

Health and antibiotics in Vietnamese pig production



Background

Vietnam's economy and population are growing rapidly. Production and consumption of animal products are increasing even faster. To manage pig diseases and increase meat production, farmers are turning to antibiotics and other antimicrobials, creating a hotbed for zoonotic diseases and resistance to antibiotic drugs.

The World Health Organization (WHO) regards antibiotic resistance as one of the most significant threats to human health because of diminished effectiveness of antibiotic treatments. Tainted food also threatens consumer trust and the long-term health of the pig industry.

At present much is unknown about the scale and drivers of the problem. Early sampling studies have found alarming rates of antibiotic use, resistance in pigs and drug residues in pork; but firm data is lacking. Even less is known about why antibiotics are used at farm level and how farmers perceive risks and benefits of antibiotic use; what kind of information they act on; or how information, regulation and stakeholder interaction could foster more prudent antibiotic use practices. However, it is clear that Vietnam needs effective, evidence-based intervention strategies tailored to local circumstances and stakeholders to reduce antibiotic use in its pig industry.

The health and antibiotics in Vietnamese pig production (VIDA-PIG) project will help fill these gaps by using the One Health approach for mapping the many drivers of antibiotics use and resistance across the Vietnamese pig value chain. It will collect baseline data, set up local stakeholder networks, garner insight into stakeholder knowledge and rationale, and do small-scale testing of a newly designed intervention.

The project is funded by the Danish Ministry of Foreign Affairs through the Strategic Sector Cooperation Facility and will be implemented from February 2018 to January 2020 in Bac Ninh province, 30 km northeast of Hanoi, Vietnam.

Objectives

The overall aim of the VIDA-PIG research collaboration project is to undertake research to identify and assess factors that influence veterinary health management and drug use practices at pig farms with a view of facilitating the establishment of prudent and science-based antimicrobial usage practices consistent with the One Health approach.

The project has the following specific objectives:

- Identify factors that influence veterinary health management and drug use practices at pig farms in Bac Ninh province.
- Review current guidelines for antimicrobial use.
- Assess contextual dimensions and networks that influence pig health management and antibiotic use.
- Establish quality and quantity of antibiotic drugs used in pig production.
- Strengthen local capacity in surveillance of antibiotic use, prevalence of antibiotic resistance and antibiotic residues in pigs and pork products.
- Strengthen local stakeholder interactions and communication channels to advance animal health, reduce the use of antibiotics and diminish the spread of antibiotic resistance and residues related to pig production.

Research methods

Randomized farm sampling will be stratified by herd size (number of pigs), production type (piglets; finishers, sows) and district. Questionnaires, open questions and on-farm observations will be used to collect data on pig health, biosecurity, timing and administration of antibiotic drugs and their intended purpose. A systems approach to animal disease surveillance will be considered.



Qualitative research methodologies will be employed to assess perceptions, rationales and practices of pig farmers and other stakeholders in terms of pig health management and antibiotic use. Participant observations will be used to follow farmers in their daily management of pigs and their interaction with peers and other stakeholders such as veterinarians. Informal dialogue will be used to add further insight. A question guide will be used to standardize interviews with farmers, veterinarians and other stakeholders, allowing project researchers to assess biomedical and local knowledge systems and specific health management-related practices. Focus group discussions will be used to collect data from larger groups of farmers and stakeholders, with a focus on identifying ways to improve pig health management.

Key partnerships

The project is coordinated by the University of Copenhagen in partnership with the National Institute of Veterinary Research, Vietnam (NIVR); the National Institute of Nutrition, Vietnam (NIN); and the International Livestock Research Institute (ILRI).

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Research packages

Work package 1: Pig health and health management practices

To identify and analyze all relevant actors that influence the prevalence of infectious disease in pigs and the application of various infectious disease control strategies

Work package 2: Veterinary drug use by pig farmers

To collect information and antibiotics and antibiotic use at individual farms, a level at which information is currently scarce

Work package 3: Antibiotic resistance in pigs and residues in pork products

To establish more solid evidence on the prevalence of antibiotic resistance at pig farms and antibiotic residues in marketed pork products

Work package 4: Effective interventions for improving pig health management

To design and test improved intervention strategies for reducing reliance of pig farmers on the use of antibiotics for disease management

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June 2019