

SUDS

INVESTIGACION

Kevin Rufino Pérez Roblero

"LA IMPORTANCIA DE LA VETERINARIA
EN LOS DIFERENTES CAMPOS PROFESIONALES"

1er PARCIAL

INGLES

Eduardo Enrique Arriola Jiménez

Lic. Medicina Veterinaria y zootecnia

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Veterinary medicine is a scientific and professional discipline that deals with the prevention, diagnosis, and treatment of diseases in animals, but it also has a profound impact on public health, food safety, animal welfare, and environmental conservation. The interrelationship between animal and environmental conservation. The interrelationship between animal health, human health, and ecosystem health makes veterinary medicine an indispensable pillar for sustainable development and global wellbeing.

Veterinary medicine has evolved significantly; today its focus is comprehensive and multidisciplinary, following the "One Health" concept, which emphasizes collaboration across disciplines to address complex global health issues such as zoonoses, antimicrobial resistance, and climate change.

Veterinary medicine is based on an interdisciplinary approach linking animals health with public and environmental health through the "One Health" strategy. This concept recognizes that the emergence and spread of zoonotic diseases are linked to complex factors such as human-animal contact, habitat destruction, and globalization.

Recent advances in molecular biology, genomics, and proteomics have enhanced understanding of diseases at the cellular and genetic levels, allowing the growth of precision veterinary medicine - treatments tailored to genetic profiles and disease mechanisms.

For instance, veterinary anatomy and physiology provide critical understanding of the structural and functional aspects of various species, enabling practitioners of various species, enabling practitioners to identify abnormalities or illnesses. Pathology and microbiology are essential for detecting infections, while pharmacology ensures the safe and effective use of medicines tailored to different species.

Recent advances in molecular biology have opened path for genetic testing, personalized treatments and early diagnosis of hereditary diseases. Moreover, epidemiology plays a crucial role in understanding disease dynamics both at the individual and population levels, guiding preventive and control measures dynamics both at the individual and population levels, guiding preventive and control measures with animal communities as well as public health systems.

The historical roots of veterinary medicine trace back to the late 18th century with the establishment of the world's first veterinary schools.

These institutions emerged to combat devastating animal epidemics that threatened agriculture and economies.

Over centuries, the profession expanded its scope from basic animal epidemics that threatened its core agriculture and animal healthcare to complex roles including public health, research, and, environmental stewardship.

The creation of international regulatory bodies like the World Organization for Animal Health (WOAH) has institutionalized veterinary standards, elevating the field to a global health pillar.

The profession evolved through health pillar, growing societal expectations surrounding animal welfare and ethical treatment.

Professionalization involved formalizing education systems, creating licensing boards, and developing veterinary associations to advocate for practitioners and promote ethical standards. This institutional framework has helped position veterinarians as key actors in One Health collaborations addressing zoonotic diseases, food, security, and ecosystem health.

Technological advances, including molecular diagnostics, imaging, and surgical techniques, continue to expand professional capabilities. Increasingly, veterinarians participate in multidisciplinary teams, emphasizing collaboration and communication across human, animal, and environmental health sectors.

① One health is a multidisciplinary framework recognizing the interconnectedness of animal health, human health, and the environment. It promotes collaborative efforts among veterinarians, physicians, ecologists, epidemiologists, and policymakers to manage health risks that arise at the interface of these domains.

The majority of emerging infectious diseases in humans originate from animals, underscoring the critical role veterinarians play in early detection, diagnosis and control of zoonoses including SARS responsible for COVID-19.

One health approaches involve integrated surveillance systems for humans and animals, joint outbreak investigations, and coordinated control strategies that cross traditional sector boundaries. The environmental dimension includes recognition of how anthropogenic activities like deforestation, wildlife trade, and climate change affect disease emergence.

Veterinarians bring expert knowledge in animal populations, disease ecology, pathogen biology and biosecurity measures. Their role extends to food safety inspections, ensuring that animal-based food productions are free of pathogens, thus protecting public health.

Worldwide, organizations such as the WHO, FAO, WOAH, and UNEP collaborate to implement One Health initiatives. This united effort aims to reduce disease burden, promote sustainable agricultural practices, and foster resilient health systems to prepare for future health emergencies.

In decades, veterinary medicine has experienced notable advances thanks to the integration of modern scientific technologies and innovative approaches that have transformed diagnosis, treatment, and health management in animals.

These innovations have significantly improved animal life and significantly improved animal life and veterinary practitioners' capacity to address diverse health problems in various contexts.

In diagnosis, imaging techniques have revolutionized clinical approaches. Tools such as computed tomography, and endoscopy, magnetic resonance imaging, advanced ultrasonography and postoperative assessment. This precision increases treatment success and reduces trauma to patients.

The introduction of biotechnology has opened new frontiers, including gene therapy, immunotherapy, and gene editing to correct hereditary defects or strengthen animals' enhancing therapy. Nanotechnology permits the design of more efficient drug delivery systems enhancing therapeutic efficacy while minimizing side effects.

Emerging artificial intelligence (AI) and digital technologies are revolutionizing veterinary medicine. Machine learning analyzes large clinical, imaging, and epidemiological datasets providing veterinarians support tools for more accurate, personalized diagnostics and treatments. Telemedicine and digital platforms provide veterinary access, allowing remote consultations and continuous monitoring via portable devices and smart sensors.

Veterinary medicine is a multidimensional profession that encompasses a wide variety of professional fields beyond the traditional clinical care of animals. Its reach extends across multiple fundamental sectors related to public health, food safety, animal welfare, production animal, and wildlife. This includes prevention, diagnostics, treatment of diseases, surgery, rehabilitations, and pain management. The ability to care for diverse species demands specialized knowledge and behavioral particularities of each animal type, making veterinarians indispensable professionals to ensure overall health.

Veterinary medicine also plays an important role in environmental conservation and wildlife management, participating in endangered species preservation and ecological monitoring to prevent disease spread between wildlife and domestic animals. This role is essential for balancing biodiversity and protecting fragile ecosystems.

In summary, the multidimensional nature of veterinary medicine reflects its importance for animal welfare, public health, and environmental sustainability, establishing it as an indispensable pillar for healthy and developed societies.

Additionally, veterinarians function as technical advisors in legislation and sanitary regulation, supporting governments and organizations in formulating and implementing policies concerning animal health, welfare, and food safety.

In academia and research fields, veterinarians participate in vaccine development, new therapies, epidemiological research, and professional training.

Veterinary medicine is an essential and multidimensional profession that extends far beyond the clinical care of animals. Its importance lies in its direct contribution to public health, food safety, environmental conservation, and animal welfare, making it a fundamental pillar for the sustainable development of modern societies.

Veterinarians play key roles in the prevention and control of zoonotic diseases that pose constant threats to human health emergencies. Their work is also crucial in ensuring the safety of animal-derived food production, guaranteeing that the population has access to healthy and contaminant-free food.

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