

THE VETERINARIAN: A RESOLUTE GUARDIAN OF FOOD AND HEALTH

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THE ORIGIN

Ever since the genesis of the first veterinary school in Lyon, France and substantially before that, veterinary sciences have played a critical role in safeguarding the health of animals and maintaining a steady source of the global food supply. The earliest iterations of animal husbandry took shape during ancient civilisations, bridging the nutritional gaps as humans transitioned from hunter-gatherers into settlers. Throughout the ages that followed, the interdependence of animals and humans was greatly accentuated, initiating the necessity of a comprehensive scientific discipline in the form of modern veterinary science. Over the years, multiple theories have been proposed justifying the origin of veterinary science, evidence of which extends back to the *Kahun Papyrus* in Egypt (Thrusfield, 2007). Shalihotra, a preeminence in equine medicine of ancient India, is widely regarded as the first veterinarian. The mighty Pandavas, Nakula and Sahadeva, were authorities in equine and bovine medicine, respectively. The revered Mauryan advisor Kautilya addressed the themes of meat science and jurisprudence in his 'Arthashastra'. Notable advancements followed the decades after, with innovations in animal welfare, pathology, medicine and research under eminent personalities such as Rudolf Virchow, Claude Bourgelat and Sir John McFadyean. In modern times, the object of veterinary sciences has extended its spectrum to include companion, exotic and laboratory animals, while seamlessly refining traditional livestock practices. With

such deep roots in global history, veterinary science evolved rapidly alongside human medicine, integrating seamlessly into one another under the umbrella of 'One Health'.

THE GUARDIANS OF FOOD

With an exponential surge in global population, the total food demand is expected to increase by 35% to 56% till the year 2050 (Dijk et al., 2021). Animal products, in the form of milk, meat and eggs, constitute a major chunk of this demand. Moreover, in the developing regions of the world, there is a greater prevalence of protein malnutrition, resulting in growth deformities (Smith et al., 2024). Veterinarians act as catalysts in addressing these issues through scientific husbandry practices, genetic improvement, disease surveillance, and prompt interventions. Food spoilage and contamination pose significant challenges in countries like India, compromising both public health and the domestic economy. High ambient temperatures in tropical and sub-tropical climates, coupled with the lack of infrastructural facilities (e.g., cold chain maintenance) and regulatory norms, may be attributed to this problem. Unscrupulous practices in the livestock industry, such as adulteration, fabricated safety claims, and injudicious use of drugs and hormones, often result in serious health hazards. Veterinarians play a key role in regulating and curtailing these practices as livestock product inspectors, public health scientists and animal welfare advocates, working in close association with national bodies as policymakers.

Owing to its vast livestock resources, India ranks topmost among the global milk producers and second among the egg producers (DAHD, 2025). Veterinary services facilitate maintenance of this standard through continuous breed upgradation, Assisted Reproductive Technology (ART), prophylactic protocols and product standardisation, ensuring food security and safety.

THE GUARDIANS OF HEALTH

The escalation in world population has also led to an increased anthropogenic pressure on animal habitats. Human encroachment into forest lands, urbanisation and wildlife exploitation, coupled with climatic stress, have resulted in changes in disease patterns (Esposito et al., 2023). Over 60% of emerging infectious diseases are zoonotic (Jones et al., 2008), and anthropogenic stress stimulates spillover events through vectors or reservoirs. Transmission of several diseases can occur at the human-wildlife interface, and domestic animals reared near forest lands are particularly susceptible, accidentally integrating into the sylvatic cycle. Veterinarians possess the extensive knowledge required to acknowledge these transmission cycles, identify carriers and limit their spread. Malpractices such as illegal wildlife trades introduce novel transboundary diseases into a region, often triggering an ecological collapse. In retaliation, veterinary professionals use complex epidemiological tools such as early warning systems for prompt identification and containment of novel animal diseases. Attributable to their erudition regarding zoonoses, veterinarians often act as a fine link between animal and human health. They undertake vital animal birth control and vaccination programmes in order to curtail disease burdens (e.g., rabies) in society. Advanced knowledge of disease dynamics helps veterinarians predict outbreaks prior to spillovers. This fundamental role of the

profession was further solidified during the recent COVID-19 pandemic, in which veterinarians were consulted regarding their proficient knowledge of *Coronaviridae* as animal pathogens.

Historical records establish that it was the collective effort of veterinarians by virtue of which the devastating cattle plague, Rinderpest, was globally eradicated in June 2011 (OIE). The experience gained inevitably paved the way for other eradication programmes, such as the WHO Zero by 30 (dog-mediated rabies) and NADCP (FMD & Brucellosis). Another formidable responsibility of veterinarians is the restoration of endangered animal species to stable numbers through captive breeding programmes. Wildlife veterinarians specialise in resolving human-wildlife conflicts, relocating stranded animals, aiding conservation efforts and maintaining ecological balance. A core aspect of the profession lies in veterinary jurisprudence. Beyond clinical practice, veterinarians are deeply tied to legislative responsibilities- to enact, modify and uphold laws pertaining to animal health and welfare.

THE SACRIFICE

It is self-evident that the veterinary profession presents its own spectrum of occupational hazards. Professionals, especially on-field practitioners, often endure difficult terrain, inclement climate and zoonoses in exercising their duties. In the event of disease outbreaks, veterinarians serve selflessly at the frontline in identifying, mitigating and preventing the crises, frequently at the expense of their own health. Nevertheless, their unwavering contributions throughout the years prove that compassion towards animals fuels the very core of the veterinary discipline.

CONCLUSION

Evidently, veterinary science is truly an all-encompassing and evolving discipline with

multifarious obligations, not only towards animals, but also towards One Health. The indispensable nature of this profession effectively positions veterinarians as the resolute guardians of food and health. "Between animal and human medicine there is no dividing line—nor should there be. The object is different but the experience obtained constitutes the basis of all medicine." (Rudolf Virchow, 1858)

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