

One Health – A Reality or Yet Another Utopian Overreach?



Relationships among species and their environments have existed from the beginning of time. It is those relationships that make our earth habitable. Going back several thousand years, humans and animals have lived together, cooperated and depended on each other for almost every basic need imaginable for the emergence of a civilised society.

However, the rapid evolution of human society over the past few hundred years has created gaps between humans, animals and the environment. In this relatively short period of time, humans have changed so much that in many cases animals and the environment that we depend on have been left behind.

In essence, we as humans have created a bubble. This bubble, however, unlike the economic bubbles that we have grown accustomed to over the past few years, will eventually be detrimental to our lives and our planet as a whole.

The One Health concept recognises that the health of humans is inextricably linked to the health of animals and the environment. The One Health umbrella covers wide-ranging disciplines including environmental health, ecology, veterinary medicine, public health, human medicine, molecular biology, microbiology and health economics.

The origins of the One Health movement can be found as early as the early 19th century. However, it wasn't until 1964 that Calvin Schwabe, DVM, ScD, MPH proposed that human and veterinary health professionals collaborate to combat zoonotic diseases. He then coined the term "One Medicine" in his textbook "Veterinary Medicine and Human Health", published by The Williams & Wilkins Company, Baltimore.

The One Medicine concept eventually became One Health in 2007 through an official collaboration between the American Veterinary Medical Association and the American Medical Association. The One Health Joint Steering Committee (OHJSC) held its first meeting on December 3, 2008, in Washington, D.C. to discuss, among other issues, the development of a national One Health Commission. The One Health Commission (OHC), was chartered as a 501(c)3 non-profit organisation on June 29, 2009.

In late 2008, representatives from more than 120 countries and 26 international and regional organisations endorsed the first One Health-based strategy for fighting avian influenza and other infectious diseases at the International Ministerial Conference on Avian and Pandemic Influenza in Egypt. This strategy directed efforts towards controlling infectious diseases in areas where animals, humans and ecosystems meet.

We have known for a long time that if we keep our animals healthy and take care of our environment, we as humans will be healthier. Scientific breakthroughs and technological advances have merely enforced this knowledge and helped demonstrate just how closely connected human health is to animal health and the overall health of the environment.

There are many factors that are evident to us every day that highlight the importance of One Health. One major factor is the world population. The annual world population growth

rate, although declining, is currently just over 1%. The world population is expected to reach 8 billion from the current 7 billion in the next ten years, and will be over 10 billion in 2100. As the population continues to increase and expand, contact between human and wild animal habitats will increase, increasing the risk of exposure to new viruses, bacteria and other disease-causing pathogens. In fact, a large majority of the most devastating emerging and re-emerging diseases are either spread directly between humans and animals, or are carried across animal populations from infected animals by intermediate species like insects and bats.

And it's not just wild animals we need to be concerned about. As human society has become more advanced, changes have occurred in how humans view and interact with animals. In many parts of the world, animals are viewed as companions and family members. In many of those societies we are not animal owners but pet parents, and our pets share our living rooms, beds and many other aspects of our lives.

Another factor is our food supply, which has been shown to be vulnerable, and thus human food and animal feed safety has become a hot item high on the lists of governments worldwide. Recent legislative developments in many parts of the globe, and most noticeably in the United States through the Food Safety Modernization Act, underscore how important and visible a factor this has become.

Finally, one cannot ignore water safety. Our waters are regularly contaminated by industrial by-products and chemicals manufactured for our daily use. In a recent example, an accidental leak released an estimated 7500 gallons of 4-methylcyclohexane methanol into the Elk River, in the State of West Virginia. The site of release was about two miles upstream from the intake at West Virginia American Water's treatment plant that provides drinking water for some 300,000 residents of nine counties in the Charleston area. The residents were ordered to stop using tapwater for anything besides flushing toilets for several days.

I can, and I'm sure others can, given some time, go on and on to give example after example of why this concept is important to us. But considering the "obviousness" of all of this to many, and the fundamental importance of this "One Health movement", if one can call it that, it's ironic that it has not been matched by a concerted effort to engender grassroots and popular support for it. Apart from a few professionals, professional organisations and some governmental agencies in a few countries the effort has thus far been rather elitist, targeting the highly educated, and essentially preaching to the converted. Of course, involving organisations such as the American Veterinary Medical Association and the American Medical Association, and government agencies such as the Center for Disease Control, the Food and Drug Administration and a handful of universities in the United States, is very important and efforts there should continue. Realistically, however, without involving industry and educating the public in a meaningful way, the concept may remain just that ... a concept or a fad. To be clear, humanity's impact on other species and the environment is exponential and therefore any countermeasure effort must also be aggressive and exponential.



Let's take food, for example, because it touches every soul, human or otherwise, on this planet on a daily basis. In the past several years, food safety for both humans and animals has been reported on frequently and has captured the public's attention. We don't have to look too far back to find some reports about *E. coli*- or *Salmonella*-tainted human foods or food ingredients. Similarly, pet food has been in the public eye, starting with the melamine disaster back in 2006/2007, which was followed a year later by another melamine-related disaster, this time with Chinese infants given contaminated baby formula. More recently, jerky treats for pets in the United States have been linked to the deaths and illness of thousands of animals in recent months, with the cause still unknown.

While we always talk about healthy eating, avoiding processed food, eating fresh and sourcing ingredients from reputable suppliers in the human world, when we go to look at what we feed our animals, the vast majority are still fed "animal-grade" foods made with ingredients that humans themselves will not eat.

Common animal feeding practices, including the heavy use of antibiotics as growth promoters in cattle and other animals destined for the human food chain, are also bound to backfire in the not too distant future, and while it's easy to blame greed and the industry, one must not forget the essential driver behind those practices, the one and only "market".

The reality is that because markets are made of, and indeed, by "us" the people, who look for value for money and, for the most part, pay without asking too many questions about how the food eventually arrives at our tables, the driving force for such practices will exist for a long time to come. It is, therefore, essential to educate the people to help nurture a grassroots change that would be more effective and longer-lasting than an alternative top-down approach.

Of course, it's easy for me to sit in my ivory tower and preach about this, because words are cheap and the facts on the ground are complex, but the examples above are simply given to illustrate the reality that we live. In the food example above,

without meaningful partnerships with pet food and animal feed manufacturers, backed by strong regulatory requirements that have teeth and the political will to enforce them, there will be no incentive for any change in any meaningful way.

I am by no means singling out the pet food and animal feed industries, nor do I have any intention of painting them as villains. The fact is that every industry that touches humans, animals or the environment in any way has some responsibility towards the overall health and wellbeing of all of us. It is well documented in history that single-minded approaches to things even as simple as farming could turn into unmitigated disasters that affect humans, animals and the environment that they live in. One only needs to mention the words "dust bowl" to remind many amongst us of the disproportionate impact that human practices can have on our lives and livelihoods.

More importantly, without educating the public, who in the end have the power to put pressure for meaningful change on industry and governments alike, the effort may simply fizzle out and be relegated to the archives of the "also-ran" social movements that never made it.

Call it what you may - a concept, idea, mission or movement, I personally believe in "One Health" innately and I practice it in my business because it is common sense. I also believe that eventually all the moving parts will catch up with each other to make meaningful change. But time is of the essence, and as someone, somewhere said well over 2000 years ago, we should most definitely "seize the day".



Dr. Sam Al-Murrani Chief Executive Officer Babylon BioConsulting LLC, a human and animal health-based business consultancy firm. He is also Managing Director for Bimini LLC, a privately owned pet health company manufacturing pet dose-form health supplements and a newly introduced line of pet health treats
Email: murrani@babylonbioconsulting.com