

One Health: the need to move from theory to practice in a Public Health perspective

Leonardo Villani^(1,2) , Walter Ricciardi⁽¹⁾ 

(1) Department of Life Sciences and Public Health, Section of Hygiene, Università Cattolica del Sacro Cuore, Rome, Italy

(2) UniCamillus - Saint Camillus International University of Health and Medical Sciences

CORRESPONDING AUTHOR: Leonardo Villani, MD, UniCamillus - Saint Camillus International University of Health and Medical Sciences. Via di Sant'Alessandro 8, 00131, Rome, Italy; e-mail: leonardo.villani@unicamillus.org

The term One Health identifies a holistic vision that recognizes how human health, animal health and environmental health are closely interconnected and interdependent, to the extent that they influence and shape each other [1]. Although this idea may seem banal and almost obvious, only in recent years have its prominence and scope significantly influenced the way we think about science, research, and the entire healthcare system, both locally and internationally. Indeed, the One Health vision has been strongly integrated into the agendas of many countries and major international organizations over the past five years, being officially recognized as a major and therefore fundamental strategy. It was as recently as May 2021 that the World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO), the World Organization for Animal Health (OIE), and the United Nations Environment Program (UNEP) established an interdisciplinary group of high-level experts to strengthen cross-sectoral collaboration and first to conceptualize and define the One Health vision, and then to lay the groundwork for its practical implementation [2].

It becomes clear that to move from theory to action and thus apply and implement such a model, it is first necessary to be aware of the historical period we are going through.

Public Health faces challenges such as climate change and the recent COVID-19 pandemic, wars, and an economic crisis that continuously exacerbates inequality, which we cannot expect to address by locking ourselves in our silos of knowledge [3].

As Public Health professionals, how can we stop the burden caused by antimicrobial resistance without considering the vital input that can come from other fields such as veterinary, biology, as well as law and economics? Or again, how can we reduce the number of deaths during heat waves, which will be increasingly frequent, without engaging with meteorologists and climatologists to identify the most dangerous days, as well as with architects and engineers to design greener, tree-lined cities to prevent risks?

So, while from a theoretical point of view we are now able to define One Health, understood as an approach that aims to sustainably balance and optimize the health of people, animals, and ecosystems, it is clearly more complex to apply and implement models that take this vision into account. According to the One Health vision, when designing strategies to address a single problem, the involvement of a variety of sectors and disciplines, as well as the involvement of civil society and policymakers, should be considered. What then should we focus on? Fostering a new way of thinking not only about science but about our lives in general is the first step in translating the holistic One Health vision into reality. In this sense, supporting a change in the broadest conception of the term, as much in the way we produce evidence and implement projects as in the way we conceive of our place within the Planet, is an indispensable step, which is based on at least four key points: awareness, collaboration, sharing, and education and training.

To achieve the same goal, in fact, professionals should be aware both need to adopt this approach to respond to the challenges of the Century and of the importance of recognizing other disciplines as crucial. Transdisciplinarity and multi-sector collaboration provide that broad and representative range of perspectives and knowledge, which is indispensable. We must ensure that these terms are not merely empty words, but that they truly represent a new vision that guides the way we produce evidence and implement policies, projects and activities. Awareness, in its broadest sense, naturally leads us to another key point: collaboration. In this context, numerous projects have been promoted to foster the creation of consortia with different backgrounds and many funds are allocated in many countries, with numerous initiatives especially in the European Union [4]. Such initiatives, extremely complex and challenging in implementation, will increasingly have to become the standard in the process of producing evidence and implementing basic and applied research projects. In this sense, the main challenge is involving professionals whose

skills and expertise may differ significantly in terms of study and training, yet are closely connected when addressing common problems. Communication, sharing knowledge and experience, admitting the relevance of other disciplines and, when necessary, our own limitations, will allow us not only to achieve our goal, which is the protection and promotion of the health of the population, but also to enrich ourselves personally. Therefore, collaboration should be an opportunity and not a reason for competition or the presumed superiority of one discipline over others.

Awareness, willingness to collaborate, and knowledge sharing then leads to the last key concept that will help us move from theory to practice: education and training. In this context, Public Health plays a key role in proposing a new way of thinking about our place on the Planet and the related relationships that bind us to all its components, which presupposes an immense education and training effort at all levels. Offering a new vision is as complex as it can be, especially in healthcare systems. However, change, not only of the individual behavior but of the entire organization and, more broadly, the entire system, is the only truly effective and lasting tool we have to embrace the One Health vision. Funding and, consequently, transdisciplinary collaboration may cease; professionals and teams may change over time, just as awareness and knowledge are not inherently present. What really remains and endures is education, training, knowledge acquisition, development of critical thinking and reasoning skills. This effort, made even more difficult by the need to transmit knowledge from different disciplines and sectors, must be our priority. The complexity is even greater when we consider that our target is not limited to professionals, but also to policymakers and citizens, the real actors of change. Again, however, it becomes clear how, to meet the challenge of education and training, we cannot rely on our own strengths alone. How could we, as Public Health professionals, educate about the circular economy or new models of urban greenery and sustainable cities to citizens and professionals alike? Such contamination of knowledge is the real force that will enable us to move from theory to practice, without which we will remain in our silos without ever being able to apply the One Health approach. That is why Public Health must strive to be a promoter of this change, bringing together the different stakeholders and proposing innovative models of education and training, both of professionals and citizens.

It becomes clear that change requires awareness, collaboration, sharing and education, concepts that are linked, inseparable and interdependent, to be considered in a circular vision in which one prescinds from the other and at the same time nurtures it. Only by

truly committing to, investing in, and believing in these concepts can we translate the holistic One Health vision into practice and ultimately seek to assure ourselves and future generations a future that allows us to live in balance and with respect for the Planet.

AUTHOR CONTRIBUTIONS

LV and WR conceived the research hypothesis. The manuscript was written by LV and WR. All authors read and approved the final version of the manuscript.

FUNDING

The authors declare they have not received funding to conduct this study.

CONFLICT OF INTERESTS

The authors declare no conflicts of interest.

DATA AVAILABILITY

NA

REFERENCES

1. Adisasmito WB, Almuhairi S, Behravesh CB, Bili-vogui P, Bukachi SA, Casas N, et al. One Health: A new definition for a sustainable and healthy future. *PLoS Pathog.* 2022 Jun 1;18(6)
2. Food and Agriculture Organization of the United Nations (FAO). One Health High-Level Expert Panel (OHHLEP) [Internet]. [cited 2024 Aug 12]. Available from: <https://www.fao.org/one-health/background/ohhlepe/en>
3. Ricciardi W. Save the world or disappear: the fate of Public Health in an era of formidable challenges. *Eur J Public Health.* 2024 May 22
4. European Commission and European Environment Agency. The European Climate Adaptation Platform Climate-ADAPT [Internet]. [cited 2024 Aug 12]. Available from: <https://climate-adapt.eea.europa.eu/en/eu-adaptation-policy/sector-policies/health#:~:text=The%20research%20funding%20programme%20Horizon,funding%20of%20adaptation%20measures%20page>