

Moving towards a One Health surveillance system for antibiotic resistance in Vietnam

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Executive summary

Antibiotic resistance (ABR) is a global health threat that calls for the implementation of an inter-disciplinary and inter-sectoral surveillance system, in line with the One Health (OH) concept. The international community is strongly advocating the implementation of OH surveillance system for ABR at country level. In this context, the Vietnamese authorities have developed an inter-ministerial strategy (2013) to combat the phenomenon, including a surveillance system for ABR, that targets hospitals, community, food-producing animals and retailed food. However, those in charge of surveillance tasks are having trouble implementing the inter-sectoral and inter-disciplinary collaborations promoted at policy level. To elucidate the rationale behind success or unsuccessful collaborations and in order to suggest solutions to overcome identified obstacles, we interviewed all categories of actors involved in the national strategy. We have identified seven factors that may impede the development of the collaborations required by the OH approach: the current governance and operational framework, a divergent institutional culture, the level of knowledge, technical capacities, availability of resources, conflicting commercial interests and the international partners' influence. To overcome these barriers, we propose a new model for the governance of ABR surveillance that may open the way to a more effective and sustainable OH surveillance system in Vietnam.

In Vietnam, the Government recognizes that antibiotic resistance (ABR) represents a multi-dimensional risk that threatens public health, trade, economy and, more generally, the over-all sustainable development of the country. While the real health and economic impact remains unknown, many studies show that ABR in the human and animal sectors is very high. Supported by international organizations and cooperation, the Vietnamese authorities have developed an inter-ministerial strategy to combat the phenomenon, including a systemic surveillance system for ABR and antibiotic usage (ABU). However, operational stakeholders report difficulties in implementing the required collaboration.

In partnerships with the National Institute of Veterinary Research and the Faculty of Political and Social Sciences of the National University of Agriculture, CIRAD has conducted a research project to investigate the role and perception of stakeholders involved by the Vietnamese strategy for ABR surveillance. This study aims to identify, through key surveillance actors,

the factors that influence collaboration across sectors and disciplines, and barriers to their implementation. Based on the situation analysis, some recommendations are made towards the development of a new governance model for ABR surveillance in Vietnam.

Antibiotic resistance surveillance: the need for a One Health approach

ABR is a global health issue: if the situation remains unchanged, estimates show that 10 millions people will die every year due to ABR. Resistant bacteria exist in humans, animals, food and the environment, and there are no barriers to the transmission of resistance genes across bacterial species and domains. Bacteria can be naturally resistant; however, exposure to antibiotics is the main driver for the emergence and spread of resistance genes. Surveillance systems for ABR should monitor resistance and antibiotic consumption in the human, animal and environmental domains. Those data must then be jointly analysed and interpreted

to fully understand the complex epidemiology of ABR and to support decision-makers in developing appropriate risk mitigation measures. Such systems involve various governmental authorities working at different scales, as well as private stakeholders. They may have divergent interests, different surveillance objectives and non-standardised methods for data collection. This complex multi-actors' network emphasizes the need for a systemic approach, in line with the OH concept which promotes collaborative efforts across sectors and disciplines to achieve optimal health for humans, animals and ecosystems.

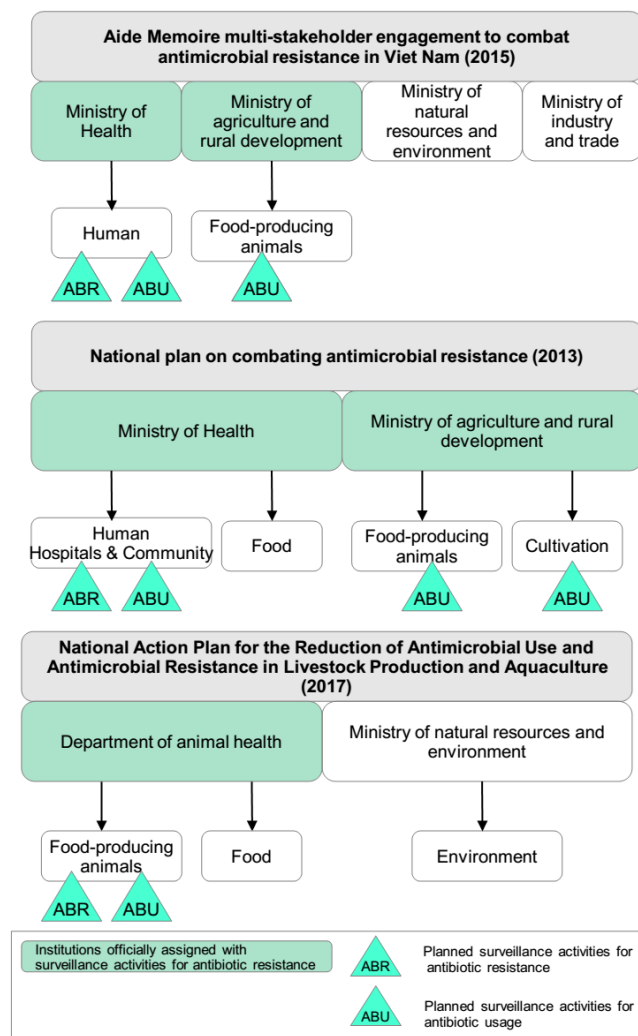
Strong advocacy from the international community to develop One Health surveillance system for ABR

The international community is strongly advocating the implementation of OH surveillance systems for ABR at country level. The World Health Organisation has issued a Global Action Plan on Antimicrobial resistance, in collaboration with the World Organisation of Animal health (OIE) and the Food and Agriculture Organisation (FAO). This action plan calls for the strengthening of knowledge through surveillance and research. A guideline on Integrated Surveillance of Antimicrobial Resistance has been issued by the WHO advisory group (AGISAR). These guidelines provide the basic information for countries to establish an integrated surveillance of ABR, including ABU, in humans, food-producing animals and retailed food.

A challenging operationalisation of the One Health strategy for ABR surveillance

The Vietnamese authorities have developed an inter-ministerial strategy to combat ABR, including a multi-sectoral surveillance system, targeting hospitals, community, food-producing animals and retailed food. Policy and legal instruments have been issued, underlining the strong commitment of the government to combat ABR in a collaborative manner.

Sectoral surveillance components are now implemented, or are about to be, in the main domains. The technical departments in charge of surveillance activities are working on operationalising the global and collaborative system promoted at policy level. However, these actors recognise the difficulties of acting beyond the sectoral boundaries. Although some cross-sectoral and multi-disciplinary initiatives are actually underway, the organisation of the national surveillance system remains highly silo-oriented.



The strategic framework for the surveillance of antibiotic resistance in Vietnam (September 2017)

The Vietnamese government has promulgated an Aide Memoire to underlay the inter-ministerial commitment to fight against antibiotic resistance. In addition, two national action plans have been issued and frame the One Health surveillance system for antibiotic resistance. These action plans have assigned surveillance activities for resistance and antibiotics usage to ministerial departments.

Seven factors that influence the operationalization of collaboration among ABR surveillance system actors

In order to understand factors that hamper or favour inter-sectoral and inter-disciplinary collaborations, we conducted a structural and social analysis of actors' position regarding the multi-ministerial surveillance strategy for ABR in Vietnam.

Participatory interviews were conducted with different categories of actors: governmental authorities (animal health, public health, environment, food safety), national research institutes (public health, veterinary public health, food safety), governmental and non-governmental international partners.

Based on the participants' perspective, we identified seven factors that might explain the difficulties faced by actors attempting to implement the collaborative strategy.

- Governance and operational model for the OH strategy: The Ministry of Health is in charge of the implementation of the inter-ministerial action plan, while it has no authority over other ministries. The National Steering Committee appointed to follow up on the implementation of the action plan is dedicated to strategic discussions only and does not provide an appropriate framework for technical collaborations among operational actors.
- Institutional culture: Actors report the co-existence of divergent cultures and competing agendas across departments, belonging to the same or to different ministries. This leads to little sense of mutual understanding and a lack of common goals for surveillance activities.
- Level of knowledge: Some actors admit that they do not perceive the added value of collaborating across sectors or have not identified relevant areas of collaborations for surveillance activities. This is explained by a lack of knowledge on (i) the complex epidemiology of ABR, (ii) the functioning of a OH surveillance system, (iii) the national strategy.
- Technical capacities: The priority remains the establishment or the strengthening of sectoral surveillance components, which is considered as a pre-requisite to the implementation of cross-sectoral and international collaborations for most of the sectors. In some sectors, actors consider that there is no interest in sharing the data they are currently collecting due to their poor quality.
- Resources: Stakeholders deplore the lack of resources dedicated to sectoral surveillance activities and even more dramatically to the implementation of the inter-institutional actions as envisaged in the national strategy.
- Conflicting commercial interests: Some actors fear that the revenue represented by antibiotic sales might hamper the private sector's adhesion to the surveillance strategy.
- International partners' influence: Support from inter-governmental organisations and donors usually targets a single domain and does not allow the implementation of activities at the interface of several sectors; this approach in turn influences the financial support of the government for one domain to the detriment of another, according to some actors.

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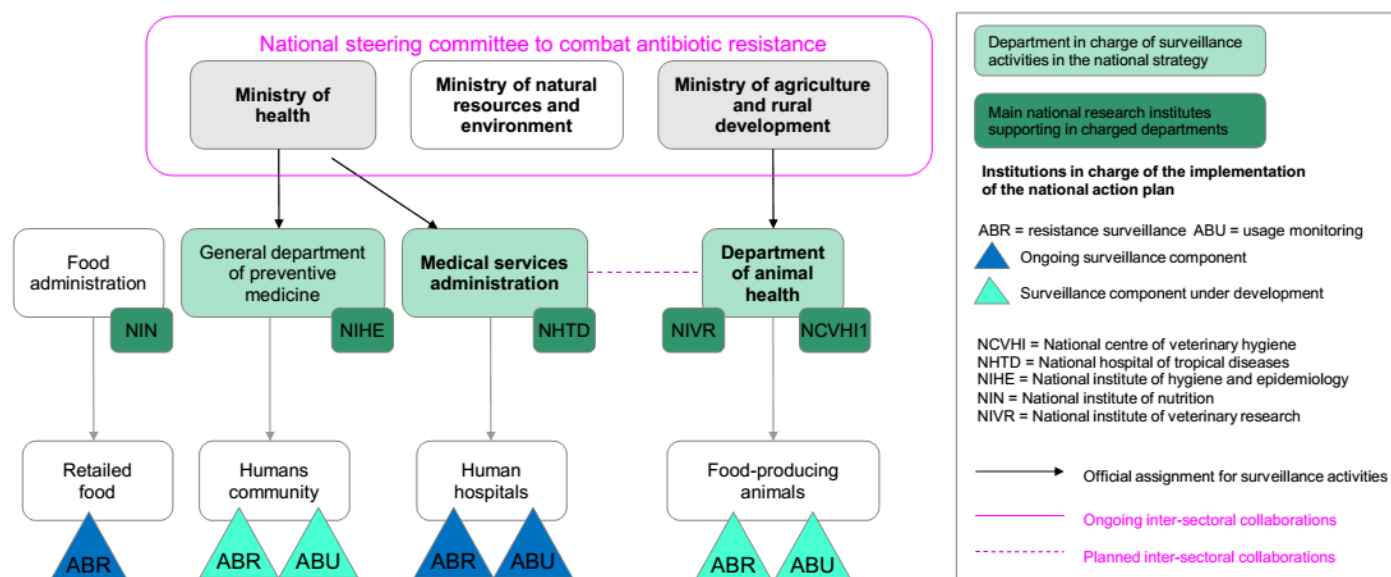
A new model for governance of the ABR surveillance should be considered in Vietnam. Actions must be taken to improve **mutual understanding and trust among actors** and to provide an appropriate **framework to operationalise relevant collaboration**. The development of new collaborative practices for ABR surveillance, accepted and applied by all actors, could help to initiate a "community of practices" for a sustainable OH surveillance system.

- The National Steering Committee should be chaired at the Prime Ministry level to ease the implementation of the national action plan and to ensure synergies across ministerial strategies.
- A regulatory framework should be defined accordingly to clearly state the role and responsibilities for all stakeholders (authorities, national reference laboratories, national research institutes, private sector) in the implementation of the strategy.
- Financial mechanisms should be approved at a high policy level to ensure the allocation of appropriate resources to surveillance activities, including those requiring inter-sectoral collaborations.
- A scientific and technical platform should be established to operationalise collaborations and to advise policy makers on the national surveillance system, based on the following missions:
 - supporting exchanges across sectors and disciplines, and between academia and policy-makers,
 - identifying areas where collaborations would be useful to improve the integrated surveillance of ABR (e.g. establishment of common indicators, harmonisation of laboratory testing and reporting methods, data sharing protocols, etc),
 - providing scientific evidence and technical assistance to the government for the conception of the surveillance protocols and for the inter-sectoral interpretation of the data,
 - conducting technical and economic evaluations of the surveillance system.

The implementation of these recommendations would be facilitated with the support of the One Health tripartite partnership between FAO, OIE,

and WHO. At the regional level, guidelines for One Health surveillance could be developed to help countries to establish appropriate governance models and to identify the necessary technical collaborations across sectors, depending on their national surveillance context.

The success of a One Health surveillance system relies on the commitment of all stakeholders; this can only be achieved through (i) the development of mutual understanding and trust among actors, (ii) provision of an appropriate governance and operational framework to support collaboration.



Organisation of the national surveillance system for antibiotic resistance in Vietnam (September 2017)

Surveillance components are implemented, or about to be, in the main domains (retailed food, hospitals, community, food-producing animals). They are supervised by Departments officially appointed by the Government within each Ministry. Despite a strong political willingness to develop a global approach to surveillance, the organisation is highly silo-oriented.

Further readings

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policy brief

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