see the difference in the graduates they produce, but what about those who are already in practice? I don't have all the answers but they are questions worth considering, and that is why I set up The Veterinary Well-being Project - to help train appropriately and overcome these gaps.

### Do you think that being a veterinary surgeon is no longer a vocation but simply a profession?

I think it is – and should always be – both. Many vets are attracted to the profession because they are passionate about making a difference to the lives of animals and their owners – it's a fantastic vocation that gives great fulfilment, satisfaction and meaning to our lives. However, it is also a profession where we deliver high standards of clinical treatment, service and care.

To ensure we build and maintain a sustainable profession, there is a fundamental requirement to look after the most important resource we have – people. We need to start putting people back at the heart of the veterinary profession and not to use the fact that it is a vocational profession as an excuse to break people. That is not acceptable nor is it a profitable way to run a business!

### Stress and well-being are important issues in practice today. Do we presume that they have always been there but people just coped; or is the modern vet exposed to more factors within the industry causing these problems?

Did they cope previously? A colleague of mine who qualified with 50 others over 40 years ago, talks about losing over 10 per cent of the year to suicide, with many more on at least their second marriages, suffering serious illnesses. Is this coping? Is this OK? The veterinary profession is – and always will be – a pressurised one. However, the world of work is changing and stress now poses the greatest risk to your health and safety.

Workplace stress arises when there is a mismatch between the demands, control and the degree of support available. My own Masters degree research concluded that lack of autonomy was a significant issue for vets in practice and that those who worked in a supportive practice – where they were listened to and valued – demonstrated higher levels of fulfilment and satisfaction. Coaching and training help people work in a resilient and sustainable way, by taking back control of their time, expectations, life and career – in turn helping individuals and teams go from surviving to thriving in practice.

Following on from the previous question, would you say that perhaps at least some of the stress issues are not necessarily related to the work environment but rather to modern life in general and the pressures of social media, IT, pace of life, expectations and litigation? It is certainly true that modern life and the world of work are changing. Veterinary practices and the profession must adapt accordingly and embrace change – both in terms of the demands from our clients and the needs of those working within the profession. We live in a society that is on 24/7, we work in a consumer-led profession, public expectations are driven by social

Our role is to educate clients not just on what could be done but also what should be done. We need to respond to the needs of our clients but not at the cost of the needs of our teams. Practices have legal obligations to assess and minimise the risks to employees, ignoring these responsibilities contravenes health and safety legislation and leaves veterinary practices exposed to serious consequences.

media and television programmes.



### Stowe Veterinary Centre

Located in Stowmarket, Suffolk, this is the centre of our first opinion farm, equine and small animal practice.

We are a long established practice, with purpose-built modern premises and an extensive range of diagnostic equipment, facilities, stabling and a fully trained and experienced veterinary nursing and management team.

- Small Animal Internships
- Mixed Practice Internships

Both positions are suitable for new and recent graduates.



# **Ipswich Veterinary Centre**

With the opening of our new veterinary centre in Ipswich, Suffolk, we have a number of exciting opportunities for experienced veterinary clinicians, advanced practitioners and specialists.

This is a fantastic opportunity to work as part of a friendly team in a brand new, purpose-built and fully equipped centre.

- Experienced Veterinary Surgeon
- Orthopaedic Surgeon
- Veterinary Neurologist



An attractive salary package, supported on-going professional development and a flexible rota are provided.

To find out more or to apply for any of the above positions, please contact Lynn Smith: lynn.smith@stowevets.co.uk

### www.stowevets.co.uk

# National Veterinary Data Service



# A complete lost and found service for your clients



To find out more about this service please email: enquiries@nvds.co.uk or visit: www.nvds.co.uk



NATIONAL VETERINARY DATA\_SERVICE

# **Federation of** Independent Veterinary Practices

- Promoting
- Representing
- Sharing
- Supporting

www.fivp.org.uk | Email: enquiries@fivp.org.uk | Tel: 03301 239 351