

The added value of a One Health approach

Companion animal vets play a vital role in the One Health movement, according to Eithne Leahy DVM BA MSc, who writes about this movement in the context of companion animal practice

According to the Federation of Veterinarians of Europe, all of us involved in the veterinary profession play an essential role in keeping animals healthy, protecting people, boosting the economy and safeguarding the environment. No mean feat! We should feel proud of ourselves and our profession knowing that the health we enjoy as people is, to a very large extent, based on the enormous progress made in veterinary medicine.

One Health is a complex concept, presenting numerous difficulties but numerous opportunities too, as the physicist and Nobel Laureate, Albert Einstein, once said: "In the middle of difficulty lies opportunity." The first difficulty surrounding One Health is to understand what it is. The term has appeared with increased frequency, often in italics or within apostrophes, in recent years yet most people I've spoken to struggle with understanding its exact meaning, finding it difficult to visualise tangible examples within everyday practice.

DEVELOPMENT OF ONE HEALTH

One Health may be incorrectly presumed to be a recent phenomenon when, in fact, its origin dates to the 19th century. It all started when a German physician and pathologist, Rudolf Virchow (1821-1902), coined the term 'zoonosis'. He was very supportive of the veterinary profession, strongly advocating for public health meat inspections and set the foundations for modern meat inspection practices by veterinarians. Virchow firmly believed that 'between animal and human medicine, there is no dividing line – nor should there be' and, with this statement, the One Health concept was born. His pioneering outlook of using an integrated approach to medicine – human and animal – crossed the Atlantic with numerous American physicians becoming increasingly interested in comparative medicine in the 1920s. The development of One Health advanced dramatically when Calvin Schwabe, a renowned American veterinary epidemiologist and parasitologist, published, in 1964, his book *Veterinary Medicine and Human Health*, the first textbook considering veterinary medicine and human health as one entity. The One Health movement since then has evolved constantly with research showing potential economic savings to be made through human and animal medical cooperation. By the early 2000s, a widely accepted operational definition for One Health, proposed by Jacob

Zinsstag was: "One health is anything that adds value to the health of animals and humans, economic savings, not achievable without cooperation of the two medicines."

The dramatic growth in human and domestic animal populations seen in recent years has been matched by an equally dramatic decline in the size of wild populations of animals, with widespread environmental damage (Welburn, 2011). While the collaboration between human and animal health sciences remains the cornerstone of the One Health approach, this approach would ignore another important component in health, environmental health. A key feature of many of the emerging disease threats in today's modern world has been the deterioration in the health of our ecosystems (Gibbs, 2014). Therefore, the One Health concept as it currently stands values the three pillars of human, animal and environmental health in equal measure, promoting maximum integration of all key stakeholders to optimise health (WHO, 2017).

But, how does this affect my daily life working in clinical practice you may ask. Well, as I said already, we play a vital role in the One Health movement; as vets we hold a unique position in understanding interactions at the animal-human interface giving us an enormous advantage in understanding zoonotic disease. We work daily at the coal face of zoonotic disease more so than any other profession. And why the huge concern about zoonotic disease? Because a recent WHO report (2016) showed that 75% of the new diseases that have affected humans over the past 10 years have been caused by pathogens originating from an animal or from products of animal origin. Many of these diseases have the potential to spread through various means over long distances becoming global problems.

ONE HEALTH MENTALITY

Ever heard about the concept of pathogen hitchhiker? It's no longer a farfetched, futurist notion but a reality. Eighty years ago, it took 100 days to travel around the world, today no two cities on the planet are more than 24 hours apart. Travel has changed our world and pathogens' habitats have changed too. In veterinary medicine, understanding the host-pathogen-environment interplay forms an integrated part of our work. Daily, in clinical practice, we identify problems and solutions in a systematic fashion, keeping in mind this crucial interplay. Reaching a diagnosis and developing a treatment plan for our patients depends not

only on our understanding of the pathogen affecting our patient but the environment of the patient too. Detailed history taking in the consult room can shed light on the movement of pets within animal disease of zoonotic disease endemic areas. Pet travel is a serious issue to be dealt with the upmost care, we work at the coal face of this. Other public health risks can be mitigated by simply asking what diet is fed to pets. Pathogens transmitted directly or indirectly by food such as *Escherichia coli*, *Salmonella enterica*, *Campylobacter*, *Cryptosporidium*, *Neospora*, and *Toxoplasma* must be a consideration if raw food, intended for pet consumption, is handled, as it poses a risk of infectious disease to the pet, the pet's environment, and the humans in the household (Schlesinger, and Joffe, 2011). Thinking beyond the consultation room's wall is key, in doing so we are embracing the One Health mentality while working at the highest level as clinicians.

EDUCATING CLIENTS

Zoonotic or infectious disease is not the only area of One Health that companion vets are involved in. Research has shown that dogs can serve as sentinels of human health risks (Rabinowitz and Conti, 2010) and humans and animals in many cases develop the same or similar health problems (Lerner and Berg, 2015). In the US, the American Heart Association (2013) promotes pet ownership, claiming that owning pets is associated with reducing your risk of heart disease. Other studies have highlighted the positive impact pet ownership can have on human mental health with evidence showing how pets may be of particular value to older people and patients recovering from major illness (McNicholas, 2005). In clinical practice, we witness daily the animal-human relationship. Supporting and enabling pet owners to manage their pet and their health problems whenever possible gives enormous added value to the pet-owner-vet relationship. Therefore, when we educate clients on healthy pet ownership, we are truly giving One Health an operational setting, extending wellbeing beyond the clinic into the community.

ONE HEALTH – MULTIPLE ISSUES

One Health stresses a preventative approach to health rather than a more traditional curative one. It draws on current understanding of the human-animal-environment relationship, while expecting the clinician to have a healthy intellectual curiosity to question other areas of research and build communication channels with other health stakeholders.

Anecdotal evidence shows how many within the veterinary profession, when asked to define One Health, equate it to increased awareness around antimicrobial resistance (AMR). Obviously, AMR is a One Health issue, but One Health encompasses much more than this. One Health addresses multiple issues that affect multiple people and it should not be limited in its location to offices of health officials and policy maker. It is a mindset, an approach, a mentality that we all need to incorporate into our *modus*

operandi in our daily lives in clinical practice. By using the One Health approach, we are educating animal owners and improving animal health with the possible added value of improving human health and even environmental health. By forging links and sharing cases and information with other colleagues both within the veterinary sector, human health sector and beyond, we are also constantly educating ourselves. If One Health is only addressed at a global, theoretical level, its practical importance on the ground will not come into effect. Remember, you play a vital role as a companion animal vet in the One Health movement, make it yours, make it part of your working day and see the opportunities that lie beyond the difficulties.

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