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One health approach the need of the hour: A review

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Abstract
The world of animals, humans and environment are inter-connected and give rise to a number of benefits as well as a spread in zoonosis and multifactorial chronic diseases. Rapid climate and environmental changes have led to the emergence of infectious and no-infectious disease. For combat the emerging infectious disease and zoonotic threats, one health approach, as the standard approach is gaining attention. One Health is a collaborative, multisectoral, coordinated, and transdisciplinary approach working at the local, regional, national, and global levels with the goal of achieving optimal health outcomes by recognising the interconnection between people, animals, plants, and their shared environment. In India, one health approach in embryonic stage and increasingly gaining importance. Globally, three major international organisations, WHO, WOAH (founded as OIE), and FAO, are working together to prevent and control health risks at the human-animal-ecosystems interface.

Keywords: Animal, human, environment, emerging, zoonotic, disease, one health

Introduction
Due to increasing population, trade globalisation, urbanization, industrialization, global warming and climatic changes ecosystems and biodiversity of humankind as well as animals are damage which led to the increasing health risk and occurrence of emergence and re-emergence of infectious and non-infectious diseases. All these factors provide multiple opportunities for pathogens to colonise new territories and evolve into new forms and the risk is not only for humans while most risk assessments focus on the transmission of pathogens from animals to humans, animal health is also greatly impacted by diseases transmitted by humans. SARS-CoV-2, tuberculosis, and various influenza viruses, among others, can harm or be fatal to different species of animals (Aggarwal and Ramachandran, 2020) [1]. Zoonotic diseases are infections that are transmitted between animals and humans and are a major source of emerging infectious diseases. Nearly 60% of the pathogens that infect humans cause zoonotic diseases in humans. The highest zoonotic disease burden, with widespread illness and death, is prevalent in Ethiopia, Nigeria, Tanzania, and India. According to a study carried out by the International Livestock Research Institute in India, 13 zoonoses are the cause of 2.4 billion cases of human diseases and 2.2 million deaths per year (Jones KE *et al*., 2008) [3]. Managing these major global health risks, from disease control to global warming, is not possible alone and needs the full cooperation of the animal, human, and environmental health sectors. WOAH brings its expertise in animal health and welfare to multisectoral partnerships that develop global strategies to tackle major diseases or broader health threats and calls for a One Health (OH) approach. One Health is a collaborative, multisectoral, coordinated, and transdisciplinary approach working at the local, regional, national, and global levels with the goal of achieving optimal health outcomes by recognising the interconnection between people, animals, plants, and their shared environment (Dasgupta *et al*., 2021) [2]. The OH approach is increasingly gaining attention as the standard approach globally to combat emerging infectious diseases and zoonotic threats such as SARS or Ebola. For the success of OH, intersectoral collaboration and various actors in the complex health system involved should be operationalized. The approach should be able to adapt to the local needs and the existing constraints of the health system, employing them at the same time by enabling various stakeholders to collaborate without difficulties. The "One Health" concept summarised an idea that had been known for more than a century: that human health and animal health are interdependent and bound to the health of the ecosystems in which they exist. We envisaged and implemented it as a collaborative global approach to understanding risks for human and animal health and ecosystem health as a whole (OIE).

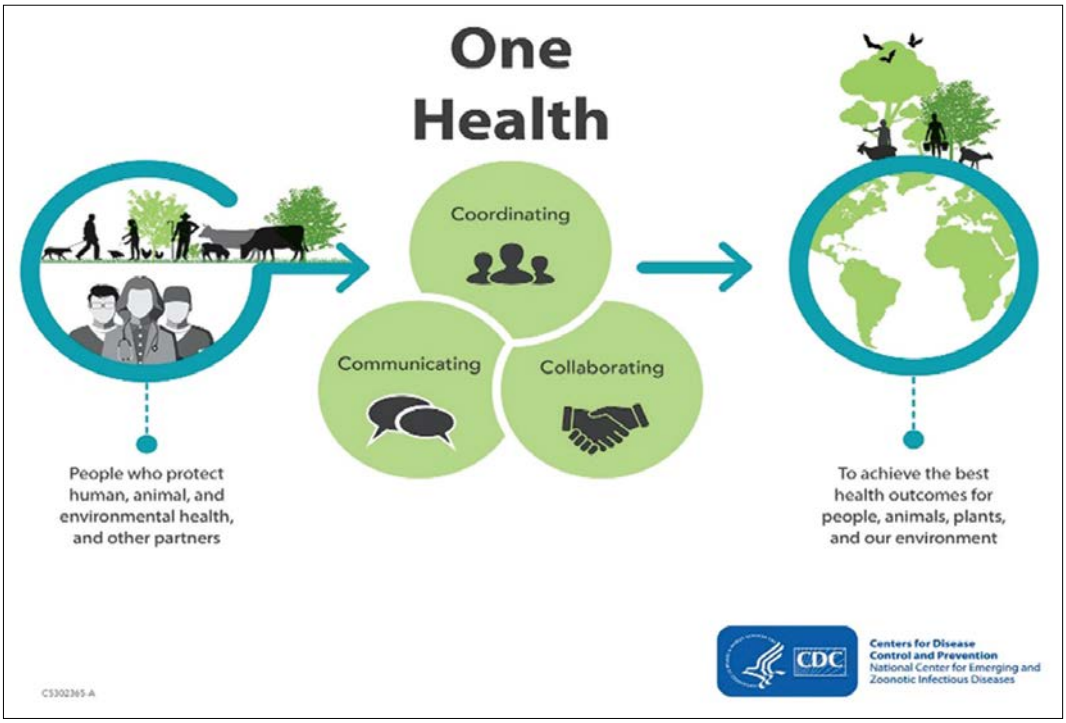

Fig 1: One health approach, source CDC

The global status of one health approach

Coordinating the many players involved in human, animal, and environmental health is vital to meet the health challenges of tomorrow. In this context, three major international organisations, WHO, WOAH (founded as OIE), and FAO, are working together to prevent and control health risks at the human-animal-ecosystems interface. They are developing global strategies and tools to ensure a consistent, harmonised approach throughout the world, and to better coordinate human, veterinary and environmental health policies at the national and international levels. These three organisations have worked together for many years to prevent, detect, control, and eliminate health threats to humans originating directly or indirectly from animals. Putting the "One Health" vision into practise has been facilitated by a formal alliance between the three organisations. In this context, the FAO, WOAH, and WHO acknowledge their respective responsibilities in combating diseases that have a severe impact on health and the economy, particularly zoonoses. In 2010, the three organisations published a **"**Tripartite Concept Note**"** describing their collaboration and objectives in the prevention and control of health risks in the human-animal ecosystem. By working together in this way, they can create synergy in their expertise and communications activities on issues of common interest in order to mobilise their public and private partners, Member Country governments, and public opinion. They meet regularly, and their principal activities are aimed at early detection of the emergence of animal and human diseases so that these can be met with a swift and targeted response to control disease outbreaks and prevent their spread worldwide. Throughout the organisation's work, we promote the One Health approach, recognising the interdependence of animal, human, and environmental health. Because the health of animals and of the environment strongly depend on human activities, because the health of animals and the environment also determine human health.

Current status of one health approach in India

In the Indian context, the OH approach is strategically gaining importance from all stakeholders, such as public health professionals, veterinarians, health care providers, policymakers, and researchers. While animal-to-human transmission is a major threat in the country with several diseases such as avian flu and rabies, a major growing threat is from bovine tuberculosis, which is on the increase. In addition, emerging zoonotic diseases are acquired through wild animals, and the OH approach should look into the wild zoonotic diseases also. The successful implementation of the OH model involves integration and collaboration between multiple sectors of agriculture, animal health, and human health. Although the OH approach is in an embryonic stage in India, there are many cross-cutting policies and regulatory measures that are in place and conducive to further development of the approach. Owing to the public health importance of zoonotic diseases in India, a National Standing Committee on Zoonoses was formed in 2007 (Aggarwal and Ramachandran, 2020) [1].

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