Policy Brief

Data sharing. The main challenges regarding the sharing and use of health data between One Health sectors

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Summary

This policy brief proposes a strategic direction for strengthening data sharing within the One Health approach, based on the results of a survey of experts and relevant actors in the fields of human health, veterinary health, the environment, and digitalization. The central problem identified is the severe fragmentation of data systems, the lack of interoperability and common governance, which limits the ability of Romania and the European Union to prevent, detect and respond effectively to complex threats such as zoonoses, antimicrobial resistance, pollution, or social vulnerabilities.

The topic is of major importance both at European level, in the context of the implementation of the European Health Data Space, and at national level, where the lack of integrated databases and digital registers, for example those on disabilities, affects public policies and services for vulnerable groups.

The study highlights three key findings:

1. **Technical and semantic interoperability is the main operational constraint;**
2. **The absence of a clear and mandatory legal framework discourages inter-institutional collaboration;**
3. **Funding and institutional capacity are insufficient for sustainable initiatives;**

The general recommendation is to establish a national One Health framework that ensures

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strategic coordination and structured data exchange between sectors, in full alignment with European Union initiatives, supported by clear legislation, multi-annual funding, and investment in digital skills.

The One Health approach recognises the interdependence between human health, animal health and the environment, but its practical application depends critically on the ability to collect, integrate and analyse data from these areas. In Romania, as in many EU Member States, data systems remain fragmented, developed in separate institutional structures and governed by unharmonized legislative frameworks.[1]

This fragmentation limits the effectiveness of public policies, leads to reactive rather than preventive responses, and disproportionately affects vulnerable groups, such as children with disabilities or communities exposed to environmental risks. The impact is both social and health-related, as well as economic, through the inefficient use of resources and increased long-term costs.

The objective of this policy brief is to propose a coherent set of public policy recommendations for the period 2026–2028, based on data collected through a survey, resulting from discussions within the panel organized in the context of the BEHEALTH 2025 event, organized by Rohealth, the Health and Bioeconomy Cluster, supplemented by a questionnaire addressed to 1,685 respondents from fields of activity including: policy makers, health authorities, medical universities, and European organizations.

Context. Introducing the problem

At the European level, initiatives such as the European Health Data Space, the networks of the European Centre for Disease Prevention and Control and the European Food Safety Authority, as well as the quadripartite collaboration between the World Health Organization, the Food and Agriculture Organization of the United Nations, the World Organisation for Animal Health and the United Nations Environment Programme aim to facilitate data sharing for public health, research and innovation. However, most of these mechanisms are predominantly focused on human health, and the actual integration of veterinary and environmental data remains limited.[1]

In Romania, the situation is characterized by the lack of an integrated One Health national database, low interoperability between systems, and the absence of essential digital registers, such as those on disabilities or environmental exposures. Data are collected according to different standards, at varying frequencies, and with uneven levels of quality, making cross-sectional analysis difficult.[1]

The legislative framework is perceived as fragmented and ambiguous, particularly with regard to the interpretation of the General Data Protection Regulation[2] and the sharing of information between ministries such as the Ministry of Health, the Ministry of the Environment, and the Ministry of Agriculture. This legal uncertainty generates institutional caution and limits collaboration. In addition, many digitization initiatives depend on

temporary projects, without multiannual funding or permanent governance structures.

The survey results confirm these challenges and show that the coronavirus pandemic has amplified the consequences of the lack of interoperability: slow reporting, difficulties in identifying vulnerable groups, and the inability to correlate clinical data with environmental or agricultural factors.[1] The overall conclusion is that without structural reform of data governance, One Health remains a theoretical concept rather than an operational tool.

Review and interpretation of results

Analysis of the responses indicates wide consensus that the central problem is not a lack of data, but the inability of existing systems to communicate with each other. Semantic and technical incompatibility, for example between health information exchange standards and geospatial or unstructured data, prevents the correlation of health information with environmental factors, antibiotic use in agriculture, or social data.

This situation directly affects the health system by delaying risk detection and leading to reactive policies. For example, antimicrobial resistance is predominantly treated at the clinical level, without integrating data on antibiotic use in the veterinary sector or on residues in wastewater. Similarly, air pollution is not systematically correlated with respiratory disease outbreaks.[1]

The experience of other EU Member States shows that effective solutions are based on connecting existing data systems, not on creating fully centralized databases. Data can remain at the level of the institutions that manage it, while being accessible through standardized mechanisms and clear coordination rules.[1]

This approach helps build trust between institutions and meet data protection requirements. The main obstacles to implementation in Romania are the lack of a clear legal mandate for collaboration, the shortage of digital skills, and the absence of stable funding.[1] Without investment in human resources and permanent coordination structures, any technical platform risks becoming dysfunctional.

The results suggest that solutions must be integrated and simultaneously include technology, legislation, governance, and organizational culture. Only a coordinated approach to these elements can transform One Health data into a real tool for prevention, planning, and evaluation of public policies.

Implications and public policy recommendations

The implementation of an integrated One Health framework would have significant positive effects, such as early detection of risks, reduction of long-term costs, formulation of evidence-based public policies, and better protection of vulnerable groups. It would also strengthen Romania's position in European initiatives and facilitate access to international funding and partnerships.

It is recommended to strengthen the legislative framework by adopting national legislation mandating the exchange of One Health data, aligned with the European Strategy for the European Health Data Space and the objectives of the European Health Program, clarifying the use of personal and non-personal data in the public interest.

It is necessary to create a national data space based on the interconnection of existing databases, using common standards, application programming interfaces, and principles of accessibility, reuse, and interoperability, without mandatory centralization of information.

It is also recommended that common platforms be developed for monitoring antibiotic resistance, zoonotic diseases, and environmental risks, directly linked to European public health and food safety networks, to enable rapid and coordinated responses.

Last but not least, investments in capacity and governance are needed, through the establishment of a permanent One Health coordination structure, supported by multiannual funding and training programs in interoperability, data analysis, and digital governance.

Conclusions

This policy brief shows that the lack of interoperability and common governance for One Health data represents a major risk to public health, the sustainability of the health system, and the development of the bioeconomy. The data collected through the questionnaire confirms that the problem is systemic and recurrent, but also highlights the existence of a common vision for solutions.

Action is urgent: without structural reforms, Romania will continue to respond reactively to crises, with high social and economic costs. Implementing the proposed recommendations would enable a shift from fragmented interventions to preventive, integrated, and evidence-based policies.

The adoption of an interoperable One Health framework, supported by clear legislation, stable funding, and institutional capacity, can generate long-term benefits for the health system, environmental protection, and the competitiveness of the bioeconomy.

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