

One Health, One World: It's time to Act

The health of soil, plant, animal and man is one and indivisible.

Albert Howard.

One Health (OH) is an integrative approach to health that recognizes the interconnectedness of human, animal, and environmental health, aiming to address complex health challenges that arise from their interdependencies. This multidisciplinary framework emphasizes the necessity for collaboration among diverse professionals, including epidemiologists, veterinarians, ecologists, and public health officials, to effectively combat zoonotic diseases and other health threats.

About 60% of emerging infectious diseases that are reported globally come from animals, both wild and domestic. Over 30 new human pathogens have been detected in the last 3 decades, 75% of which have originated in animals. Human activities and stressed ecosystems have created new opportunities for diseases to emerge and spread. These stressors include animal trade, agriculture, livestock farming, urbanization, extractive industries, climate change, habitat fragmentation and encroachment into wild areas.

A holistic approach to health, rooted in the understanding of the interdependence among humans, animals, and ecosystems, is vital for the prevention and control of diseases, particularly zoonoses, which account for a significant proportion of emerging infectious diseases.

The concept has gained prominence as global health crises, such as the COVID-19 pandemic, highlighted the urgent need for coordinated responses across various sectors, making it increasingly notable in discussions surrounding public health policy and environmental sustainability.

The framework relies on key principles such as interdisciplinary collaboration, systems thinking, and transdisciplinary engagement, which are crucial for developing effective strategies to enhance health outcomes globally. One Health initiatives prioritize data sharing and communication, recognizing that structured governance frameworks can significantly improve intersectoral cooperation in addressing public health threats.

Moreover, addressing climate change is increasingly recognized as an integral component of the One Health agenda, as environmental factors significantly influence the emergence of infectious diseases. Thus, the One Health framework serves as a crucial platform

for promoting innovative solutions and sustainable practices that enhance health security and ecological resilience on a global scale.

Key Principles

- a. **Interdisciplinary Collaboration:** Interdisciplinary collaboration is essential in the One Health (OH) approach, which focuses on the interconnectedness of human, animal, and environmental health. By bringing together professionals from diverse fields, individuals from different disciplines sharing ideas and integrating their perspectives, this collaboration aims to tackle complex health challenges that have significant societal implications and requires an understanding of human behaviour.
- b. **Systems Thinking:** One Health initiative is fundamentally rooted in systems thinking, enabling participants to conceptualize the complex interactions within the system they are addressing. This approach considers multiple dimensions, scales, and specific features of complex adaptive systems, ensuring that the OH initiatives reflect the realities of the contexts in which they operate. Such comprehensive assessments help in evaluating the effectiveness of OH initiatives and their capacity to produce meaningful outcomes.
- c. **Transdisciplinary Engagement:** The evolution from interdisciplinary to transdisciplinary marks a shift toward a participatory approach in OH. This involves collaboration among different disciplines and engaging stakeholders from various sectors, thereby fostering a shared responsibility for outcomes. Effective leadership and management are crucial to facilitate strategic dialogue and shared decision-making among diverse team members.
- d. **Data Sharing and Communication:** Effective data sharing and communication strategies are vital for the success of OH initiatives. The establishment of structured communication mechanisms can significantly enhance intersectoral health systems, enabling coordinated responses to public health threats. Prioritizing the development of governance frameworks that support cross-sectoral communication is necessary for improving collaboration among stakeholders.

- e. **Holistic Approach to Health:** The OH framework emphasizes a holistic approach that connects the health of humans, animals, and ecosystems. By recognizing the interdependence among these domains, the One Health concept promotes strategies that can prevent and control zoonotic diseases and other health risks arising from environmental changes, thus enhancing overall well-being across ecosystems.
- f. **Policy Alignment and Capacity Building:** Assessing policy alignment with key OH components is crucial for operationalizing the One Health approach effectively. Targeted capacity-building efforts and enhancing the competencies of key stake-holders are critical to improving the effectiveness of OH platforms, particularly in resource-limited settings.
- g. **Research Innovation and Sustainability:** Innovation plays a significant role in the One Health approach, especially in leveraging medical and environmental technologies to mitigate health risks. By integrating advancements in health diagnostics and sustainable agricultural practices, OH initiatives can create sustainable solutions that benefit both human and environmental health. The commitment to a rational, multidisciplinary preventive strategy is essential in addressing the complex challenges posed by climate change and other global threats.
- h. **Process Evaluation:** Process evaluations are critical for understanding the mechanisms of impact and the contextual factors influencing the delivery of OH initiatives. These evaluations examine the structures, resources, and processes involved in implementation, as well as the interactions between activities and participants that drive change. By identifying the strengths and weaknesses of these initiatives, stakeholders (governments, development agencies, research institutions, and civil society) can better understand how to enhance their effectiveness and sustainability.

Global Initiatives: Overview of One Health Collaboration

In 2021, the One Health High-Level Expert Panel (OHHLEP) was established as a scientific and strategic advisory group for the Quadripartite organizations, which include the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP), the World Health Organization (WHO), and the World Organisation for Animal Health (WOAH). OHHLEP was tasked with developing a comprehensive definition of One Health, emphasizing communication, collaboration,

coordination, and capacity building across various sectors and disciplines. This collaborative effort reflects the urgent need for a global strategy on pandemic prevention, preparedness, and response, highlighted by the COVID-19 crisis.

One Health Joint Plan of Action: Recognizing the necessity for coordinated efforts, the Quadripartite launched the One Health Joint Plan of Action for 2022-2026. This five-year initiative aims to enhance collaboration and coordination across sectors to tackle health threats affecting humans, animals, plants, and the environment. The plan focuses on several critical areas, including strengthening One Health capacities, combating zoonotic diseases, ensuring food safety, and addressing antimicrobial resistance. It underscores the importance of collective action, policy guidance, and technical support at various levels.

Integration into International Agreements: The One Health approach is increasingly being integrated into international agreements and frameworks. It is highlighted in various draft instruments, including the Intergovernmental Negotiating Body's draft international instrument on pandemic prevention, proposed amendments to the International Health Regulations 2005, and the zero draft of the Political Declaration for the High-level Meeting on Universal Health Coverage. This integration reflects a broader recognition of the interconnectedness of health challenges and the need for unified responses to address them effectively.

Call to Action for Stakeholders: As the implementation of the One Health Joint Plan of Action begins, the Quadripartite partners are urging governments, development agencies, research institutions, and civil society to collaborate in operationalizing the One Health approach. This initiative aims to establish a sustainable framework to address health challenges across sectors, thereby enhancing overall health resilience and safeguarding the well-being of people, animals, and the environment. The growing recognition of One Health as a foundational principle in global health security continues to gain momentum, with endorsements from various organizations and governments around the world.

Expanding Evidence-Based Practices: The advancement of One Health initiatives will also require a robust framework for incorporating evidence-based practices into health policy. Future research must include stakeholder interviews and assess the effectiveness of implemented strategies to provide a comprehensive understanding of policy evolution and effectiveness. By integrating evidence generated at

the grassroots level into health surveillance systems, countries can enhance their preparedness and response capabilities to emerging health threats.

Collaborative Framework for Action: The One Health Joint Plan of Action developed by the Quadripartite collaboration outlines a comprehensive framework that aims to enhance collaboration, communication, capacity building, and coordination across sectors responsible for health concerns. Future efforts should focus on implementing this plan through the establishment of action tracks that promote sustainable health and food systems while reducing global health threats. Engaging international partners and civil society organizations will be crucial in mobilizing resources and support for these initiatives.

Prioritizing Integrated Surveillance Systems: To enhance the identification and management of zoonotic diseases (ZDs) and other health threats, there is a pressing need to establish comprehensive integrated surveillance systems that encompass human, animal, and environmental health. Future directions should prioritize developing such systems, fostering partnerships between veterinary and human health sectors, and utilizing modern technologies for data analytics and disease monitoring. This approach will enable timely detection and response to health threats, ultimately reducing their economic impact on communities.

By focusing on these strategic areas, the One Health approach can evolve into a powerful tool for enhancing global health security, fostering resilience against emerging health threats, and promoting sustainable development across multiple sectors.

One Health in India: National Centre for disease control : Centre for One Health (CoH): CoH is working in coordination with all stakeholders to promote health and quality of life by undertaking activities necessary for prevention and control of Zoonotic Diseases with "One Health" approach. For zoonosis, ICMR (Indian Council of Medical Research) and ICAR (Indian Council of Agricultural Research) have developed collaboration for joint research priorities. National Disaster Management Authority (NDMA), NCDC, Emergency Medical Relief (EMR), IHR for outbreak response. "National institute for One Health" in Nagpur is an upcoming key pillar for leading One Health Research under the aegis of ICMR.

National One Health Mission was set up upon approval of The Prime Minister's Science, Technology and Innovation Advisory Council (PM-STIAC) to coordinate, support and integrate all the existing One Health activities in the country and fill any existing gaps. The Mission aims to coordinate across achieving overall

pandemic preparedness and integrated disease control against priority diseases of human, animal and environmental sectors with early warning systems built on integrated surveillance system and response readiness for endemic as well as emerging epidemic or pandemic threat.

ICMR and IAPSM has signed an MOU for collaboration and co-ordination of activities towards the efforts of One health mission.

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Dr. Manjula R

Professor
Department of Community Medicine
S Nijalingappa Medical college
Bagalkote - 587102