EDITORIAL

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"One Health" and Promoting the Concept in the Journal

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One Health is an innovative global approach aiming to tighten the collaboration and communication in all aspects of human, animal and environmental health. The areas of One Health approach include food safety, the control of zoonoses, and combatting antibiotic resistance (1). The term "one health" was first introduced to the scientific community at an Expert Consultation in Canada in 2009, but the concept has been well known since the 1800s (2). Dr Rudolf Virchow (1821-1902) coined the term "zoonosis" to indicate an infectious disease that is passed between humans and animals (3).

One Health concept supports the multidisciplinary approaches to zoonotic diseases. The direct link between human and animal health supports the fact that the majority of human diseases are animal originated. Scientists estimate that more than six out of every ten known infectious diseases in people are spread from animals. In addition, three out of every four of new or emerging infectious diseases in people are spread from animals (4,5). It is estimated that every year, about a billion people become ill because of zoonoses and millions of them die (4).

The main goal of One Health approach is to understand better the complex mechanisms affecting the humans, animals and the environment because there is an urgent need to control the spreading of infectious diseases and possibly to prevent the future threats. Rapidly spreading zoonotic diseases and growing antimicrobial resistance are important challenges and deserve attention at the local, national and global levels. Many of the microbes infect both animals and humans, as they share the eco-systems. Also, in a world that people can easily pass the borders; so can the microbes. Efforts by just one sector or by one country can not prevent or eliminate the problem.

For One Health approach, World Health Organisation (WHO) works closely with the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE). The aim of these organisations altogether, in the context of one health, is to promote multi-sectoral responses to food safety hazards, risks from zoonoses and other public health threats such as antimicrobial resistance and provide guidance on reducing these risks. Many professionals with a range of expertise who

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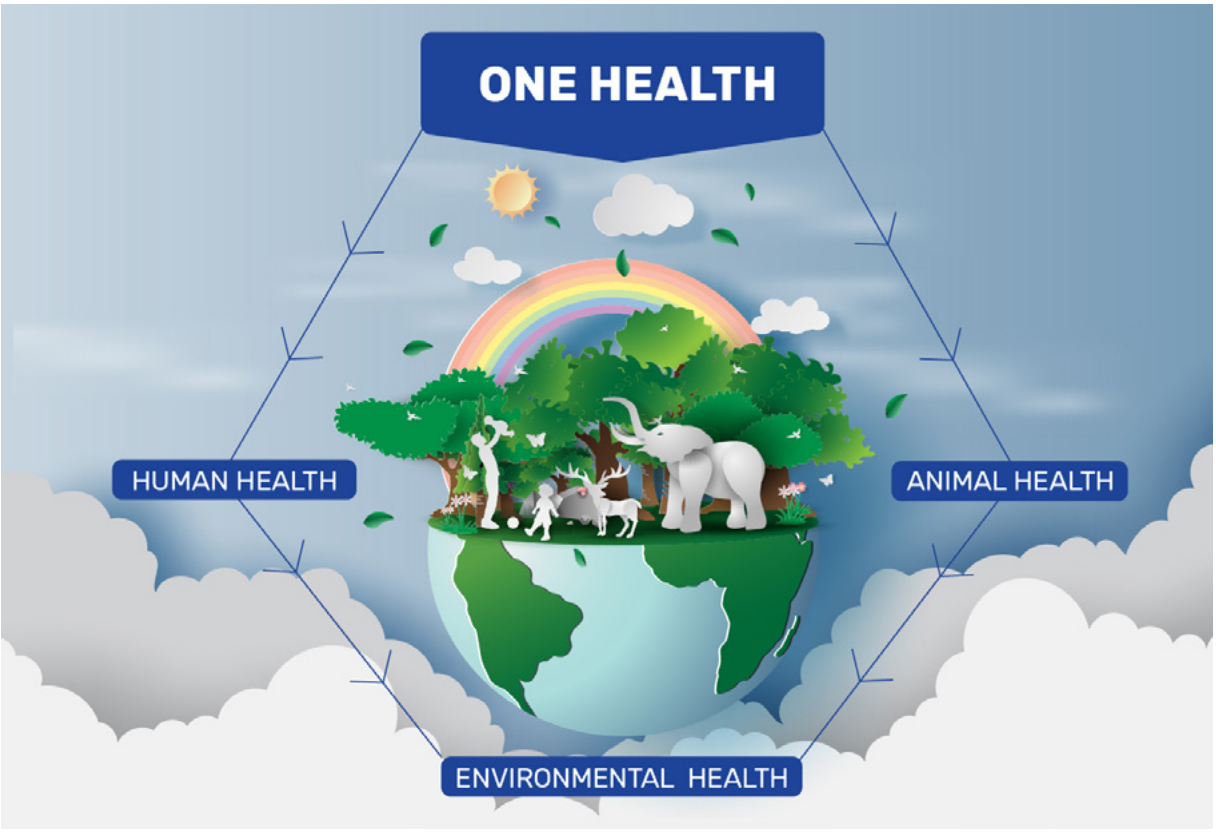

are active in sectors, such as public health, animal health, plant health and the environment, also join these efforts. Particularly for the prompt recognition and implementing the precautions, clinicians have a critical role because taking the emerging and re-emerging zoonoses into consideration in the differential diagnosis is the first vital step in the diagnosis, management and control of a public threat (6).

The global burden of zoonoses is very high as assumed, but the economic burden is disproportionately high in countries with limited resource because many people live on livestock and agriculture. Besides, the healthcare systems and technological supply for diagnosis and prevention of emerging and re-emerging zoonoses are not adequate (7). The One Health approach requires all the countries working together to tackle public health threats.

Rabies and influenza are two examples in this context of multidisciplinary collaboration to address the health threat at a human-animal-ecosystem level (8). For instance, rabies in humans is effectively prevented only by targeting the animal source of the virus (for example, by vaccinating dogs). Rabies control aims to achieve WHO's "Zero by 30" global strategic plan: to end human deaths from dog-mediated rabies by 2030. This goal mandates collaboration between the veterinarians, doctors and governments (9). Influenza viruses circulating in animals is crucial to the selection of viruses for human vaccines for potential influenza pandemics (8).

In addition to zoonotic diseases, antimicrobial resistance is also one of the main areas of interest from One Health view because antimicrobial resistance threatens public health seriously and requires action across all sectors and governments. WHO reports that antimicrobial resistance is putting the gains of the Millennium Development Goals at risk and endangers the achievement of the Sustainable Development Goals (10). The antimicrobial pipeline offers some choices but is devoid of entirely new drugs. Besides this inefficient supply, new resistance mechanisms are emerging and spreading globally. Misuse and overuse of antimicrobials are

accelerating this spread which is associated not only with human use but also with usage in animal husbandry. 72.5% of all antimicrobials are used in animals and 27.5% in humans (11). Some uses in animals, such as for the treatment of bacterial infections, are appropriate. However, approximately 70% are used for non-therapeutic purposes (12).

The use of antibiotics in animals for any reason leads to declining antibiotic effectiveness against infections in animals and eventually in humans. Drug-resistant microbes can be transmitted between animals and humans through direct contact or through contaminated food, so a well-coordinated approach in humans and animals is required to handle it effectively. In order to conserve antibiotic effectiveness in humans and animals, tracking rates of veterinary antibiotic use and resistance along with the data of human is necessary. Prudent use of antibiotics both in human and veterinary medicine is essential for a healthy life.

For the public awareness, a global "One Health Day" was planned as "November 3" in 2016 and supported by many institutions and associations. One Health Day provides an opportunity for the experts and the community to join and talk about One Health issues (13, 14).

The success of One Health concept certainly requires breaking down the interdisciplinary barriers between human medicine, veterinary medicine and environmental sciences.

The role of *Infectious Diseases and Clinical Microbiology* (IDCM)

Here in the Journal, the editors actively promote One Health concept, on the one hand encouraging all partners from all sectors to share their experiences and on the other expediting the peer review process of the papers on this topic. Thus, we aim that IDCM is to become a common platform for scientists not only from human medicine but also veterinarians and environmental scientists are welcome to submit their research.

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