The Tipping Point in Companion Vector-Borne Diseases

Within the past year, organisations such as the World Health Organization and the Bill & Melinda Gates Foundation (in partnership with the International Federation on Animal Health—IFAH), chose to recognise vector-borne diseases as a leading global public health topic, respectively. As key takeaways, we’ve learned that vector-borne diseases are gaining scope in awareness, comprise a class of diseases which are entirely preventable to both animals and humans, and affect over one billion people globally. At Bayer Animal Health, our decade-long scientific commitment to educating and informing audiences on what we term “Companion Vector-borne Diseases” (CVBDs) is clearly reaching a tipping-point, which provides an opportunity for veterinarians, human health practitioners, and patients to engage in new conversations, to raise awareness, while shaping policy in a new way. Here we provide a framework on recent CVBD activities that may provide some insight into the CVBD landscape for the next several years.

Describing the Global CVBD Framework
Within the past year, organisations such as the World Health Organization (WHO) and the Bill & Melinda Gates Foundation have provided new insights into the global importance and relevance of companion vector-borne diseases for veterinarians, human health practitioners, and the general public. For us at Bayer Animal Health, we’ve added “companion” to the VBD conversation (formerly ‘canine’) to better describe the way in which animals and humans interact in an ecosystem with the ability to share diseases.

Companion is defined, according to the Oxford Dictionaries as, “A person or animal with whom one spends a lot of time or with whom one travels.” For us, this definition encompasses the fulcrum on which companion vector-borne disease conversations are understood and made plain for the general public to engage and take action: (a) companion vector-borne diseases affect animals and humans; (b) CVBDs may often have zoonotic consequences, where disease is transferred between humans and animals (or vice versa); and (c) humans and companion animals especially are spending more time together — we now live in a world where even our pets own passports and travel!

In this brave new world, pets and their human counterparts are interacting in new ways through global travel, are sharing tables at restaurants and eateries, and in many cases are considered to be family. In this new paradigm, veterinarians are primed to educate and inform pet owners, fellow veterinarians, and their human medicine cohort on the importance of parasite protection to recognise the incidence and prevalence of CVBDs in local ecosystems to advance public health.

Bayer’s Commitment to CVBDs
At Bayer Animal Health, for a decade, we’ve engaged on the topic of companion vector-borne diseases through the CVBD World Forum — a global working group of leading experts in natural sciences, and veterinary and human medicine, from Europe, the Americas, Asia, Australia and South Africa. This group meets annually to lead a global CVBD conversation, via science, as a response to the increasing global threat of companion vector-borne diseases (CVBD).

As a programmatic addendum to the CVBD World Forum, in recent years, Bayer has also sponsored a web conference (www.cvbdwebconference.com) to share science outside of the CVBD World Forum circles to educate, inform, and engage a broader global audience. Much of this science is captured each year in the online accessible journal Parasites & Vectors. All CVBD articles, in what has become an annual series, have undergone the journal’s standard peer-review process and each article can also be found individually in hard-copy format and is made freely and permanently accessible online, without subscription charges or registration barriers.

Since the inception of the CVBD World Forum, we at Bayer Animal Health have been able to support: the publication of over 70 research articles and scientific reports, with over 350 author citations; and through the CVBD Web Conference format, we’ve been able to annually engage veterinarians in over 100+ countries. The value of this annual content is clearly in its readership, where approximately one-third of the publications to Parasites & Vectors are “highly accessed” — the designation provided for articles which have significant online traffic and relevance to a global scientific audience.

The CVBD Web Conference each year grows in scale and scope and may represent the largest online community of veterinarians worldwide. In 2014, we introduced the One Health concept into the CVBD conversation, while engaging with experts representing the Centers for Disease Control (United States), the National Center for Emerging and Zoonotic Infectious Diseases, and the World Small Animal Veterinary Association (WSAVA). We believe that by introducing the One Health concept and actively engaging physician audiences into the CVBD conversation, we were able to dramatically increase CVBD Web Conference participation (a year-over-year increase of +50 %) — the 2014 CVBD Web Conference was viewed by over 12,000 online participants.

From a scope perspective, we have grown the CVBD Web Conference to include veterinarians, human health physicians (and allied health professionals), scientists, policy-makers and in many cases our materials are of interest to the lay public as well. As a first in 2015, the CVBD Web Conference now offers eight different languages: English, Spanish, French, Italian, Dutch, Russian, German, and for the very first time Chinese! By offering the CVBD Web Conference in different languages, we’re able to further develop the opportunity for global public health awareness in countries where Companion...
Vector-Borne Diseases and their vector insect species reside.

Through its online format, the CVBD Web Conference connects with thousands of veterinarians, providing case studies, engaging roundtable discussions, and educational resources (i.e., media images). The 2015 CVBD Web Conference agenda is formatted for veterinarians, physicians, and the public, where users may, from anywhere in the world, choose their own interactive journey while learning about zoonotic CVBDs through interesting clinical case studies — either animal or human.

2015 CVBD Web Conference Programme:
1. **3 Stories** – where the moderator invites you to view three stories where both pet owner and pet have health concerns or are already suffering from a companion vector-borne disease;
2. **Clinical Cases** – you will be invited to choose one clinical case out of seven (three human clinical cases and four animal clinical cases are available);
3. **One Health Case Approach** – once logged into the online clinical case study module, either a physician or veterinarian will ask you three questions about your case;
4. **One Health Case Journey #2** – you will then have the opportunity to "journey" with a second clinical case;
5. **Roundtable Discussion** – following the two case studies, you will then be able to join the roundtable discussion — a One Health approach on CVBDs.

As an interactive value-add, CVBD Web Conference participants are able to engage with experts by submitting questions online and upon completing the online modules receive a certificate of participation.

**A Commitment to CVBD Awareness Creates Value**

At Bayer Animal Health, we believe the results of this decade-long initiative are reaping rewards in awareness while creating a platform where veterinarians, physicians, and scientists engage and learn. At the same time, we’re building a conversation of value to the general public and policy-makers to support better global disease surveillance for CVBDs, which must include public health systems to more accurately track incidence and prevalence data, is able to connect and transfer this data between physicians and veterinarians — information which may benefit the ability to better protect and treat patients, animal or human, against CVBDs.

As a promising indicator representing a true tipping-point in CVBD, One Health, and zoonotic awareness, on campuses worldwide, schools of veterinary medicine and human medical schools are partnering to further develop and implement the “One Health Curriculum”. As noted in the *Journal of Veterinary Education* (2013; 2), “most veterinarians are very interested in educational activities involving interdisciplinary interactions with both human and ecosystem health professionals.” Historically, the issue has been meeting with physicians in tandem to advance the One Health conversation, though this is changing. As another flash-
point adding to the scales representing the tipping-point in CVBD awareness, we also recognize the formation of the first-ever One Health conference between the World Medical Association (WMA) and the World Veterinary Association (WVA). These two organizations, respectively, comprise, harness, and strategically implement topics, often within their respective countries, at thought-leadership levels that may have meaningful impact within patient and policy realms.

The WSAVA One Health Committee, established in 2010 “…with a mission of ensuring the prominence of the small companion animal-human interface in the global One Health agenda,” has diligently advanced awareness of CVBDs and One Health. In 2014, the WSAVA One Health Committee met at the renowned Duke Medical Center (Durham, North Carolina, USA) to engage with one of the world’s most influential medical communities directly.

These brief examples highlight the direct level of engagement taking place between veterinarians and human physicians on a topic that supports societies and can better protect humanity against disease.

A One Health Call-to-Action
We see this tipping-point in companion vector-borne disease awareness as a call-to-action for veterinarians, especially to proactively connect with their human medicine cohort, to advance the One Health curriculum in faculties, and to inform and educate public health frameworks.

Our team at Bayer Animal Health has informed physicians and lay through Zoobiquity: The Astonishing Connection Between Human and Animal Health, by Barbara Natterson-Horowitz (a UCLA Medical Center cardiologist) and Kathryn Bowers (a UCLA professor and journalist), who vividly describe the often astounding and lesser-known connections between human and animal health. As a comprehensive introduction to the complexities and opportunities surrounding the connections between humans and animals, Zoobiquity accurately describes the landscape and begins the deeper conversation between physicians and veterinarians. For those outside of human and animal health industries, this book may also serve as the introduction to understand the fulfillment of a broader life sciences approach for firms, such as Bayer.

The broader acceptance and integration of the One Health curriculum on campuses worldwide provides an opportunity for the next generation of medical leaders to leverage the insights of a combined medical curriculum to advance science through new research topics that explore the human-animal bond from zoonotic, general health, and disease perspectives, respectively.

For those One Health and vector-borne disease specialists and experts, we regularly attend conferences where meaningful data is presented, but this data is often fragmented and/or locked inside a stand-alone database. Until this information is aggregated within a more open-source approach, public health systems will be unable to accurately respond to potential disease outbreaks and unable to protect the population against the threat of companion vector-borne diseases.

For veterinarians, our role in the clinic, especially, provides us with a broad view of an animal and often their human counterpart. Through the clinic, we are often uniquely positioned to access the psychological, cultural, and health status of not only animal, but often their human companion as well. Through pet owner conversations, we generally better understand the needs of our patients, but how many of us know the steps to take if our patient has contracted a zoonotic vector-borne disease? Are we prepared, as a clinic or profession, to accurately respond or connect our patient’s owners to medical physicians and/or report the incidence of a zoonotic vector-borne disease to the local public health office? And would this public health office then know how to respond? Despite the responses to these questions, veterinarians are standing on the front lines of public health disease surveillance, and uniquely aligned to communicate with physicians and the public.

References

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