POLICY BRIEF

EUROPEAN ANTIMICROBIAL RESISTANCE SURVEILLANCE NETWORK IN VETERINARY MEDICINE (EARS-VET)

EU-JAMRAI
Joint Action on Antimicrobial Resistance and Healthcare-Associated Infections

Co-funded by
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European Antimicrobial Resistance Surveillance network in Veterinary medicine (EARS-Vet)

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CONTEXT AND RATIONALE BEHIND EARS-VET

Antimicrobial resistance (AMR) should be tackled through a One Health approach, as stated in the EU One Health Action Plan.

In the human sector, the ECDC monitors AMR in invasive bacteria from hospitalised patients (European Antimicrobial Resistance Surveillance Network, EARS-Net) and in Salmonella spp. and Campylobacter spp. (European Food- and Waterborne Diseases and Zoonoses Network, FWD-Net). In the animal sector, the EFSA coordinates an active monitoring of AMR in commensal and zoonotic bacteria from healthy food-producing animals at slaughter and food thereof, according to Directive 2003/99/CE of the European Parliament and the Council and the Commission Implementing the Decision 2013/652/EU. Since 2011, EU agencies deliver their findings in joint inter-agency antimicrobial consumption and resistance analysis (JIACRA) reports. The JIACRA II report concluded that monitoring of AMR should also include animal pathogens.

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While the EFSA monitoring provides valuable insights into the potential for AMR spread to humans through the food chain, it also has limitations: i) it does not inform on AMR occurrence in specific animal pathogens; this information is needed to rationalize antimicrobial use and improve antimicrobial stewardship in the veterinary sector, ii) it focuses exclusively on foodborne AMR transmission, while AMR transmission from animals to humans can occur via multiple other routes and iii) it targets healthy animals that have either never been treated with an antimicrobial, or been treated a long time before sampling for AMR testing, thereby limiting the sensitivity of the surveillance system, i.e. its ability to detect AMR, and the possibility to study direct associations between AMR and antimicrobial consumption. **Hence, an important gap that remains is a European coordinated programme on surveillance of AMR in bacterial pathogens of animals, i.e. in diseased animals.**

There is currently no EU regulation on AMR surveillance in bacterial pathogens of animals. However, the EU Regulation 2016/429 (Animal Health Law) opens for the possibility to regulate AMR surveillance in veterinary medicine. As a first step in this direction, EFSA received a mandate from the European Commission to provide, by March 2022, "a scientific opinion for the listing and categorisation of transmissible animal diseases caused by bacteria resistant to antimicrobials" (excluding those already covered by Directive 2003/99/CE). However, the way surveillance should be implemented is not part of this mandate.

Of note, a number of EU countries (at least 11) already have a national surveillance system of AMR in bacterial pathogens of animals. However, these systems are fragmented, do not all monitor the same animal species, bacterial species and antimicrobials, and do not all use the same methodologies and interpretative criteria. In addition, other countries are currently developing their surveillance system, without European guidance. **There is an urgent need for a harmonized and coordinated approach for AMR surveillance in bacterial pathogens of animals across Europe.**

Hence, time has come to build the European Antimicrobial Resistance Surveillance network in Veterinary medicine (EARS-Vet), which should be set up and designed so that it can complement and integrate with existing ECDC and EFSA monitoring systems. EARS-Vet would represent a major step towards a stronger and truly One-Health strategy for surveillance of AMR, interlinked with the monitoring of antimicrobial consumption in Europe.

This conclusion, as well as the following technical information, results from a collective agreement within a multidisciplinary group of 30 experts from 14 European countries in consultation with relevant EU bodies (ECDC, EFSA, EMA), built as part of the EU Joint Action on Antimicrobial Resistance and Healthcare-Associated Infections (EU-JAMRAI) 2018-2021 co-funded by the EU Health Programme.

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EARS-VET OBJECTIVES

EARS-Vet would be in charge of reporting on the current AMR situation, following AMR trends and detecting emerging AMR in bacterial pathogens of animals in Europe in order to:

i. Inform on AMR occurrence in specific animal pathogens;

ii. Contribute to the development of evidence-based guidelines for antimicrobial prescription in animals, thereby supporting antimicrobial stewardship in the veterinary sector;

iii. Investigate direct links between antimicrobial consumption and AMR in both animals and humans, by providing AMR data collected close to animal point-of-care; as such, EARS-Vet could complement the current pool of data covered by the JIACRA reports;

iv. Support risk assessment of human exposure to AMR from animal reservoirs via non-food related routes (e.g. direct contact with companion or food animals);

v. Provide timely information for policy makers and allow exploring the benefits of interventions at European level;

vi. Provide relevant information that could be of use to medicines agencies in the evaluation or revision of marketing authorisations;

vii. Contribute to estimate the burden of AMR in the animal sector.

EARS-VET DESIGN AND STANDARDS

EARS-Vet would operate as a network of national surveillance systems of AMR in diseased animals, similarly to EARS-Net in the human sector. All these national surveillance systems perform passive data collection, although a few countries complement their passive scheme with an active sampling. Using a bottom-up approach that takes into account what national surveillance systems currently monitor, as well as what EFSA and ECDC already cover, EU-JAMRAI partner countries agreed on a tentative EARS-Vet scope including 220 combinations of animal species - sample types - bacterial species - antimicrobials of interest and EARS-Vet standards for antimicrobials susceptibility testing.

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FUTURE STEPS TO BUILD EARS-VET

Building on EU-JAMRAI achievements, the next steps will consist in launching an EARS-Vet pilot phase where participating countries will start to share and jointly analyse their data, and finally produce a first EARS-Vet surveillance report. The level of representativeness and comparability of AMR data across national surveillance systems will also be assessed. Future EARS-Vet developments also include the integration of molecular (WGS) data for AMR bacterial clones and genes surveillance, as well as the inclusion of other AMR hazards of interest, such as those to be identified as priorities in the EFSA scientific opinion on the listing and categorisation of transmissible animal diseases caused by bacteria resistant to antimicrobials.

To achieve these next steps, and more generally to ensure the sustainability of EARS-Vet, strong political commitment from EU and national decision makers is needed. On the short term, we urge them i) to provide financial support to EARS-Vet, e.g. by funding an EARS-Vet pilot phase and ii) to provide political support to EARS-Vet, by encouraging Member States to promote surveillance of AMR in bacterial pathogens of animals in their country and to invite relevant national contact points to join the EARS-Vet initiative.

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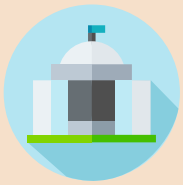

On the long-term, EARS-Vet could potentially be taken over by EU bodies (e.g. EFSA), should they receive the mandate to coordinate AMR surveillance in bacterial pathogens of animals (e.g. under the umbrella of the Animal Health Law). This would ensure the integration of EARS-Vet within the European landscape of AMR surveillance and related initiatives, and contribute to achieving a stronger One-Health surveillance of AMR in Europe.

Reference: This policy brief is based on the following publication: Mader Rodolphe et al. Building the European Antimicrobial Resistance Surveillance network in veterinary medicine (EARS-Vet). Euro Surveill. 2021;26(4):pii=2001359. https://doi.org/10.2807/1560-7917.ES.2021.26.4.2001359

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