

# Veterinary Medical Writing

## SECTION EDITORS



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### Editorial

For this issue of Veterinary Medical Writing, we have two articles from the veterinary world. The first is about the niche but increasingly in-demand service of veterinary public relations (PR). For decades, the veterinary profession has enjoyed a privileged position in society and has been (and still is!) valued by the general public. However, the profession is increasingly facing challenges to its reputation, affecting individual practices and the profession as a whole. Through the rise of social media, which gives everyone an equal platform at its egalitarian best, any individual with a grudge can inflict quite serious reputational damage to practice with a few clicks of a mouse. Drawing on her experience in veterinary PR, Caroline Chambers gives an overview of how veterinary Businesses can overcome any harmful social

media exposure and proactively build a large, positive social media presence in their community.

Elsewhere, the 2021 Autumn EMWA conference was not only the scene of the first hybrid conference, it also witnessed the first veterinary workshop on the subject of One Health. A topic that has a reputation for being abstract, intangible and something that vets do, Elissa Burnside provides a witness statement from this inaugural workshop, led by Kilian Unger. Regular readers will know that we here at Veterinary Medical Writing are big cheerleaders for One Health, and, as Elissa testifies, the new workshop is a valuable addition to the EMWA CE canon. The only thing to ask now is this; if medics look after human health and vets are in charge of animal health, which profession is the custodian of environmental health?

Finally, where the geopolitical outlook has become so much darker since the last issue of MEW, we at Veterinary Medical Writing section pay tribute to the veterinary profession's response to the crisis in Ukraine by high-lighting the VetsforUkraine initiative in the latest issue of FTHM. An example of veterinary leaders stepping up to assist colleagues caught up in this awful conflict and provide practical support for the animal welfare and public health challenges that will inevitably arise from it.

Finally, we at Veterinary Medical Writing say a fond farewell to Jennifer Bell, who has departed as co-editor to focus on the MEW Biotechnology section. All we can say is their gain is our loss and we thank her for her input and wish her all the best.

Louisa Marcombes

## Embracing a new era: The growing role of PR and social media in vet practice

**T**he way we gain information and form opinions about businesses has fundamentally changed in the last two decades. Gone are the days when word of mouth held sway, and now we carry around an ever-updating hotbed of public opinion in our pockets. This has impacted all business sectors in terms of reputation management and communications, and the veterinary profession is no exception. We are seeing a growing role for veterinary public relations (PR) and a greater focus on digital activities and social media. This sphere is not without its challenges, though, and this article discusses the changing environment and considers how practices can harness communications to reap positive rewards.

### The challenges of our interconnected world

With the digital era in full swing, communications between businesses and their clients are now quicker and easier, but they can also be more reactive and confrontational. Social platforms

give the opportunity to vent frustrations in an instant, and the normalisation of this in our culture means that the expectations of courtesy we hold for in-person interactions do not always apply. This raises huge challenges for veterinary professionals, who deal with complex and difficult situations every day in which emotions can very understandably run high. Despite a veterinary team's best efforts, commitment, and dedication, outcomes are not always positive, and the ultimate fear is a social media storm – with the story potentially being picked up by mainstream media journalists and amplified further.

There is no denying the basis of these fears; indeed, the situation can be professionally damaging and emotionally exhausting, and particularly frustrating when practices are inhibited from telling their side of the story since it would be inappropriate to comment on the specifics of a case in the public domain. However, the era of instant communication is also full of opportunity, and there is much that veterinary

### Caroline Chambers

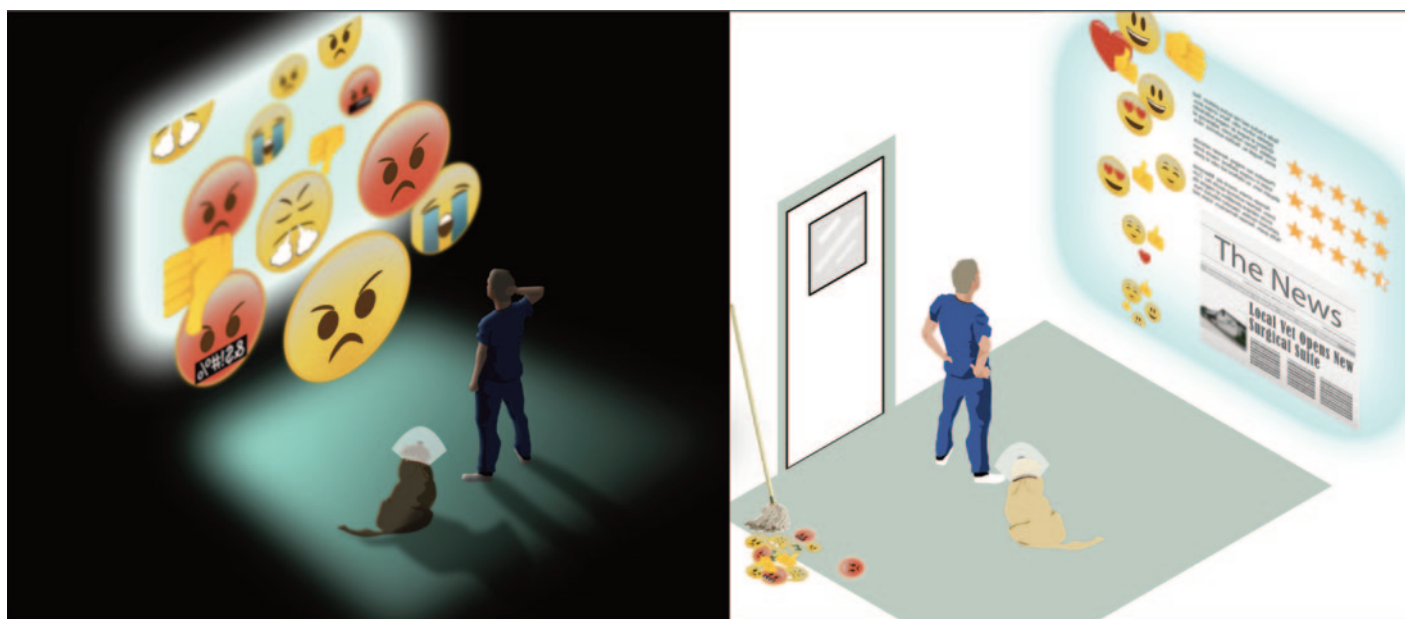
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practices can gain from this interconnected world. In order to keep the risks in perspective and experience the benefits, practices need to go beyond this reactive mindset and take a proactive approach to communications.

### A proactive approach

A proactive approach involves utilising media communications to build up a positive "bank" of good reputation, such that the impact of any negative publicity is ameliorated and seen in context. This positive PR activity will build on the good work of the practice and amplify its strong reputation amongst satisfied clients. Indeed, in some social media storms around vet practices, it is heartening to see that it is other



Graphic: Louisa Marcombes

clients who leap to the defence of their beloved practice. Of course, client loyalty develops primarily from people's personal interactions with the business rather than media communications, but a well-managed PR strategy will strengthen this by reinforcing the practice's image.

Outside the social sphere, building up a good reputation with local press can also pay dividends. If a practice has positive relationships with local journalists and editors, publications may be less inclined to pick up negative stories about them, or may get in touch with staff to request a more balanced view rather than printing the story without question.

As well as avoiding negative publicity, attention to PR can bring many other benefits to veterinary practices. These include business advantages through attracting new clients and retaining current clients, as well as recruitment benefits via showcasing the ethos of the team and encouraging applications from prospective staff. Current staff can also reap the rewards, as their work-life will be more fulfilling if they are proud to be part of a very well-regarded practice, and this can help boost retention. Taken together, all these benefits are significant and will be particularly welcome in a challenging time for veterinary practices, with the fallout from the pandemic adding to the well-recognised industry pressures in terms of wellbeing, understaffing,

and burnout.

**The era of instant communication is also full of opportunity, and there is much that veterinary practices can gain from this interconnected world.**

Given these benefits, a growing number of veterinary practices are beginning to give a greater emphasis to PR. Some larger practices or groups may have a defined marketing manager, while smaller independent practices often share the responsibilities amongst the team.

### **Leveraging press relationships**

When it comes to developing a media communications strategy

for a veterinary practice, there is a lot to consider as PR encompasses a wide range of activities with print and digital media. Considering print media initially, it is generally most beneficial for veterinary practices to develop good relationships with local press.

Sharing positive stories about the practice with local publications – for example, sending out press releases about any expansion of the service or facilities or staff members receiving awards – helps raise the practice's profile with current and prospective clients. Featuring in the press builds up the business's credibility and helps practices set themselves up as the local voice of advice for pet-related matters.

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Local, feel-good stories tend to be popular amongst readers, so press contacts will appreciate being supplied with these stories, and this can lay the foundation for long-lasting and mutually beneficial relationships. Veterinary practices can also build on these relationships by inviting local press contacts along to any events they organise, such as open days and charity fundraisers.

Some practices, particularly larger or referral businesses, can also benefit from engaging with the veterinary press. Publishing stories in this sector-specific media can help raise the profile of the practice as well as individual vets within it.

### **Social media**

Social media, while raising significant challenges for the veterinary sector, also provides a wealth of opportunities. The conversational nature of these platforms supports relationship building, helping veterinary teams establish a rapport with

clients on a much wider scale than can be achieved in-house on a normal day. Many pet owners love to share pictures and stories of their pets on social media, and veterinary teams can invest in client relationships by encouraging these positive interactions, possibly introducing fun activities such as photo competitions if they have the time. Social platforms also allow practices to showcase the

personable side of the business, helping to reinforce their approachable and caring image –

which in turn helps avoid negative publicity, as people are less likely to attack a business when they see the human face.

Practices can also use social media to reinforce pet care messages, firstly by answering client questions and secondly by crafting posts to highlight the value of preventative treatments, routine check-ups, and perhaps the practice's healthcare plan. These posts can help boost business at the same time as improving pet care, extending the reach of team-client interactions beyond the physical premises.

In terms of which platforms practices focus on, Facebook is by far still the most popular. Instagram and TikTok are also increasingly attractive, perhaps because of the reduced likelihood of engaging in toxic "debates". The "always on" nature of Twitter and the need to engage with the community means it is often too time-intensive for many practices, although veterinary professionals will often use it in a personal capacity but related to professional interests. LinkedIn is also becoming increasingly popular with vets as a means of engaging with other veterinary professionals.

It is worth ensuring that the team member(s)

in charge of social media has training in what makes an effective strategy, as social interactions can take up a lot of time, and the business must gain a return from this investment. Training can also help team members avoid inadvertently triggering any difficult situations and respond in the most appropriate way to settle any issues that may arise.

### The importance of a cohesive strategy

Alongside developing positive press relationships and forming an effective social media plan, there are many other elements to a successful PR strategy for veterinary practices. The practice website will be particularly important in terms of client relations, and other useful avenues for communication with the public include blogs, emailers, leaflets, and so on. For those practices looking to interact with the veterinary

profession more broadly, relationships with veterinary media outlets will prove very valuable. The key is to identify which of these elements will be important for the individual practice and then weave them together into a cohesive strategy to meet the business's goals.

Overall, PR for veterinary practices is growing

in importance, but the veterinary sector is very specialised, and it is important to take this context into account when applying general principles of PR. Many practices would welcome training in this regard, but it was only this year that saw the launch of the first educational platform dedicated to educating veterinary professionals on sector-specific PR and marketing (Vetti). In the future, it is likely that more practices will place a greater focus on PR to maintain their reputation and meet their business goals.

### Disclosures and conflicts of interest

The author is employed by Companion Consultancy, which runs the veterinary PR and marketing portal Vetti.

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## From the Horse's Mouth

The quarterly pick of the news from the veterinary world

**I**n response to the war in Ukraine, the Federation of Veterinarians of Europe (FVE) has partnered with the World Veterinary Association and the European Federation of Companion Animal Veterinary Associations to assist Ukrainian veterinarians, their families and animals caught up in the conflict, it was reported on the FVE website on February 25, 2022.

Through a purpose-built web portal, [vetsforukraine.com](http://vetsforukraine.com), Ukrainian veterinarians and their colleagues from the rest of Europe

and beyond can access information and resources to tackle the significant veterinary challenges that have arisen since the start of the crisis on February 24. This hub provides practical advice about housing for refugee veterinarians and addresses the specific needs of Ukrainian veterinary students who have had their studies interrupted. There is guidance on recognising the professional qualifications of Ukrainian veterinarians to support them in finding work whilst in their adoptive countries. Furthermore, there is also practical advice on

the evacuation of pets, farm animals, and zoo animals from Ukraine with update-to-date guidance on disease risk posed by the cross-border movement of a large number of animals. This initiative demonstrates how professional bodies can mobilise to support colleagues caught in a conflict zone and highlights the importance of the logistics of domestic animals at a time of war, not only on the basis of animal welfare but also in terms of food security and public health.

# The first veterinary EMWA workshop: A witness statement

**T**he EMWA November 2021 virtual conference marked an important milestone: the first-ever EMWA veterinary medical writing workshop. At the helm of this workshop was Dr Kilian Unger, a vet with heaps of experience in veterinary public health policy, who undertook the massive task of presenting the One Health topic to a diverse audience of medical writers (from vets to medical translators to regulatory writers). As a part-time veterinary surgeon and full-time regulatory medical writer, I have always been fascinated by the concept of One Health after first hearing about it during my time at university. I was very keen to jump right in and find out what opportunities lay ahead to help change the way we see the world of science, medicine, and ecology.

The structure of the workshop entailed some obligatory pre-workshop reading, and the workshop itself shone a spotlight on the hot topics of the One Health paradigm. Delegates were afterwards invited in their post-workshop assignment to write a short (700-word) essay on one of the presented topics, allowing them a deeper exploration of the themes discussed,

which were later shared with me for the writing of this article.

This article represents a summary of the topics discussed during the workshop and in the essays to give readers a taste of this exciting new veterinary workshop.

## A bit of One Health history

Pre-workshop preparation was with the mandatory reading of a very interesting paper by Evans and Leighton;<sup>1</sup> a bit like journal club prep, to help us understand the basics of the One Health concept.

On the day, the workshop first started with a bit of history; the idea of One Health is nothing new. It can actually be traced back to the great Greek philosophers, including Hippocrates and Aristotle, but gained in popularity from the 19th century onwards.<sup>1</sup> In 1858, Rudolph Virchow, an early proponent of One Health, wrote: "Between animal and human medicine, there are no dividing lines – nor should there be. The object is different, but the experience obtained constitutes the basis of all medicine".<sup>1</sup> In the mid-20th century, Calvin Schwabe built on this belief

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by exploring the interface between veterinary and human medicine and coined the term "One Medicine".<sup>1</sup> In the early 2000s, the term "One Health" made its first official appearance when emerging zoonotic diseases such as bovine spongiform encephalitis (BSE), severe acute respiratory syndrome (SARS), and avian influenza accelerated the need for collaboration between vets, human doctors, health organisations, and health authorities. In 2007, a "One Health Initiative Task Force" was created in the US, and the "One Health Commission" was established.<sup>2</sup> In 2008, a number of influential organisations (including the WHO, FAO, OIE, UNICEF, and World Bank) developed a "One World, One Health" framework to coordinate medical and veterinary health policies more effectively,<sup>3</sup> and since then a huge network of One Health organisations have cropped up all over the globe.

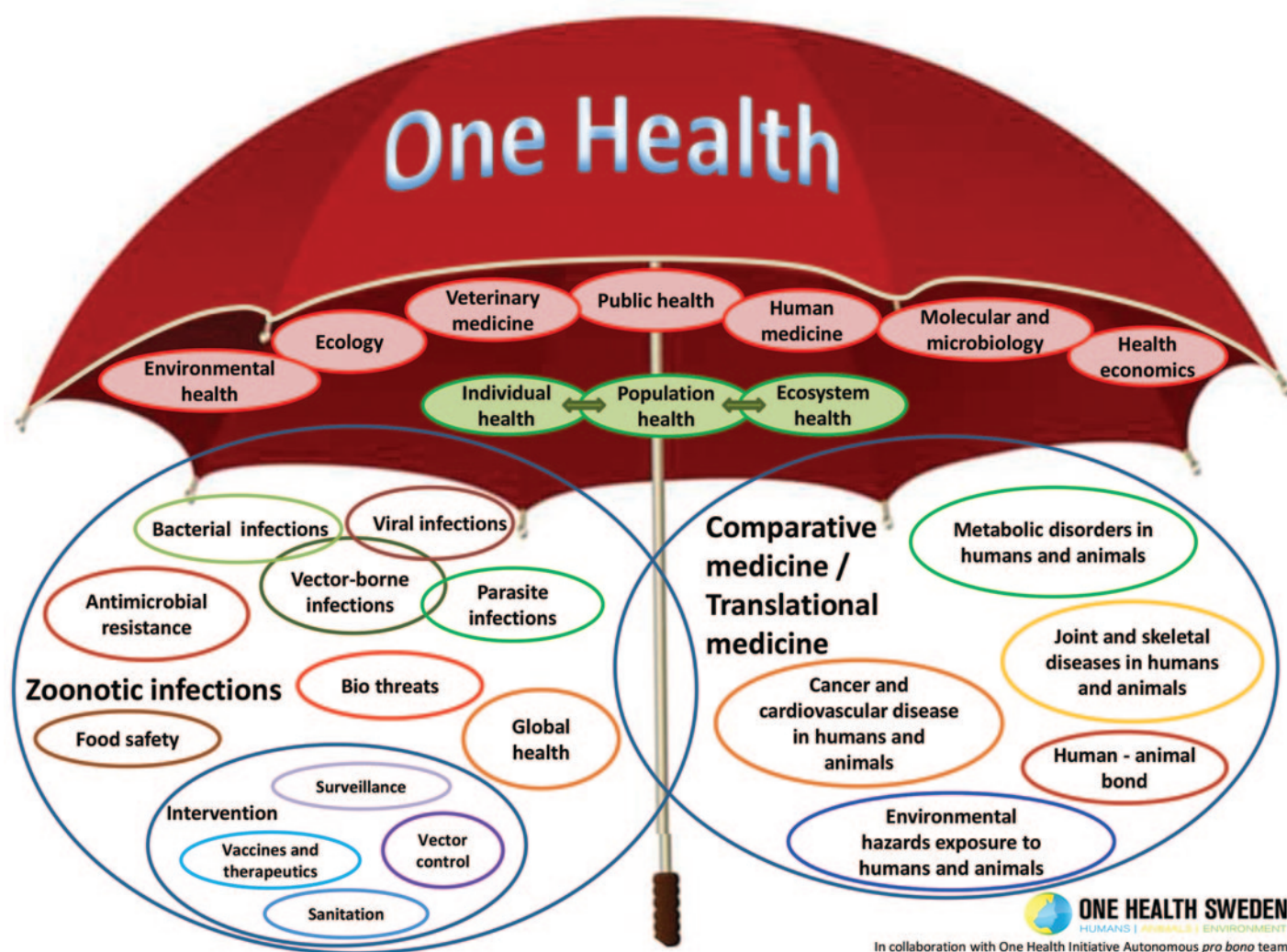
**A** recent pre-print article has advanced the case for comparative medicine on BioRxiv, the Humanimalhub.com reported on February 14, 2022. The study demonstrated that the molecular basis of many naturally occurring canine tumours have high concordance with the oncogenic drivers in humans. The analysis, involving 28 tumour types from 708 client-owned dogs representing 96 breeds and cross-breeds, identified 50 mutations in established oncogenes and tumour suppressors. Furthermore, the *TP53* gene, which is mutated in about 50% to 60% of human cancers, was mutated in over 30% of canine cases in this study. With the caveat that, at the time of writing, this data is yet to undergo peer-review, it does provide further evidence of the suitability for canine patients to be spontaneous models for human cancers.

**T**he Royal Society for the Protection of Animals (RSPCA) in the UK saw an 86% increase in reports of ear cropping in dogs to its emergency helpline in the last 12 months, it was reported in the *Vet Times* on March 7, 2022. Despite the practice, where a dog's ears are surgically altered to be pointed and stand erect, being illegal in the UK since 2006, the rise of reported cases since 2015, the year records were first kept, has been exponential. In 2015, 14 reports were filed regarding ear cropping in dogs, by the end of 2021 this had risen to 188, which represents an overall increase of 1,243%. Although this is attributed, in part, due to increased public awareness of the practice, the promotion of dogs with cropped ears on social media and by celebrity influencers is likely to have played a role. It signals a worrying trend



that pet owner's are circumventing the ban by importing animals from overseas from regions where the practice is legal, thereby driving up the demand for a procedure that is effectively a cosmetic mutilation and serious animal welfare issue. It is envisaged that legislation to ban the import of dogs who have undergone the procedure into the UK will reverse this trend and the RSPCA are currently campaigning for such legislation to be adopted.





**Figure 1. The One Health umbrella showing the many concepts, fields, and issues included in the idea of One Health**

Source: One Health Sweden and the One Health Initiative pro bono team

So, what exactly is “One Health” today? Well, there’s apparently no universally accepted definition, and some organisations regularly tweak their definition of One Health to keep it up to date.<sup>4</sup> Kilian gave examples of a few definitions, including this one by the CDC: “a collaborative, multisectoral, and transdisciplinary approach – working at the local, regional, national, and global levels – with the goal of achieving optimal health outcomes recognising the interconnection between people, animals, plants, and their shared environment”.<sup>5</sup> A vast and overarching definition I know, but the topic in and of itself is vast and overarching.

### The One Health umbrella

To help summarise One Health, this slightly crowded but comprehensive infographic was introduced to illustrate the different concepts, fields, and issues contained under the One

Health umbrella (Figure 1). This diagram was to form the basis of our post-workshop assignment. The aim was that we each spy out an aspect of One Health that we felt especially passionate about, research all the advantages and drawbacks, and relate it more closely to our world, our sphere of medical writing. I chose the topic of comparative medicine for my post-workshop assignment, one of two out of the seven delegates to do so.

### Comparative medicine

One of the many interesting One Health topics for vets is the potential power of comparative medicine. We’re not talking here about the use of genetically selected (or modified) laboratory animals used in pre-clinical studies (which unfortunately translates into quite a high failure rate for new therapeutics). The focus of comparative medicine here is based on companion

animals and the potential cooperation between vets and the human pharmaceutical industry. Pets and people have similar genetic traits, similar physiologies, and live in the same environment with common stressors. Many human diseases, including cancers and other acute or chronic diseases (such as epilepsy and diabetes mellitus), can also affect dogs and cats. Unfortunately, comparative medicine still has major limitations, including the (currently) quite poor quality of veterinary clinical trials, the sometimes poor predictive power of animal models, and the relatively low funding of veterinary research. (For anyone interested in learning more about comparative medicine, Veterinary Medical Writing editor Louisa Marcombes wrote a great summary article about this in the September 2021 issue of this journal.)<sup>6</sup>

During the workshop, however, a clear enthusiasm from the audience could be felt: the

idea of veterinary clinical trials for human drugs was an exciting new field and finding ways to combat their limitations felt like an exhilarating challenge.

For my post-workshop assignment, I discussed the potential role of medical writers in this new era of comparative medicine, in which we would be the pillars to support the enhanced communication between vets, human doctors, pharmaceutical groups, regulatory bodies, and the general public that the comparative medicine framework demands. In their take on the same subject, the other participant exposed the issue of rare and neglected diseases, showing how research and communication on how these diseases affect animals may help advance potential treatment options for humans. The participant highlighted the shared environmental hazards between humans and animals with the interesting example of podoconiosis, a debilitating and stigmatised disease caused by repeated exposure to minerals in irritant volcanic soils, affecting an estimated 4 million people worldwide.<sup>7</sup> The participant speculated that research into how animals, both wild and domesticated, react to these soils might change our view on the currently known pathophysiology and treatment options in humans. The topic was a great start to get our juices flowing!

### Antimicrobial resistance

The next topic explored during the workshop was antimicrobial resistance, a very real and very worrying issue that affects both vets and human doctors on a daily basis. Kilian described this issue in great detail, explaining how microbes can evolve to resist the action of antimicrobial medicines through selection pressure caused by the overuse and misuse of antimicrobials in both the veterinary and human medical sectors. He showed us frightening projections of the number of deaths attributable to antimicrobial resistance in 2050, with a catastrophic estimated 4.7 million deaths per year in Asia (Figure 2).<sup>8</sup> Fortunately, this issue has received a lot of attention in recent years by national governments as well as international organisations (OIE, WHO, FAO, EU commission, etc.), which are setting up global action plans to improve awareness, optimise the use of antimicrobials in both animal and human medicine, improve hygiene standards, and increase investment in new diagnostic and treatment options.<sup>9</sup> A very good One Health challenge.

One workshop participant approached this topic by highlighting the fact that many antimicrobials used today have come from microbes, which have evolved antimicrobials as

a defence mechanism against other micro-organisms; antimicrobial resistance is just the microbe's way to keep surviving and avoid extinction. However, we have unwittingly selected for antimicrobial resistance in agriculture and aquaculture by using antimicrobials as growth promoters and increasing the concentrations of heavy metals in the environment.<sup>10</sup> Antimicrobial resistance not only affects human health but also animal health and the food chain, making it vital for doctors and vets to work together. This participant also emphasised that the One Health approach should be taught from a young age, to enable future scientists and the general public to instinctively view Health as a whole, taking into account the impact of the interconnectedness of human, animal, and environmental health, and acting more efficiently and quickly when faced with issues such as antimicrobial resistance. One such initiative, the One Health Lessons project ([www.onehealthlessons.com](http://www.onehealthlessons.com)), aims to do precisely this, and its founder, a veterinarian, is a recent contributor to this journal.<sup>11</sup> Do we not, as medical writers, have the duty to get the word out too?

### Vector-borne and zoonotic diseases

Kilian then illustrated the accelerating trend of zoonotic diseases. These are infectious diseases that can spread from animals to humans and vice versa, and he gave examples of recent human outbreaks of West Nile Fever, transmitted by mosquitoes from infected birds, and Q-fever, transmitted by direct contact with infected goats. The risk of spillover diseases is increasing at an alarming rate, mostly due to changes in land use, urbanisation, global travel, and mass migration. The current emergence of monkeypox in non-endemic countries is a case in point.

Good quality scientific communication with the general public was highlighted by one of the participants as being crucial to fighting these kinds of diseases. She wrote that "it is a daunting task to lay down complex issues in a relatable and accessible way", but emphasised the importance of the One Health approach even on a small scale, by providing the example of malaria, a mosquito-borne disease endemic in many tropical and subtropical countries. Helping people understand the importance of adapting their surrounding environment to prevent such

disease, e.g. by using mosquito nets and not leaving stagnant water nearby, is actually not a straightforward task. But it accentuates the need for appropriate and targeted communication on how the environment can affect human health, be it directly or indirectly.

As another participant highlighted, "the medical writing community bears considerable responsibility for the reliability, accuracy, and even at times, the transparency of data presented to the scientific community and general public". And the COVID-19 pandemic really shone a light on this. This zoonotic disease shook the world of health and health information, with good communication being of paramount importance to help prevent its spread. Misinformation and disinformation about the COVID-19 virus, vaccines, and possible treatments were shown to have caused unnecessary harm and avoidable fatalities.<sup>12</sup>

As the participant put it, the pandemic has "taught humankind valuable lessons in cooperation, information-sharing [...], and the importance of disseminating evidence-based findings".

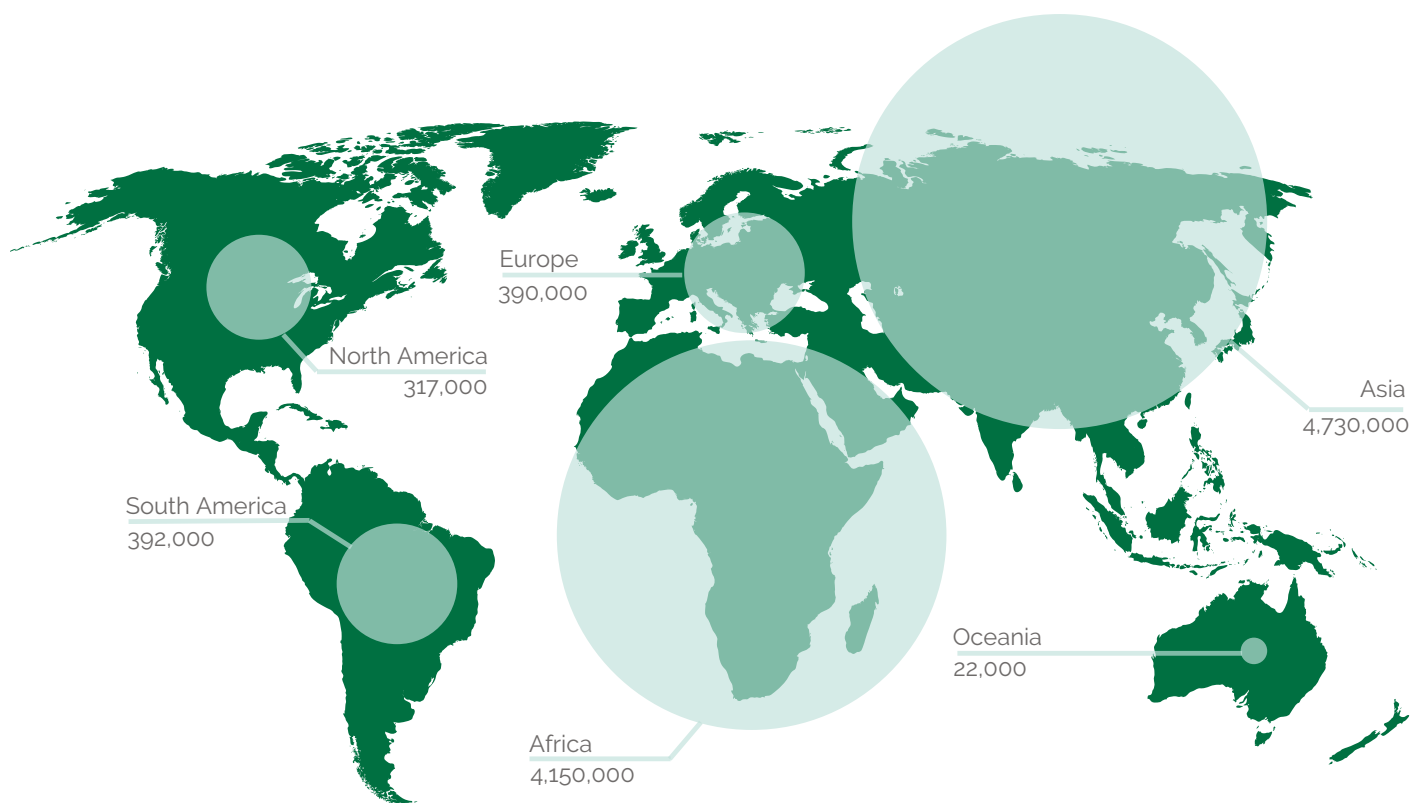
As part of the One Health approach, another participant laid out the skills that vets acquire through their chosen career path. She emphasised, through the example of the COVID-19 pandemic, that "the scientific community, including medical writers, can benefit from an interdisciplinary approach and should be aware of the knowledge that those from an animal health background can bring".

### Food security and food safety

As Kilian noted, epidemics in animals can also have huge effects on human health. The increase in zoonotic diseases in food-producing animals can lead to major issues in food safety. And even animal epidemics with low or zero zoonotic potential, such as foot-and-mouth disease or African swine fever, are equally as frightening, as they can lead to huge economic losses and jeopardise food security for millions of people.

It can be easily understood how a One Health approach to food is vital. Creating an open channel of communication between vets, human doctors, epidemiologists and veterinary pharmaceutical groups can improve both food safety and food security. One participant observed that the One Health approach "can be used to design and implement programmes, policies, and

This zoonotic disease [COVID-19] shook the world of health and health information, with good communication being of paramount importance to help prevent spread.



**Figure 2a. Projected annual deaths attributable to AMR in 2050, broken down to geographic region**

legislation”, “reduce [...] direct and indirect healthcare costs”, and even “reduce the amount of food waste and increase utilisation of nutrients”. However, the participant is fully aware that “One Health brings complexity to food safety management” and that “the food web itself is already complex”. There is still a lot of work to be done.

### So what’s in it for medical writers?

In order to stick to his workshop schedule, Kilian had to repeatedly rein back the passionate discussions from the participants. As one participant put it: “the whole concept of One Health is as vast as the many issues and challenges associated with human, animal and environmental health.”

“The whole concept of One Health is as vast as the many issues and challenges associated with human, animal and environmental health.”

of One Health into an everyday, routine way of thinking and seeing the world. And medical writers, as Kilian implied, may have an important role to play in this. This workshop has influenced my prescribing habits as a vet, to think not only about the individual animal I am treating but also about the consequences on the surrounding humans and environment, and it has also transformed my way of researching topics as a medical writer, to take into account the many aspects surrounding human and animal health. This shift to a One Health approach and the increasing funding in veterinary medical care is helping veterinary medical writing gain traction in Europe and globally. I hope that this successful veterinary workshop is the first of many of its kind.

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### Disclaimers

The opinions expressed in this article are the author’s own and not necessarily shared by his employer or EMWA.

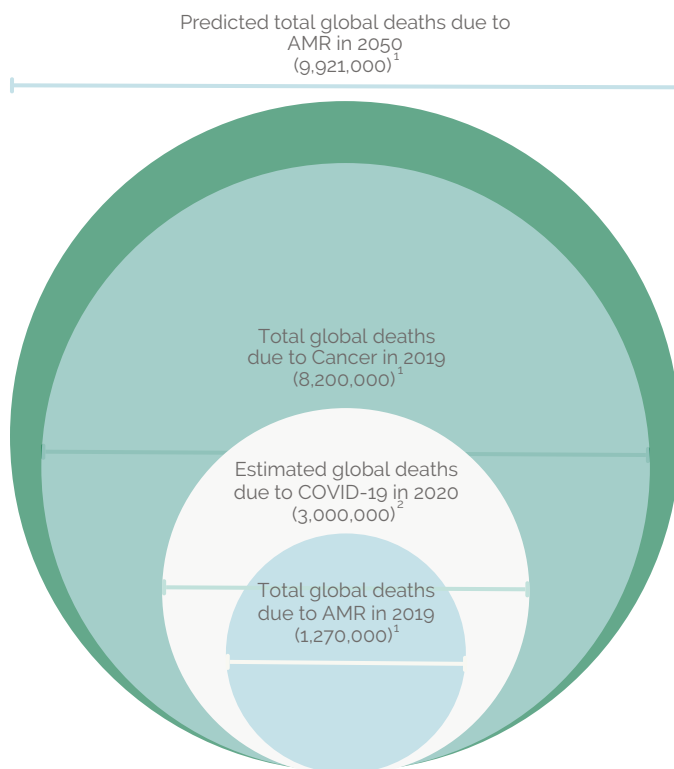
### Disclosures and conflicts of interest

The author declares no conflicts of interest.

### References

1. Evans BR, Leighton FA. A history of One Health. *Rev Sci Tech*. 2014;33(2):413–20. doi:10.20506/rst.33.2.2298.
2. One Health Commission. History of the OHC. Updated 2015 [cited 2022 Mar 19] Available from: [https://www.onehealthcommission.org/en/why\\_one\\_health/history/](https://www.onehealthcommission.org/en/why_one_health/history/)
3. World Organisation for Animal Health (OIE). One World, One Health. 2009 [cited 2022 Mar 19]. Available from: <https://www.oie.int/en/one-world-one-health/>
4. One Health Commission. What is One Health? 2021 [cited 2022 Mar 15]. Available from: [https://www.onehealthcommission.org/en/why\\_one\\_health/what\\_is\\_one\\_health/](https://www.onehealthcommission.org/en/why_one_health/what_is_one_health/)





**Figure 2b. Quantitative comparator of projected global 2050 AMR death rates with contemporary data for AMR deaths, cancer deaths and COVID-19 deaths.**

AMR = Antimicrobial resistance

1. O'Neill J. Review on Antimicrobial Resistance Antimicrobial Resistance: Tackling a crisis for the Health and wealth of nations. London: Review on Antimicrobial Resistance. 2014
2. <https://www.who.int/data/stories/the-true-death-toll-of-covid-19-estimating-global-excess-mortality> [Accessed March 25, 2022]
5. Centers for Disease Control and Prevention (CDC). One Health. 2022 [cited 2022 Mar 19]. Available from: <https://www.cdc.gov/onehealth/index.html>
6. Marcombes L. Comparative medicine: A view from the veterinary clinic. Medical Writing. EMWA. 2021 Sep;30(3):100–3.
7. Wanji S, Deribe K, Minich J, et al. Podoconiosis - From known to unknown:

Obstacles to tackle. Acta Trop. 2021;219:105918.

doi:10.1016/j.actatropica.2021.105918.

8. O'Neill J. Review on antimicrobial resistance: Tackling a crisis for the health and wealth of nations. London: Review on Antimicrobial Resistance. 2014 [cited 2022 Mar 19]. Available from: [https://amr-review.org/sites/default/files/AMR\\_Review\\_Paper\\_-\\_Tackling\\_a\\_crisis\\_for\\_the\\_health\\_and\\_wealth\\_of\\_nations\\_1.pdf](https://amr-review.org/sites/default/files/AMR_Review_Paper_-_Tackling_a_crisis_for_the_health_and_wealth_of_nations_1.pdf)
9. World Health Organization (WHO) Antimicrobial Resistance Division. Global Action Plan on Antimicrobial Resistance. 2015 [cited 2022 Mar 19]. Available from: <https://www.who.int/publications/i/item/9789241509763>
10. Seiler C, Berendonk TU. Heavy metal driven co-selection of antibiotic resistance in soil and water bodies impacted by agriculture and aquaculture. Front Microbiol. 2012;3:399 doi:10.3389/fmicb.2012.00399.
11. Thomson, D. The need for clear health communication: From COVID-19 vaccines to the malaria vaccine. Medical Writing. 2022;31(1):96–9.
12. Love JS, Blumenberg A, Horowitz Z. The parallel pandemic: Medical misinformation and COVID-19. J Gen Intern Med 2020;35:2435–6. doi:10.1007/s11606-020-05897-w

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