

One Health Criteria to support decision-making on antimicrobial resistance interventions

K. Aluzaitė* ^(1, 2, 3), M. Dione ⁽⁴⁾, D. Belay ⁽⁵⁾, J.V. Robotham ⁽³⁾, J. Guitian ⁽⁶⁾, D. Chan ⁽⁴⁾, E. Emes ⁽⁷⁾, Y.G. Endalew ⁽⁵⁾, P.J. White ^(2, 8), F. Ramponi ⁽⁹⁾ & G.M. Knight ⁽⁷⁾

(1) Centre for Health Economics, University of York, York YO10 5DD, United Kingdom

(2) Modelling and Economics Unit and National Institute for Health and Care Research Health Protection Research Unit in Modelling and Health Economics, Modelling Division, UK Health Security Agency, 61 Colindale Avenue, London NW9 5EQ, United Kingdom

(3) Healthcare-Associated Infections and Antimicrobial Resistance (HCAI & AMR) Modelling and Evaluation, AMR & HCAI Division, UK Health Security Agency, 61 Colindale Avenue, London NW9 5EQ, United Kingdom

(4) International Livestock Research Institute, c/o AfricaRice, Rue 18 Cité Mamelles, BP 24265 Ouakam, Dakar, Senegal

(5) Department of Food and Resource Economics, University of Copenhagen, Rolighedsvej 23, DK-1958 Frederiksberg C, Denmark

(6) World Organisation for Animal Health Collaborating Centre for Risk Analysis and Modelling, c/o Veterinary Epidemiology, Economics and Public Health Group, Department of Pathobiology and Population Sciences, Royal Veterinary College, Hawkshead Lane, North Mymms, Hatfield, Hertfordshire AL9 7TA, United Kingdom

(7) Antimicrobial Resistance Centre, Centre for Mathematical Modelling of Infectious Diseases, Department of Infectious Disease Epidemiology, Faculty of Epidemiology and Population Health, London School of Hygiene and Tropical Medicine, Keppel Street, London WC1E 7HT, United Kingdom

(8) School of Public Health, Imperial College London, 90 Wood Lane, London W12 0BZ, United Kingdom

(9) Department of Global Health and Population, Harvard T.H. Chan School of Public Health, Harvard University, 677 Huntington Avenue, Boston, MA 02115, United States of America

*Corresponding author: aluzaitekristina@gmail.com

Summary

A One Health approach is widely recognised as key in addressing antimicrobial resistance (AMR) and is increasingly reflected in national action plans and global strategies. However, there is limited practical guidance on how to integrate a One Health perspective into the prioritisation and evaluation of AMR interventions to support decision-making.

This article proposes a qualitative framework titled One Health Criteria to support decision-making on AMR interventions from a One Health perspective. It is based on assessment and characterisation of the setting where the intervention may be implemented, enabling early assessment of intervention impact according to outlined criteria (organised in themes and characteristics). It is a flexible, principle-based approach to guide AMR intervention planning and decision-making at all stages and levels, adaptable to diverse contexts. By enabling structured comparison of countries' One Health profiles, the framework also promotes transferability and cross-learning for AMR intervention prioritisation.

The authors identify three key themes that influence intervention success in a One Health perspective: i) ecosystem connectivity within and between sectors; ii) systemic societal factors, such as governance, policy and infrastructure; and iii) data availability to inform action.

While this thematic approach supports early prioritisation, it is not a substitute for detailed analyses or economic evaluations where data permit. The authors aim to provide a practical tool for researchers and policy-makers to enhance the design and selection of AMR interventions within a One Health perspective. Future research should focus on refining the proposed themes and characteristics and developing robust methods to monitor and evaluate them.

Keywords

Agriculture – AMR interventions – Antibiotics – Antimicrobial resistance – Environment – Human health – One Health – Prioritisation.

Required citation

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Introduction

Antimicrobial resistance (AMR) represents a critical and escalating threat to global health and the economy, with a rapidly increasing burden and concerning future projections [1,2]. It has been a central focus of multiple high-level national and international initiatives, including the 79th United Nations General Assembly High-Level Meeting on AMR. Given its inherently complex, dynamic and interconnected nature, AMR is widely recognised as a One Health challenge [3], necessitating 'an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals, and ecosystems', as defined by the One Health High-Level Expert Panel [4]. The importance of a One Health approach to AMR mitigation is reinforced by its inclusion in countries' national action plans (NAPs) and the establishment of the Quadripartite – comprising the Food and Agriculture Organization of the United Nations, the United Nations Environment Programme, the World Health Organization and the World Organisation for Animal Health – and other global governance structures [5,6]. There is growing recognition of the importance of coordinated, inter-sectoral action and the need for greater understanding and evidence on how AMR interventions within a single sector

can exert indirect yet consequential effects across other sectors, influencing both present and future AMR dynamics [7].

Consequently, there is increasing recognition of the need to adopt a One Health perspective when designing, evaluating and prioritising interventions and NAPs to combat AMR. Several approaches to evaluate AMR interventions from a One Health perspective have been explored, including explicitly considering inter-sectoral One Health effects in economic evaluation [8,9] and capturing inter-sectoral AMR costs [10]. However, further work is needed to establish unified principles, consistent definitions and standardised frameworks for evaluating individual interventions and designing comprehensive AMR NAPs.

A One Health approach extends beyond implementing multisectoral interventions; it requires the systematic evaluation of interventions in all sectors and the quantification of inter-sectoral effects where these may influence outcomes. This enables more comprehensive and context-specific assessments,¹ supporting the prioritisation of interventions that yield the greatest overall reduction in AMR burden. In contexts where inter-sectoral effects are unlikely to alter decisions, their consideration may not be necessary.

All health or non-health funding allocation decisions face resource constraints, along with associated opportunity costs, which refer to the value of the next best alternative intervention forgone to pursue a particular intervention. Decision-makers have to decide on the composition of intervention packages, how interventions should be prioritised, the geographical distribution of their allocation, equity considerations and other elements [11]. The relevant considerations will vary by decision-maker, governance level and contextual setting. Considerations of feasibility and other aspects of implementation may be central to some of these decisions, as they may affect the costs, efficacy and breadth of coverage of the interventions. Gaps in breadth of coverage may reduce the overall effectiveness of infectious disease interventions due to their transmissible nature [12].

1. Here 'context' refers to the broader set of political, economic, social and epidemiological factors that could shape decision-making processes and influence the outcomes of health interventions.

Intervention coverage and the potential need for system and infrastructure strengthening to improve the overall outcomes constitute a complex and active area of research [13-15]. In some cases, insufficient infrastructure (e.g. sewage) may also impact the underlying AMR burden and transmission (as well as the ability to intervene) [16,17].

Using a One Health approach in evaluation and prioritisation of AMR interventions will have additional analytical and normative challenges. The approaches and challenges associated with using an inter-sectoral perspective have been described widely in the literature and include agreeing on the perspective and outcomes of interest (i.e. which effects and costs should be captured across the sectors) in the economic evaluation of interventions and considering opportunity cost across the different sectors [8,18,19].

There are a range of tools (some developed for general AMR analysis, and others specifically for the One Health approach) available that can be used in developing and implementing intervention packages and NAPs. These tools include those designed to aid data gathering (for example, the Surveillance and Information Sharing Operational Tool [20]) and to aid with analyses (such as the World Health Organization Costing and Budgeting Tool for NAPs on AMR [21]) as well as tools outlining the overall areas of action for a comprehensive response [22]. Recent work by Noyes *et al.* [23] outlines an AMR intervention prioritisation framework focusing on biological efficacy (defined as the degree to which an intervention can reduce AMR, as determined by its underlying biological mechanisms or mode of action), feasibility, unintended consequences and cost of interventions, and lists a series of questions that could guide decision-making.

The current article advances this discussion by considering the pre-assessment of interventions and intervention packages, overviewing key challenges associated with evidence-driven decision-making within a One Health perspective and proposing a structured approach to characterising different settings.

One Health Criteria

The One Health Criteria framework offers a pragmatic and adaptable approach for the pre-assessment of AMR interventions through the systematic characterisation of the settings – i.e. the geographic, institutional and operational environments – in which they will be implemented. Grounded in One Health principles, the framework consists of a set of themes and characteristics to profile countries or settings, enabling early evaluation of interventions.

By focusing on setting characterisation, the framework helps:

- to assess whether the inter-sectoral effects would influence the overall effectiveness and overall cost-effectiveness of interventions, and whether they should be considered in impact assessment;
- to determine whether inter-sectoral action should be prioritised, based on broader criteria (including but not limited to effectiveness and cost-effectiveness);
- to help assess the feasibility of implementing interventions across different sectors in a given setting/context;
- to assess the availability and quality of data to support assessment and design, and how data limitations may affect evidence-based decision-making.

Methods of deriving the One Health Criteria framework

The key insights and themes underpinning the framework were developed through the Selecting Efficient Farm-level Antimicrobial Stewardship Interventions (SEFASI) consortium (see [Supplementary material](#)), supported by the Joint Programming Initiative on Antimicrobial Resistance (JPIAMR) initiative, and through a review of existing literature on One Health and implementation research. SEFASI brought together stakeholders from Denmark, England and Senegal, representing human, animal and environmental health sectors, in a series of inter-sectoral discussions and knowledge exchange hubs. These collaborative dialogues identified themes that were both evidence-informed and grounded in practice. Importantly, they highlighted that interventions effective in one context may be ineffective or impractical in another – underscoring the need for context-sensitive prioritisation of AMR interventions.

Generalisability

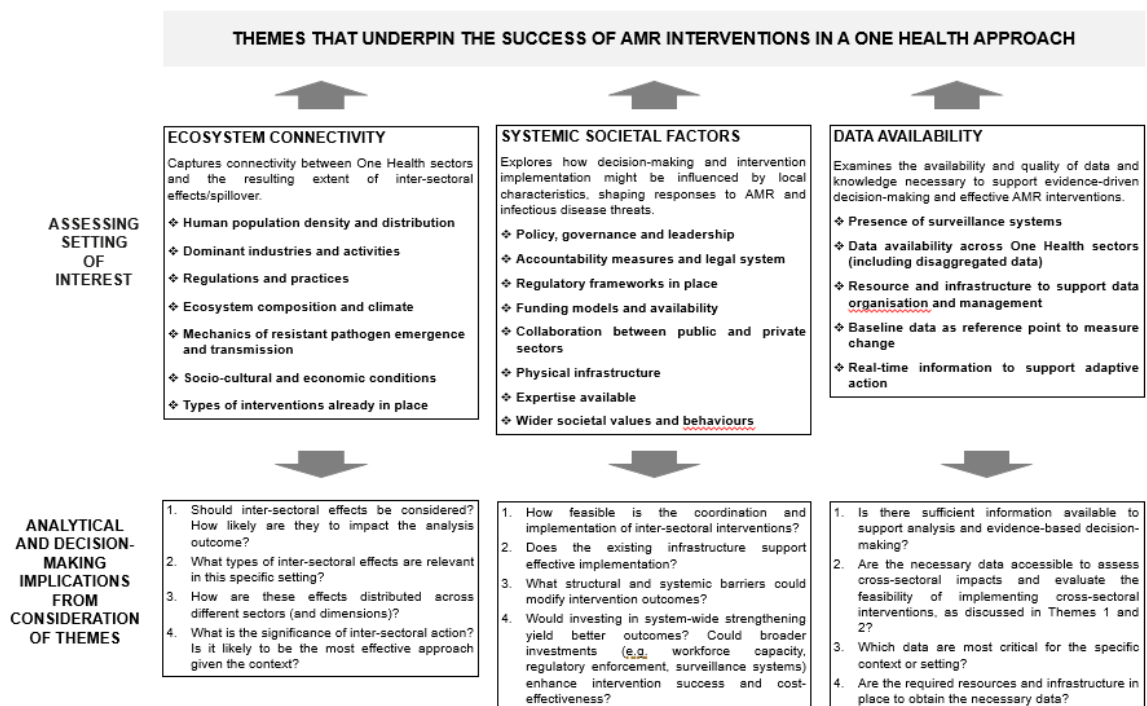
The framework is designed to support prioritisation and decision-making throughout various stages of AMR intervention development and implementation. It is adaptable to different settings and decision-making levels – local, national and regional. The framework is grounded in general principles that can be applied pragmatically at different levels of planning and execution, from initial prioritisation through to design, implementation, evaluation and scale-up of interventions to NAPs. Its components are intended to be adapted to context-specific needs, recognising that their relevance may shift depending on the intervention stage and setting.

The framework also offers a structured approach for comparing the likely impact of AMR interventions across settings, facilitating cross-context learning. It helps identify key factors influencing the transferability of successful interventions, assessing their potential effectiveness in different contexts. For example, countries can identify others with similar One Health profiles and adapt proven intervention strategies accordingly.

Themes and characteristics

The proposed One Health Criteria framework (Fig. 1) consists of multiple characteristics to consider structured under three themes.

- 1) **Ecosystem connectivity** influences the types and distribution of outcomes across One Health sectors (given an intervention) as well as corresponding methodological choices.
- 2) **Systemic societal factors** affect acceptability, adoption, feasibility, effects, cost, sustainability and possible breadth of coverage of interventions.
- 3) **Data availability** is essential for informing action by enabling quantification of intervention effects and other considerations (assuming evidence-based action).



AMR: antimicrobial resistance

Figure 1

One Health Criteria themes and characteristics that underpin the success of interventions in a One Health perspective and potential implications for analyses and decision-making

Theme 1: Ecosystem connectivity – importance of One Health approach

Ecosystem connectivity across One Health sectors determines the extent of inter-sectoral spillover from AMR interventions and, consequently, the need to quantify and account for these effects in evaluation and prioritisation [24]. Defined by the functional linkages among human, animal and environmental sectors, ecosystem connectivity reflects the dynamic interplay of biological, ecological and socio-economic factors. A deeper understanding of these dynamics can guide the design of more targeted AMR interventions and improve consideration of their scope, distribution and overall impact within a One Health approach.

To begin with, the connectivity between One Health sectors is influenced by factors such as dominant industries, population density and distribution, ecosystem composition, climate, and socio-economic and cultural conditions [16,25,26]. This connectivity is further shaped by pathogen characteristics, including resistance mechanisms and disease burden [1], as well as the type and volume of antimicrobial use across sectors. These factors collectively determine the dynamics of AMR emergence and transmission, influencing inter-sectoral pathways and consequences [27,28]. For instance, the relationship between antimicrobial use in food production and human AMR outcomes can vary depending on factors such as species (e.g. companion animals *versus* livestock or fruit *versus* rice), farm typology, regulatory environments, administration type and waste management practices [29]. Human antimicrobial use can also affect AMR selection in the environment and hence potential in animal systems [30]. Improving the understanding of each sector's relative contribution under varying conditions would support more targeted and effective interventions [31].

Additionally, the preferred types of interventions to address AMR will depend on dominant industries and activities – such as the type of agriculture (e.g. intensive farming *versus* subsistence) – that will influence inter-sectoral connectivity. The type and scale of agriculture, along with its proximity to human populations and environmental interfaces, will influence the extent of spillover between sectors. These factors shape both the contribution of specific sectors to resistance emergence and the transmission pathways through which resistance spreads, ultimately affecting the likely impact of interventions such as infection prevention control, water, sanitation and hygiene (WASH) and biosecurity measures [32-34]. In the case of antimicrobial stewardship policies for livestock, these policies' appeal and effectiveness will depend on the ability to implement

them without compromising animal health and productivity. This feasibility is influenced by the general health status of the animal population, the availability of complementary disease prevention measures (such as vaccination, biosecurity and management of infected animals), and the degree of connectivity with other sectors, which determines the risk and scale of resistance transmission.

Finally, it is important to consider the socio-cultural and economic factors that may contribute to connectivity and how this drives AMR emergence and transmission. For example, sharing homesteads with animals, using animals for medicinal purposes, and reliance on informal food markets are recognised pathways for transmission of AMR pathogens and genes as well as zoonotic diseases [35,36]. Although less studied, emerging evidence shows that bushmeat species, including great apes, can carry AMR bacteria, indicating a possible transmission route between humans, wildlife and the environment [37-39].

Theme 2: Systemic societal factors

The success of AMR interventions in reducing AMR burden will depend on the overarching societal factors that influence both the decisions surrounding these interventions and their implementation. These factors encompass a wide array of institutions, capabilities and infrastructure that directly influence the feasibility and effectiveness of interventions and intervention packages [40-42].

Regulation, governance and leadership

Governance and leadership at both national and subnational levels will play an important role in advancing AMR action. Progress may depend on the explicit recognition of the AMR challenge, the development of comprehensive NAPs and the allocation of sufficient funding to address the issue [43]. Although the absence of a well-developed AMR NAP does not necessarily impede action in this area, a comprehensive AMR NAP can serve as a valuable tool for motivating and coordinating efforts, particularly when adopting a One Health approach [44]. A crucial element that facilitates One Health action is the presence of collaboration between various departments, which may include established frameworks, working groups or platforms that enable decision-makers and stakeholders from different sectors to convene and collectively address AMR and related issues. An NAP formalises these collaborations and pushes a collective policy-driven target for the multisectoral issue of AMR.

Moreover, regulatory frameworks and systems play a crucial role in determining the feasibility of policy implementation. Antimicrobial stewardship policies, for example, are more effective when supported by robust access control mechanisms. Enforcing such controls, however, is difficult in settings where access to healthcare professionals and trained pharmacists is limited in human, animal and plant health sectors [45,46]. Many low- and middle-income countries also face the dual challenge of insufficient access to effective antimicrobials for patients in need alongside widespread illegal over-the-counter sales that undermine stewardship efforts [47]. The capacity to drive change further depends on the availability of enforcement tools, the degree of compliance within targeted systems, and the presence of accountability measures, which are often shaped by the national legal framework.

Funding of interventions

Another critical characteristic is a dedicated funding commitment to tackling AMR across sectors, such as a fully costed NAP. Many essential AMR interventions require substantial upfront investment, which is feasible only with dedicated funding. For example, establishing robust surveillance systems or implementing antimicrobial stewardship programmes often demands sector-specific financial support. A key implementation challenge is the absence of mechanisms for proportional allocation of resources across sectors, given that budgets are typically siloed. Proportional resourcing aligned with each sector's role and need would be crucial for effective cross-sectoral collaboration on AMR [48].

However, the absence of AMR-specific One Health funding does not preclude progress. Interventions with broader health benefits, such as improved WASH systems, biosecurity and vaccination programmes (of humans and livestock), can still have significant impacts on AMR [34,49,50]. Whether these interventions are prioritised will in part depend on how well their comprehensive effects – including impacts on AMR – are quantified and considered in decision-making. While not the only factor influencing funding decisions, this can play a significant supportive role.

Assessing AMR interventions through the lens of cost-effectiveness and affordability is critical for optimising resource allocation and minimising unintended health loss (i.e. health gains forgone due to suboptimal resource allocation) at the population level. A rigorous evaluation of opportunity cost – here referring to the health gains forgone by choosing one intervention over another – enables policy-makers to prioritise strategies

that maximise public health impact and ensure that scarce resources generate the highest returns [51]. Considering the inter-sectoral effects may improve the cost-effectiveness of some interventions. However, in some cases, the costs of an intervention may be borne by one sector while the benefits are realised in another, creating a misalignment between expenditure and impact. For example, restricting the use of antimicrobials for growth promotion in livestock can reduce the emergence of AMR but may also decrease animal productivity or increase disease incidence, with potential negative consequences for overall food security [9]. This illustrates the trade-offs that policy-makers need to consider when implementing interventions that span human and animal health. Doing so poses significant challenges, particularly in settings with multiple decision-makers and independently managed budgets [18,19,52]. Addressing these complexities requires careful consideration of opportunity costs and inter-sectoral trade-offs to ensure efficient resource allocation across sectors. Strengthening this dimension of economic analysis remains a key priority for advancing AMR policy and ensuring a more integrated, cross-sectoral approach to resource allocation.

Collaboration between public and private sectors

Effective collaboration between the public and private sectors is key for advancing One Health AMR interventions, particularly in areas such as antimicrobial use regulation and stewardship. The role of these partnerships varies across countries, reflecting differences in regulatory capacity, market structures and resource availability [53]. In the case of strong public-sector oversight, established regulatory frameworks often enable structured engagement with private industry. For instance, antibiotic use monitoring in livestock production, as seen in Denmark's VetStat system,² relies on extensive cooperation between government agencies, veterinary professionals and agricultural stakeholders [54]. The ability of public agencies to set targets, enforce standards and promote sustainable antimicrobial use practices is important to advancing AMR responses. The public sector supports these efforts by investing in education for healthcare providers, veterinarians and farmers; providing financial incentives such as

2. VetStat is the Danish Veterinary and Food Administration's veterinary register/database of authorised veterinarians, practices, veterinary advisory service contracts and consumption of veterinary medicines and coccidiostats.

subsidies for adherence to stewardship guidelines or for participation in monitoring programmes; and developing infrastructure – including diagnostic laboratories, supply chain systems and data reporting platforms – that facilitates compliance and strengthens enforcement capacity.

Infrastructure and expertise

The success of AMR interventions from a One Health perspective depends on the capacity to implement them in practice. Two main factors are critical: i) the availability of expertise and workforce to design and carry out interventions and ii) the presence of adequate infrastructure. Infrastructure is required for key functions such as transport (e.g. roads and vehicles), isolation (of patients in the health sector and animals in agriculture), surveillance (including equipment, reagents, data processing and skilled personnel), cleaning and decontamination, treatment and waste management [55,56]. Some gaps in infrastructure not only limit intervention capacity but also directly contribute to AMR. For instance, insufficient waste management infrastructure can lead to contamination of water sources and living environments for humans and animals, thereby increasing the AMR burden [16,57].

Wider societal values and behaviours

Finally, it is essential to consider the broader range of behaviours, perceptions, cultural norms and practices that shape societal functioning. For instance, ethnomedical beliefs influence how patients engage with healthcare systems and affect health outcomes [58]. These factors play a critical role in shaping the characteristics discussed above and must be carefully considered when prioritising and designing interventions.

Theme 3: Data availability

Challenges in data availability and surveillance

Limited high-quality data availability remains a major barrier to evidence-based AMR decision-making, particularly in the environmental sector [59,60]. In the SEFASI project, data on resistance levels and antibiotic concentrations in water and soil were scarce across all three study countries [61]. Surveillance in agriculture and the environment is often weak and hindered by commercial barriers, restricting access to critical information from farms, water sources and soil [62]. Siloed data systems further limit integrated surveillance, and while aggregate data can support cross-sector comparisons, fragmented systems prevent comprehensive analysis. Overcoming these challenges

requires coordinated efforts among public, private and international stakeholders, secure research environments and structured data-sharing platforms [63].

Reliable data are critical not only to assess the scale of AMR but also to quantify the costs and effects of interventions across sectors. A One Health approach requires integrated, cross-sectoral data to reflect impacts on human, animal and environmental health [8]. For instance, changes in antimicrobial use in animals not only affect animal health and productivity but also may lead to indirect consequences to human health. Without baseline knowledge, comprehensive One Health analyses and targeted action are constrained.

Considerable variation exists in data collection practices. Denmark, for example, uses farm-level data systems like VetStat [54] to support targeted interventions such as the yellow card scheme [64]. In contrast, Senegal lacks comparable systems, hindering the development of measurable indicators and limiting the scope of effective interventions.

Barriers to data access

Ethical, commercial and privacy concerns continue to restrict access to critical AMR data. For example, few data are available from commercial livestock farms, and even subnational data remain limited in many settings. Data sharing is further hampered by concerns over confidentiality and potential reputational or commercial risks, regulatory constraints such as the European Union's General Data Protection Regulation [65] and limited resources for data management. These barriers often necessitate reliance on national aggregates, restricting nuanced cross-sectoral analysis.

Equity considerations

Characteristics across the framework's themes are unevenly distributed among populations and contexts. Differences in factors such as ecosystem connectivity or sectoral capacity reflect structural and societal determinants that vary by geography, socio-economic status and other contextual variables. When such variations are considered unfair, avoidable or remediable, they constitute inequities. Although equity was not a primary focus of this framework, the One Health Criteria offer a systematic means to identify inequalities and their determinants, supporting consistent interpretation of which differences represent inequities based on explicit value judgements. For instance, limited AMR surveillance capacity in rural low- and middle-income countries may reveal a remediable inequity linked to resource distribution. By highlighting such

disparities, the framework can inform actions to enhance both fairness and effectiveness in AMR control.

Discussion

This article introduces the qualitative One Health Criteria framework to support the evaluation and prioritisation of AMR interventions by systematically assessing the characteristics of a country or setting of interest. The framework brings these characteristics together under three key themes: ecosystem connectivity, systemic societal factors and data availability – all critical for evidence-based decision-making and early-stage consideration of intervention options. At its core, the framework enables settings to advance prioritisation of interventions or intervention packages in a One Health approach by laying out the characteristics that need to be considered.

The One Health approach to decision-making necessitates a multidisciplinary perspective to addressing the complex intersections of human, animal, plant and environmental health. This involves quantifying inter-sectoral costs and effects of AMR interventions. Despite growing literature on One Health evaluation methodologies, there remains a lack of consensus on its implementation due to methodological complexities and the variability of decision contexts across countries and regions [8,10,23]. This article discusses insights from a multidisciplinary, multisectoral, multi-country SEFASI consortium and relevant literature to support prioritisation strategies within a One Health perspective.

Characterising settings or countries using the One Health Criteria before developing NAPs would allow nuanced discussions on intervention feasibility and outcomes, aiding prioritisation and design. In settings with limited capacity for detailed analyses, the proposed qualitative framework would provide practical guidance. It would also be valuable for international agencies and policy groups, such as the Quadripartite, in prioritising external support and investment. For instance, while Senegal demonstrates strong policy engagement, inadequate surveillance infrastructure hinders targeted interventions. By using the One Health Criteria, countries could be supported to find other countries with similar structures to foster knowledge sharing and support the design of NAP structures without the need for costly, multi-year studies. The criteria proposed here can assist policy-makers in comparing countries with similar performance across key characteristics, identifying intervention points and refining policy strategies.

Assessing AMR intervention feasibility using the One Health Criteria can identify opportunities to strengthen underlying systems, which in turn may enhance implementation, increase intervention coverage and reduce associated costs. While certain interventions may be constrained by infrastructure, expertise or coordination challenges, the proposed framework helps identify a spectrum of achievability, defined here as the extent to which an intervention can be feasibly implemented given local resources, capacities and coordination mechanisms. Higher achievability is expected to correlate with more favourable implementation outcomes, including adoption and sustainability. Further refinement of the framework, informed by interdisciplinary expertise, will be essential for its development and use, including specific approaches for characterising and measuring the outlined characteristics. This work is best undertaken by interdisciplinary teams with input from analysts and decision-makers.

Given the inherent heterogeneity across settings, further context-specific analyses (where available) will be necessary to guide decisions, as the impact of various characteristics on outcomes will differ by setting and intervention. The level of detail in the characteristics considered will depend on the framework's application scale (for example, national or subnational). The One Health Criteria framework, while not a substitute for comprehensive analyses, would offer a pragmatic solution in data-limited settings, helping policy-makers compare contexts and design targeted strategies. It provides a simple prioritisation approach where full analyses are infeasible due to data gaps or limited capacity.

Conclusions

This article proposes the One Health Criteria framework, consisting of three themes: ecosystem connectivity, systemic societal factors and data availability. By systematising the key themes and characteristics that underpin the success of AMR interventions, the authors hope to support countries and settings to have more structured discussions around the anticipated effects of AMR interventions, as well as their feasibility of implementation, to aid the consideration of the One Health approach in AMR decision-making and action.

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Critères « Une seule santé » en appui à la prise de décision sur les interventions à mener contre la résistance aux antimicrobiens

K. Aluzaitė, M. Dione, D. Belay, J.V. Robotham, J. Guitian, D. Chan, E. Emes, Y.G. Endalew, P.J. White, F. Ramponi & G.M. Knight

Résumé

L'approche « Une seule santé » est désormais reconnue comme étant essentielle pour faire face au problème de la résistance aux antimicrobiens (RAM) et à ce titre elle est de plus en plus présente dans les plans d'action nationaux et les stratégies mondiales en la matière.

Pourtant, les orientations pratiques d'aide à la décision pour intégrer une perspective « Une seule santé » dans la priorisation et l'évaluation des interventions contre la RAM restent limitées.

Cet article propose un cadre qualitatif intitulé “ Critères « Une seule santé » ”, destiné à étayer la prise de décision sur les interventions relatives à la RAM selon une approche « Une seule santé ». Fondé sur l'évaluation et la caractérisation précise du contexte où une intervention pourrait être mise en œuvre, ce cadre permet de réaliser une évaluation précoce de l'impact que pourraient avoir les interventions au regard d'un certain nombre de critères définis (organisés par thèmes et caractéristiques). Il s'agit d'une méthode souple, fondée sur des principes, apportant des orientations pour la planification et la prise de décision en matière de RAM à tous les stades et niveaux, et adaptable à des contextes variés. En facilitant la comparaison structurée des profils nationaux « Une seule santé », le cadre favorise également la transférabilité entre pays et l'apprentissage mutuel en vue d'une priorisation des interventions dans le domaine de la RAM.

Les auteurs font ressortir trois thèmes clés influençant le succès des interventions dans une perspective « Une seule santé » : i) la connectivité des écosystèmes au sein de chaque secteur et entre secteurs ; ii) les facteurs sociétaux systémiques tels que la gouvernance, les politiques et les infrastructures ; et iii) la disponibilité des données nécessaires à l'éclairage des décisions sur les actions à mener.

Bien que cette approche thématique contribue à l'établissement précoce des priorités, elle ne remplace pas les analyses détaillées ou les évaluations économiques qui pourraient être réalisées lorsque les données le permettent. Les auteurs visent à fournir aux chercheurs et aux décideurs politiques un outil pratique pour améliorer la conception et le choix des interventions contre la RAM dans une perspective « Une seule santé ». Il serait souhaitable que les recherches futures affinent les thèmes et les caractéristiques proposés et élaborent des méthodes robustes pour leur suivi et évaluation.

Mots-clés

Agriculture – Antibiotiques – Environnement – Interventions relatives à la RAM – Priorisation – Résistance aux antimicrobiens – Santé humaine – Une seule santé.

Criterios de «Una sola salud» para apoyar la toma de decisiones en materia de intervenciones contra la resistencia a los antimicrobianos

K. Aluzaité, M. Dione, D. Belay, J.V. Robotham, J. Guitian, D. Chan, E. Emes, Y.G. Endalew, P.J. White, F. Ramponi & G.M. Knight

Resumen

A pesar de que el enfoque «Una sola salud» generalmente se reconoce como clave para abordar la resistencia a los antimicrobianos (RAM) y cada vez está más presente en los planes de acción nacionales y las estrategias mundiales, la orientación práctica de la integración del enfoque «Una sola salud» en la priorización y evaluación de las intervenciones contra la RAM para facilitar la toma de decisiones sigue siendo limitada.

Este artículo propone un marco cualitativo titulado “Criterios de «Una sola salud»” para apoyar la toma de decisiones en materia de intervenciones contra la RAM desde una perspectiva «Una sola salud». Se basa en la evaluación y caracterización del contexto en el que se pondrá en práctica la intervención, lo que permite una evaluación precoz del impacto de la misma según criterios establecidos (organizados por temas y características). Se trata de un enfoque flexible y basado en principios para orientar la planificación y la toma de decisiones en materia de intervenciones contra la RAM en todas las etapas y niveles, adaptable a distintos contextos. El marco permite realizar una comparación estructurada de los perfiles «Una sola salud» de los diferentes países, promoviendo la transferibilidad y el aprendizaje transversal para la priorización de las intervenciones contra la RAM.

Los autores identifican tres temas clave que influyen en el éxito de las intervenciones desde una perspectiva «Una sola salud»: i) la conectividad del ecosistema dentro y entre los sectores; ii) los factores sociales sistémicos, como la gobernanza, las políticas y las infraestructuras, y iii) la disponibilidad de datos para orientar las medidas.

Si bien este enfoque temático facilita la priorización precoz, no reemplaza ni los análisis detallados ni las evaluaciones económicas cuando los datos permitan realizarlos. Los autores buscan proporcionar una herramienta práctica que permita a investigadores y responsables políticos mejorar el diseño y la selección de las intervenciones contra la RAM desde una perspectiva «Una sola salud».

Las investigaciones futuras deberán centrarse en el perfeccionamiento de los temas y características propuestos y la elaboración de métodos sólidos para su seguimiento y evaluación.

Palabras clave

Agricultura – Antibióticos – Intervenciones contra la RAM – Medio ambiente – Priorización – Resistencia a los antimicrobianos – Salud humana – Una sola salud.

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Supplementary material

1. Selecting Efficient Farm-level Antimicrobial Stewardship Interventions consortium

The Selecting Efficient Farm-level Antimicrobial Stewardship Interventions (SEFASI) consortium examined the human and animal health impacts and costs of interventions across England, Senegal and Denmark, employing stakeholder elicitation and health economic modelling. This work underscored the heterogeneity of contexts and decision challenges that shape intervention costs and effects within a One Health framework. It also highlighted implementation feasibility issues and the varying significance of cross-sectoral intervention effects, given the interconnectedness of ecosystems. Additionally, substantial evidentiary gaps and difficulties in collating and comparing data across countries posed challenges for prioritising interventions. SEFASI's collaborative design exemplifies the One Health approach, integrating expertise across sectors to address these complexities.

Project website: <https://www.lshtm.ac.uk/research/centres-projects-groups/sefasi>

2. Glossary

- BREADTH OF COVERAGE refers to the proportion of the population, while depth of coverage refers to what types of interventions are covered.
- CONTEXT is the broader set of political, economic, social and epidemiological factors that shape decisions and influence outcomes.
- ENVIRONMENT *VERSUS* ECOSYSTEM. In the One Health approach, the environment refers to the external physical, chemical and biological conditions that influence the health of humans, animals and plants. Environment may be built or natural. An ecosystem, by contrast, includes not only these environmental components but also the complex and dynamic interactions among living organisms (including humans, animals and microbes) and their surroundings. While the environment sets the stage, the ecosystem captures the interdependent relationships that drive health outcomes. In this article, the authors acknowledge the value of ecosystem-based thinking as foundational to the One Health approach. At the same time, it is common to structure the discussion about antimicrobial resistance (AMR) action around three key sectors of action – human health, animal health and environmental health – recognising their interconnected yet distinct contributions to addressing shared AMR health challenges.

- **INTER-SECTORAL EFFECTS** are outcomes in one sector that are influenced by actions or interventions implemented in another sector. These effects reflect the indirect or spillover impacts that cross sectoral boundaries – for example, how implementation of antibiotic stewardship in veterinary medicine may reduce AMR in human populations (health sector).
- **MULTISECTORAL EFFECTS.** While some literature defines these as outcomes resulting from coordinated actions across multiple sectors, this article uses the term more broadly to refer to effects that span multiple sectors, regardless of whether the intervention itself is multisectoral. This contrasts with inter-sectoral effects, which typically describe the impact of an intervention in one sector on outcomes in another.
- **ONE HEALTH** is an integrated approach that recognises the interdependence of human, animal and environmental health in the development and implementation of health interventions.
- **PRIORITISATION** is the process of allocating limited resources to interventions or actions based on their relative importance, feasibility or expected impact.
- **SCOPE OF AMR ACTION.** This article does not focus on individual interventions, intervention packages or national action plans (NAPs); rather, its insights are intended to be broadly applicable across all these levels. The terms ‘interventions’, ‘intervention packages’ and ‘NAPs’ are used with some flexibility, reflecting the general applicability of the considerations presented throughout the article.
- **SECTOR.** In this article, the term ‘sector’ refers to One Health sectors: human health, animal health and environmental health.
- **SETTING** is the geographic, institutional and operational environment of interest. The ‘setting of interest’ specifies where the intervention is implemented or considered for implementation.
- **SUCCESS OF INTERVENTIONS.** In this article, this term is used to refer broadly to the extent to which an intervention achieves its intended objectives in an effective, efficient, equitable and sustainable manner. The term is applied flexibly and does not imply adherence to strict or predefined evaluation criteria.