

Understanding One Health: a Holistic Perspective

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The COVID-19 pandemic, a human public health crisis of unprecedented proportions resulted from a virus of potential animal origin. This emphatically underlined the critical importance of the One Health concept in understanding and confronting global health risks, which are, indeed, increasing of late. Drivers such as changes in climate and land-use, unsustainable agricultural practices, globalisation leading to increased movement of people and goods, the wildlife trade etc., provide multiple opportunities for pathogens to evolve into new forms, making spillover events from animals to humans more frequent and intense. The World Organisation for Animal Health (WOAH), against this background, warns that the risk is not only to humans, but animals too. "While most risk assessments focus on the transmission of pathogens from animals to humans, diseases can also pass from humans to animals, and generate great impacts on the health of animals, whether domestic or wild. COVID-19, tuberculosis, influenza, among others, can infect or be fatal to different species of animals."

Dr. Emmanuelle Soubeyran, the Director General of the organisation claims that "WOAH champions the One Health approach, recognising the vital interconnection between animal, human,

and environment health to enhance global preparedness and tackle the root causes of health crises."

What is the One Health concept and approach? WOAHO explains the "One Health" approach as "a concept that has been known for more than a century; that human, animal and plant health are interdependent and bound to the health of the ecosystems in which they exist. We envisage and implement it as a collaborative, whole of society, whole of government approach to understanding, anticipating and addressing risks to global health." The organisation, further, recognises that "numerous cross-cutting issues, such as "antimicrobial resistance, food safety, climate change and weak health care infrastructure, need to be addressed from a multisectoral and multidisciplinary perspective, which the One Health approach guarantees."

Now, it is curious that the issue of "antimicrobial resistance" (AMR) has been given a greater focus by the WOAHO underlining these words in the text. This, in my view, amounts to a dilution of the One Health agenda by making it unidimensional. One Health is about health NOT about disease or medicine. AMR is only one of the several components of One Health, and certainly not the be all and end all of it as, unfortunately, our national and international policymakers have made it to be. The G-20 declaration too fell into this trap. Amongst other objectives, the declaration seeks to "Promote One Health-based approach driven by the Quadripartite's One Health Joint Plan of Action (2022-2026)" and "Implement and Prioritise tackling Antimicrobial Resistance (AMR) following One Health Approach..." There is not even a whisper about animal health in this discourse on One Health and AMR. Unfortunately, we seem to have fallen short of a holistic perspective of One

Health; the declaration confines expression of concern for human health against the challenge of AMR. No wonder misgivings about AMR abound and the livestock sector becomes the victim of vilification. The WOAHO, the apex international organisation dedicated to animal health, too has expressed concern to the growing challenge of AMR relegating to shadows the other crucial facets of One Health.

Let it also be forcefully clarified here that, contrary to what the WOAHO states, the concept of One Health is not "more than a century old" but dates back to circa 400 BC: its roots are in ancient science and wisdom. The ancient Greek philosopher and physician Hippocrates, considered one of the most outstanding figures in the history of medicine and traditionally referred to as the "Father of Medicine" in recognition of his lasting contributions to the field, was the first in the recorded history of civilization to recognise the relationship between human and animal health. The central idea of Hippocratic philosophy is the principle of wholeness, that knowledge of nature is possible only when it is correctly approached as a whole: in a nutshell it recognizes that human health, animal health and environmental health are part of a whole body. Hippocrates advocated that administration of medicine should rest on the foundation of this holistic understanding. The concept and the terminology "One Health", may be a recent entrant in the medical lexicon: in fact, it is a recognition of what Hippocrates said circa 400 BC in his treatise "On Airs, Waters and Places" exhorting physicians to consider all aspects of a patient's life including the environment. Disease, according to him, was an outcome of an imbalance between man and environment. "One Health" is an approach that precisely recognizes this thought and theory that the health of people is closely connected to

the health of animals and our environment, which is shared by the two.

Dr. Calvin W. Schwabe, called the father of veterinary epidemiology, too recognized the relationship between animal and public health decades before the current One Health movement. “Veterinary Medicine and Human Health,” is his seminal work published in 1964; he wrote, “Veterinary medicine is the field of study concerned with the diseases and health of non-human animals. The practice of veterinary medicine is directly related to man’s well-being in a number of ways.” Through this innovative term “non-human animal”, he propounded the concept that public health is inclusive of veterinary health. An early advocate for integrating aspects of veterinary and human medicines, Dr. Schwabe is even credited with coining the phrase “One Medicine,” although the term’s origins are still debated. “One Medicine” as a scientific concept has been linked to the 19th century German physician and pathologist, Rudolf Virchow. He proclaimed that there should be no dividing line between human and animal medicine.

According to the WHO as also the World Animal Health Organisation, 60% of existing human infectious diseases are zoonotic i.e., they are transmitted to humans from animals either through direct contact or through food, water and environment; 75% of emerging infectious human diseases have an animal origin. Of the five new human diseases appearing



AIDS and diarrhoea put together. One fifth of premature deaths in poor countries are attributed to diseases transmitted from animals to humans. And all the pandemics in recent history, including the COVID-19 which had thrown our lives out of gear

Should it not, therefore, be a matter of concern that on the one hand investment in animal health remains low on the governance agenda, and on the other the entire approach to One Health appears to have been narrowed down only to AMR.

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In simple terms, One Health is the concept whereby human and animal healthcare advance hand in hand alongside respect for the environment, with all stakeholders including the veterinarians, doctors and researchers collaborating to ensure that all humans and animals benefit equally from progress which is sustainable. The underlying theory is that human and veterinary medicine could work together as humans and animals share a lot of their biology, and nearly 75% of all known causes of disease are shared between humans and animals. Even in ancient Greece, convergence between human and animal physiology was a normal part of science.

Isn't it then an elementary common sense that the most effective and economic approach to protecting human health is to control zoonotic pathogens at their source. This would require close institutionalised and harmonised collaboration at local, regional and global level between the veterinary, health and environmental governance.

To reiterate, One Health is plain and simple common sense.

every year, three originate in animals. If this is not scary enough, 80% of biological agents with potential bio-terrorist use are zoonotic pathogens. It is estimated that zoonotic diseases account for nearly two billion cases per year resulting in more than two million deaths; more than HIV/

these days, have an origin in a zoonotic pathogen. Developing countries like ours have much greater stakes in strong One Health systems on account of small agricultural holdings and mixed farming systems resulting in uncomfortably close proximity of animals and humans.