Editorial Commentary

The COVID-19 pandemic: A time for veterinary leadership in one health

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ABSTRACT

The COVID-19 pandemic is a wake-up call for leaders of the North American veterinary profession. Veterinary professionals constitute an invaluable workforce capable of delivering public services essential to weathering the current pandemic and preventing future pandemics. Yet North American veterinary professionals are often underutilized in efforts that could maximize their contributions to public health and research. Misguided public perception about the utility of the profession might hinder One Health partnerships between veterinary professionals and diverse collaborators. Society in general demands that leadership across several levels of the profession expand and diversify efforts aimed at greater public service while preserving societal benefits stemming from companion animal care. The pandemic’s most deeply rooted effects could lie in its potential degradation of global food security, which can be better preserved if more veterinarians embrace their public health foundations. The pandemic is an opportunity and obligation for change. Failing to seize this moment could undermine public health and global security for generations.

1. Call for change

In 2004, Dr. Frederick Leighton analyzed the relevance of 21st century North American veterinary medicine through the “Lifeboat Test.” He argued that if “the Titanic of collective human enterprise runs into an iceberg of some unanticipated and severe difficulty”, people in essential professions including food production, healthcare, and education would be given lifeboats. He writes, “Veterinary medicine, as currently practiced, will go down with the ship” [1]. Hollier et al. reached out to the veterinary profession about Leighton’s “Lifeboat Test” in 2014 and argued that market forces based disproportionately on companion animal have sidelined the profession’s foundational societal values [2].

Based on analysis of the American Veterinary Medical Association’s (AVMA) electronic member database, 83.9% of veterinarians in the United States 75 years of age or younger were in private clinical practice in 2018, while federal, state and local government agencies employed 3.7% of the veterinary workforce that year [3]. Among veterinarians working in private clinical practice in 2019, 66.6% worked in companion animal exclusive capacities, while 1.8% worked in food animal exclusive capacities [4]. Despite the profession’s disproportionate focus on private clinical practice and companion animal medicine, veterinarians possess a very valuable One Health foundation that can be put to greater use during this global pandemic.

2. Global food security and the COVID-19 pandemic

In their commentary in the Journal of the American Veterinary Medical Association (JAVMA), Kelly et al. contend that veterinary medicine can transform global food security and ask, “What will it take to get the veterinary profession more fully engaged?” [5]. Will the veterinary profession stand idle in the face of worsening global food security concerns during economic fallout from COVID-19? Threats to global food security exist in the form of climate change, population growth, rising food prices, and environmental stressors [6]. Leadership and foresight from veterinarians is needed now more than ever to preserve global food security. The COVID-19 pandemic threatens animal and plant-based food production domestically and globally. The pandemic has strained critical food production, supplies, and processing functions through COVID-19 outbreaks in some processing plants. Staff shortages and decreased demand from restaurants have forced producers to destroy crops and animal products. Breakdown of critical infrastructure threatens food safety and food security. The result could be insufficient animal protein to meet needs and demands.

The pandemic threatens to disrupt global food supply chains and markets. Essential workers in meat and poultry processing facilities can be especially vulnerable to COVID-19 due to high population-density workplace settings [7]. The link between food security and global security is undeniable. Food security is essential to health and economic growth [8]. Food insecurity and increased food prices can lead to violence and undermine political stability which can have profound global security implications [9]. In randomized control trials, early introduction of animal protein improved growth of young children [10]. Stunting is associated with poor cognitive development, which can negatively impact a country’s long-term progress [8]. Veterinarians are uniquely poised to help safeguard global food security and stability through contributing their expertise in food animal production, food safety, epidemiology and biosecurity. This expertise will prevent future pandemics and maintain public health infrastructure including the safety of people engaged in animal origin food production. Veterinarians need a seat at the table of discussions on strategies and models to improve national and global food security plans and emergency operation efforts.

After the pandemic subsides, emerging and re-emerging diseases and zoonoses will remain a threat. Global food insecurity might worsen due to unemployment. It is uncertain if recent demand for companion animal clinical services will persist in the face of financial hardship. Given...
the interface of food animals and their products with humans, veterinarians are tasked to reform population health, manage diseases including zoonoses and protect human health through assurance of safe food through animals. Should strained state and federal budgets continue to support a veterinary profession focusing so heavily on companion animal medicine? The pandemic could increase demand for public services aimed at preventing future pandemics and safeguarding food security. This shift provides an opportunity for the veterinary profession to restructure and meet this challenge.

3. Public perception of veterinarians

A program conferring the Doctor of Veterinary Medicine (DVM) or Veterinariae Medicinae Doctoris (VMD) degree in the North America is typically four years. Curricula are crowded, making substantial change difficult. But even in the absence of curriculum changes, programs address population-based health issues affecting animals and people, food safety, zoonotic diseases, environmental ecology, and social determinants of health. Veterinarians have tools to meet society’s broader demands and to provide for the global public good. Why do so few veterinarians work in food animal medicine, food safety, and public health? A report by the Council for Agricultural Science and Technology provides a comprehensive review of interrelated factors influencing recruitment and retention of food animal veterinarians in the United States. The report identifies perception, companion animal dominated veterinary education, student loan debt, demand for services, and rural living acceptability as relevant factors.

The DVM or VMD curriculum provides students a foundation for success in public health and research jobs, should they choose to pursue those options. Those with veterinary degrees fill such positions in organizations like the Centers for Disease Control and Prevention (CDC), Food and Drug Administration (FDA), state and local public health departments, US military, and US Department of Agriculture (USDA). However, public perception of veterinarians’ utility outside of companion animal medicine potentially hinders expanded veterinary contribution to public health and research. As per the AVMA, veterinary medicine is at the forefront of food security, ensuring the production of high-quality foods derived from animals that are free of microbial or chemical contaminants. An Internet search of “veterinarian” primarily produces images of veterinarians in clinicians’ jackets holding pets. Public awareness of veterinarian’s contribution to food animal medicine, public health, and biomedical research is poor. Lack of awareness among veterinarians and veterinary students might serve as a barrier to recruitment and retention of food animal veterinarians.

4. One health: less talk and more action

The One Health concept highlights connections between human, animal, and environmental health and promotes collaboration between diverse sectors. Veterinarians often drive One Health initiatives and attempt to gain a seat at the table of collaborative efforts. Despite their best efforts and attempts at reinforcing the importance of collaboration between sectors, veterinarians’ voices often remain unheard. The AVMA states that ‘veterinarians play an integral role in One Health because animals both impact and are impacted by people and the environment.’ However, global health leaders like the World Health Organization (WHO) have been slow to integrate animal and environmental health into strategies to combat human diseases. Recent efforts to integrate One Health into the Global Health Security Agenda represent progress and present opportunities for veterinarians to contribute their expertise. Organizations like the AVMA One Health Commission continue to foster genuine collaborative efforts, but veterinarians must make noticeable progress in shifting their efforts from talking about One Health to implementing it. Merely discussing One Health in terms of the three pillars might paradoxically serve to reinforce silos between these three sectors. The COVID-19 pandemic is an opportunity for veterinarians to demonstrate their utility in One Health efforts. Those aiming to expand their contributions may need to explain and more importantly demonstrate the unique value of a DVM or VMD degree to academic admissions boards, collaborators, and hiring entities that may lack such understanding. The small box in which veterinarians currently reside is in part byproduct of the response to market forces. This can be changed through strong leadership.

5. Leadership, mentoring, and rebranding the veterinary profession

Veterinary leaders have succeeded in creating a highly respected companion animal medicine industry that supports the very important human-animal bond. Isolation during the COVID-19 pandemic has reminded many of the psychological and physical benefits associated with pet ownership. The profession’s leaders should embrace opportunities the COVID-19 pandemic has presented to expand and diversify veterinary medicine’s benefits to society. The COVID-19 pandemic is both a monumental challenge and an undeniable opportunity for improvement through leadership.

In the face of the ongoing COVID-19 pandemic and the real threat of future pandemics, the veterinary profession must retain adequate focus on companion animal clinical training while strengthening focus on food animal medicine, public health, and research. Preventing and solving today’s pressing challenges can only be achieved through sound leadership and effective collaboration between sectors. Current veterinary curricula reflect changes that have occurred over decades to meet companion animal clinical service demands. Companion animal clinical services remain important and are in high demand during COVID-19, but the pandemic has revealed additional focus areas in which veterinarians should serve to maximize their benefit to society. Some have called for changes to veterinary curricula to better prepare students for work in food animal medicine, public health, and research. Many veterinary colleges have answered such calls by recruiting more food animal medicine students and by developing DVM-MPH and DVM-PhD programs. What else can be accomplished through leadership?

Continued focus on multidisciplinary collaboration and increasing student body diversity is essential to meet current and future societal needs and demands in clinical services, public health, and research. According to the Association of American Veterinary Medical Colleges (AAVMC), 74.8% of DVM students enrolled at US Colleges of Veterinary Medicine in the class of 2023 were white, and 75.1% of applicants to this class were white. Within the class of 2023, 82.1% of students identified as female, and 13% identified as male. Among applicants to the class of 2024, 54.3% had suburban communities of origin, and 61.7% desired to practice in a suburban setting. Applicants to the class of 2024 had averages of 1661 veterinary experience hours, 1132 animal experience hours, but only 241 research experience hours. Veterinary training must prepare students to function as dynamic collaborators in diverse and multidisciplinary settings. This is essential to maximizing the profession’s impact across a breadth of professional sectors and toward the benefit of all of society. To maximize their benefit, veterinary colleges must continue bolstering efforts to recruit a student body representing a more diverse set of professional and educational interests and backgrounds, and races and ethnicities. The pool of students interested in topics like infectious diseases and zoonoses, epidemiology, food safety and security, social determinants of health, international development, urban design is undoubtedly growing in the face of COVID-19. The AAVMC, AVMA, and individual veterinary colleges have taken efforts to increase diversity within the profession. However, to meet better meet current and future needs and demands, the profession must continue these efforts. The COVID-19 itself presents an opportunity to highlight the utility of a veterinary degree, to change public perception, and to attract a more diverse applicant pool to veterinary colleges.

Veterinary colleges can expand their reach by highlighting the utility of a DVM or VMD outside of companion animal practice. Early media
coverage of veterinary involvement in the COVID-19 response seemed limited to ventilator donation and expert opinion on pets’ role in SARS-CoV-2 transmission. While these are important efforts deserving of recognition, veterinarians’ recent contributions to food security and safety, vaccine development, epidemiology, and biosecurity are also important but receive less attention. Therefore, public perception of veterinarians might be dominated by the image of a clinician holding a pet. Public perception of the profession could dissuade some talented and non-traditional students from pursuing veterinary education and should be further studied. Veterinary colleges should actively recruit students with backgrounds in fields like economics, international relations, political science, ecology, civil engineering, anthropology, sociology, entomology, and human healthcare. The DVM or VMD must be viewed as a valuable degree facilitating entry into dynamic professions with global health relevance.

How can veterinary colleges change? Federal and/or state governments could inject funding to support increased class sizes, expanded recruiting efforts, hiring of faculty members representing more diverse backgrounds and disciplines, and curriculum modification to meet broader societal demands and needs. Doing so might help change public perception about veterinarians and stimulate interest among public health, food animal medicine, and research-minded students. Veterinary colleges could explore options for course collaborations with medical colleges to emphasize One Health approaches. Such collaborations might be more feasible in light of increased familiarity with video communication technology since the start of COVID-19. These efforts might help veterinarians practice One Health efforts grounded in steady progress and mutual understanding among collaborators across disciplines. Increasing class size must be met with accessible government jobs previously less available to veterinarians. Veterinarians and established leadership must be more vocal and willing to lobby politicians and stakeholders who stand to benefit from a more service-focused profession.

Non-traditional veterinarians must seize the moment to demonstrate leadership and collaboration that might change the face of the profession during a period of ongoing infectious disease and novel food security threats. Current leaders must take initiative to demonstrate effective collaboration with professionals outside their typical sphere of influence. Veterinarians must force their ways into new and diverse professional networks by developing relationships with leaders and stakeholders outside of their comfortable circles. Leaders must advocate for the impressive utility of the DVM or VMD degree and support motivated and creative minds interested in applying their education toward preventing and solving global health problems like food insecurity and infectious diseases.

6. Conclusions

The COVID-19 pandemic is an opportunity for the US veterinary to shine. The profession must nurture creativity and leadership to expand its benefit to society. Veterinarians have an opportunity to assert themselves as key players in transforming One Health theory into collaborative action through focusing on food security, navigating the COVID-19 pandemic, and preventing future pandemics. To maximize its benefit to society, the profession must also continue its recruitment efforts to support a diverse professional workforce. If veterinary leadership does not seize this moment to demonstrate its value, an entire generation of talented and service-minded professionals could turn its back to the profession.

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Declaration of Competing Interest

The authors declare no conflict of interest.

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