



Mi Universidad

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Introduction:

Veterinary medicine is a science of great social significance that encompasses multiple dimensions. Traditionally, it has been associated with the care of companion animals, but today its role is recognized in diverse areas such as public health, food production, environmental conservation, scientific research, and economic development.

The veterinary doctor (often referred to as MVZ in Latin America: Médico Veterinario Zootecnista) is a professional who combines knowledge of biology, medicine, animal science, pharmacology, microbiology, epidemiology, and ecology, applying them for the benefit of animals and, indirectly, of humanity.

Its importance is reflected in the fulfillment of the "One Health" concept, which establishes that the health of animals, humans, and the environment are interconnected. Therefore, Veterinary work is indispensable to achieve sustainable and healthy societies, conscious of the balance between all forms of life.

2.1 Clinical Veterinary medicine and animal welfare:

One of the best-known fields of Veterinary medicine is the clinical care of domestic and companion animals. Professionals in this area:

- Prevent diseases through vaccination and deworming.
- Diagnose and treat common and complex conditions.
- Perform surgeries and emergency procedures.
- Advise owners on nutrition, hygiene, and general care.

Additionally, their work focuses on ensuring animal welfare, a concept that implies dignified living conditions. The internationally recognized "Five Freedoms" guide this concept, ensuring that animals are free from hunger, thirst, pain, fear, and are able to express natural behavior.

Animal welfare has not only ethical implications but also economic and public health ones, since healthy animals transmit fewer diseases and foster greater social trust.

2.2 Animal production and food security

Veterinary medicine in livestock production is essential to guarantee safe, nutritious, and high-quality food. This field covers the health of cattle, pigs, poultry, farmed fish, sheep, and goats.

Key functions include:

- Preventing and controlling diseases that reduce productivity (e. foot-and-mouth diseases that brucellosis, avian influenza, African swine fever).
- Implementing biosecurity and sanitary management programs.
- Supervising the food production chain (milk, meat, eggs, fish).
- Ensuring compliance with international standards that guarantee products suitable for human consumption.

In this sense, Veterinarians are not only responsible for animal health but also for global food security, making this profession a strategic pillar of the economy and international trade.

2.3 Veterinary medicine in public health.

The close relationship between animals and humans makes Veterinarians central in the prevention of zoonoses - diseases that can be transmitted from animals to humans. These pose significant risks, as 60% of pathogens affecting humans are of animal origin.

Relevant zoonoses include:

- Rabies: a deadly disease transmitted by the bite of infected animals.
- Brucellosis: affecting livestock and transmitted to humans through contaminated products.
- Leptospirosis: Spread by the urine of carrier animals.
- Avian influenza and Swine flu: causes of global pandemics.

Veterinarians participate in vaccination campaigns, pest control, sanitary inspections in markets and slaughterhouses, and collaborate with epidemiologists and medical doctors in contingency plans. Their role directly protects human lives and prevents large-scale health crises.

2.4 Research biotechnology and pharmacology

Veterinary medicine actively contributes to scientific progress. Some key contributions include:

- Development of animal and human vaccines.
- Assisted reproduction techniques: artificial insemination, cloning, embryo transfer.
- Research into new medicines and antibiotics.
- Creation of functional foods and supplements to enhance animal production.

- Use of animals as experimental models in biomedical studies, helping to understand diseases such as cancer, diabetes, or Alzheimers.

In pharmacology, Veterinarians also ensure the responsible use of medicines and antibiotics, preventing bacterial resistance that threatens both humans and animals.

2.5 Environment and biodiversity conservation:

Veterinarians play a key role in wildlife conservation and the management of fauna in natural ecosystems or under human care.

Their contributions include:

- Rehabilitation of animals rescued from illegal trafficking or affected by pollution.
- Collaboration in zoos, aquariums, and natural reserves.
- Implementation of breeding programs in captivity and reintroduction of species.
- Surveillance of diseases affecting wild populations (e. white-nose syndrome in bats, threatening biodiversity)

Their work guarantees ecological balance and contributes to tackling global problems such as climate change and biodiversity loss.

2.6 Economic and social impact

Veterinary medicine's role in the economy is decisive:

- Ensures international trade of food and animals by meeting export standards.
- Reduces economic losses in livestock and agriculture by controlling outbreaks
- Generates employment in clinics, hospitals, laboratories, pharmaceutical industries, livestock production, research, and conservation.
- Supports family economies, as many small farmers depend on the health of their herds.

Additionally, the emotional bond with pets, increasingly significant, also generates social impact. Veterinary medicine fosters values of empathy, respect for animals, and shared responsibility.

Summary:

The importance of veterinary medicine in different professional fields cannot be underestimated. It is a science that guarantees animal welfare, protects human health through the prevention of zoonotic diseases, ensures quality food for the world population, drives scientific research, and preserves biodiversity.

In globalized world vulnerable to health and environmental crises, the work of Veterinarians acquires strategic value for sustainability and the future of humanity.

Their integration into public policies, research projects, and development plans is vital to face current challenges and build healthier, fairer, and more responsible societies with the planet.

Conclusion:

Veterinary medicine is an essential science that impacts multiple areas of human and animal life. From clinical practice to livestock production, public health, biotechnology, environmental conservation, and the economy, it ensures an integral balance between animal and human welfare. Its multidisciplinary nature and global relevance make it an indispensable profession in the 21st century.

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