



**Introducing
ONE HEALTH MANAGEMENT:
the pathway to improving
sustainability, optimising
resource use, and unifying
approaches within global
healthcare systems**

Published by the European Health Management Association (EHMA) in October 2024.

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Co-funded by the European Union. Views and opinions expressed are however those of the authors only and do not necessarily reflect those of the European Union or the European Health and Digital Executive Agency (HADEA). Neither the European Union nor the granting authority can be held responsible for them.



Co-funded by the
European Union

Abstract

The One Health approach, which emphasises the interconnectedness of human, animal, and environmental health, has gained significant attention due to its potential to address complex global health challenges. Despite its growing importance, the management aspect within this One Health framework remains insufficiently developed. In response, the European Health Management Association (EHMA), through its Special Interest Group (SIG) on One Health, comprised of leading experts, has proposed a novel and more unified definition of One Health Management, while also exploring its areas of applicability. Aiming to bridge existing gaps, this definition incorporates management principles to enhance coordination, optimise resource allocation, and improve policy making across multiple sectors.

Thus, this paper presents a comprehensive definition of One Health Management, exploring its potential to improve health outcomes, strengthen governance, and foster cross-sectoral collaboration, while mapping its applicability, challenges, and integration into current One Health practices.

Introduction

The global health landscape is becoming increasingly complex due to the interconnectedness of human, animal, and environmental health. Emerging zoonotic diseases, the rise of antimicrobial resistance (AMR), and the growing impacts of climate change present significant challenges that require comprehensive, coordinated, and strategic responses.¹ The One Health approach has gained recognition for addressing these interconnected issues.² Nevertheless, its implementation often remains fragmented, with a unified management framework still absent. To address this gap, the European Health Management Association (EHMA) is proposing a strengthened management approach through a new and more holistic definition of One Health Management. This paper introduces and explores the applicability of the proposed definition, which seeks to integrate unified management principles into the One Health framework. By ensuring effective coordination, optimising resource allocation, and fostering improved cross-sectoral collaboration, this unified definition is designed to better tackle global health challenges.

History and development of One Health approach

The One Health concept, and its accompanying definition, is timely, as the world is facing unprecedented challenges at the human, animal and environmental interface. The importance of improving the application of the One Health approach in practice is evidenced by its being a high political priority for the World Health Organization (WHO), which recently inaugurated the One Health High-Level Expert Panel (OHHLEP). One of the OHHLEP's main aims is to "maintain the political momentum required for advancing One Health implementation".³

The similarity in disease processes among animals and humans has been noted since the first quarter of the nineteenth century. Rudolf Virchow, MD, first coined the term 'zoonosis' in 1855 to define an infectious disease which is exchanged between humans and animals. After over a century of developing the linkages between animal and human health, the term 'One Medicine' entered parlance after Calvin Schwabe, DVM, ScD, MPH introduced it in his textbook 'Veterinary Medicine and Human Health'. The term pinpoints the associations between human and veterinary medicine, and the need for collaboration to effectively cure, prevent, and control illnesses that affect both humans and animals.⁴ On 29 September 2004, attendees of the Building Interdisciplinary Bridges to Health in a Globalised World symposium, set in New York City and organised by the Wildlife Conservation Society in the United States, proposed the Manhattan Principles, or 12 priorities to address the mounting challenges of zoonotic diseases. These principles explicitly called for a globalised and multidisciplinary response to prevent disease and thus formed the basis for the 'One Health, One World' concept.^{4,5} On 25-26 October 2008, representatives from more than 120 countries and 26 international and regional organisations attended the 2008 International Ministerial Conference on Avian and Pandemic Influenza in Sharm el-Sheikh, Egypt. During this meeting, 'Contributing to One World, One Health – A Strategic Framework for Reducing Risks of Infectious Diseases at the Animal-Human-Ecosystems Interface' was released, whereby attendees endorsed a new strategy for fighting avian influenza and other infectious diseases.⁴

In 2010, the United Nations, World Bank and European Union recommended the adoption of the One Health Approach cementing the framework in (global) public health studies and policy as an important priority.^{4,6}

Finally, in light of increasing climate change and biodiversity loss, the One Planet, One Health, One Future conference, held in October 2019, revisited the Manhattan Principles. Convened by the German Federal Foreign Office and the Wildlife Conservation Society, this meeting led to the development of the Berlin Principles on One Health, an updated set of guidelines that address contemporary global health challenges, including pathogen spillover, climate change, and antimicrobial resistance. These principles reaffirm the

importance of a multidisciplinary response and highlight the urgency for decisive actions to prevent future pandemics.⁷

Current landscape

Major global organisations like the World Health Organization (WHO), Food and Agriculture Organization (FAO), and the World Organization for Animal Health (WOAH) recognise that addressing issues like zoonotic diseases, antimicrobial resistance (AMR), and climate change requires collaboration across these sectors.⁸ However, despite these visible efforts, the implementation of One Health remains fragmented.^{9–11}

While some countries have started developing their own national One Health frameworks, there is still no universally accepted roadmap for integrating One Health into everyday practices.^{12,13}

High-income countries, with better-resourced health systems, are often able to take more proactive steps in implementing cross-sector approaches. Meanwhile, many low- and middle-income countries face significant barriers, such as underfunded healthcare systems, lack of infrastructure, and competing priorities, all of which often prevent the effective incorporation of One Health approaches into national policies.^{14,15}

Additionally, many current initiatives focus specifically on either zoonotic disease control, AMR, or the health impacts of climate change.^{16,17} For example, the Global Action Plan on Antimicrobial Resistance, introduced by the WHO, FAO, and WOAH, aims to foster cross-sector collaboration to combat drug-resistant infections.^{18,19}

Further, sectors like health, agriculture, policymaking, and finance often work in silos, making collaboration difficult.^{10,20}

This fragmentation delays or hinders the implementation of a truly holistic approach that addresses human, animal, environmental, agricultural, and economic factors simultaneously. Although in part addressed by plans like the One Health Joint Plan of Action 2022–2026⁸, ultimately, without a unified management structure, the full potential of the One Health framework remains unrealised. This highlights the urgent need for coherent, strategic management.

Implementing the One Health approach, guided by the newly proposed holistic definition of One Health Management, emphasises coordinated leadership and resource-sharing across sectors, helping to bridge existing gaps in addressing complex health challenges. By establishing a unified management structure that aligns with national policies and international guidelines, One Health Management offers a pathway for tackling global health challenges collaboratively and efficiently.

Proposed new approach: definition of One Health Management concept

The European Health Management Association (EHMA) defines **Health Management** as the strategic guidance and coordination required to manage health across individual, organisational, and systemic levels. It embraces a comprehensive view of health, recognising that a wide range of factors, including behavioural, social, and environmental, influence health outcomes. Health Management goes beyond conventional care environments, seeking to integrate and harmonise with related policy areas.²¹ This approach is consistent with the 'One Health' concept, which acknowledges the interconnections between human, animal, and environmental health. Health Management encompasses the entire health ecosystem, uniting health managers, healthcare professionals, patients, both informal and formal caregivers, patient organisations, legislators, educators, policymakers, public health specialists, researchers, health insurance experts, and the pharmaceutical industry.²¹ These stakeholders work together to create a cohesive health vision and alignment strategy, establishing the organisational, societal, and technological conditions required to achieve the best possible health outcomes for both individual patients and the wider community.²¹

Considering the growing recognition and urgent need to implement the One Health approach for preventing future health threats and emergencies, there is an increasing understanding of the critical importance of coordinated management in addressing the growing burden of disease and environmental challenges that affect humans, animals, and the environment. In response to this, the European Health Management Association (EHMA), alongside its Special Interest Group (SIG) on One Health is proposing a new definition called **One Health Management**: "One Health Management is a comprehensive and strategic approach that integrates leadership and coordination across human, animal, and environmental health sectors. It emphasises the interconnectedness of these domains and the need for an integrated unified management framework to address complex health challenges. One Health Management extends beyond traditional healthcare settings by incorporating behavioural, social, and environmental determinants of health, and aligning with related policy areas. It involves collaboration among a wide range of stakeholders, including health managers, healthcare professionals, policymakers, public health experts, and various industry professionals, to develop and implement strategies that promote optimal health outcomes across the entire ecosystem. This approach is grounded in the principles of effective governance, co-design, and co-production, ensuring a holistic and coordinated response to health threats that impact both individuals and communities."

In the following sections, the term “One Health Management” will be used to specifically refer to the newly proposed holistic definition introduced in this paper, distinguishing it from the broader, existing One Health concept.

Applicability and implications of One Health Management

Adopting and implementing this new definition of **One Health Management** offers a transformative shift in how health challenges are addressed by promoting coordinated cross-sectoral collaboration. This new perspective moves beyond isolated interventions and encourages a more comprehensive strategy that tackles the interconnected health, environmental, and economic dimensions of global challenges.

One example of integrating the new definition of One Health Management can be seen in its application to both zoonotic disease control and antimicrobial resistance (AMR). By bringing together diverse ministries, community representatives, and stakeholders like non-profit organisations (NGOs) and industry leaders, this approach ensures better resource coordination, streamlined decision-making, and more effective interventions. For instance, the Global Action Plan on AMR¹⁹, which promotes cross-sector collaboration, provides a foundational model that One Health Management could expand by introducing structured leadership and resource-sharing mechanisms. This would ensure that all sectors, from community care and hospitals to livestock farming, work together to manage antibiotic use, reduce resistance, and address zoonotic disease outbreaks more effectively.¹⁹

Resource allocation and sustainability are key benefits of One Health Management. Currently, many countries prioritise human health over animal and environmental health, creating an imbalance that limits the holistic application of One Health.^{22,23} One Health Management addresses this by coordinating resources across sectors to ensure more equitable distribution. In addition, One Health Management promotes sustainable health systems by encouraging long-term planning and investment in cross-sector infrastructure. Governments could create joint health funds, a ‘One Health fund’, and pool resources specifically for this to support integrated initiatives. Public-private partnerships and international funding from organisations like the World Bank could also help low- and middle-income countries build the necessary infrastructure for long-term sustainability. Countries that adopt integrated surveillance systems for human, animal, and environmental health are better equipped to detect and respond to health crises early, reducing costs and ensuring more efficient use of resources.^{24–26}

In policymaking, One Health Management could influence the development of new governance structures that facilitate better cooperation between ministries of health, agriculture, and the environment.^{27,28} Governments might

need to establish on a national, as well on an international level, inter-ministerial task forces or cross-sectoral councils to ensure seamless policy integration.²⁸⁻³⁰ For example, France has established a One Health institute to train leaders and policymakers, while Germany promotes the One Health approach within the EU, including through the new Animal Husbandry Labelling Act to report livestock housing standards. The Netherlands' Centre for One Health (NCOH) addresses infectious diseases and global health challenges by identifying research gaps, and Spain is advancing EU health policies with a focus on antimicrobial resistance (AMR). In the United States, the bipartisan 'Advancing Emergency Preparedness Through One Health Act of 2019' introduced in both the Senate (S.1903) and House (HR.3771) seeks to create a national One Health framework, coordinating federal efforts to prevent and respond to zoonotic outbreaks. Such cross-sectoral collaborations encourage resource sharing, leading to more efficient use of public funds.³¹⁻³⁶ Additionally, such structures could improve data sharing and surveillance systems, enabling quicker responses to emerging health threats.³⁷ By fostering and rewarding stakeholder engagement, including community and private sector involvement, these governance models would empower diverse perspectives and increase public trust.³⁸ This would mark a shift from isolated decision-making to a more holistic, systems-level approach that recognises the interconnectedness of health domains.

For research, the implementation of One Health Management would encourage interdisciplinary studies that bring together insights from human medicine, veterinary science, ecology, public health and social sciences.^{39,27} This could lead to more comprehensive and actionable data, allowing for more effective interventions.³⁹ Research priorities would likely shift toward understanding the dynamics of disease transmission at the human-animal-environment interfaces and exploring a broad range of health determinants.^{9,16}

In practice, the implications are equally profound. Practitioners in healthcare, public health, veterinary services, and environmental management would need to collaborate closely in outbreak investigations, surveillance activities, and community health programs.⁴⁰ This could lead to the development of integrated, community-based health initiatives that consider the full spectrum of factors affecting health, from sanitation and food security to animal welfare and environmental health.^{41,40}

The implementation of an approach guided by the newly proposed definition of One Health Management can significantly enhance hospital management by fostering cross-sectoral collaboration and preventive healthcare measures. This collaboration might involve hospitals adopting green management practices and working closely with public health authorities, veterinary services, environmental agencies, and the private sector.⁴² For example, hospitals can strengthen infection control by sharing data with veterinary health experts to track zoonotic diseases and reduce antimicrobial resistance.⁴³ Early detection of emerging health threats, such as zoonotic

diseases, becomes more efficient through this collaboration, enabling hospitals to implement quarantine measures and activate response teams more effectively.^{44,45} Involving the private sector may add further benefits. Hospitals can partner with pharmaceutical companies to ensure a sustainable supply of essential medications and vaccines, particularly for diseases affecting both humans and animals.^{46,47} Collaboration with environmental management companies can improve waste and water management practices within hospitals, helping to prevent contamination and improve overall hygiene.⁴⁸ Additionally, private-sector expertise in technology and innovation can enhance healthcare infrastructure, from advanced diagnostic tools to telemedicine platforms, further supporting hospitals in preventive care efforts.^{49,50} Through fostering these cross-sectoral partnerships, hospital management can create a more integrated, efficient, and preventive healthcare system, eventually improving patient outcomes and enhancing the sustainability of health services.

Further focus areas for integrating the proposed definition of One Health Management include the holistic management of foodborne diseases and geographical harmonisation. The management of foodborne diseases benefits greatly from a One Health approach by uniting food safety, veterinary sciences, and public health in preventative strategies across the food supply chain.⁵¹⁻⁵³ This integration reduces contamination risks, enhances monitoring, and ultimately improves consumer health outcomes. Additionally, geographical harmonisation of One Health policies across borders is crucial for managing transnational health challenges.⁵⁴ Aligning policies, standards, and data-sharing practices across sectors allows One Health Management to strengthen national health systems while fostering a cohesive global framework. This dual approach enhances resilience and collaboration, equipping countries to respond swiftly and effectively to complex, multifaceted health threats.

Finally, to enhance the integration of a One Health Management approach, it is essential to implement educational programs that foster collaboration among healthcare professionals, health managers, environmental scientists, veterinarians, policymakers, and community leaders. These programs should emphasise interdisciplinary training to ensure a comprehensive understanding of the interconnectedness of human, animal, and environmental health.⁵⁵ Developing curricula aimed at re-skilling and upskilling diverse professionals, focusing on green skills, digital competencies, and pandemic preparedness, is vital for supporting the transition to sustainable practices and a low-carbon economy.⁵⁶⁻⁵⁸ All stakeholders must advocate for policies that promote health and environmental wellbeing, including reducing air pollution, encouraging eco-friendly diets, minimising waste, and promoting sustainable lifestyle practices. These investments in education and training highlight the urgent need for strategic management that addresses the complex relationship between health and environmental challenges.⁵⁹⁻⁶¹

Ultimately, One Health Management offers a pathway to improve the sustainability of health systems by fostering collaboration, optimising resource use, and ensuring that all sectors contribute to tackling health challenges in a unified and efficient way.

Challenges and limitations of implementing One Health Management

Implementing the approach of One Health Management presents several key challenges and limitations. One of the primary barriers is the persistent institutional silos between human, animal, and environmental health sectors. These sectors often operate independently, with their own policies, funding structures, and priorities. Overcoming these silos requires a coordinated effort across government ministries, organisations, and other stakeholders.^{62,63}

Required diverse stakeholder engagement also poses a difficulty. For One Health Management to succeed, it requires long-term collaboration between diverse actors, such as including government agencies, NGOs, local communities, and the private sector. Sustaining this level of engagement can be difficult, particularly in regions where there is little tradition of cross-sectoral cooperation.^{11,63,14}

Another major challenge is resource allocation. Implementing One Health Management involves substantial investments in infrastructure, training, and policy alignment.^{64,54} In many low- and middle-income countries, this can be a significant obstacle, as limited funding and competing priorities often make it difficult to distribute resources equitably across sectors.^{63,65}

Furthermore, financial constraints can limit the ability of countries to fully implement this approach. In lower-income regions, the reliance on international funding may lead to sustainability issues, making it hard to maintain One Health Management in the long term.^{63,54} Additionally, countries all over the world often have to prioritise certain sectors over others, with human health frequently receiving more attention and resources than animal or environmental health.⁶⁶ This imbalance can hinder the holistic, cross-sectoral approach needed for effective One Health Management, further preventing long-term sustainability efforts⁶³

Finally, cultural and institutional resistance to change presents another hurdle. Shifting long-standing priorities, particularly where human health has traditionally been prioritised over animal and environmental health, will require significant advocacy, education, and policy reforms.^{63,67,14,10}

Conclusions

The proposed definition of **One Health Management** addresses gaps in the traditional One Health approach, acknowledging the need for structured leadership and improving cross-sectoral coordination. By integrating management principles, it enhances collaboration across human, animal, and environmental health sectors, ensuring a unified and strategic response to global health threats like zoonotic disease outbreaks, AMR, and climate change. This approach strengthens One Health Systems by optimising resources and promoting long-term resilience, leading to a more proactive and sustainable model for global health governance.⁶⁸

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