

NPA BRIEFING



Date: May 2016
Contact: Zoe Davies
Telephone: 07814448956

NPA briefing note antibiotic use in pigs

Issue:

There has been a surge of interest in antimicrobial resistance and the use of antibiotics in farming, with the pig sector in particular coming under intense scrutiny.

Background:

- The discovery of antibiotics and their widespread availability revolutionised healthcare after WWII.
- Bacteria have always evolved to resist the new drugs that medicine invents to combat them – it is a natural phenomenon. However, there are a number of reasons why resistance has become more of a problem in recent years
 - the pace at which we are discovering new antibiotics has slowed drastically,
 - antibiotic use in general is rising,
 - antibiotics are not always used appropriately in human and veterinary medicine,
 - an increase in global travel and trade has contributed to the spread of resistant pathogens.
- It is feared that if the problem of antimicrobial resistance (AMR) is not tackled, there may come a time when antibiotics no longer work and healthcare returns to the dark ages. AMR is therefore on the National Risk Register and a priority issue for both human and veterinary medicine.
- The agricultural and veterinary industries are acutely aware that responsible use of antibiotics is vital to ensure AMR in animal pathogens doesn't become more of a problem in the future for human health and animal health and welfare.
- Bacterial infections may cause pain and discomfort to animals. The treatment of such infections is a requirement of both national and EU animal welfare legislation and all veterinarians are under oath to protect the welfare of the animals in their care.
- In the UK, all antibiotic use in animals is controlled through the veterinary profession and regulated by the Veterinary Medicines Directorate (VMD), an executive agency of Defra. All antibiotics are classified POM-V medicines, meaning they can only be prescribed by, and used as directed by, a veterinarian.
- A recent report published as part of the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project presented data on the sales of veterinary antimicrobials collected from 26 countries across Europe ^[1]. The data demonstrates that in comparison to other Member States, sales of antibiotics in the UK are not excessive. When livestock numbers are taken into account, the UK sits in the mid-range of antibiotic sales levels.

- To date, a number of important actions have been implemented by the European Commission to tackle AMR, e.g.
 - the use of antimicrobials for growth promotion in animals was banned in 2006,
 - a Directive was introduced to set out mandatory requirements for the surveillance of resistance in bacteria that can be transferred between animals and humans.
- Under EU legislation there exists an EU harmonised monitoring programme for evaluating antibiotic resistance in bacteria of relevance to human health, which have been isolated from healthy livestock animals. The results of this surveillance in the UK are published in the One Health Report ^[2].
- In the UK there is also passive surveillance of antibiotic resistance in bacteria that have been isolated from diseased animals. This acts as an “early warning system” for emerging patterns of AMR. This data is presented in the UK-VARSS Reports ^[3].
- The UK Government also launched a Five Year AMR Strategy in 2013 with the overall aim of slowing the development and spread of AMR through improved knowledge and understanding, conservation and stewardship of existing antibiotics, as well as stimulation of development of new treatments ^[4].
- In 2014, the UK Government commissioned Lord Jim O’Neill to conduct a Review on AMR. The final report “Tackling drug resistant infections globally” has been published ^[5], which outlines a series of recommendations including:
 - A global public awareness campaign,
 - Improve hygiene to prevent the spread of infection,
 - Reduce unnecessary use of antimicrobials in agriculture and their dissemination into the environment,
 - Improve global surveillance of antimicrobial drug resistance and consumption in humans and animals.
- The O’Neill report also listed some specific recommendations in relation to antibiotic use in agriculture, including:
 - 10 year targets to reduce unnecessary antibiotic use in agriculture,
 - Restrictions and/or bans on certain types of highly critical antibiotics.
- In the UK, sales of antibiotics for use in food-producing animals (in mg/PCU) have remained relatively stable between 2010 and 2014 ^[3].
- Penicillins and tetracyclines constitute the bulk of sales in the UK for use in food-producing animals. Sales of fluoroquinolones and 3rd/ 4th generation cephalosporins (both classed as critically important antibiotics for humans) are very low in the UK, representing just 0.9% of total sales combined ^[1].
- Veterinary medicines for livestock containing fluoroquinolones are available as in-water formulations but there are no in-feed formulations authorised. There are no veterinary medicines for livestock containing 3rd or 4th generation cephalosporins which are available as an in-feed or in-water formulation, meaning these antibiotics are only ever administered to individual animals.

• The accepted measure for comparison over time and between countries is the mg/PCU, which reflects the amount of antibiotic used per kilogram bodyweight of livestock (mg/kg) which were eligible for treatment during the year. This measure has been adopted throughout EU countries for comparisons of this kind.

Antibiotic Use in the British Pig Industry:

- Control of infection at the group level is often necessary to successfully manage disease problems in pig herds. This is achieved through administration of antibiotics in feed or water to groups of pigs, rather than treatment of individual pigs. However, where appropriate pigs can also be treated individually using injectable medication.
- Group treatment is known as “metaphylaxis”. Within a group there may be some animals showing symptoms of disease that require treatment; the remaining animals in the group will also be given antibiotics in case they are already infected and not yet showing signs, to prevent them becoming ill. As an example, in humans if a school child is diagnosed with bacterial meningitis, the other children in their class will be treated with antibiotics in case they have already been infected.
- When there is a known history of a certain bacteria affecting pigs on a unit, sometimes healthy animals will be treated with antibiotics against the bacteria to prevent them becoming ill. This is known as prophylactic, or preventative, medication.
- Antibiotics are typically incorporated at feed mills (under veterinary prescription only) to produce accurately formulated pre-mixes of medicated animal feed. Approximately 60% of total sales of antibiotics for food-producing animals in the UK are in this format ^[4].
- The British pig industry is proactive about tackling AMR. While veterinary antimicrobial *sales* data is available, until recently there was no system in place for accurately capturing data relating to their exact *usage* on farm. Many antibiotics are licensed for use in both pigs and poultry, so it is difficult to ascertain which species they have been used to treat. In recognition of this knowledge gap, AHDB Pork worked closely with Government to develop on an industry-wide system of electronically collecting usage data from pig units.
- The electronic medicine book (eMB-Pigs) was launched in May 2016 and enables pig producers to voluntarily record their antibiotic usage, monitor usage trends over time and benchmark against similar farms. AHDB Pork has a system in place by which anonymous, aggregated data can be shared with the VMD as and when national data is sought.
- 92% of pigs produced in the UK are from units that are members of Red Tractor Farm Assurance. A requirement of the assurance standards is that farmers must compile an annual report of total antibiotic usage, including medicated feed, and review this with their vet.
- Red Tractor units also have quarterly vet visits and monitor indicators of welfare through the Real Welfare scheme; these are important for understanding on farm health and welfare, targeting problem areas, improving management and ultimately reducing the requirement for medical intervention.
- In May 2016 NPA launched its **Pig Industry Antibiotic Stewardship Programme**, which includes six strands of activity:
 - Capture and collate antibiotic use data recorded on pig farms,
 - Benchmark each farm's antibiotic use against other farms of a similar type,
 - Extend education in effective disease control strategies,
 - Reduce antibiotic use, consistent with responsible human and food-animal medicine,
 - Promote veterinary prescribing principles ^[6] to strictly limit the use of antibiotics of critical importance to human health,
 - Appoint Stewardship Commissars who will continually review industry's use of antimicrobials and champion initiatives.
- Many of the recommendations made by the O'Neill Review on AMR are already incorporated in this stewardship programme. NPA is now working to ensure the programme progresses forward as quickly as possible.

- The Responsible Use of Medicines in Agriculture (RUMA) Alliance recently set up a Task Force ^[7] to look at how meaningful targets can be developed to replace, reduce and refine antibiotic use in UK agriculture. The task force will harness the expertise of specialists across different sectors and work proactively with the authorities to look at identifying effective, evidence-based goals that work for the UK livestock sectors and protect animal welfare.

NPA position:

- NPA supports a global holistic approach to tackling AMR, involving cooperation from human and veterinary medicine, agriculture, trade and environment sectors.
- NPA is a member of RUMA (Responsible Use of Medicines in Agriculture Alliance) and therefore is aligned with RUMA's view that responsible use of antimicrobials means using them "as little as possible and as much as necessary".
- NPA is of the opinion that antibiotics must not be used as a substitute for good farm management; rather they should be complementary to biosecurity, farm hygiene and appropriate vaccination programs.
- Routine preventive use of antibiotics in pigs should not be allowed as a replacement to the above measures. Nevertheless, preventive use should be allowed under precise and defined conditions and left to the judgement of the vet on the basis of their clinical and epidemiological knowledge.
- NPA accepts that the setting of evidence-based targets for the reduction of antibiotic use is likely to form part of the solution to address AMR on a global scale.
- The use of a number of critically important antibiotics (CIAs) for human health is already restricted as part of the Pig Veterinary Society prescribing principles. However, NPA is concerned that further unsubstantiated restriction of antibiotics available to the agricultural sector could lead to reliance on too few antibiotic classes and may increase the rate in which resistance could occur.
- NPA agrees with the opinion of NOAH, that the intensive versus extensive farming debate is not linked to antimicrobial resistance ^[8]. Animals can become infected with bacteria and require antimicrobial treatment regardless of the system in which they are kept.
- The pig industry strives to be transparent regarding its use of antibiotics and aims to demonstrate how these medicines are used responsibly within the pig sector. NPA advocates voluntary industry-led initiatives to minimise AMR use over dictatorial legislation.

References

^[1] Sales of veterinary antimicrobial agents in 26 EU/EEA countries in 2013 (EMA/387934/2015)

http://www.ema.europa.eu/docs/en_GB/document_library/Report/2015/10/MC500195687.pdf

^[2] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/447319/One_Health_Report_July2015.pdf

^[3] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/477788/Optimised_version_-_VARSS_Report_2014_Sales_Resistance_.pdf

^[4] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/244058/20130902_UK_5_year_AMR_strategy.pdf

^[5] Review on AMR final report "Tacking drug resistant infections globally" <http://amr-review.org/>

^[6] Pig Veterinary Society Prescribing Principles for Antimicrobials

<http://www.pigvetsoc.org.uk/files/document/558/1601%20PVS%20AntiB%20Prescribing%20Policy.pdf>

^[7] <http://www.ruma.org.uk/ruma-welcomes-oneill-findings-announcement-targets-task-force/>

^[8] <http://www.noah.co.uk/papers/NOAH%20briefing%20on%20antimicrobials%20in%20veterinary%20medicines%20July%202014%20PDF.pdf>

END