

Climate Change and Veterinary Medicine: Action is needed to retain social relevance

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Social relevance is gained by answering questions that society asks or solving problems it faces. The intent of this commentary is to spark a national conversation on the relevance of veterinary medicine in the battle against climate change; not only to improve management of climate change globally, but also to engage the veterinary community in responding to evolving societal needs.

On June 18, 2019, Canada declared a national climate change emergency, joining a growing number of countries and jurisdictions around the world making similar declarations. Canada should be leading the action as it is warming at twice the rate of the rest of the world and the warming is “effectively irreversible” (1). Canada’s vulnerability to such changes is not news — for example, our prairies are known to be facing a dry future as a primary source of water (melting glaciers) will decline and eventually disappear in this drought-prone region (2). A 2018 collaborative report of Auditors General across Canada concluded that most governments were not ready for the impacts of a changing climate (3). What roles and responsibilities do veterinarians have to better prepare Canada by building climate change resilience with their clientele and partners?

The anticipated consequences of climate change are occurring faster than expected (4). Many Canadians are already experiencing weather extremes, forest fires, and changing distributions of biodiversity (5). The public health effects of climate change, such as the expanding range of Lyme disease and an increase in heat-related morbidity are already being witnessed in Canada (6). The Intergovernmental Panel on Climate Change 5th Assessment Report reminded us that climate change and associated health impacts are inevitable. The World Health

Organisation declared climate change to be the world’s biggest public health threat. There is no reason to doubt the same holds true for animal health. Changes in food patterns are already evident in a “disruptive” shift away from traditional meat production by leaders in the field (7) and are reflected in significant consumer trends (8). Even under the most optimistic scenarios, climate change will impact the health of wild and domestic animals in Canada.

What will be veterinary medicine’s social relevance to the problem of climate change?

Following the House of Commons emergency declaration, we entered the term “climate change” into the search bars of the websites for the Canadian, American, British, and Australian Veterinary Medical Associations. Climate change was not identified as a priority by any of these groups. The Australian Association had position statements related to climate change that recognize that veterinarians are in a position to play key roles in responding to the effects of climate change on animal health and welfare and food security, as well as in the adoption of measures to mitigate and adapt to climate change. They advocate for government recognition and response to the effects of climate change on animal health, welfare, the environment, and agricultural sustainability. Similar positions could not be found on the web sites of the CVMA nor Canada’s veterinary colleges, but the CVMA plans to host a plenary forum on the topic at its 2020 Convention.

The 2019 General Session of the World Animal Health Organisation (OIE) noted that climate change impacts animal infectious diseases and veterinary services, thus threatening sustainable development. The OIE’s 6th Strategic Plan expresses the need to understand the relationships between climate change and ecosystem health, biodiversity loss, and the spread of diseases in order to address its strategic objective of securing animal health and welfare by appropriate risk management. However, the Strategic Plan reflects mainly a concern for changing risks of vector-borne diseases. Broader involvement in the global discussion is limited. The Food and Agriculture Organization emphasizes support for countries to mitigate and adapt to the effects of climate change through research-based and practical programs and projects. Understandably their work is focussed more broadly on agriculture for human well-being and sustainable development with animal health as a contributing element. Many documents available on the Government of Canada’s

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website list climate change as a topic of inquiry, focusing on the effects on the physical environment (e.g., floods and fires), and food and water security. Little is written in the veterinary literature on the implications of climate change, especially for wildlife, despite the serious risks of extinction for climate-sensitive species. While the One Health concept is increasingly integrated in national and international activities, the environmental component of health and its links to conservation and wildlife, are vastly under-considered. Exceptions to the rule are multi-sectoral disaster management initiatives. Animal production in a transitioning climate will inevitably raise societal choices and require adaptation to the impacts on animal health, biodiversity, and food security.

The focus of the general discourse is too often limited to identifying and managing emerging risks, rather than building resilience in advance of climate change harms. Our preliminary online search revealed an exceptionally limited scope and number of documents on what can be done today, with what we know now, to protect and promote animal health and the value it brings Canadians in the face of climate change. When climate change and animal health are discussed, it is most often in relation to infectious diseases that will have public health implications or threaten food systems. A veterinary voice is relatively infrequently heard. Veterinarians need to be part of the dialogue on actions that have animal health implications for food systems management, conservation, animal welfare, and public health. Climate change requires disruptive leadership that helps us to re-think our roles, adopt new identities, and create new meaning from what we do.

Visionary leadership will be required for veterinary medicine to align its professional community with partners with whom we will need to collaborate on climate change responses. A well-conceived vision needs a core ideology and an envisioned future that are compelling enough to motivate collective effort (9). We propose a core ideology for veterinary medicine's climate change vision to be, "veterinary medicine is a steward of healthy animal populations and biodiversity and the benefits they bring ecosystems and society." Stewardship is the careful and responsible management of something entrusted to one's care. Society sees veterinarians as caretakers of animal biodiversity, including health, welfare, and the requisite habitat, without prejudice to whether they are owned or unowned animals. Veterinarians need to reframe climate change from "something we lack the resources, skills or authority to influence" to "something we do as our daily business." Failure to do so will reduce the profession's social relevance.

Climate change will impact veterinary medicine by amplifying existing health problems, altering global food production and consumption patterns and creating unanticipated threats (epidemics, fire, drought, species migration). For amplified threats, climate change adaptation is essentially a matter of ensuring accessible animal health services that can be deployed and/or enhanced in response to locally changing epidemiological situations. Addressing unanticipated threats requires capacity to be prepared for and adapt to surprising events. This will require expanding veterinary medicine's partnerships and perspectives to find ways to build resilience in animal populations and food

systems and to consider cumulative effects when trying to mitigate impacts. Animal health stewardship in the face of climate change means promoting a continuum of care that will prevent anticipated impacts, resist unanticipated impacts, and ensure recovery without persistent and irreversible harms. It means a stronger veterinary voice and greater ownership of animal health activities influenced by climate change and to which veterinarians can contribute (e.g., strengthening health systems, adaptation to changing disease epidemiology and food production systems, protection of biodiversity and wildlife, addressing the needs of vulnerable groups).

To effectively tap into the diverse skills and knowledge of the animal health profession, we will need to reframe what we do in veterinary medicine today as climate action. Actions to adapt to climate change are more likely to be implemented if they are consistent with what we do to cope with non-climatic stresses and impose minimal changes on routines and practices (10,11). Education and messaging about how routine veterinary services are part of climate change adaptation and how they will need to be augmented (e.g., disaster training) or deployed (i.e., addressing health inequities for animals in rural and remote locations or owned by poor or marginalized people) would help veterinarians see their place in climate action today.

We adapted the recommendations in the report "Advancing the Science of Climate Change" (12) to inform an action agenda to situate the veterinary community as an active player in the battle to survive and thrive in the face of climate change. This agenda includes:

- i) promoting animal health, linked with ecological and human health, as part of society-wide climate change plans and actions;
- ii) investigating and communicating the implications of climate change for animal health affecting conservation, sustainable food production systems, food security, public health and community resilience;
- iii) bridging the knowing-to-doing gap by facilitating collaborative action in the face of disagreements or institutional inertia;
- iv) strengthening links between veterinary practice, policy and research, with social, ecological, economic and health sectors in concert with communities to build locally relevant actions;
- v) making animal health knowledge accessible to climate change planning decision-makers;
- vi) bringing climate change into veterinary undergraduate and graduate curricula to develop highly trained individuals who can be knowledge brokers and facilitators of local, place-based actions to address climate change action as appropriate in different places/context; and
- vii) expanding our thinking of animal health and climate change from only risk management to also capacity-building for healthy animal populations and animal health systems.

Next steps

Despite being arguably the most important challenges of the 21st century, veterinary engagement and leadership on this issue remains hard to find. When it comes to human health,

tackling climate change was considered by the 2015 Lancet Commission as “the greatest global health opportunity of the 21st century” (13). The Commission recommended multi-sectoral government-wide strategies to address climate-related health threats, recognizing health professionals as leaders in this battle. Where are veterinarians now in this One Health challenge and will they lose their rightful opportunity to be part of the global climate change action?

Climate change action is within veterinary medicine’s scope of practice — known by OIE as the veterinary domain. Failure to address this full scope of practice will diminish the profession’s social relevance. New research on the relationship of climate and animal health has its own merits but without the capacity to effectively get this knowledge to the people who can act to make the necessary changes, little will come of it. The animal health community needs to engage in policy discussions and political action at local, regional and national levels to better situate its concerns and provide its expertise in climate change planning and action. This will be best achieved through alliances with other health, agricultural, conservation, fisheries, and related groups to make shared plans, statements, and commitments to action. Cross-sectoral, collective action to address shared determinants of health and resilience could be achieved by moving One Health beyond infectious diseases to collaboration on reciprocal care for ourselves, animals, and ecosystems. The next generation of Tripartite (OIE/WHO/FAO) initiatives on the strengthening of health systems, which currently include WHO/OIE “One Health” Bridging Workshops, could further serve this goal by increasing their environmental focus (14).

Veterinary schools, statutory bodies, and leaders of the profession must strengthen climate change literacy and awareness among veterinarians, animal owners, and managers. This will require outreach and cross-sectoral conversations as well as curriculum developments at undergraduate and graduate levels to empower the next generation to be local and national leaders. Veterinary students and recent graduates should be inspired by opportunities to build resilience to climate change through actions across the entire veterinary domain, from disease prevention, to sustainable food systems, to ecosystem health.

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