Australian Government Department of Agriculture, Fisheries and Forestry



Australia's Animal Sector Antimicrobial Resistance

Action Plan 2023 to 2028









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Acknowledgement of Country

We acknowledge the Traditional Custodians of Australia and their continuing connection to land and sea, waters, environment and community. We pay our respects to the Traditional Custodians of the lands we live and work on, their culture, and their Elders past and present.

Introduction

Antimicrobial resistance (AMR) is a significant global health threat driven by the use of antimicrobials in humans, animals and agriculture. AMR occurs when microorganisms, including bacteria, viruses, fungi or parasites that cause infections, develop the ability to resist the medicines used to treat them.

In March 2020, the former Australian Government Departments of Health and Agriculture, Water and the Environment released 'Australia's National Antimicrobial Resistance Strategy – 2020 and Beyond' (the 2020 strategy). The 2020 strategy focused on a One Health approach across 5 key sectors: humans, animals, food, agriculture and the environment. The 2020 strategy includes a longer term (20 year) vision that provides flexibility to adapt to changing priorities over time, and has an expanded focus beyond antibiotics, to include antimicrobials such as antifungals, antivirals and antiparasitics. The 2020 strategy represents Australia's continued commitment to 'minimise the development and spread of antimicrobial resistance and ensure the continued availability of effective antimicrobials' (Department of Health 2021).

In February 2021, a coordinated 'One Health Master Action Plan for Australia's National Antimicrobial Resistance Strategy to 2020 and Beyond' (OHMAP) was published. The aim of the OHMAP was to provide guidance on the implementation of the 2020 strategy's 7 key objectives: governance, infection prevention and control, communication and engagement, antimicrobial stewardship, AMR surveillance, research and global partnerships.

Australia's Animal Sector Antimicrobial Resistance Action Plan 2023 to 2028 aligns with the 7 objectives of the 2020 strategy and the priority activities of the OHMAP, providing Australia's animal health and animal industry sectors with agreed priority activities for the terrestrial and aquatic animal sectors to implement the 2020 strategy.

These objectives are:

- 1. clear governance for antimicrobial resistance initiatives
- 2. prevention and control of infections and the spread of resistance
- 3. greater engagement in the combat against resistance
- 4. appropriate usage and stewardship practices
- 5. integrated surveillance and response to resistance and usage
- 6. a strong collaborative research agenda across all sectors
- 7. strengthen global collaboration and partnerships.

The plan was developed following consultation with government and non-government animal health stakeholders. It contains agreed AMR priority activities, including those mentioned in other published national animal sector related plans such as:

- Animalplan 2022 to 2027: Australia's National Action Plan Australia's National Action Plan for Production Animal Health (Animalplan)
- AQUAPLAN 2022 2027: Australia's National Strategic Plan for Aquatic Animal Health (AQUAPLAN)
- Australia's National Action Plan for Health Security 2019 to 2023 (NAPHS)
- National Animal Health Surveillance Business Plan 2016 to 2020 (NAHSBP)
- National Animal Health Diagnostics Business Plan 2021 to 2026 (NAHDBP).

The animal sectors included in the plan comprise: terrestrial and aquatic food- and fibre-producing animals, companion animals (including performance animals), zoological collections, laboratory animals and wildlife treated with antimicrobials. Like the 2020 Strategy and OHMAP, the plan broadens its scope to include other classes of antimicrobials such as antifungals, antiprotozoals and antivirals.

The activities identified are intended to be completed over the 5-year time frame of this action plan. After this period, monitoring and evaluation will be conducted to determine the effectiveness of the activities and will assist in the development of the next 5-year action plan.



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Clear governance for antimicrobial resistance initiatives

Strengthening governance arrangements will ensure sustained, coordinated and effective animal sector actions that contribute to national, regional and international One Health goals.

Table 1 Activities supporting Objective 1: Clear governance for antimicrobial resistance intiatives

Activity	Linkages	Expected outcomes
1.1 Develop a business case for sustainable funding to undertake national AMR priority actions and initiatives in animal health	1.1 OHMAP	A business case has been developed after extensive consultation.
1.2 Develop a national reporting and surveillance system that meets stakeholder and reporting requirements for the collection and reporting of antimicrobial usage (AMU) and AMR data in the animal sectors	1.1.2 OHMAP Objective 1 and 2 NAHSBP	A national reporting surveillance system to collect and manage data on AMU and emergence of AMR in animals has been designed and implemented and is compatible with international reporting requirements and
1.3 Contribute to the development of a national monitoring and evaluation framework for the 2020 Strategy and OHMAP	1.2.2 OHMAP	–
1.4 Review national and international governance arrangements on AMR and AMU across the One Health sectors	1.3.1 OHMAP	AMR governance structures are understood, broadened, and strengthened.
1.5 Develop nationally consistent regulations for veterinary prescribing and compounding rights	1.4.1 ОНМАР	Veterinary prescribing regulations are updated to provide consistency in prescribing behaviours and compounding rights across jurisdictions.
		Regulatory measures relevant to AMU and AMR are monitored and reviewed.

Prevention and control of infections and the spread of resistance

Reduced disease burden in Australian animals, including terrestrial and aquatic food- and fibre-producing animals, companion animals and performance animals, will reduce the need for antimicrobial use. Reducing the disease burden can be achieved through strengthened infection prevention and control (IPC) and biosecurity measures.

Table 2 Activities supporting Objective 2: Prevention and control of infections and the spread of resistance

Activity	Linkages	Expected outcomes
2.1 Promote best practice IPC and biosecurity measures	2.2.1 OHMAP	The reliance on antimicrobials in animals is reduced through strengthened IPC and
	Recommendation 10 NAPHS	
	Objective 1 Animalplan	biosecurity measures.
	Objective 3 Animalplan	
2.2.1 Investigate barriers to and incentives for	2.3.2 OHMAP	Incentives to develop and
onshore development and adoption of animal vaccines by manufacturers and animal health	Objective 6 AQUAPLAN	use vaccines and reduce the need for antimicrobials are
workers, respectively	AIAS Strategy	increased.
2.2.2 Identify and leverage funding initiatives for	2.3.2 OHMAP	Incentives to develop and
the manufacture of new vaccines and AgTech based on the needs of the animal sector	Objective 6 AQUAPLAN	use vaccines and AgTech and reduce the need for
	AIAS Strategy	antimicrobials are increased.



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Greater engagement in the combat against resistance

Ongoing engagement with stakeholders and the general public will ensure improved awareness and understanding of the AMR challenge. This will support behavioural change and other initiatives that reduce inappropriate antimicrobial use and the spread of AMR.

Table 3 Activities supporting Objective 3: Greater engagement in the combat against resistance

Activity	Linkages	Expected outcomes
3.1 Work with stakeholders to develop and implement an AMU and AMR communications plan	3.1.1 and 3.1.2 OHMAP	Antimicrobial users have a better understanding of inappropriate antimicrobial
	Objective 5 NAHSBP	
	Objective 3.3 Animalplan	use and the spread of
	AIAS Strategy	resistance.
3.2 Continue to develop and implement AMR	3.2.1 OHMAP	Awareness on how to combat
education and training resources and tools, targeted at students, practicing veterinarians and paraprofessionals and other animal health stakeholders	3.3.1 OHMAP	AMR is increased through
	3.4.2 OHMAP	training.
	3.4.3 OHMAP	



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Appropriate usage and stewardship practices

Activities under this objective will encourage appropriate use of antimicrobials in all terrestrial and aquatic foodand fibre-producing animals, companion animals, and wildlife. This will be measured against species-specific, evidence-based, and standardised best-practice Australian prescribing guidelines.

Table 4 Activities supporting Objective 4: Appropriate usage and stewardship practices

Activity	Linkages	Expected outcomes
4.1 Develop antimicrobial prescribing guidelines for species such as beef cattle, goats and camelids for which guidelines are not currently available	4.1.3 OHMAP 4.3.1 OHMAP	Species or sector-specific antimicrobial prescribing guidelines made available to food animal producers and large animal veterinarians to encourage prudent antimicrobial usage.
4.2 Develop a set of AMS accreditation standards using existing practice and quality assurance frameworks where possible.	4.2.1 OHMAP	An accreditation AMS model for veterinary practices and hospitals is scoped, supported and implemented.
4.3 Identify patterns and address barriers to improve selection and targeted use of antimicrobials to improve stewardship practices	4.2.2 OHMAP 4.2.4 OHMAP	Behaviours align with best practice approaches for judicious antimicrobial usage.

Integrated surveillance and response to resistance and usage

Enhanced production, collection, storage, analysis and reporting of AMU and AMR data in animals at the species and industry level will be used to identify ongoing or emerging issues and inform actions. This will demonstrate Australia's world-class status in AMR and AMS and provide harmonised data onto developed global platforms to inform global AMR initiatives.

Table 5 Activities supporting Objective 5: Integrated surveillance and response to resistance and usage

Activity	Linkages	Expected outcomes
5.1 Provide assistance and advice on behalf of the animal sector during the development stage of a One Health Surveillance System that integrates AMR and AMU data from human health, animal health, agriculture, food and environment sectors in Australia	5.1.2 OHMAP	An agreed national One Health
	Objective 2.1 and 2.5 Animalplan	AMR surveillance system is resourced, adopted and implemented by all sectors.
	Recommendation 12 and 13 NAPHS	
	Objective 4 and 6 NAHSBP	
	Objective 6 (Activity 6.1 and 6.3) AQUAPLAN	
	Objective 5 NAHDBP	
	AMR surveillance and monitoring programs in other One Health sectors	
5.2.1 Develop a robust national animal health AMU Monitoring program	5.1.2 OHMAP	An enhanced, robust AMU animal sector monitoring program is developed in Australia.
5.2.2 Describe the veterinary antimicrobial supply chain, and identify AMU data sources to better support interventions and complement available antimicrobial sales data along the supply chain	5.1.2 OHMAP	An enhanced, robust AMU animal sector monitoring program is developed in Australia.
5.2.3 Identify possible IT platforms for AMU	5.1.2 OHMAP	An enhanced, robust AMU
data collections that will integrate with existing clinical veterinary practice or farm management software systems	5.4.2 OHMAP	animal sector monitoring program is developed in Australia
5.3.1 Assess the need for new and repeat species-specific surveys on AMR and how often these surveys should be conducted.	5.1.2 OHMAP	An enhanced, robust animal sector AMR surveillance program is established, funded, and implemented in Australia which meets national and global surveillance requirements.

Activity	Linkages	Expected outcomes
5.3.2 Review and promote a list of priority	5.2.1 OHMAP	An enhanced, robust animal
organisms for antimicrobial susceptibility testing and reporting in terrestrial and aquatic	Objective 2.4 Animalplan	sector AMR surveillance program is established,
food- and fibre-producing animals, companion animals and wildlife to support improved AMR data collection	Objective 5 NAHDBP	funded, and implemented in Australia which meets national and global surveillance requirements.
5.3.3 Review and update the 'Antimicrobial	5.3.1 OHMAP	An enhanced, robust animal
Susceptibility Testing' Australian and New Zealand standard diagnostic procedures for	Objective 2.4 Animalplan	sector AMR surveillance program is established,
terrestrial animals (as described in Buller,	Recommendation 11 NAPHS	funded, and implemented in
Tjomas & Barton 2014)	Objective 5 NAHDBP	Australia which meets national and global surveillance requirements.

A strong collaborative research agenda across all sectors

A sustainably funded, collaborative and prioritised research agenda will support the translation of research findings into new policies to combat AMR.

Table 6 Activities supporting Objective 6: A strong collaborative research agenda across all sectors

Activity	Linkages	Expected outcomes
6.1 Contribute to a gap analysis of AMR research and development for the animal sector	6.1.1 OHMAP	Animal sector AMR research
	AIAS Strategy	gaps and priorities are identified and addressed.
6.2 Scope the feasibility of rapid, cost-effective	6.1.3 OHMAP	Rapid, field-based diagnostic
field-based diagnostic tests for priority infectious diseases and their appropriate	Objective 4 (Activity 4.1 and 4.4) AQUAPLAN	test kits are made available where practical.
	Objective 2.2 Animalplan	
	Objective 4 NAHDBP	
6.3 Identify pathways to translate research findings into practical solutions	6.1.3 and 6.4.1 OHMAP	There is a greater transfer of research findings into practice to mitigate AMR.
6.4 Ongoing information sharing of AMR	6.2.2 OHMAP	Forums to share research and
research findings in the animal health space with stakeholders and associated networks	AIAS Strategy	development are expanded and strengthened.
6.5 Identify and use antimicrobial alternatives, such as novel therapies, vaccines, nutrition, and genetics	6.3.3 OHMAP	The reliance on use of
	6.4.1 OHMAP	antimicrobials is reduced.

Strengthen global collaboration and partnerships

Australia will provide leadership and advocacy on AMR in animal health in national, regional, and international fora and standard-setting organisations, and will work directly within the Southeast Asia and Pacific regions to minimise the development of AMR.

Table 7 Activities supporting objective 7: Strengthen global collaboration and partnerships

Activity	Linkages	Expected outcomes
7.1 Engage with The Quadripartite Alliance on One Health, relevant organisations within the alliance, including the Codex Alimentarius Commission, and other international fora to progress Australian and regional actions and initiatives	7.1.3 OHMAP	AMR outcomes and information-sharing are aligned with regional partners and neighbouring countries.
7.2 Support the advancement of technical AMR capacity and capability in the animal sectors of Southeast Asia and the Pacific	7.2.5 OHMAP 7.3.1 OHMAP	Advance AMR mitigation in the Southeast Asia and Pacific regions.



Glossary

Term	Definition
AIAS	Animal Industries Antimicrobial Stewardship
AMU	Antimicrobial usage
AMR	Antimicrobial resistance
AMS	Antimicrobial stewardship
IPC	Infection prevention and control
The Quadripartite Alliance on One Health	The Quadripartite Alliance on One Health comprises the Food and Agricultural Organization of the United Nations, the United Nations Environment Programme, the World Organisation for Animal Health, and the World Health Organization
Regional	The Asia-Pacific region, which includes Australia
Stakeholder	Any person or business that is directly involved in the animal industry. This includes, but is not limited to, agricultural government bodies, veterinarians, animal industries (including feed suppliers), farmers, animal health diagnosticians and animal owners.

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