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# **ONE HEALTH MASTER ACTION PLAN**

FOR AUSTRALIA'S NATIONAL  
ANTIMICROBIAL RESISTANCE  
STRATEGY  
2020 & BEYOND



**Australian Government**

**Department of Health**

**Department of Agriculture,  
Water and the Environment**

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# Foreword

The One Health Master Action Plan (OHMAP) provides guidance on implementing *Australia's National Antimicrobial Resistance Strategy – 2020 and Beyond* (the 2020 Strategy).

In March 2020, the Australian Government released the 2020 Strategy to combat the threat of antimicrobial resistance (AMR). We use antimicrobials such as antibiotics to prevent and treat infections caused by microorganisms. But the more we use antimicrobials, the less effective they become because microorganisms can adapt through genetic changes. This is known as antimicrobial resistance. The inappropriate use of antimicrobials in Australia and worldwide is making the problem worse.

This means some infections caused by resistant microorganisms have become harder and, in some cases, almost impossible to prevent and treat. This includes some common gastrointestinal, skin and urinary tract infections.

Antimicrobials are a valuable shared resource and we need to ensure they remain effective at protecting the health of humans, animals and the environment for decades to come.

Building on *Australia's First National Antimicrobial Resistance Strategy 2015–19*, 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.**

To achieve this goal, the 2020 Strategy focuses on seven Objectives divided into Priority Areas for Action. They highlight where we must focus our efforts. This includes implementation partners developing 'short- to medium-term action plans' to show when and what they will do to tackle AMR.

The OHMAP assists by highlighting activities to focus on, informed by the expert advice of the Australian Strategic and Technical Advisory Group on Antimicrobial Resistance.

This means implementation partners can refer to the OHMAP for expert and current guidance when developing their action plans.

As Australia builds on its successes, the 2020 Strategy and OHMAP emphasise the importance of tackling AMR through a One Health approach. This means working in a collaborative and coordinated manner across all levels of government and sectors.

By implementing a One Health approach with the OHMAP guiding the way, Australia can minimise the development and spread of antimicrobial resistance and ensure the continued availability of effective antimicrobials.

This will help achieve a healthier future for Australians.

For more information about AMR and Australia's response, please see:

[\*Australia's National Antimicrobial Resistance Strategy – 2020 and Beyond\*](#)

[amr.gov.au](http://amr.gov.au) (One Health AMR website)

[\*Australia's First National Antimicrobial Resistance Strategy 2015–2019\*](#)

## THE 2020 STRATEGY FOCUSES ON 7 OBJECTIVES.

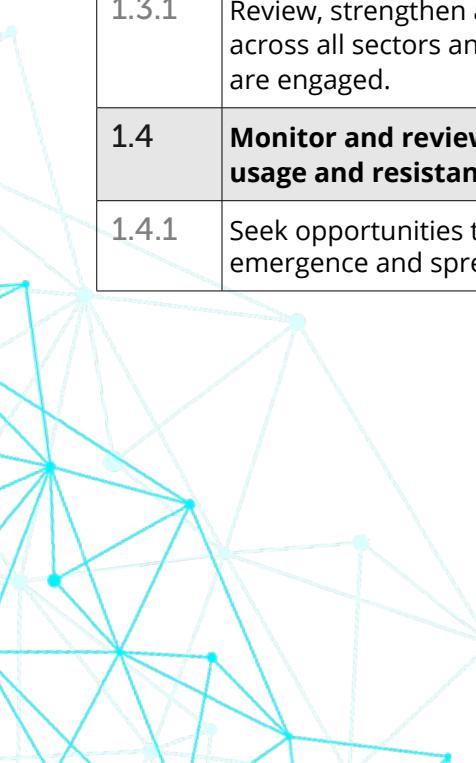
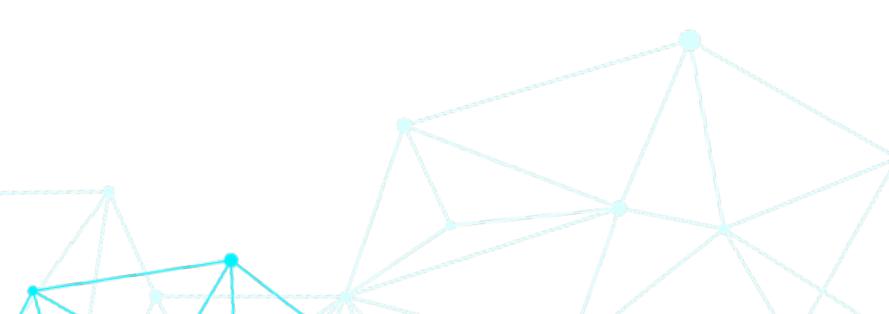
- 1 Clear governance for antimicrobial resistance initiatives
- 2 Prevention and control of infections and the spread of resistance
- 3 Greater engagement in the combat against resistance
- 4 Appropriate usage and stewardship practices
- 5 Integrated surveillance and response to resistance and usage
- 6 A strong collaborative research agenda across all sectors
- 7 Strengthen global collaboration and partnerships

## OBJECTIVE 1

### CLEAR GOVERNANCE FOR ANTIMICROBIAL RESISTANCE INITIATIVES



		One Health Sectors				
		Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS 1.1 – 1.4</b>						
<b>FOCUS AREAS 1.1.1 – 1.4.1</b>						
1.1	<b>Create sustainable funding for combatting antimicrobial resistance based on evidence of economic and societal costs and benefits of different approaches in all sectors</b>					
1.1.1	Establish objective and robust benchmarks to measure the impact of antimicrobial resistance initiatives in order to provide the evidence required to secure continued and new funding.	◆	◆	◆	◆	◆
1.1.2	Publish national reports on AMR and antimicrobial usage to contribute to the evidence-base for measuring economic and societal costs and benefits.	◆	◆	◆	◆	◆
1.2	<b>Develop, implement and/or maintain sector-specific action plans</b>					
1.2.1	Encourage stakeholders to ensure their governance structures include plans for minimising AMR.	◆	◆	◆	◆	◆
1.2.2	Develop accountable and transparent sector-specific action plans with stakeholders, including monitoring and evaluation frameworks.	◆	◆	◆	◆	◆
1.3	<b>Maintain and expand linkages and opportunities between stakeholders across all sectors to provide a nationally coordinated approach to combatting antimicrobial resistance</b>					
1.3.1	Review, strengthen and consider broadening AMR governance structures across all sectors and settings and ensure all relevant stakeholders are engaged.	◆	◆	◆	◆	◆
1.4	<b>Monitor and review regulatory measures (legislated and other) relevant to antimicrobial usage and resistance</b>					
1.4.1	Seek opportunities to strengthen regulation to more effectively limit the emergence and spread of resistance.	◆	◆	◆	◆	◆

## OBJECTIVE 2

### PREVENTION AND CONTROL OF INFECTIONS AND THE SPREAD OF RESISTANCE



One Health Sectors					
	Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS 2.1 – 2.4</b>					
<b>FOCUS AREAS 2.1.1 – 2.4.1</b>					
<b>2.1</b>	<b>Adopt evidence-based and nationally consistent standards for infection prevention and control and biosecurity</b>				
2.1.1	Develop, implement and/or update national biosecurity and waste management standards and support resources and education for different animal and agricultural settings.	◆	◆	◆	
2.1.2	Work with key stakeholders in the major food- and fibre-producing animal industries to improve on-farm biosecurity measures so antimicrobial treatments are used appropriately.	◆			
2.1.3	Strengthen national evidence-based and best practice infection prevention and control standards and supporting resources in clinical and community settings including general practice, dentistry, pharmacy, aged care, and rural and remote primary health care.				◆
2.1.4	Update hospital and general practice accreditation standards to better support best practice IPC in human health and consider additional mechanisms to support and monitor compliance in this setting.				◆
<b>2.2</b>	<b>Maximise compliance with best practice infection prevention and control and biosecurity measures through adherence to applicable legislation, targets and accreditation standards</b>				
2.2.1	Strengthen and assess the use of accreditation and/or quality assurance programs to better support the implementation of national biosecurity and/or IPC guidelines in the animal and human health sectors.		◆		◆
<b>2.3</b>	<b>Promote disease prevention practices to reduce infections and subsequent use of antimicrobials</b>				
2.3.1	Improve awareness of the importance of IPC in reducing AMR.		◆		◆
2.3.2	Foster the development of vaccines and the uptake of vaccination as a preventative measure to assist reduction in antimicrobial use.		◆		◆
2.3.3	Improve health literacy in priority populations and relevant stakeholders for key infections.		◆		◆
2.3.4	Improve and promote the national hand hygiene approach to reduce healthcare-associated infections and AMR and expand principles to other settings.	◆	◆	◆	◆
<b>2.4</b>	<b>Share information on emerging antimicrobial resistance trends to inform responses</b>				
2.4.1	Develop and/or improve national resources and capabilities to respond to novel and emerging IPC and AMR needs across all sectors, including inter-jurisdictional opportunities for learning within sectors.	◆	◆	◆	◆

## OBJECTIVE 3

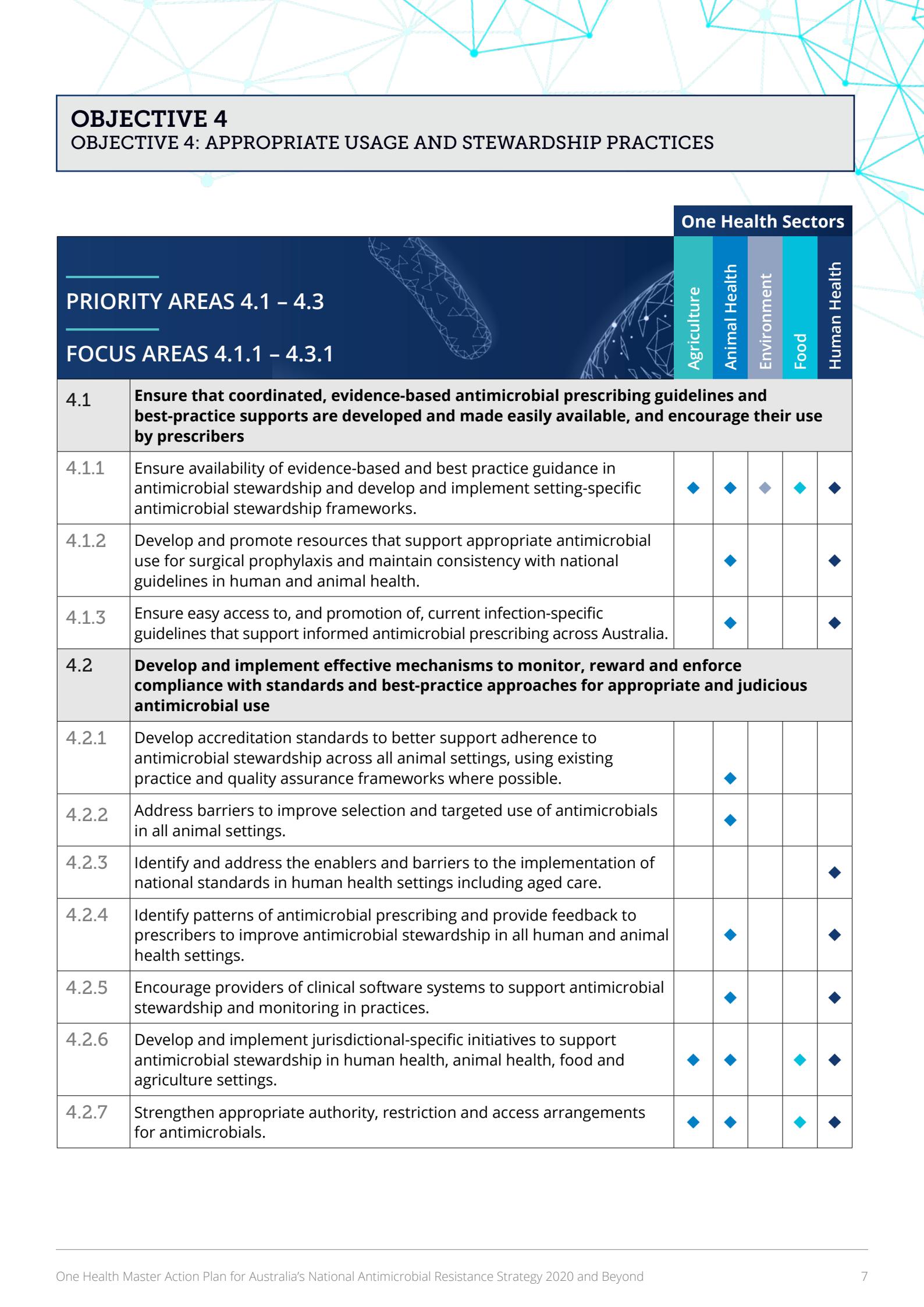
### GREATER ENGAGEMENT IN THE COMBAT AGAINST RESISTANCE.



		One Health Sectors				
		Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS 3.1 – 3.4</b>						
<b>FOCUS AREAS 3.1.1 – 3.4.5</b>						
3.1	<b>Develop and implement a coordinated, One Health communication strategy, as well as monitoring and evaluation, to support whole-of-society awareness and behavioural change</b>					
3.1.1	Develop and implement a One Health communication strategy to raise awareness of the actions stakeholders can take to minimise the development and impacts of resistance.	◆	◆	◆	◆	◆
3.1.2	Monitor and evaluate the effectiveness of the One Health communication strategy.	◆	◆	◆	◆	◆
3.2	<b>Strengthen public and political awareness to champion and improve the understanding of combatting antimicrobial resistance</b>					
3.2.1	Improve audience reach and engagement through traditional, social and innovative media platforms.	◆	◆	◆	◆	◆
3.2.2	Maintain and improve the One Health AMR website to ensure access to reliable and up-to-date information.	◆	◆	◆	◆	◆
3.3	<b>Create new and different key antimicrobial resistance messages that resonate with society</b>					
3.3.1	Use evidence based approaches to better understand the behavioural drivers for antimicrobial use across all sectors and translate into resources for influencing behaviour.	◆	◆	◆	◆	◆
3.4	<b>Drive education and training initiatives across all relevant sectors and increase accessibility to evidence-based best-practice information</b>					
3.4.1	Increase health professionals' knowledge of antimicrobial stewardship in accordance with relevant national standards and policies.	◆	◆	◆	◆	◆
3.4.2	Strengthen education and training initiatives to improve knowledge about AMR and develop resources that promote and support appropriate prescribing, use and disposal of antimicrobials across all sectors.	◆	◆	◆	◆	◆
3.4.3	Ensure curriculum outcomes and competencies for antimicrobial resistance, antimicrobial stewardship and infection prevention and control/biosecurity are emphasised and current in undergraduate and post-graduate training for professionals across all sectors.	◆	◆	◆	◆	◆
3.4.4	Facilitate access to, and dissemination of, national infection prevention and control/biosecurity guidelines for human and animal health through various platforms including the One Health AMR website.		◆			◆
3.4.5	Increase availability of resources to assist professionals to reinforce key messages with patients/clients about appropriate antimicrobial use and actions to reduce AMR.		◆			◆

## OBJECTIVE 4

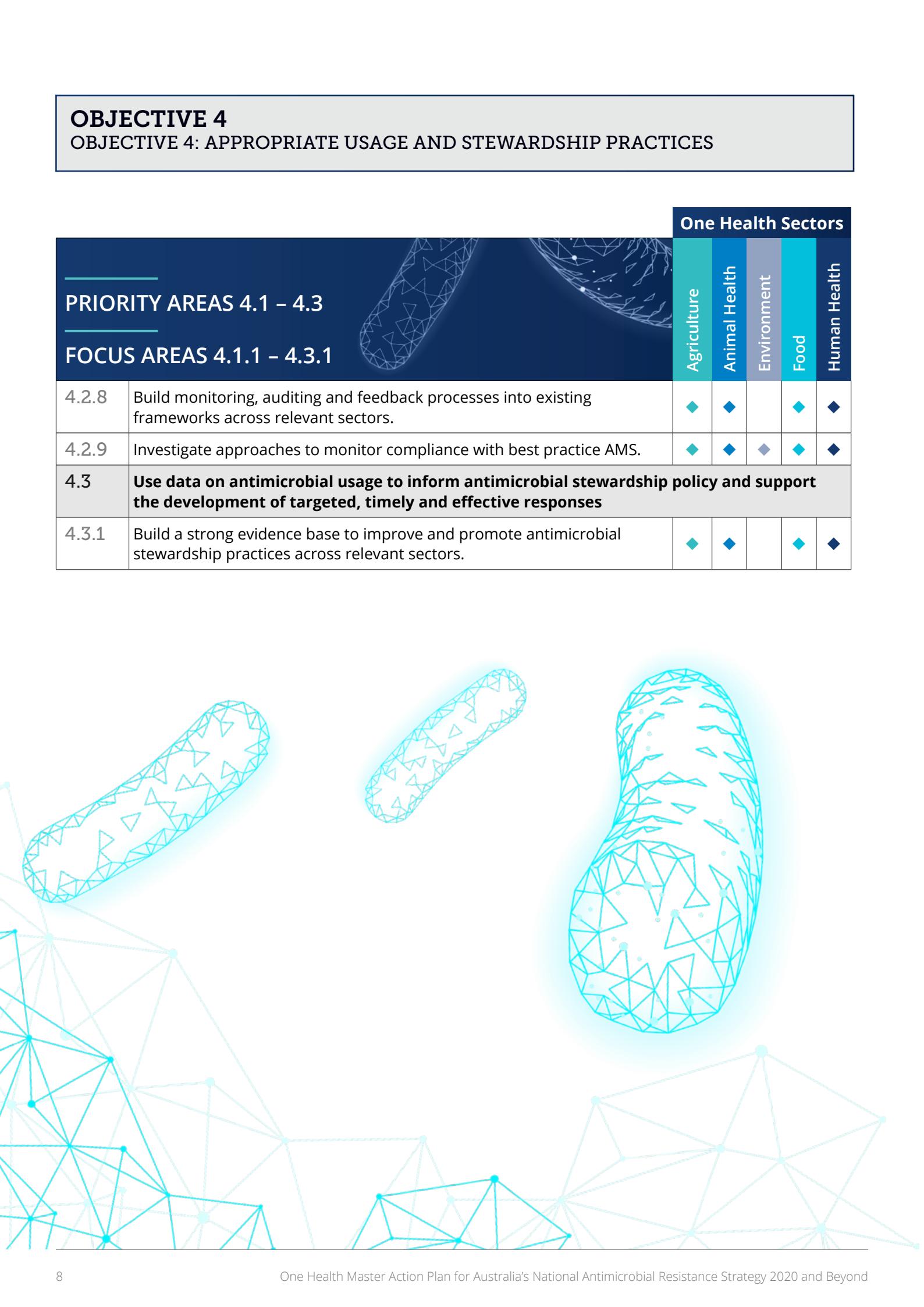
### OBJECTIVE 4: APPROPRIATE USAGE AND STEWARDSHIP PRACTICES



		One Health Sectors				
		Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS 4.1 – 4.3</b>						
<b>FOCUS AREAS 4.1.1 – 4.3.1</b>						
4.1	<b>Ensure that coordinated, evidence-based antimicrobial prescribing guidelines and best-practice supports are developed and made easily available, and encourage their use by prescribers</b>					
4.1.1	Ensure availability of evidence-based and best practice guidance in antimicrobial stewardship and develop and implement setting-specific antimicrobial stewardship frameworks.	◆	◆	◆	◆	◆
4.1.2	Develop and promote resources that support appropriate antimicrobial use for surgical prophylaxis and maintain consistency with national guidelines in human and animal health.		◆			◆
4.1.3	Ensure easy access to, and promotion of, current infection-specific guidelines that support informed antimicrobial prescribing across Australia.		◆			◆
4.2	<b>Develop and implement effective mechanisms to monitor, reward and enforce compliance with standards and best-practice approaches for appropriate and judicious antimicrobial use</b>					
4.2.1	Develop accreditation standards to better support adherence to antimicrobial stewardship across all animal settings, using existing practice and quality assurance frameworks where possible.		◆			
4.2.2	Address barriers to improve selection and targeted use of antimicrobials in all animal settings.		◆			
4.2.3	Identify and address the enablers and barriers to the implementation of national standards in human health settings including aged care.					◆
4.2.4	Identify patterns of antimicrobial prescribing and provide feedback to prescribers to improve antimicrobial stewardship in all human and animal health settings.		◆			◆
4.2.5	Encourage providers of clinical software systems to support antimicrobial stewardship and monitoring in practices.		◆			◆
4.2.6	Develop and implement jurisdictional-specific initiatives to support antimicrobial stewardship in human health, animal health, food and agriculture settings.	◆	◆		◆	◆
4.2.7	Strengthen appropriate authority, restriction and access arrangements for antimicrobials.	◆	◆		◆	◆

## OBJECTIVE 4

### OBJECTIVE 4: APPROPRIATE USAGE AND STEWARDSHIP PRACTICES



One Health Sectors					
	Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS 4.1 – 4.3</b>					
<b>FOCUS AREAS 4.1.1 – 4.3.1</b>					
4.2.8	Build monitoring, auditing and feedback processes into existing frameworks across relevant sectors.	◆	◆		◆ ◆
4.2.9	Investigate approaches to monitor compliance with best practice AMS.	◆	◆	◆	◆ ◆
<b>4.3</b>	<b>Use data on antimicrobial usage to inform antimicrobial stewardship policy and support the development of targeted, timely and effective responses</b>				
4.3.1	Build a strong evidence base to improve and promote antimicrobial stewardship practices across relevant sectors.	◆	◆		◆ ◆

## OBJECTIVE 5

### INTEGRATED SURVEILLANCE AND RESPONSE TO RESISTANCE AND USAGE



One Health Sectors					
	Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS 5.1 – 5.4</b>					
<b>FOCUS AREAS 5.1.1 – 5.4.2</b>					
<b>5.1</b>	<b>Create a sustainably funded national One Health surveillance system that integrates human, animal, food and environmental usage and resistance data</b>				
5.1.1	Develop a national surveillance plan, including the potential use of genomics, with sector-specific objectives to support the implementation of a national One Health surveillance system.	◆	◆	◆	◆
5.1.2	Develop and continue to improve mechanisms to provide and analyse data on antimicrobial resistance and usage across all sectors to the One Health surveillance system.	◆	◆	◆	◆
5.1.3	Improve understanding of antimicrobial use in all sectors to inform policy decision making.	◆	◆	◆	◆
5.1.4	Improve understanding of the extent to which resistant bacteria are present in the food chain, the extent of transmission of resistant organisms, and the risk this may pose to human health.	◆	◆	◆	◆
<b>5.2</b>	<b>Develop and regularly review lists of priority organisms and associated antimicrobials</b>				
5.2.1	Regularly review and promote the current list of priority organisms and associated antimicrobials for human and animal health surveillance and establish lists for other sectors as needed.	◆	◆	◆	◆
<b>5.3</b>	<b>National alignment of laboratory testing practices and reporting for antimicrobial resistance</b>				
5.3.1	Develop, promote, harmonise and monitor national consistency in antimicrobial susceptibility testing and reporting to improve data comparability within and between sectors.	◆	◆	◆	◆
<b>5.4</b>	<b>Use evidence-based surveillance and monitoring data to inform actions and responses to contain antimicrobial resistance</b>				
5.4.1	Establish national coordination of surveillance and response to the emergence, and outbreaks, of multi-resistant organisms.	◆	◆	◆	◆
5.4.2	Explore capability for real-time collection, analysis and reporting of antimicrobial resistance and use across all sectors.	◆	◆	◆	◆

## OBJECTIVE 6

A STRONG COLLABORATIVE RESEARCH AGENDA ACROSS ALL SECTORS.



		One Health Sectors				
		Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS 6.1 – 6.4</b>						
<b>FOCUS AREAS 6.1.1 – 6.4.1</b>						
6.1	<b>Set a flexible national antimicrobial resistance research and development agenda that strives for innovation</b>					
6.1.1	Regularly review research and development priorities and impacts.	◆	◆	◆	◆	◆
6.1.2	Investigate opportunities to increase support for national AMR research and development priorities.	◆	◆	◆	◆	◆
6.1.3	Support innovative research design for translation into practical solutions.	◆	◆	◆	◆	◆
6.2	<b>Coordinate and share research and development activities</b>					
6.2.1	Improve the One Health AMR website as a national research and development hub that promotes stakeholder contribution, collaboration and coordination.	◆	◆	◆	◆	◆
6.2.2	Strengthen and expand forums to share research and development.	◆	◆	◆	◆	◆
6.3	<b>Seek and maintain dedicated funding for the national research and development agenda, including private and public investment partnerships</b>					
6.3.1	Investigate ways to improve funding for research and development, including through private investors and co-funding opportunities.	◆	◆	◆	◆	◆
6.3.2	Explore opportunities to increase cross-disciplinary initiatives on AMR research.	◆	◆	◆	◆	◆
6.3.3	Investigate opportunities to incentivise the development of new antimicrobials.	◆	◆	◆	◆	◆
6.4	<b>Support the translation of research findings into new approaches, applications and policies to combat antimicrobial resistance</b>					
6.4.1	Identify pathways to translate research findings into the most appropriate measures.	◆	◆	◆	◆	◆

## OBJECTIVE 7

STRENGTHEN GLOBAL COLLABORATION AND PARTNERSHIPS.



One Health Sectors					
	Agriculture	Animal Health	Environment	Food	Human Health
<b>PRIORITY AREAS FOR ACTION 7.1 – 7.3</b>					
<b>FOCUS AREAS 7.1.1 – 7.3.2</b>					
<b>7.1</b>	<b>Influence the global antimicrobial resistance agenda by active engagement and collaboration with other countries, multilateral organisations and forums</b>				
7.1.1	Develop curricula on antimicrobial resistance for use in low- and middle-income countries, with a One Health emphasis.	◆	◆	◆	◆
7.1.2	Participate in and contribute to the implementation of the World Health Organization (WHO) Global Action Plan on AMR.	◆	◆	◆	◆
7.1.3	Participate in WHO, World Organisation for Animal Health, Food and Agriculture Organization of the United Nations, United Nations Environment Programme, Codex and other high-level and technical international forums to enhance global antimicrobial resistance policies and initiatives.	◆	◆	◆	◆
7.1.4	Leverage international relationships to collaborate and coordinate on research and development and improve national best practices.	◆	◆	◆	◆
<b>7.2</b>	<b>Promote the importance of antimicrobial resistance in the South East Asia and Pacific regions, and engage in related initiatives to build regulatory and other capacity</b>				
7.2.1	Contribute to the current knowledge and understanding of AMR in animal health in the South East Asia and Pacific regions.	◆	◆	◆	
7.2.2	Support efforts to control malaria, tuberculosis and other significant infectious disease in the South East Asia and Pacific regions.				◆
7.2.3	Support food safety initiatives involving AMR in the South East Asia and Pacific regions, recognising the importance of cross border trade and zoonotic disease.	◆	◆	◆	◆
7.2.4	Assist in the development of AMR strategies, tools and resources in the South East Asia and Pacific regions.	◆	◆	◆	◆
7.2.5	Support capacity building for diagnosis, reporting and response to AMR pathogens.	◆	◆	◆	◆
<b>7.3</b>	<b>Participate in international surveillance and monitoring initiatives</b>				
7.3.1	Contribute to global antimicrobial resistance surveillance and antimicrobial usage monitoring activities such as Global Antimicrobial Resistance Surveillance System; and initiatives of the Food and Agriculture Organization of the United Nations and World Organisation for Animal Health.	◆	◆	◆	◆
7.3.2	Develop and enhance cross-border capacity to track emergence and spread of resistance internationally, with support for genomic-based diagnostic capacity in the South East Asian and Pacific regions.	◆	◆	◆	◆



# Glossary

**Agriculture sector:** The agriculture sector relates to plants and crops cultivated and harvested as food or feed. For the purpose of this document it excludes animal production (see ‘animal sector’).

**Animal sector:** The animal sector includes terrestrial and aquatic food- and fibre-producing animals, companion animals (including performance animals), zoological collections, laboratory animals and wildlife treated with antimicrobials.

**Antimicrobial:** An active agent such as medicine that, on application to living tissues or through systemic use, kills, prevents or inhibits the growth of microorganisms. Antimicrobials include antibiotics, antiseptics, antifungals, antivirals, antimalarials and anthelmintics.

**Antimicrobial resistance (AMR):** The ability of microorganisms such as bacteria, fungi and viruses to develop a capability to grow or survive in the presence of antimicrobials, and to pass this trait on via their genes to other microorganisms.

**Antimicrobial stewardship (AMS):** The safe and appropriate use of antimicrobials to reduce harm while also curtailing the incidence of antimicrobial resistance.

**Biosecurity:** Efforts to prevent, respond to and recover from pests and diseases that threaten the economy and environment.

**Environment sector:** The environment sector covers all terrestrial and aquatic ecosystems and the native and introduced species present in those ecosystems including vertebrates, invertebrates, plants, fungi, macro and microorganisms. The environment sector does not include animals or plants covered by the animal and agriculture sectors, respectively.

**Food sector:** The food sector includes all those enterprises and premises engaged in food production, processing, food preparation, food service and retail of food commodities.

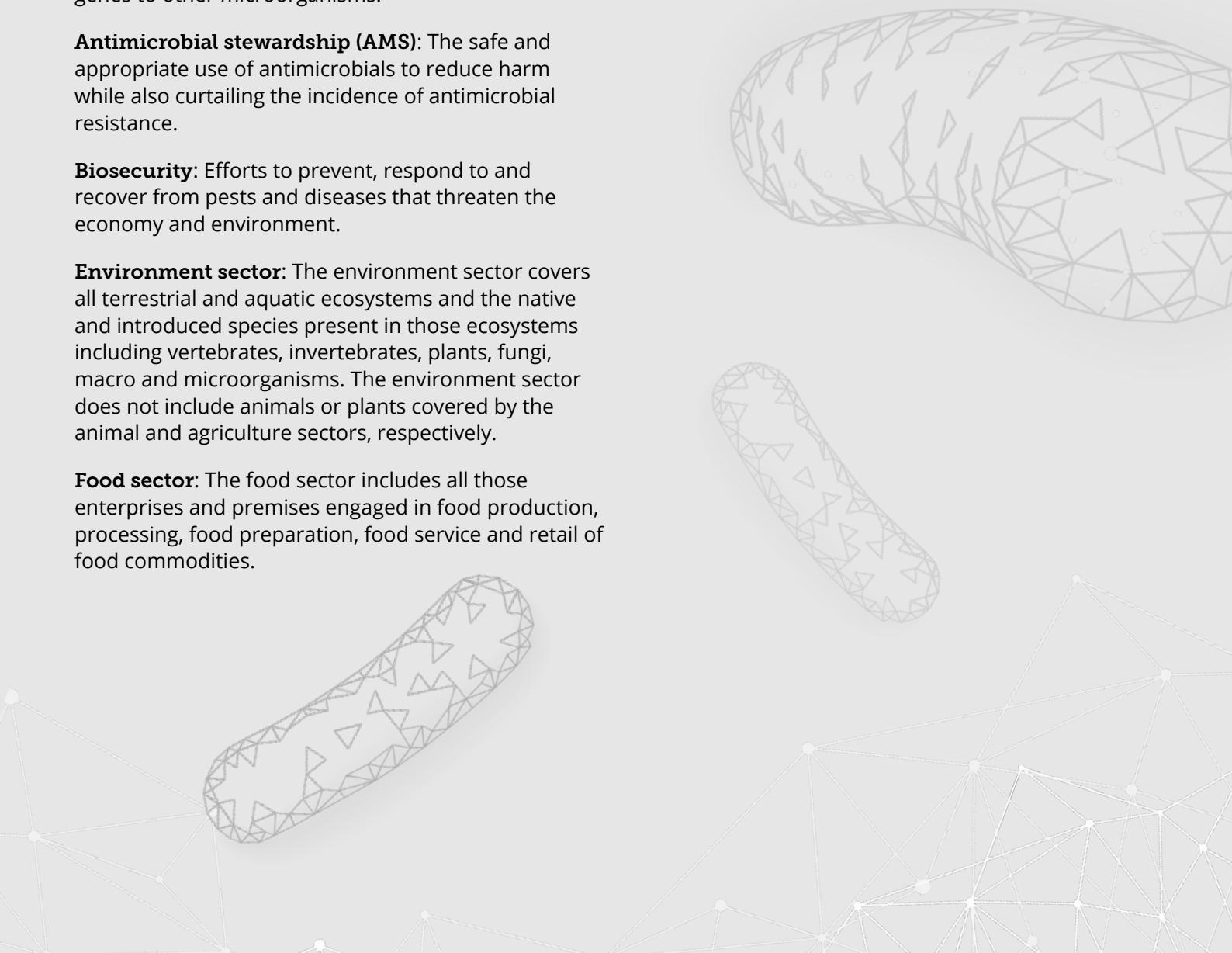
**Infection prevention and control (IPC):** Any practice to prevent and/or stop the occurrence of disease-causing microorganisms in human and animal clinical, preventive health and community settings.

**One Health:** The principle of applying a collaborative and coordinated effort across multiple sectors—working locally, nationally and globally—to attain optimal health for people, animals and the environment.

**Priority populations:** Specific groups of Australians who should receive priority consideration depending on circumstances.

**Sector:** In this report, ‘sector’ refers to the agriculture, animal health, environment, food and human health sectors to which a One Health approach will be applied.

**Society:** In this report, ‘society’ is an inclusive term referring to all Australians, whether in the general public or in other groupings.





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