



One World, One Health: Prevent Zoonoses!

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Abstract

Zoonotic diseases are infectious diseases that can be transmitted from animals to humans, either directly or indirectly via vectors or food. Zoonotic diseases can also be transmitted from humans to animals. Many environmental factors also influence host-pathogen interactions and disease dynamics, emphasizing the need for collaboration when addressing zoonoses and achieving human health, including both animal health and environmental quality. One health is a concept that aims to bring together human, animal, and environmental health. The new concept of "One World, One Health" is based on the recognition that humans, animals and the environment are inseparable, showing that the world is immediately aware of the relationship between ecology, veterinary diseases and public health, and strives to restore and maintain harmony and unity. The One Health Initiative supports disease surveillance systems, information sharing processes with all stakeholders, diagnostic testing and early zoonotic disease and diagnosis networks by promoting effective coordination of key activities. WHO has published the One Health Approach Action Supplementary Document Roadmap to Combat Neglected Tropical Diseases Until 2021-2030, which aims to support countries and organizations in conflict with international organizations. The only way to combat this alarming problem of zoonoses is through a coordinated global effort to implement the International health regulations, global health security agenda and One Health approaches.

Keywords: One Health; Zoonotic Diseases; WHO; Covid-19

Introduction

Zoonotic diseases are becoming more and more common. Zoonotic diseases are caused by various harmful organisms such as viruses, bacteria and parasites [1]. They are transmitted directly to humans from non human animals or from intermediate sources such as mosquitoes and ticks, causing the emergence or re-emergence of infectious diseases such as Zika virus, West Nile virus and avian influenza [1]. In addition, many environmental factors influence host-pathogen interactions and disease dynamics [2], emphasizing the need for collaboration when addressing zoonoses and achieving human health, including both animal health and environmental quality.

Therefore, it seems necessary to adopt One Health (OH) concept of the interaction between animals, humans and their environment for the prevention of zoonotic diseases [2].

One Health is a collaborative, multitasking and collaborative effort working at local, national, regional and international levels to achieve good health outcomes by recognizing the interactions between humans, animals, plants and their shared environments. In recent years, the One Health approach has gained significant attention in addressing the health of human-animal-environment interactions. Zoonotic diseases (diseases shared between animals and humans) are a major challenge for One Health. The conditions of human-animal-environment interaction are constantly changing due to factors such as climate change, land use (including climate change).

For example, deforestation and agricultural intensification) and increased traffic and trade directly and indirectly affect the emergence and recurrence of zoonotic diseases [3,4].

The need for more scientific methods to solve today's health and environmental problems has never been greater. The One Health (OH) approach to research through the expertise of researchers from a variety of local, national and international disciplines, including public health and medical professionals, to answer questions which are common for human, animal and environmental health. Although the need for multidisciplinary research is not new, the concept of OH has gained momentum as researchers in human medicine, public health, veterinary medicine, urban planning, and environmental sciences seek increasingly holistic, integrated solutions to complex human health, animal and environmental health problems [5].

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An OH approach to studying these organisms can provide more complete information on infection prevention than environmental methods. The main objective of OH research is to identify opportunities to improve health and improve risk reduction in all three areas simultaneously [6].

Background

One Health System emerged when Rudolf Virchow (1821-1902) placed veterinary medicine in the field of human health in the 19th century and claimed that there was no distinction between the two. This was followed by the global rise of the One Health Strategy and the revolution of the early 2000s; since then, collaborative efforts have continued to expand [7].

The commitment to providing a good link between all ecosystem types goes back to when a conference was held in Manhattan (New York, USA) in 2004 with the participation of experts from many disciplines from around the world to discuss the problems caused by the spread of human diseases, livestock and wildlife [8].

Then, in 2008, four international organizations, including the Food and Agriculture Organization of the United Nations (FAO), the World Health Organization (OIE), the World Health Organization (WHO), and UNICEF, together with the World Bank and the United Nations Influenza System Coordinator, produced a policy report entitled "One World, One Health: Safety for Safety. system Interface" [8].

The World Veterinary Medical Association (WVA) and World Medical Association (WMA) World Health Conference in May 2015 is one of the most important for expanding the United Health platform, proposing a collaborative partnership between veterinarians and doctors to improve animal and human health. Since then, the concept of United Health has gained recognition and its initiatives have grown faster than the platform [9].

Importance of one health approach

The "One Health" method is used as joint disease assessment; control and prevention of zoonotic disease; improve food safety and security; reduce disease resistance and improve human and animal health. The One Health Initiative supports disease surveillance systems, information sharing processes with all stakeholders, diagnostic testing and early zoonotic disease and diagnosis networks by promoting effective coordination of key activities. This approach supports zoonotic disease prevention and control staff and enables effective and participatory public health emergency planning, where all strategies contribute to the reduction of zoonotic diseases. Overall, the One Health Initiative promotes global health security by solving health problems such as zoonotic diseases, vaccines, food safety and security issues through the coordination of various projects, the coordination of key projects and the exchange of information [10-12].

One health approach for the control of zoonotic disease

There are two aspects of disease dynamics - the human-animal interface and the human-environment interface. Many diseases persist in small amounts in animals in their habitat. But they come to humans by migrating due to many factors such as deforestation, climate change and demolition of buildings. In the process, they cross the species barrier by mutating to infect humans and other species. The recent coronavirus outbreak is a classic example of this virus to human and the evolution of new viruses.

At the same time, international expansion and divergent movements have contributed to the spread of COVID-19, making it the worst epidemic for any country in the world. Therefore, implementation of the One Health global initiative is needed to protect human and animal health by controlling toxic chemicals and waste, protecting biodiversity and maintaining ecosystem balance, to prevent disease now and in the future. All countries should develop and implement strategies to reduce their carbon footprints [13].

COVID-19 has identified a number of key areas to consider in Individual Health. The development and integration of surveillance

and monitoring methods should be used to identify new viruses with similar animal genotypes that have the potential to infect humans. Hotspots, such as the livestock trade, must be tightly controlled to prevent the spread of disease between animals and humans. Policies and programs should address the risk of infection among vulnerable and vulnerable groups and healthcare workers. It is important to ensure the cooperation and cooperation of all stakeholders for the effectiveness of One Health principles and policies [14].

WHO has published the One Health Approach Action Supplementary Document Roadmap to Combat Neglected Tropical Diseases Until 2021-2030, which aims to support countries and organizations in conflict with international organizations. take approach.

This document aims each group to achieve three main tasks or strategic objectives. The first pillar is to increase business by integrating a healthcare system for neglected diseases and plans such as advances in technology (through guidance and evidence-based interventions), services and delivery strategies (surveillance and joint risk assessment) and support for financial assistance, collaboration and multidisciplinary work. The second priority is to strengthen cooperation through collaboration and collaboration between key sectors and implement it through initiatives such as animal support and human integration platforms; the first neglected tropical diseases in human-animal-environmental health systems; and coordinating neglected tropical disease responses with other sectors. Another pillar is to change the culture and work structure of the country to fulfill its mission by promoting and supporting the country's One Health culture. This framework is achieved through initiatives such as national and local ownership (responding to the specific needs of the population and the global health system), identifying stakeholders (managing priorities between countries and projects), and aligning organizational structures, operational standards and thinking [15].

Prevention of public health problems through one health approach

- The FAO/WHO/OIE document outlines key aspects of animal welfare and public health, including [8] Availability of infrastructure and expertise at national and regional levels and access points.
- Timely identification and response to animals and humans and communication between the two.
- An up-to-date emergency preparedness and response plan.
- Ability to communicate the level of risk.
- Compliance with international agreements and standards.
- Continually evaluate and improve biosecurity.
- Management and legislation comply with international standards.
- Adequate capacity and capability in the laboratory supported by external quality assurance systems.
- Establishment of monitoring and evaluation of veterinary and public health services.
- Legal framework for providing incentives through cooperation with the private sector.

Conclusion

The world's environment and human and animal populations are closely intertwined, and all three are currently at risk of extinction due to various factors. The only way to combat this alarming problem is through a coordinated global effort to implement the International health regulations, global health security agenda and One Health approaches, the latter being a comprehensive approach that targets the entire ecosystem. Coordination should be established between all stakeholders, including public health and veterinary authorities and agencies, environmental protection agencies, industry, research institutions, livestock traders and practitioners, and society at large. It is time for the world to come together and do all we can to protect the home ecosystem we all share.

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