

Veterinary medicine's increasing role in global health

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ABSTRACT

Zoonotic diseases including rabies, avian influenza, and Ebola can spread from dogs, birds, and nonhuman primates to pets, poultry, and wildlife, respectively. Effective preventative measures require a thorough understanding of the biology and risk factors associated with the transmission of these diseases to humans. A long and strong history of administration in some public health facts can be found in veterinary medicine. For the sake of human and animal health, several animal diseases brought on by infectious organisms that also seriously afflict humans have been eliminated or controlled. That is respect, the continuation of veterinarians' high-quality continuous education, and It is crucial to provide pet owners with information that is properly presented .The idea of ONE Health is also necessary.

Introduction:

The aggregate of all impacts to the total wellness in all aspects of one's life, of humans through an understanding and the implementation of veterinary medical science," is how the World Health Organization defines veterinary public health.[1]

Every veterinarian contributes to this definition. Whether through the provision of health pet maintenance, animal welfare enforcement, and biomedical providing substantial production of food animals and food safety, or study. Human health is affected by veterinary public health limiting exposure to risks brought on by animals, environmental factors, and animal products.

Among these dangers are chemicals, zoonoses, vector-borne illnesses, and other contagious diseases, animal abuse of drugs, and harm from contact with animals.

VMP:

The Veterinary Medicine Profession (VMP) is a vital element of One Health initiatives supporting the sustainability of the world's food supply. At the heart of these campaigns is education about veterinary public health. The emphasis in veterinary education has shifted from companion animal care to veterinary public health, including food sustainability. The VMP needs to emphasize education if it hopes to play a long-term influence in healthcare through veterinary public health. Agriculture and Food and food animal care should receive more attention in veterinary curricula, but companion animal medicine should not be neglected because it also meets a societal need.

The development of a bigger group of academics and students motivated to put their abilities and expertise to use for veterinary medicine, public health, and dietary sustainability is key to these efforts. In terms of global wellness, food safety, and the post-2015 development goals put forth by a high-level UN panel, veterinary medicine is becoming more and more significant. Without efficient animal health services, three out of the five proposed goals—ending all forms of severe poverty; fostering feasible social, financial, and natural development; and creating a new global partnership linking alleviating poverty with sustainable development—cannot be achieved. These services, along with the livestock industry in general, have been severely isolated and underfunded for years in a large portion of the developing world, making it impossible for them to handle the challenges posed by a livestock industry that is becoming more commercialised, poverty alleviation, sustainable food supply, and food safety.

For instance, in 2013, a large portion of Shanghai's drinking water supply, the Shanghai River, was poisoned by the disposal of hundreds of dead pigs. The Chinese veterinary medical system is far from adequate, according to Jia Youling, head of the Chinese Veterinary Medical Association and a former director of the Ministry of Agriculture's Bureau of Veterinary Medicine, who noted that this incident was a symptom of larger issues with animal health care in China[2]. Jia added that veterinary medicine is hardly accepted as a profession in China. Animal and bird production are the fastest-growing segments of global agriculture, driven by increasing urban income, expanding demand for foods with animal-based ingredients, and rising pricing.

Substantial-scale, intensive operations account for a substantial portion of the expansion, but rising demand offers subsistence farmers a previously unheard-of chance for economic development and the eradication of poverty.

Zoonoses and Contagious diseases:

Among these dangers are chemicals, zoonoses, vector-borne illnesses, and other contagious diseases, animal abuse of drugs, and harm from contact with animals[3].

The emergence and spread of zoonotic illnesses from wildlife have been a growing global crisis for more than 20 years. Potential transfer of zoonotic illnesses from poultry to humans includes Diseases like

Bacterioses, Botulism, Campylobacteriosis, (E. coli) Colibacillosis, Yersinia enterocolitica, Erysipelas, Listeriosis, Mycobacteria that aren't tuberculous, Salmonellosis, Streptococcosis, Tetanus, Relapsing fever caused by ticks, Mycoses, Aspergillosis and Candidiasis[4]. These diseases include catastrophic acute respiratory syndrome, extremely pathogenic Avian flu, Rift Valley fever, contracting West Nile virus, the virus hemorrhagic a high fever, the Nipah virus infections, and respiratory syndrome from the Middle East.

AIDS and severe acute respiratory illnesses, which have significant case fatality rates, have emerged more recently. SARS as well as H5N1 avian influenza are both Emerging infectious illnesses that have shot to the top of the political and medical agendas working together demonstrating the value of animals as a reservoir or disease-carrying agents.

Avian influenza is a current example that can cause human pandemics following genetic mutations, or Influenza virus reassortment between wild and domesticated birds, other creatures, and people. The possibility of an H5N1[5] global pandemic is quite real, at the very least for wild mammals and birds, and potentially for people. One such illustration includes HIV infection and AIDS was created by no fewer than two non-human species reservoirs for primates in Africa. Fruit bats have recently been linked to several high-profile viral zoonoses that have arisen over the past ten years as reservoirs such as SARS[6]. Several pathogens have secondary

Transmission to humans needs "amplifier" hosts: Hendra virus therefore originated from the fruit bats to horses, then to people, in Australia between 1994 and 1995, and Pigs and dogs contracted the Nipah virus from fruit-eating bats to people in Malaysia between 1998 and 2009.

Nipah virus Bangladesh, where the virus has subsequently emerged considerably different genetically from that of the southeast region of Asia, and Possible transmission from person to person. Keep the Nipah virus on your "radar screen" probable human pandemics: the outbreak from 1998 to 1999 106 persons perished without transmission between people.

COVID-19 PANDEMIC:

The COVID-19 pandemic, similar to SARS and MERS, shows that human, animal, and environmental health are intricately linked and emphasises the necessity for a transdisciplinary partnership, according to One Health strategy[7]. But how can veterinary public health professionals? interact with the human being health care industry in a positive and proactive manner to act in the same manner whether dealing with COVID-19 or upcoming pandemics programme for epidemiological surveillance? In light of the animal origin of the majority of zoonoses in incorporating infections, COVID-19, and The vital function that veterinarians play in animal care is provided by this work. and disease surveillance in the public health sector to stop disease outbreaks, zoonotic illnesses included. They have extensive expertise in The knowledge on how to deal with the spread of virulent viruses among wildlife on the one hand. This would significantly advance the investigation of SARS-CoV-2 reservoirs in wildlife and the use of sampling techniques for the enforcement of animal epidemics and the COVID-19 pandemic's adaptability. Indeed, the significance of veterinarians in public health from one source: Health Perspective can be imagined and supported at several levels.

Specialised fields, such as management and viral wildlife surveillance control of previous animal epidemics, diagnostic laboratory services, and describe diseases like SARS-CoV-2, and describe how to process human animal testing for COVID-19, animal research, and creating vaccines for Risk analysis for animal imports, both for people and for animals.

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VETERINARY VACCINATION:

The EU veterinary policy for animal health is based on the idea that "prevention is better than cure," and it focuses on limiting viral transmission episodes between species (wild and domestic animals) by ensuring that vaccines, medications, and biosafety measures are available and used to their greatest advantage on farms. Avert farms from evolving into a source of issues for world health. International cooperation, unified guidelines for animal welfare husbandry, markets, transportation, and veterinary technology advancements medicine, work to prevent farm-related illnesses, such as zoonosis not spread as quickly or widely across the globe as COVID-19[8]. The fight against COVID-19 has accelerated significantly as a result of the development of the Next-Generation DNA Sequencing method exchange of genomics and bioinformatics on a worldwide scale) analysis.

Additionally, in the case of COVID-19, the utilisation of animal models and research, particularly on species that are susceptible to SARS-CoV-2, such as ferrets, primates that are not humans, pigs, and rodents, as well as the availability of algorithms and programmes for artificial intelligence, obviously

in connection to supporting the advancement of human therapies and vaccinations to a wide range of illnesses. Indeed, the successful creation of vaccinations against human pathogens has been aided by animal studies. Millions of lives were saved by the development of vaccines against diseases including polio, measles, tuberculosis, meningitis, and human papillomavirus, and more recently to the creation of animal vaccinations to protect against zoonoses like Ebola is in line with the single health philosophy.

The genesis and spread of numerous human illnesses are also caused by the rapid expansion of food animal populations.

MUTATION AND VARIATIONS:

The changing patterns of transmissible to humans illness propagation and transmission are influenced by additional variables such as changes in the climate, the global marketplace of trade worldwide (including rising trade in livestock and animal dietary supplements between countries that are developing), rapid global population growth, and expansion of livestock ranching into wildlife areas. Over eighty percent of livestock farmers in the sub-Saharan region of Africa live in severe impoverishment, and 75% of those who are poor reside in rural regions. Hotspots of endemic sickness in these areas confine individuals in poverty and present a danger to everybody else in the world. Priority should be given to areas where endemic disease is most prevalent when developing disease control strategies and prospects for economic growth.

Furthermore, it is important to encourage the millions of livestock farmers who raise cattle for subsistence to enhance their output because doing so will be very expensive. Currently, their animals' yields are at best minimal due to poor diet and ongoing diseases. Additionally, unhealthy animals limit access to profitable markets and create food safety hazards. Due to these issues, more animals are required to satisfy growing demand, which is an unsustainable strategy. A more effective strategy would use fewer, healthier, and more effective animals. In addition to research on nutrition, genetics, administration, market-entry, and rural economic development, urgent investment is required in studies on the prevention and control of infectious diseases and food safety. Medical, veterinary, agricultural, social, environmental, and wildlife scientists must work together to develop effective therapies. All of these professions have intersections with veterinary medicine, which has long pushed the idea of Universal Health as a way to encourage cooperation.

SUGGESTIONS:

The UN advisory panel's suggestions enhanced the One Healthcare Initiative, which is gradually gaining ground as more people are becoming aware of the connection between animal welfare and fighting poverty. But the obstacles still seem insurmountable. The risk of contracting any disease from pathogens frequently found in the environment will be considerably reduced if the general public practises good hygiene and animal husbandry. The proper upkeep and care of flocks will be beneficial to cut back on bothersome elements. Regulation and education. Risks should be avoided or reduced using techniques. The advice of public health experts can help in decision-making by serving as advisors and working with animal health professionals. Agency for provincial and municipal animal health can help by providing veterinary outreach instruction, local veterinary clinics and educational initiative backyard chicken keepers. The interaction between animals and Public health practitioners will advocate for the most practical benefits of the link between humans and animals, as well as the choice in wholesome food items.

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