



Llywodraeth Cymru  
Welsh Government

# Antimicrobial Resistance in Animals and the Environment

Five Year Implementation Plan for Wales 2019-2024



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# Ministerial Foreword



## Lesley Griffiths

Minister for Environment,  
Energy and Rural Affairs.

I welcome the launch of this plan to address the threat of antimicrobial resistance (AMR) in animals and the environment in Wales. It lays out our proposals for a step change in how we deal with this major threat.

AMR is a global threat. I am committed to Wales playing its part in ensuring the efficacy of antibiotics for future generations, both here at home and throughout the world.

The development and spread of AMR is a complex problem. Addressing it requires a "One Health" approach encompassing human, animal and environmental health services. We have made a good start here in Wales. I recognise the great contribution made by vets and animal keepers who are working alongside human health professionals in this field. There is a lot more to be done however, and this plan sets out our priorities for the coming years.

Fighting AMR requires high standards of animal health, and adoption of the principle of prevention being better than cure. This approach is at the heart of the Wales Animal Health and Welfare Framework<sup>1</sup>. It helps ensure food safety, consumer confidence and profitable livestock businesses.

This plan will play an important role in our commitment to protect the health and welfare of future generations, who are dependent on health services that can effectively combat infections.

This plan sets out how we will play our full part in contributing to the UK Five Year AMR National Action Plan. We will play to our strengths, leading where we can and supporting others in areas where they take the lead.

Controlling the risk of AMR is not solely for Government. All those who keep or care for animals and manage our environment must play their part. We have made a good start to collaborative working on AMR in Wales and I look forward to this continuing and strengthening during the course of this Implementation Plan.

<sup>1</sup> gov.wales/animal-health-and-welfare-framework

# Executive summary



This Implementation Plan for Wales sets out the ways in which we intend to address the risks of the development and spread of AMR in animals and the environment. It aligns to the UK AMR Five Year National Action Plan and, through that, to international and global AMR control plans.

AMR poses an existential risk to modern society. Our health services for humans and animals are founded on the ability to successfully control bacterial infections, and AMR threatens that. Because antibiotic use is itself a driver for the development of AMR, we should do all we can to reduce the need to use antibiotics by preventing infectious disease in animals. It is also essential that, when antibiotics do have to be used, medicine selection and administration are to the highest standards, and treatment accompanied by review of how antibiotic use could be avoided in the future – moving to prevention rather than cure.

We also need to address the spread of AMR through environmental routes, in particular understanding how and where contamination of water occurs in order to prevent it happening.

This Implementation Plan includes goals and actions for animal and environmental aspects of AMR control in Wales. However, we understand the threat requires a ‘One Health’ approach, in which human medical, veterinary and environmental risks and control are addressed holistically. We will achieve this in Wales by close liaison with the Chief Medical Officer and the National Health Service. We will also encourage active participation of Public Health Wales and National Resources Wales in the delivery of this Implementation Plan.

We will establish an AMR Delivery Group for Animals and Environment to facilitate responsibility-sharing, provide expert advice and to drive the delivery of this plan.

## **Our major goals in the next 5 years (2019-2024) are to:**

- Significantly reduce the need to use antibiotics in farmed animals by raising the health status of herds and flocks, applying the principle of “prevention better than cure” through animal health planning.
- Collect/measure antibiotic usage information for each major farmed animal species in Wales
- Improve standards of antibiotic stewardship, through training, benchmarking and provision of guidance and setting of standards for both prescribing and supply.
- Better understand the role of the environment in the development and spread of AMR. In particular, to monitor antibiotics and their residues in the environment, particularly water sources.
- Promote responsible use of antibiotics in companion animals.

# Introduction

## Global and UK context

We recognise that Antimicrobial Resistance is one of the greatest health concerns of this generation and it is in our responsibility to protect the wellbeing of future generations. [futuregenerations.wales/about-us/future-generations-act/](https://futuregenerations.wales/about-us/future-generations-act/)

We understand our place in the wider UK and global context, and must seek to learn from best practice elsewhere in the world, however, we can make a difference through Wales' unique

governance, delivery landscape, relationships and attitude towards our farming, veterinary and water/environmental industry.

The UK Government has published its 20-year vision and 5-year plan to control AMR, which Wales is a signatory to. [www.gov.uk/government/publications/uk-20-year-vision-for-antimicrobial-resistance](https://www.gov.uk/government/publications/uk-20-year-vision-for-antimicrobial-resistance)

There is scope for us to pursue specific interventions in Wales that take into account our unique situation and align our

AMR policy goals with the wider vision set in the Well-being of Future Generations (Wales) Act 2015. We also wish to exploit the interdependencies between animal health and welfare, the environment and public health. This plan contributes not only to the Five Year UK AMR National Action Plan but also to the Wales Animal Health and Welfare Framework and adopts the Welsh Governments principles of sustainable development.

## The Wales Approach

In line with our Animal Health and Welfare Framework, we want Wales to have healthy and productive animals, with a good quality of life, and for people to trust and have confidence in the way food is produced and the way public health is protected. [beta.gov.wales/sites/default/files/publications/2018-01/animal-health-and-welfare-framework.pdf](https://beta.gov.wales/sites/default/files/publications/2018-01/animal-health-and-welfare-framework.pdf)

Playing to our strengths such as close collaboration with stakeholders and delivery partners, makes it second nature for us to embrace a One Health approach in our ways of working, co-ordinating animal and environmental health with public health, and delivering this policy in synergy with our animal health and welfare strategic objectives.

Through the principles at the heart of our Animal Health and Welfare Framework for

Wales – such as: working in partnership, prevention is better than cure and understanding and accepting roles and responsibilities – we will promote better husbandry and disease prevention practices in order to minimise the likelihood and impacts of animal becoming infected, improving their welfare, reducing the need for them to be treated and increasing productivity for the farm enterprises.

## Ways of Working

This document describes the goals and priorities for Antimicrobial Resistance (AMR) control in Wales, for the Welsh Government and its partners. It outlines in broad terms how these goals will be achieved.

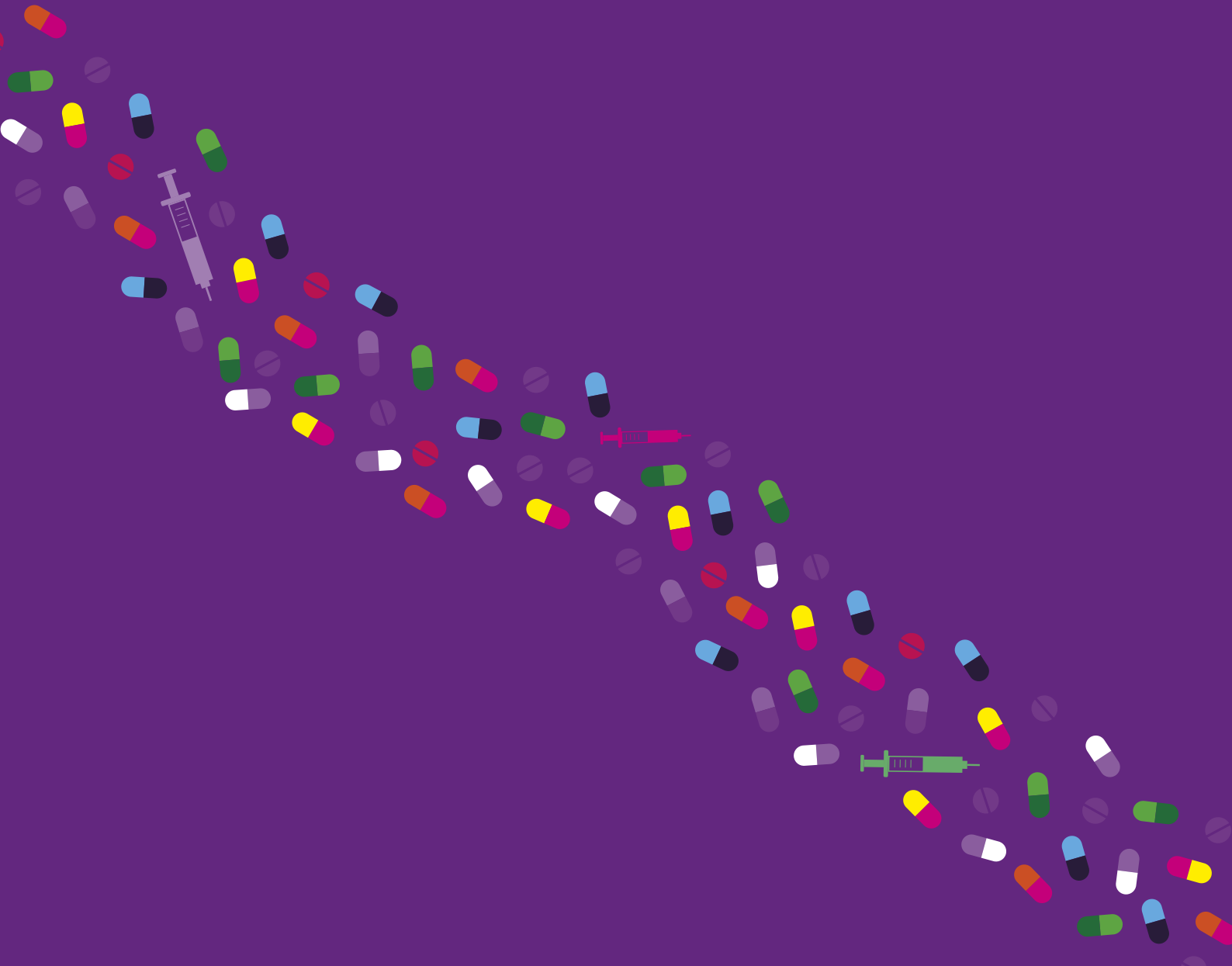
We hope this will facilitate engagement with interested parties and welcome it being shared widely so people understand what we are doing and have an opportunity to feed in.

The newly established Animal and Environment AMR Delivery Board for Wales will drive

delivery of this Plan over the next five years, by bringing together the collective knowledge and experience of the different sectors to ensure this Plan not only meets the Welsh Government's ambitions and objectives, but also takes into account the realities on the ground.

# The Five Major Components of The Implementation Plan

Our major components align with and contribute to those of the UK AMR National Action Plan.





# 1. Reducing need for and unintentional exposure to antimicrobials

## 1.1 Lower the burden of animal infection — infection prevention and control

Infection prevention and control in farmed and companion animals is already a priority in Wales.

In farmed animals, it is brought about by veterinary, action-focussed animal health planning. The current Wales Rural Development Plan is helping dairy, beef and sheep farms to integrate animal health planning into the core management of their business. Effective animal health planning involves good biosecurity (see below) and knowledge of the disease status of animals on the farm. This is brought about by contributing to disease surveillance systems through investigation of disease incidents, resulting in an accurate diagnosis.

### 1.1.1 Reducing the exposure of animals to infectious agents which could result in the need to treat with antibiotics

**Exposure to infection cannot be eliminated, but it can be reduced by:**

**Biosecurity is a key part of effective animal health planning, and of infection prevention and control. It includes:**

- Policies for bringing animals onto the farm: safe sourcing, risk assessment, quarantine, testing and treatment.
- Farm boundaries – ensuring that diseases cannot spread across farm boundaries.
- Vehicles, and equipment coming on and off the farm – entrance and routes and separation from animals; disinfection.
- People coming on and off the farm – previous contact with livestock, clothing and footwear.
- Effective management of wildlife, where they could pose a risk of disease transmission, such as keeping birds out of feed stores.

- Keeping animals in hygienic conditions, for example in high health production systems. Wherever possible, infection prevention should be designed-in to animal housing.
- Managing groups of animals in ways that reduce spread of infection (such as all-in, all-out housing systems and quarantine of incoming animals)

Effective infection control in animals requires common understanding and agreement of responsibilities, with all who can influence playing their part. This includes animal owners and keepers, their veterinarians, those who could spread infectious disease through their activities, those who organise animal movements and gatherings and those who regulate. The potential onward spread of infections from animals through their produce requires co-operation and responsibility-sharing of supply chains and their regulators.

**Our approach will be targeted at:**

- Reducing the exposure of animals to infectious agents which could result in the need to treat with antibiotics, and;
- Maximizing the ability of animals to resist infectious diseases that could otherwise result in the need to treat with antibiotics.
- Practicing high standards of biosecurity, at all levels, from individual groups of animals to nationally, to reduce spread of infectious pathogens.
- Keeping movements and mixing of animals to a minimum, and avoiding the movement of animals from low to high health status units or groups.



### 1.1.2 Maximizing the ability of animals to resist infectious diseases that could otherwise result in the need to treat with antibiotics

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**As some pathogens are carried by animals and exposure cannot readily be reduced, it is also important that resistance to infectious disease is optimised, for example by:**

- Ensuring animals receive a nutritious diet, appropriate for their age and stage of production, as malnourished animals are more susceptible to infection.
  - Reducing to a minimum, stress in animals, which weakens their immune system (e.g. extremes of temperature and inappropriate handling).
  - Controlling co-infections, particularly immunosuppressive viral infections which increase
- susceptibility to bacterial diseases. For example bovine viral diarrhoea (BVD) in cattle can be addressed by farm-level, regional or national control or eradication plans. In Wales, Gwardu BVD is the national BVD eradication programme.
  - Vaccinating animals to increase resistance to infectious disease, and prioritising the development of new or better vaccines where they are needed.
  - Exploiting opportunities to breed animals resistant to infection (for example, by selecting for resistance to mastitis in dairy cows).



### 1.2 Animal health planning

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We already encourage the application of regular, monitored animal health planning for all farmed animal enterprises as a principle means of delivering improved infection prevention and control. Animal health planning is a holistic approach and requires close collaboration between livestock keepers and their veterinarian and results in measurable health improvement outcomes.

We will encourage best practices for infection control in companion animals, particularly for gatherings, such as shows, kennelling, and events, when risk of infection spread is greatest.

We will address infection risks specific to companion animals such as the breeding of dogs that do not suffer from susceptibility to infectious diseases, and risks from raw pet food.

We will help animal keepers to prepare for future restrictions to the prophylactic use of antibiotics in animals by adopting alternative infection control approaches. To this effect we will prioritise knowledge gaps in future research programmes and monitor impacts of withdrawal of prophylactic use.

We will promote animal disease surveillance systems to identify infectious disease risks and so enable effective control.



## 2. Optimising use of antimicrobials in animals

Our ambition is for Wales to be an exemplar of the responsible use of antibiotics and for our vets and animal keepers to adopt the highest standards of antibiotic stewardship.

We believe Wales is well-placed to pioneer some of the new approaches to ensure antibiotics are used with care and in ways that reduce the risks of the development of resistance.

**There are four main outcomes to achieve optimal use of antibiotics in animals:**



### 2.1 Improving standards of antibiotic selection and prescribing

This will be done by training and education of vets, who have the legal responsibility and privilege to use and control antibiotics in animals.

**We will:**

- Prioritise training on best practice for deciding whether or not antibiotic therapy is necessary and appropriate, and on selection of antibiotic for best clinical cure and least risk of AMR development.
- Work to ensure that vets have access to up to date, guidance on best practice antibiotic selection for the most common clinical scenarios.

### 2.2 Improving standards of antibiotic supply

We will engage with veterinary practices to help them develop robust, responsible and consistent guidelines for the supply of antibiotics, especially to livestock farms.

### 2.3 Training and education on the responsible use of medicines for those looking after livestock

We will continue to use our Farming Connect, social media and other channels such as awareness campaigns to provide training and guidance to livestock keepers, future farmers and other animal care professionals on their responsibilities for the storage, disposal and safe use of medicines.

### 2.4 Providing information for companion animal owners on the responsible use of medicines

We will work with the veterinary professional bodies for the companion animal sector to promote and support positive messaging with regard to prudent antibiotic use and to the risks of certain practices – such as feeding raw meat.

And, in general, we will promote the observance of best practice in prescribing, administration, storage and safe disposal of antimicrobials in line with the RUMA guidelines:

**[www.ruma.org.uk/antimicrobials/guidelines/](http://www.ruma.org.uk/antimicrobials/guidelines/)**

# 3. Minimise spread of AMR through the environment

## 3.1 Improved understanding

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We will identify available evidence and knowledge gaps on transmission pathways of AMR between animals, the environment and humans, and prioritise rectifying these in future research.

We will monitor antibiotics and their residues in water sources in Wales. And we will review the potential for further

environmental monitoring and control, such as surveillance of key resistant bacteria in the environment.

**To deepen understanding about AMR in the environment, Wales will contribute to the collective position within the UK's administrations to:**

- Support research to reduce evidence gaps and improve understanding of the hazards and risks from AMR in the environment.
- Explore the establishment of a river catchment based research programme with clear standards for sample collection, analysis and review, with the aim of delivering AMR monitoring data that can be used to evaluate existing management interventions and inform any new policy initiatives.
- Increase public awareness of the hazard and risk of AMR in the environment.



## 3.2 Responsible farm waste management practices

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We will promote more efficient and environmentally responsible farm waste management systems, including new technologies, in particular where synergies can be found with other Welsh Government priorities such as achieving better pollution prevention and increased biosecurity through the containment and treatment of farm waste.

## 3.3 Minimise antimicrobial contamination

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Reducing the need to use antibiotics to a minimum also reduces the risk of adverse impacts of antibiotics on the environment (for example on soil microflora), and of the onwards spread of resistant bacteria and their genes to animals and people.

## 4. Stronger laboratory capacity and surveillance of AMR in animals

There is a significant surveillance requirement to measure the effectiveness of interventions to improve infection prevention and control in animals.

Some information exists already, but we envisage an increased requirement in order to monitor, manage and evaluate this Implementation Plan.

### What do we need to measure or monitor?

- The uptake of veterinary animal health planning for farmed animals
- The impact of veterinary animal health planning for farmed animals, specifically, the number and nature of disease incidents in livestock that result in the need for antibiotic treatment.

- Other indicators – both proxy and direct – of the infectious disease status of animals, such as scanning surveillance data trends, abattoir condemnation rates, livestock keeper self-reporting, industry schemes such as for lameness in cattle.
- The amount and type of antibiotics used in animals in Wales.
- The development of AMR in bacteria of animal origin in Wales.

A key challenge of the Wales Implementation Plan will be to deliver these measures in order to effectively manage the AMR risk. We recognise the potential of technology to do this and the importance of undertaking it in partnership and collaboration

with other parts of the UK as far as possible.

We will work with other UK administrations and with partners in Wales to analyse this new surveillance and animal health planning data to benchmark and inform policy to be able to target interventions that are effective and value for money.

We will consider opportunities to improve our understanding of AMR in human foods of animal origin in order to identify critical points to control routes of spread of AMR.



## 5. Investing in innovation, supply and access to tackle AMR

Tackling AMR requires knowledge and understanding of the nature of the threat. Our evidence needs are large and broad, from the molecular basis of resistance development and spread, to the behaviours of vets and livestock keepers who prescribe and use antibiotics.

The evidence required to deliver this Plan ranges from research that has global relevance through UK-level information to Wales-specific data and understanding.

The government budget and oversight for all the UK research on AMR in animals sits with the Veterinary Medicines Directorate.

We will continue to contribute our requirements and advice to this research programme.

We will also actively seek opportunities for scientists based in Wales to contribute to this Plan, without duplicating work being done elsewhere.

# Evaluation



The Animal and Environment AMR Delivery Group for Wales has been established to refine and recommend the Animal and Environment AMR Implementation Plan for Wales. And to ensure that the Implementation Plan is delivered and its outcomes are achieved.

The Implementation Plan outlines priorities, how these contribute to the strategic outcomes, and key actions. The plan will be kept under review.

If necessary, new priorities can be included to reflect situations, which may occur. It is expected that some priorities will remain in place over a number of years

whilst others may have a much shorter lifespan but nevertheless can have considerable impact.

The priorities and the timeline for delivery of each objective will be considered by the Delivery Board. Every objective must be measurable so that success can be monitored.