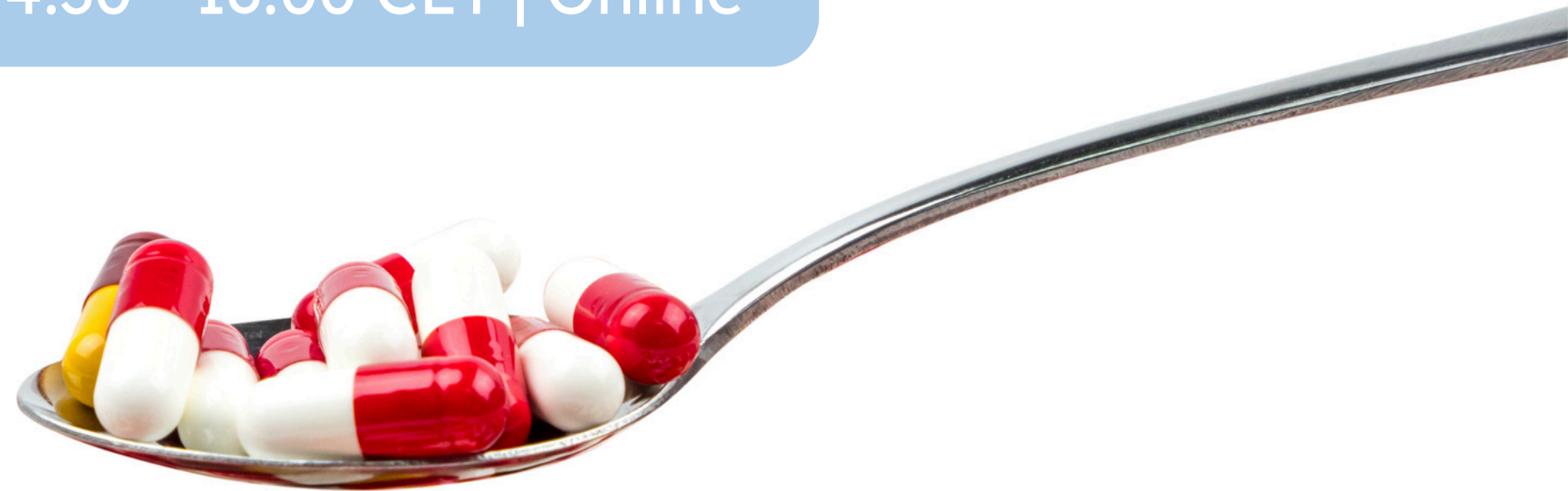


Tackling Antimicrobial Resistance in Food Production: A One Health Perspective

Wednesday 26 November | 14:30 - 16:00 CET | Online

Welcome



#EAAD #EAAD2025 #WAAW #WAAW2025
#WorldAMRWeek #AMRWeek





Opening

14:30 – 14:35



Jaisalmer de Frutos Lucas
Policy Manager at EPHA



Bruno Gonzalez-Zorn
Full Professor at Complutense
University in Madrid



Panel Discussion

14:35 – 14:40



Jorge Matheu Alvarez

Scientist at Governance,
Coordination and Monitoring
Unit, AMR department, World
Health Organization



Ernesto Liebana

BIOHAZ Team Leader at
European Food Safety
Authority



Azucena Mora

Full professor of Microbiology
at University of Santiago de
Compostela

Member of the Scientific
Committee of AESAN (Spanish
Food Safety Agency)



Wannes Vanderhaeghen

Head of Data Analysis Unit at
AntiMicrobial Consumption and
Resistance in Animals

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Presentation



Jorge Matheu Alvarez

Scientist at Governance, Coordination and Monitoring
Unit, AMR department, World Health Organization



Food and Agriculture
Organization of the
United Nations



World Health
Organization



World Organisation
for Animal Health
Founded as OIE

One Health Global response to AMR: Efforts on food production

Jorge Matheu, AMR department, WHO HQ



Definition of One Health

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems.

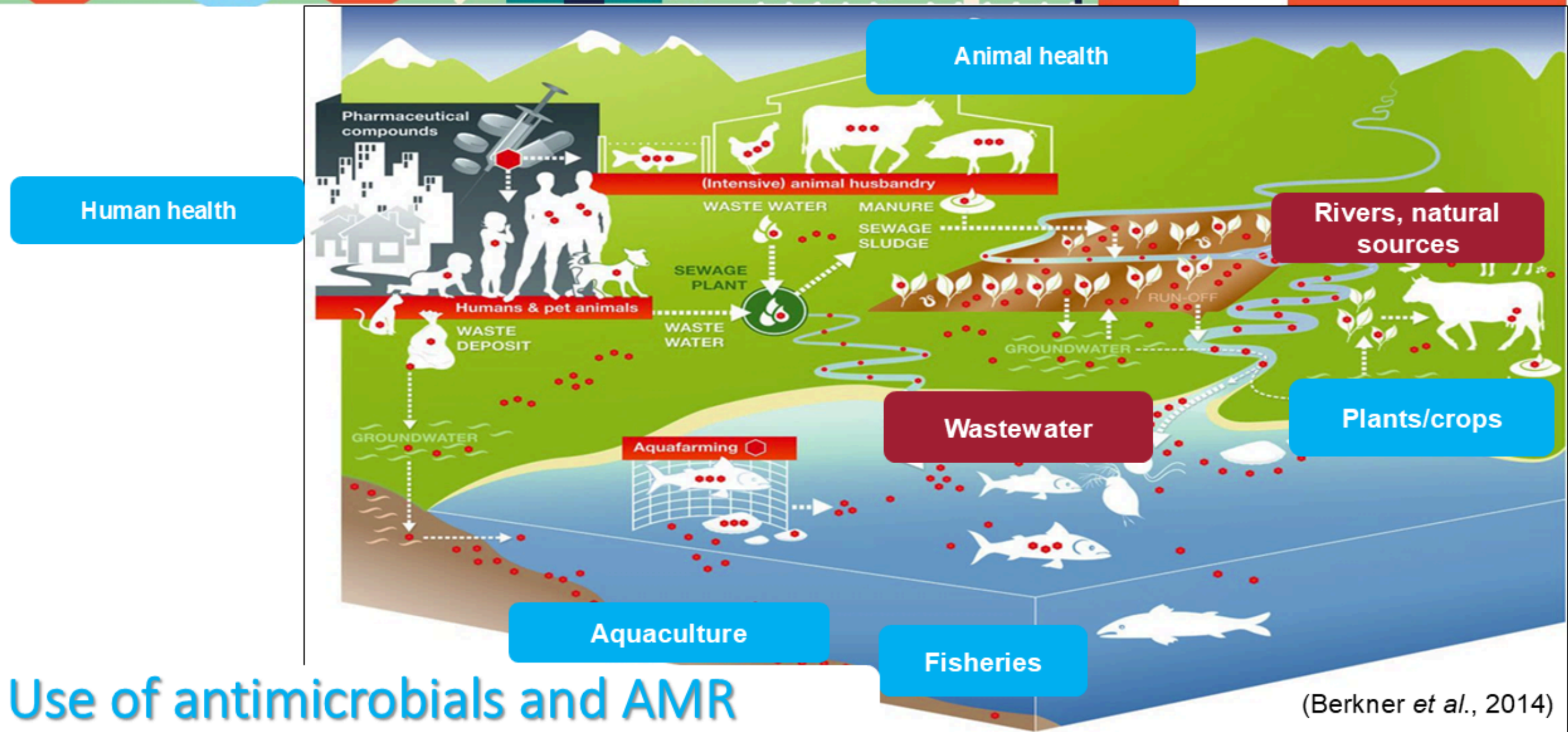
It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent.

The approach mobilizes **multiple sectors, disciplines and communities** at varying levels of society **to work together** to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and **contributing to sustainable development.**



One Health High Level Panel, 2021

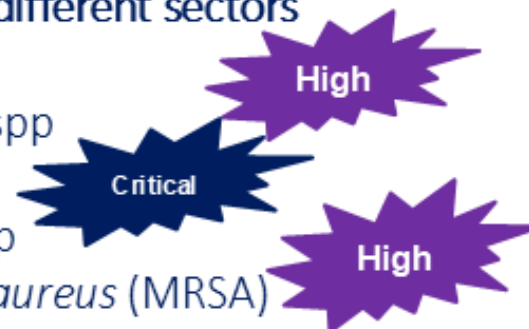




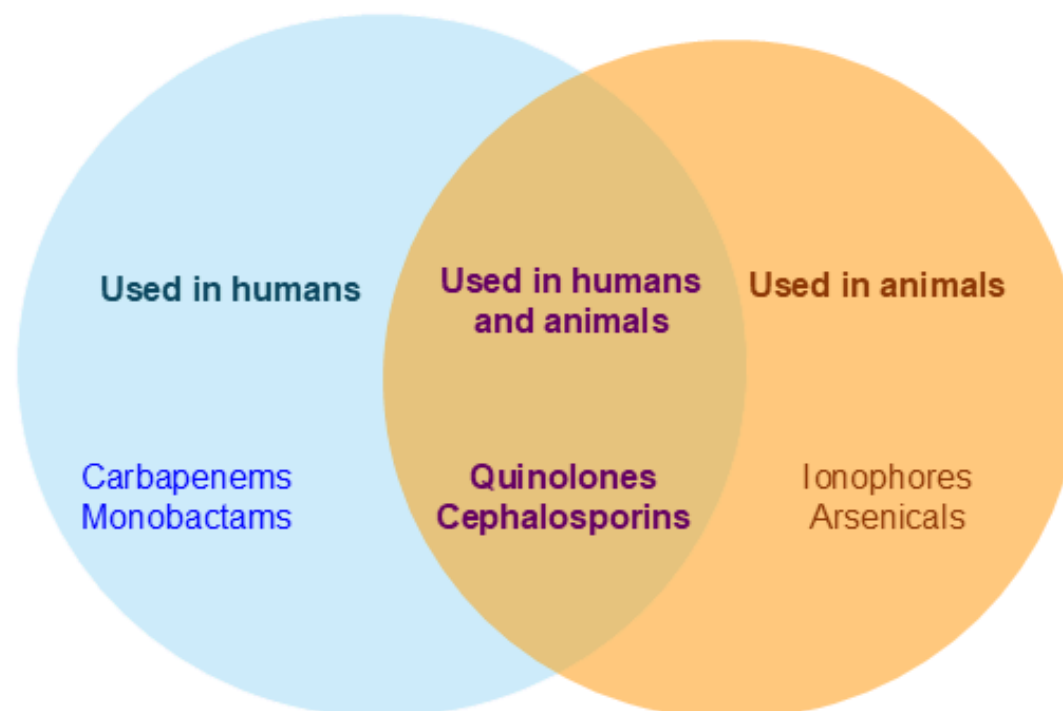
Context

Common bacteria in different sectors

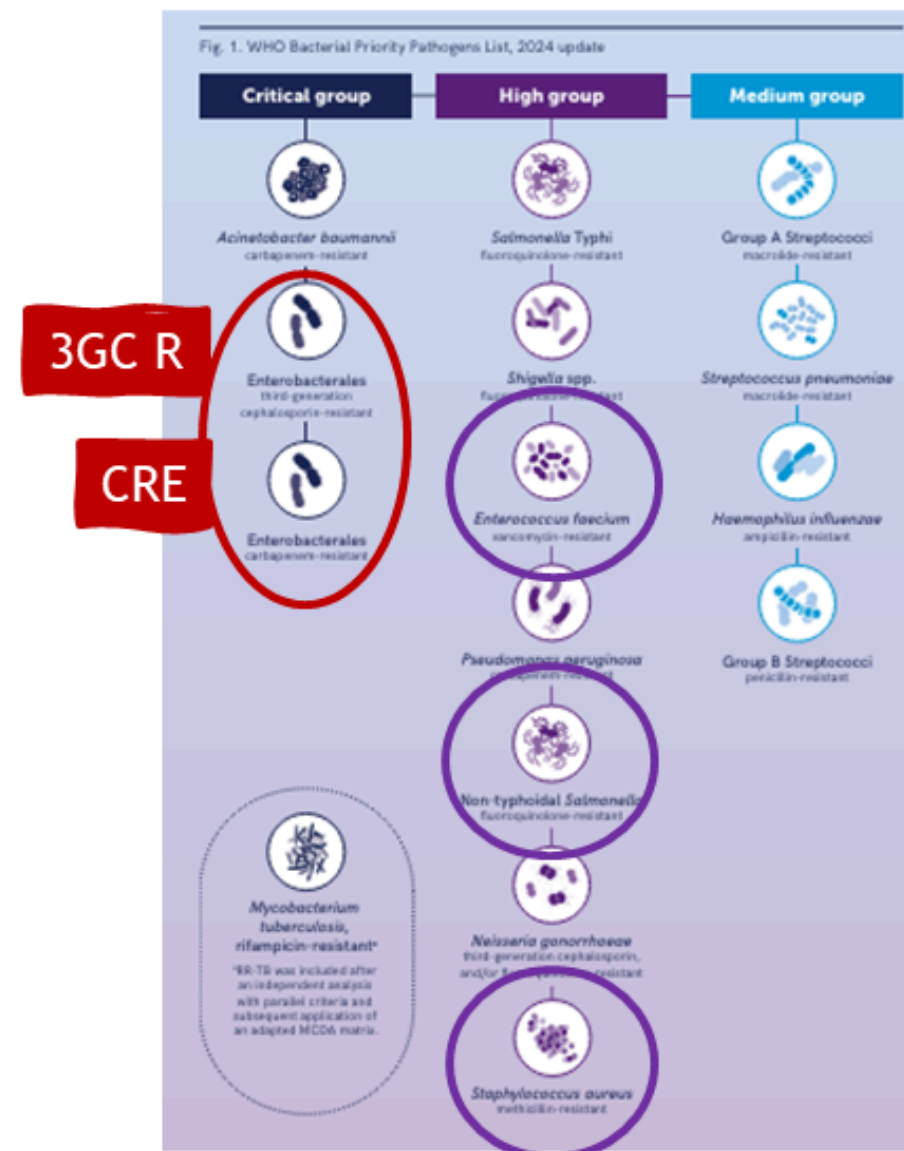
- ▶ *Salmonella* spp
- ▶ *Campylobacter* spp
- ▶ *Escherichia coli*
- ▶ *Enterococcus* spp
- ▶ *Staphylococcus aureus* (MRSA)



Use of Antimicrobials in different sectors



WHO Bacterial Priority Pathogen List 2024



Quadripartite Collaboration on One Health



Food and Agriculture
Organization of the
United Nations



World Health
Organization



World Organisation
for Animal Health
Founded as OIE

Agriculture

Environment

Human Health

Animal Health

One Health

The Quadripartite Joint Secretariat on AMR



World Health
Organization

5



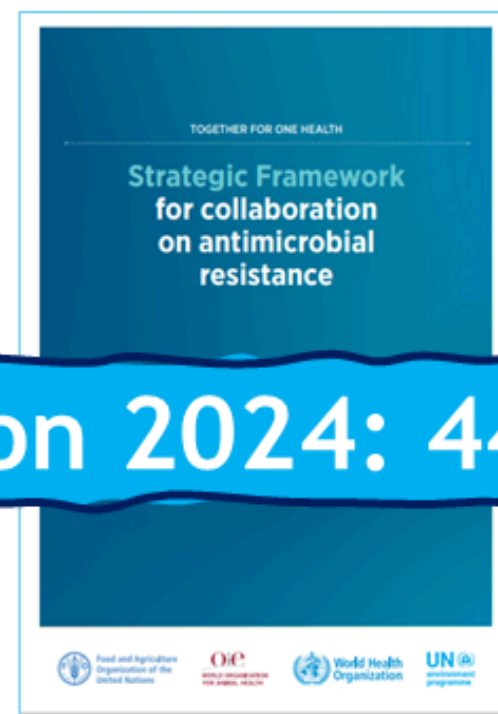
Political framework and guidance on OH AMR



GAP 2015



IACG 2019



QPT Strategic Framework 2022



One Health Joint Plan of Action 2022

UNGA Political Declaration 2024: 44 commitments



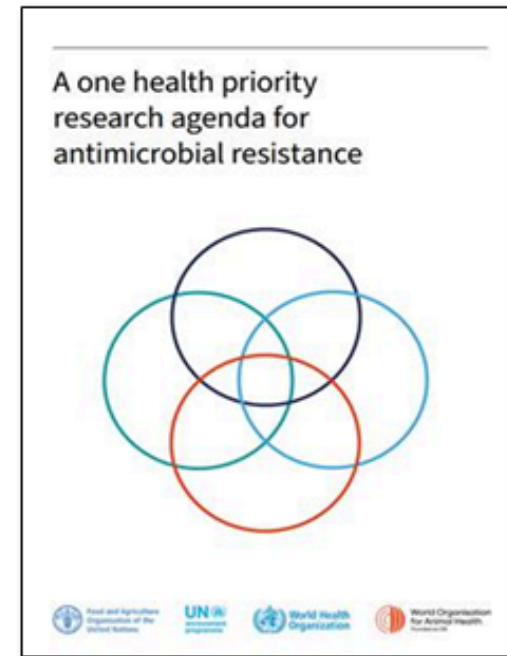
<https://www.qjsamr.org/technical-work/one-health-priority-research-agenda-for-amr>



One Health AMR Guidance and tools to support NAP implementation



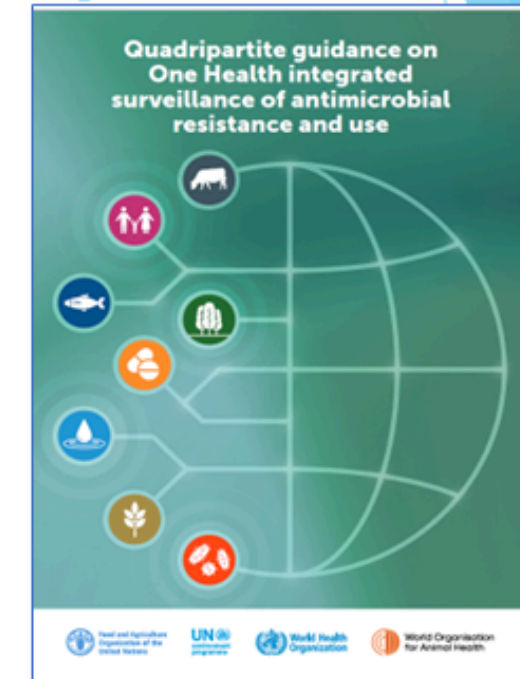
Responsible use in non-human sectors



OH AMR Research



OH AMR Legislation



OH Integrated Surveillance

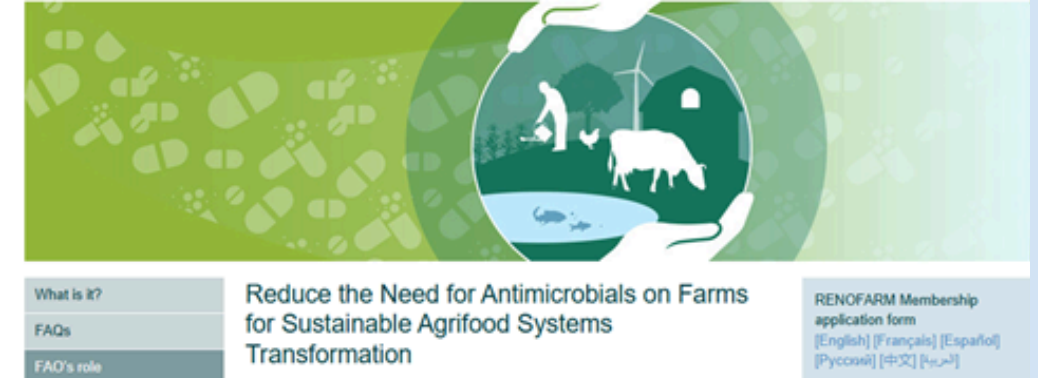
UNGA Political declaration 2024

Critical need to enhance collaboration, cooperation and partnership



FAO RENOFARM

- ▶ Provides comprehensive support in implementing good production practices that lead to a reduced need for antimicrobials and a prudent and responsible use when antimicrobials are needed.
- ▶ RENOFARM is guided by the Farm 5Gs:
 - ▶ **Good Health Services:** Ensuring access to good health services, including guidance on prudent AMU.
 - ▶ **Good Production Practices:** Implementing good production and husbandry practices across all farm production value chains, optimal farm biosecurity and hygiene measures, prudent AMU and efficient farm waste management.
 - ▶ **Good Alternatives:** Embracing alternative approaches, such as vaccines, biosecurity measures, alternative feeds, feed additives, integrated pest management (IPM), and biological control methods.
 - ▶ **Good Incentives:** Promoting economic and productivity outcomes at the farm level through measures like regulatory frameworks, quality control mechanisms, and bolstering functional supply chains.
 - ▶ **Good Connection:** Strengthening the connection of farmers to reduce their dependence on antimicrobials involves enhancing their access to crucial resources and support.



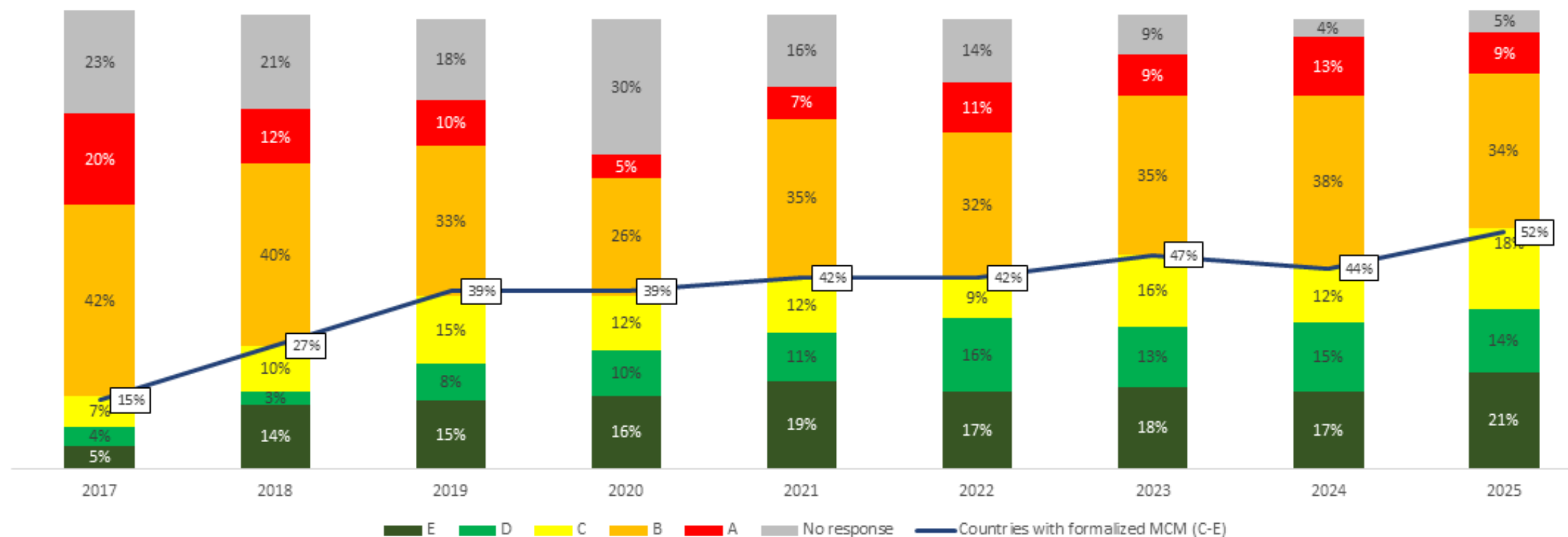
Food and Agriculture
Organization of the
United Nations





Multisector coordination on AMR

9-year trend: Multisector Coordination on AMR (N=194)



Steady increase in percentage of countries with formalized MCM

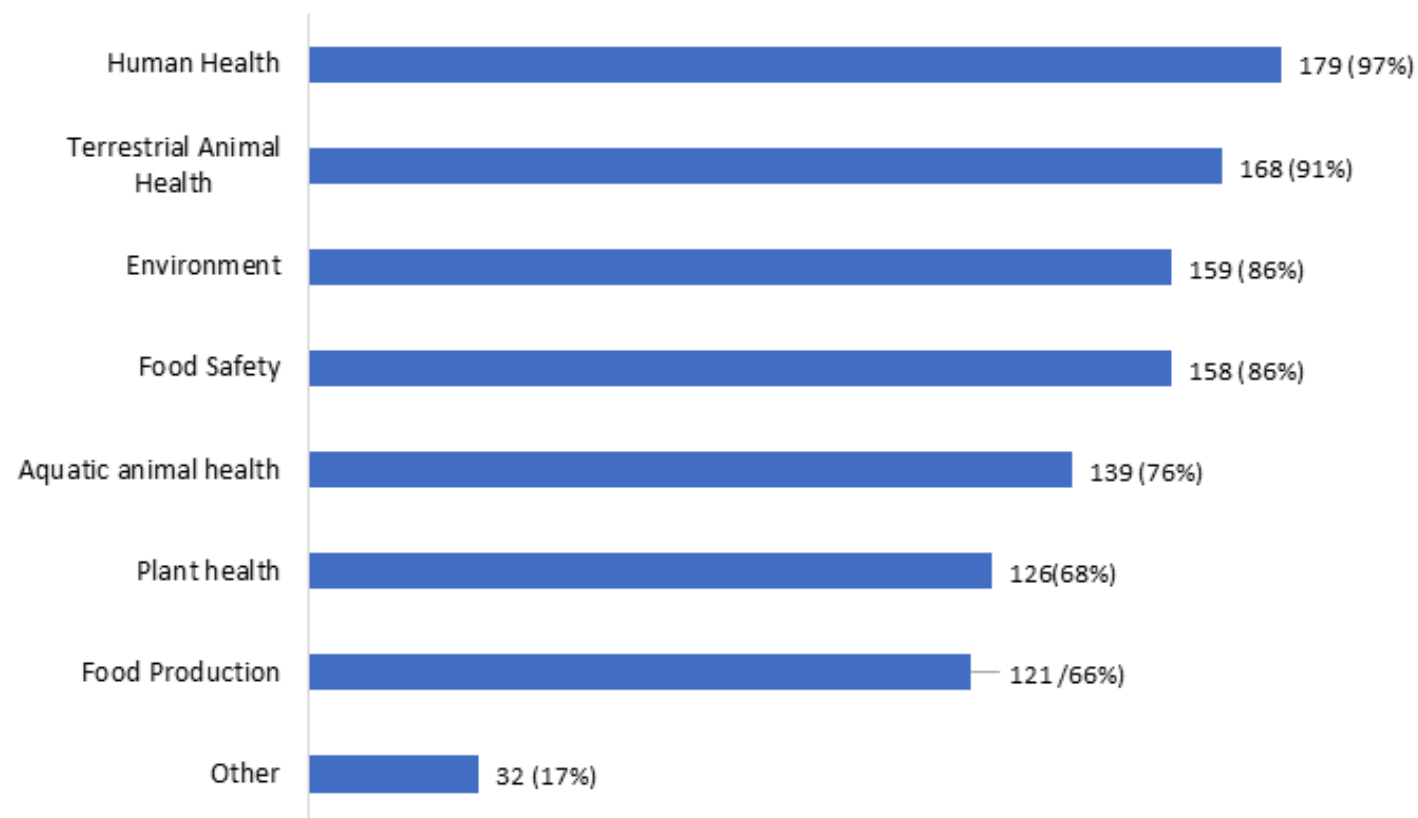
A - No formal multi-sectoral governance or coordination mechanism (MCM) exists. B - MCM on AMR established with Government leadership; C - Formalized MCM with technical working groups established with clear terms of reference, regular meetings, and funding and reporting/accountability. D - Joint working on issues; E - Integrated approaches used to implement the AMR NAP with relevant data and lessons learned from all sectors to adapt NAP implementation.





AMR Multisector Coordination Sectors involved

TrACSS 2025: Sectors involved in the AMR
multisector-coordination mechanism (N=184)



Number and percentage of countries

46%
Of countries
have **all sectors**
listed involved
in the AMR
MCM

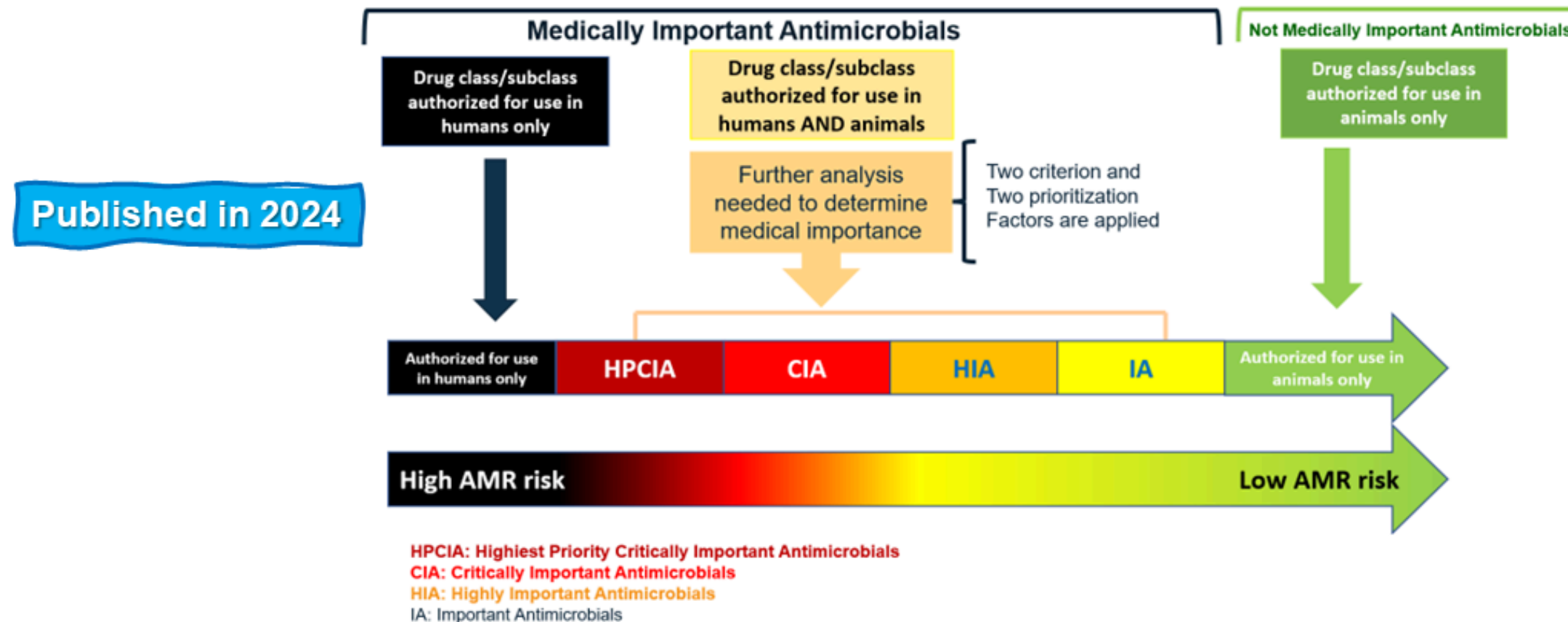


WHO Medically Important Antimicrobial List

-WHO MIA List- 2024

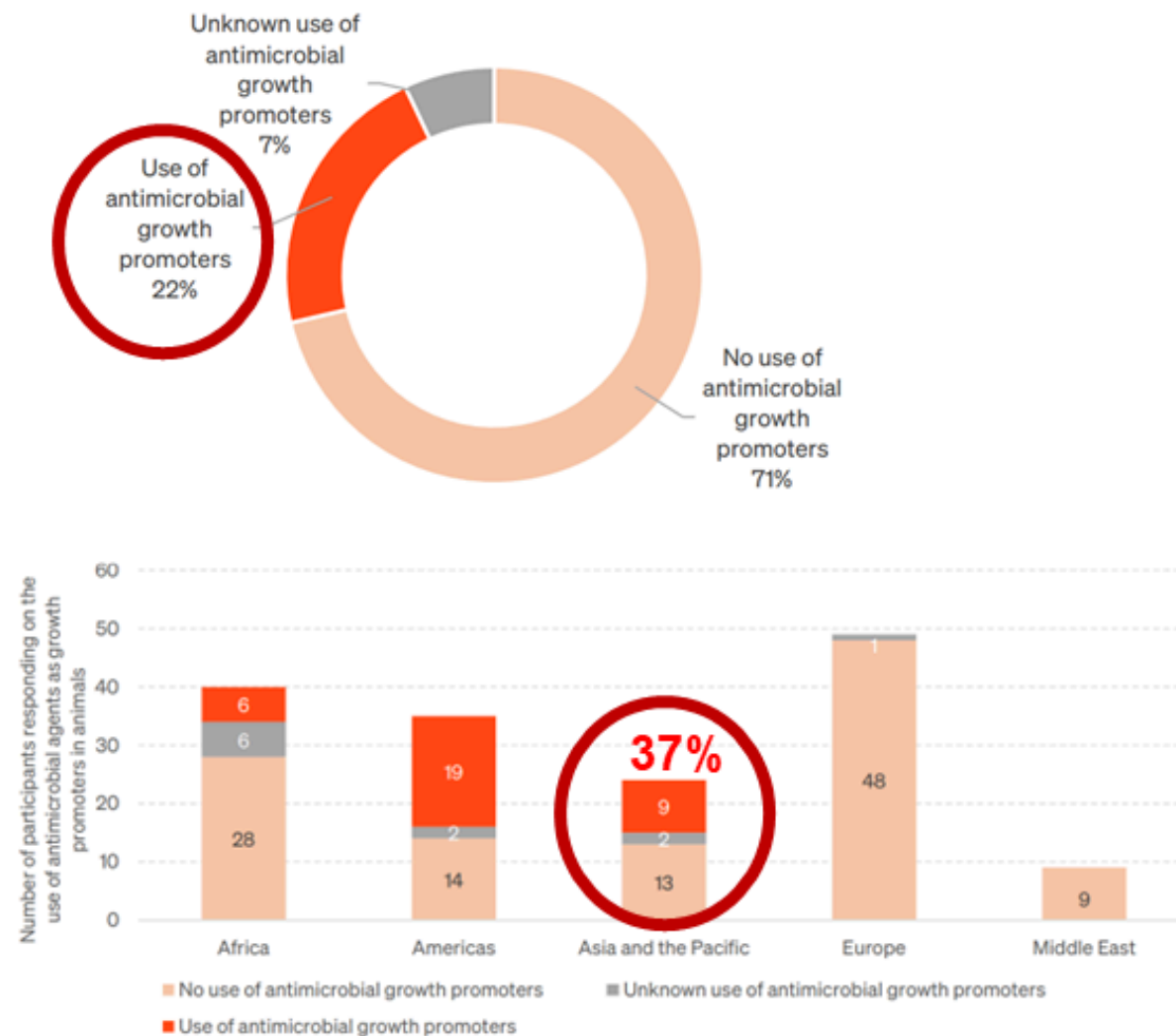


- Previously known as the **WHO Critically Important Antimicrobial List –WHO CIA List-**
- **All classes** of antimicrobials were analyzed and included in one of the three groups
- The **categorization** is based on **resistance mechanisms**. The most common resistance mechanism affects all agents in a particular class of antimicrobials.

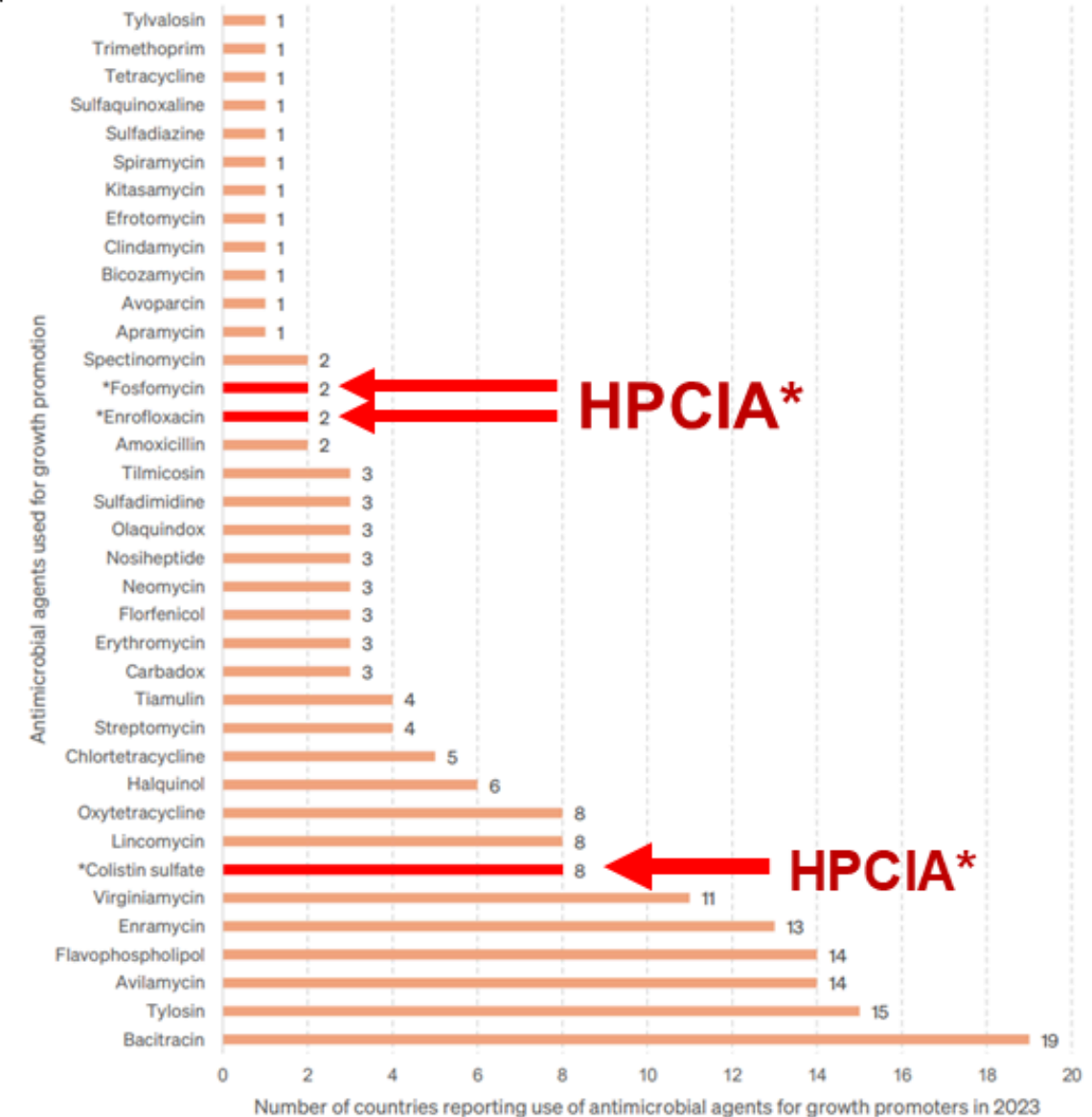


9th WOAHA report: Use of HPCIA for growth promotion is still common

Use of antimicrobial growth promoters in 157 Participants in 2023

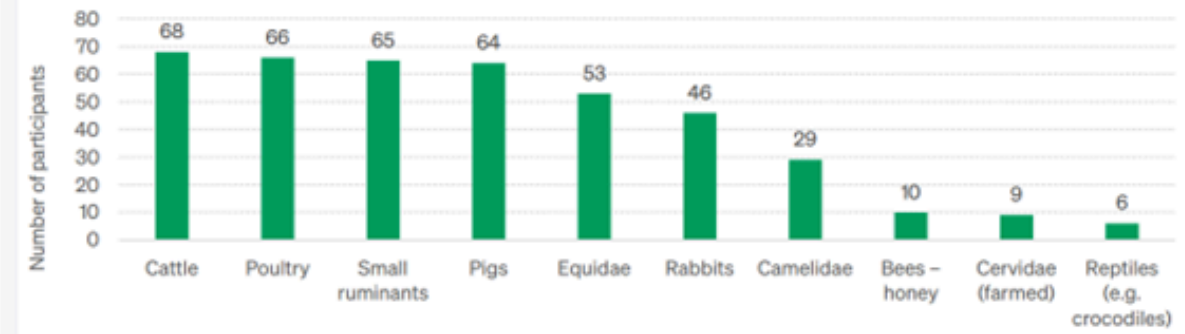
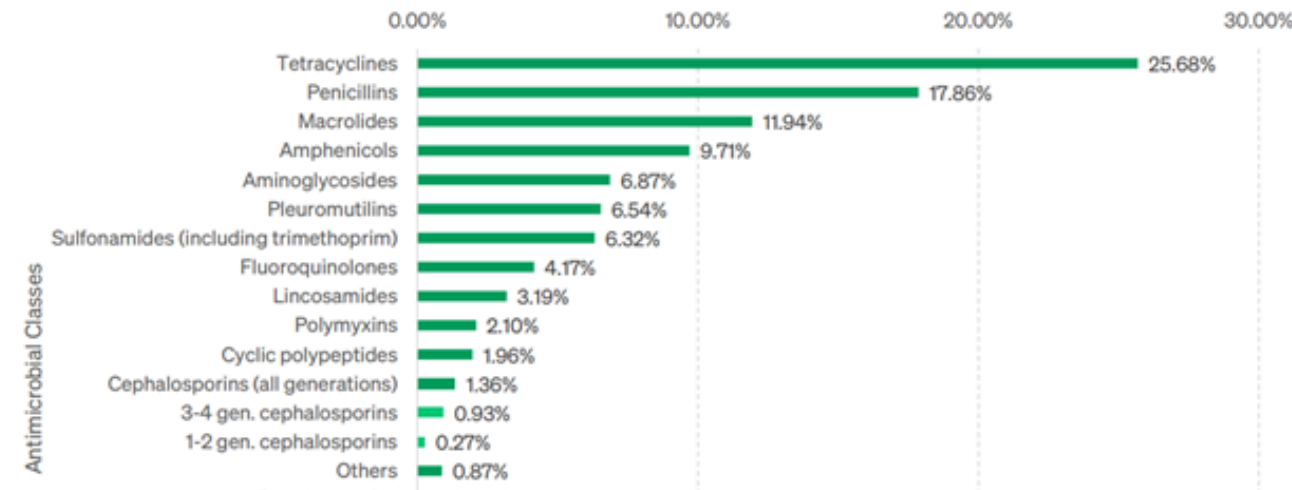


Antimicrobial agents used for growth promotion in animals 2023



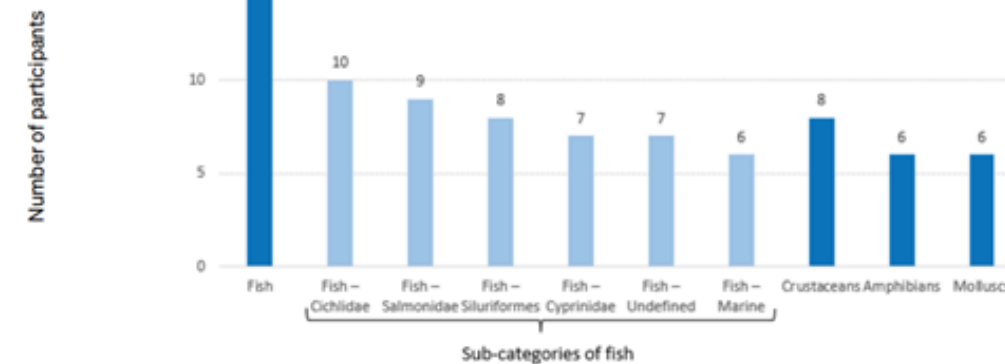
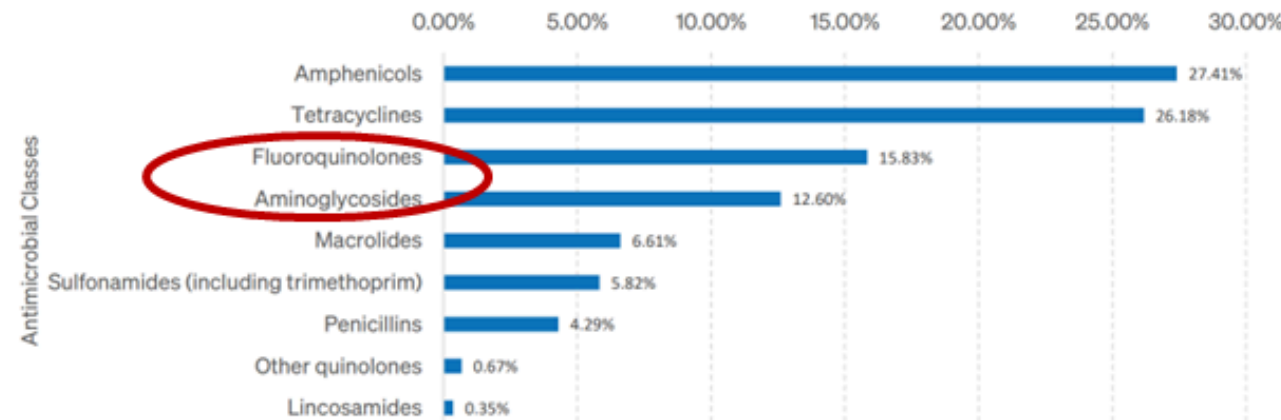
9th WOA Report 2025: Use of antimicrobials in Animals 2022

% of reported quantities of antimicrobial agents used in terrestrial food-producing animals by 71 participants in 2022



Terrestrial food-producing animals covered according to the label of the veterinary product

% of Reported Quantities of Antimicrobial Agents Used in Aquatic Food-Producing Animals by 18 Participants in 2022



Aquatic food-producing animals covered according to the label of the veterinary product



GISSA - Global Architecture for Integrated AMR and AMU Surveillance

Quadripartite Global Systems

Health System



AMR/AMU

Agricultural System



ANIMUSE Global Database



AMU

Environmental health



AMR and
Residues



AMR
in animals and
food

AMU
in plant production
and protection

Global Integrated Surveillance for AMR and AMU





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One Health Integrated Surveillance of AMR/AMU

To be published soon



Thank you



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for Animal Health
Founded as OIE





Presentation



Ernesto Liebana

BIOHAZ Team Leader at European Food Safety
Authority

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ADDRESSING AMR THROUGH ONE HEALTH: INSIGHTS INTO EFSA'S ACTIVITIES IN MONITORING & RISK ASSESSMENT.

Dr. Ernesto Liebana, BIOHAZ Team Leader and EFSA AMR coordinator

European Public Health Alliance (EPHA) webinar on "Antibiotic Use in Food Production" 26 November 2025

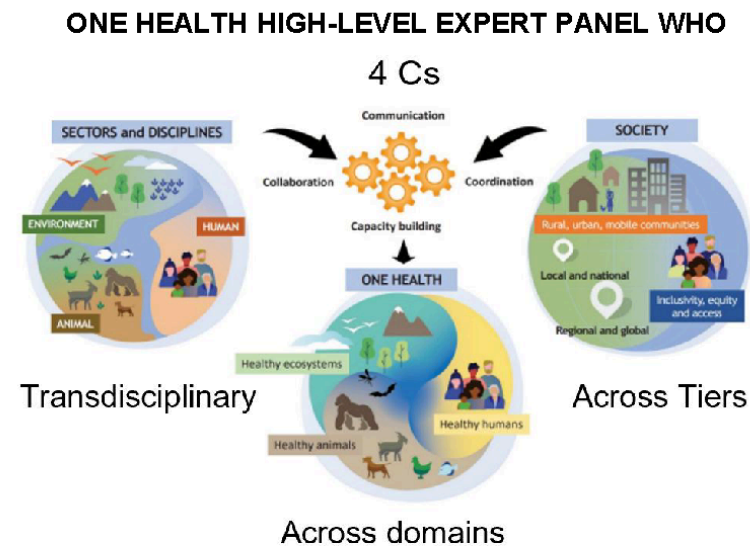


THE EU ONE HEALTH RESPONSE TO AMR



EU AMR One-Health Network

- (i) trans-sectoral and integrated approach
- enhance MSs discussions
 - exchange information and sharing of best practices



2017 EU AMR 'One Health' Action Plan



INTER-AGENCY WG ON AMR



EFSA, ECDC, EMA, ECHA, EEA

- Regular meetings, with at least one annual physical meeting per year.
- The coordination of the working group will rotate among the agencies. Each term will last 18 months.
- Each agency will designate one focal point (with an alternate) to coordinate agency's contributions
- Commission representative will be invited to participate in the meetings
- External ad hoc members and observers may attend the meetings as needed.





KEY OUTCOME INDICATORS AND TRENDS



KEY OUTCOME INDICATOR COMPLETE SUSCEPTIBILITY IN INDICATOR *E. COLI*



**Marked variations
among reporting
countries**

Lower KOI CS were generally
observed in countries in eastern
and southern Europe and the
highest in countries in the
northern Europe



**Statistically significant
increasing trends
(from 2014-2023)
registered in 48% of
the reporting
countries (14 of 29)**



KEY OUTCOME INDICATOR PREVALENCE OF ESBL- AND/OR AMPC-PRODUCING *E. COLI*



Marked variations among reporting countries

Higher KOI ESBL were generally observed in countries in eastern and southern Europe and the highest in countries in the northern Europe



Statistically significant
decreasing trends
(from 2015-2023)
have been observed in
**70% of the reporting
countries (21 of 30)**





DETECTING EMERGING SIGNALS: THE EXAMPLE OF CARBAPENEM RESISTANCE



CPE in the FOOD CHAIN in THE EU/EFTA. PART 1: 2025 (ToR1/3)

Self-task Mandate BIOHAZ, SO adopted 12 March 2025

Current status: Occurrence, genes, bacteria, clones, mobile genetic elements, Sources, geographical and temporal distribution

Methods in use: Detection, cgharacterization



Biological Hazards



WG Carbapenemases



Observers:



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH



European Commission

Transmission dynamics:
Documented transmission routes, risk factors

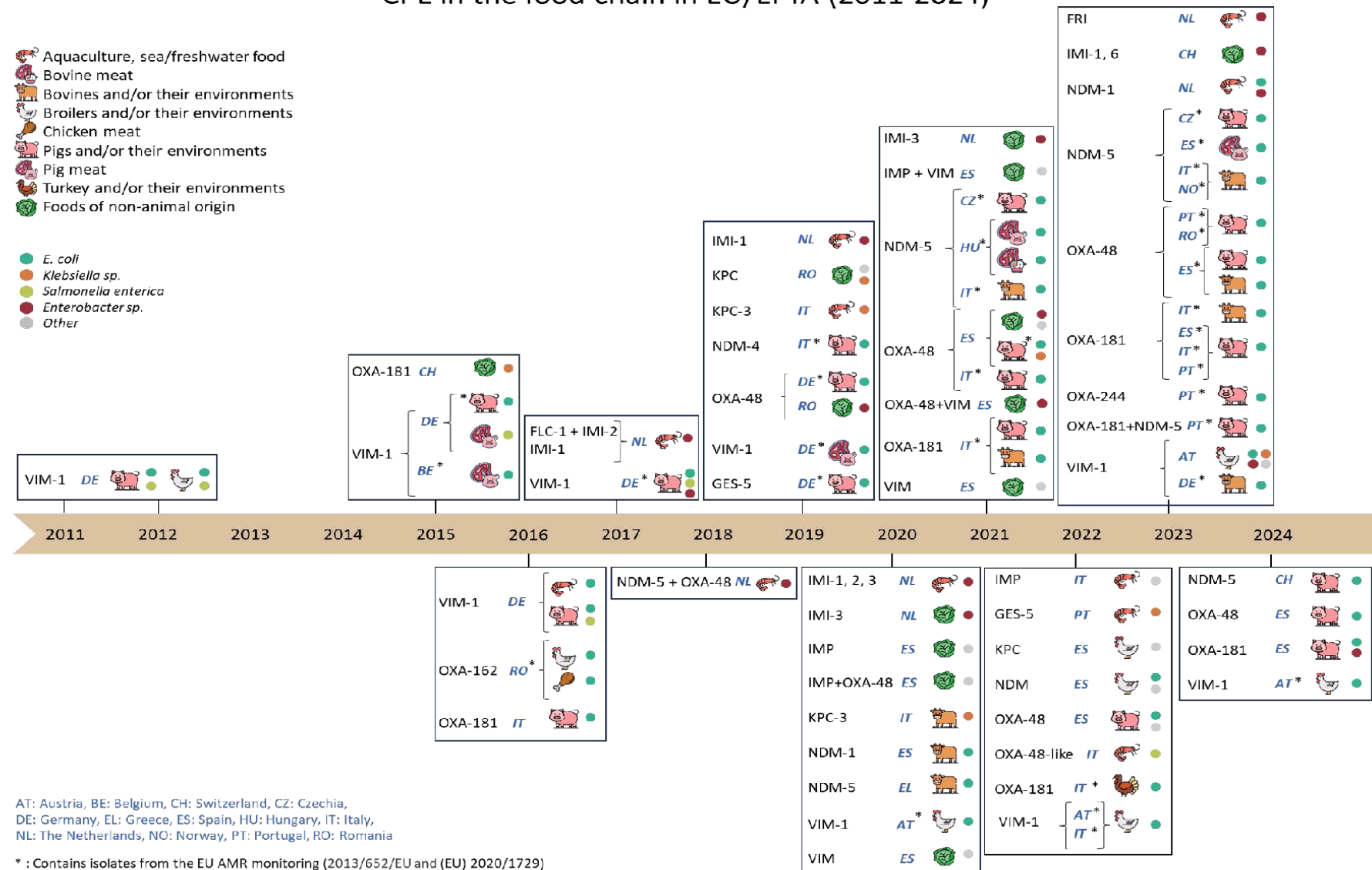
Contingency, mitigation plans:

8



Temporal distribution and sources

CPE in the food chain in EU/EFTA (2011-2024)



Most reports from terrestrial animals, mainly from pigs, followed by bovines and poultry.

Compared to meat, more frequently detected in food derived from aquatic animals and food of non-animal origin (including imported products) exhibiting greater diversity in bacterial species and carbapenemase genes

Increase in number of reports, mainly from pigs, with a surge in

2021:
OXA-18: Italy

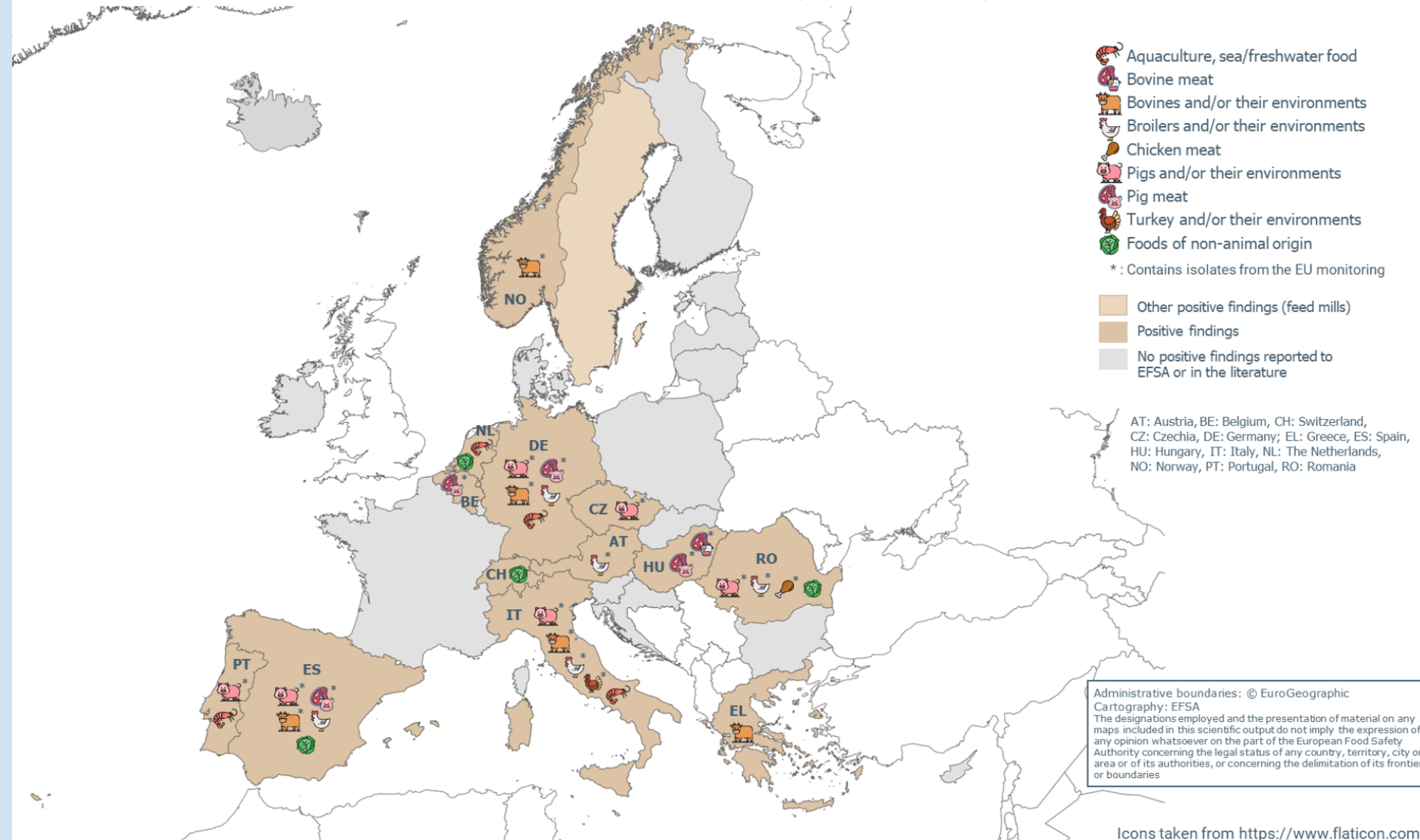
2023:
OXA-48: Spain

OXA-181, OXA-48, OXA-244 & blaNDM-5: Portugal



Geographical distribution

CPE in the food chain in the EU/EFTA (2011-2024)



Reported in 14 EU/EFTA countries (11 of them though the official EU monitoring)

Pig production a source across multiple countries (e.g. Germany, Italy, Czechia, Spain & Portugal)



CPE- RECOMMENDATIONS to fill identified gaps

MONITOR additional sources:

- seafood (aquaculture),
- foods of non-animal origin,
- Imports into EU
- others

Perform further studies to clarify transmission:

- trace-back-forward investigations,
- drivers for spread, risk factor analysis



MONITORING additional bacteria:

Klebsiella spp., *Enterobacter* spp.,
Salmonella spp., others

Detection methods:

- Increase sensitivity
- perform/harmonize characterization of MGE

Different types of studies/research that could be conducted were proposed:

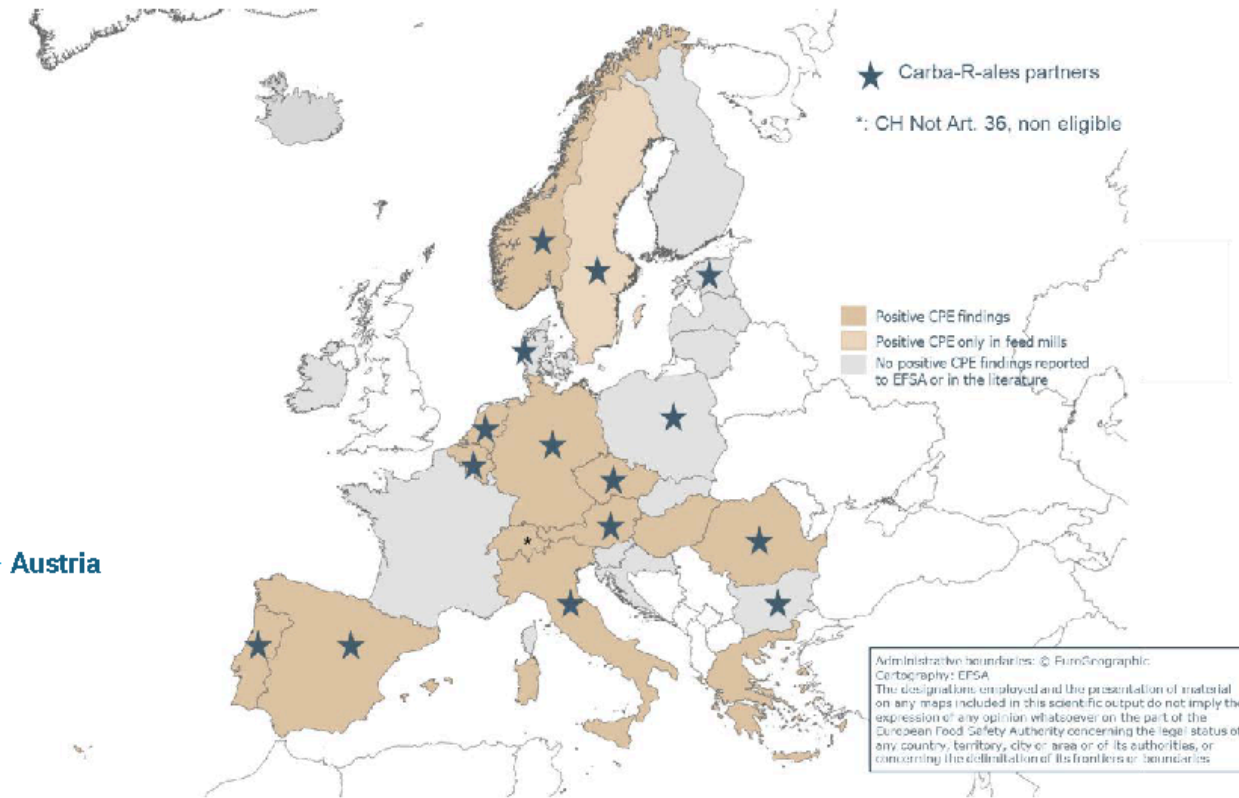
Molecular epidemiology, temporal and spatial correlation, experimental validations, advanced computational modelling, metagenomics/microbiome analysis



Data Generation on Carbapenemase-producing Enterobacterales (CPEs) in the food chain in the EU/EFTA.

GP/EFSA/BIOHAW/2024/01

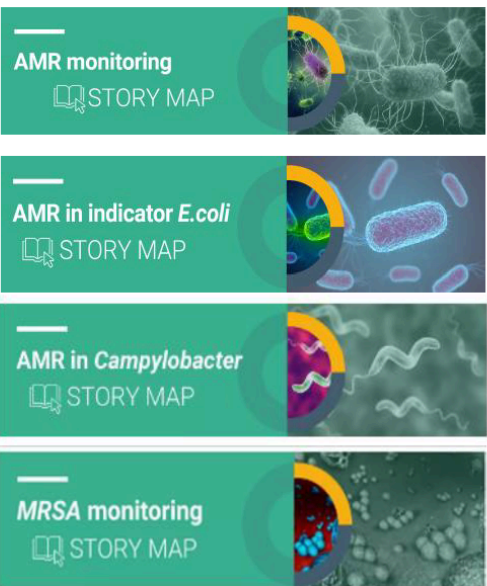
- Coordinated by : **TECHNICAL UNIVERSITY OF DENMARK -DTU FOOD- Denmark**
- Austrian Agency for Health and Food Safety – Institute for Medical Microbiology and Hygiene Graz – **Austria**
- SCIENSANO, Belgian National Public Health Institute – **Belgium**
- National Diagnostic and Research Veterinary Medical Institute – **Bulgaria**
- Státní veterinární ústav Praha – **Czech Republic**
- National Centre for Laboratory Research and Risk Assessment - LABRIS – **Estonia**
- The Federal Institute for Risk Assessment. Bundesinstitut für Risikobewertung – **Germany**
- Istituto Zooprofilattico Sperimentale del Lazio e della Toscana – **Italy**
- Norwegian Veterinary Institute – **Norway**
- Institute of Marine Research – IMR – **Norway**
- PAŃSTWOWY INSTYTUT WETERYNARYJNY – PAŃSTWOWY INSTYTUT BADAWCZY – **Poland**
- The National Institute of Agricultural and Veterinary Research – INIAV – **Portugal**
- Wageningen Bioveterinary Research, institute within the legal entity Stichting Wageningen – **The Netherlands**
- Institutul de Diagnostic și Sănătate Animală – IDSA – **Romania**
- Institutul de Igienă și Sănătate Publică Veterinară - IHVPH – **Romania**
- Central Veterinary Laboratory – **Spain**
- National Food Center Spanish Agency for Food Safety and Nutrition – CAN AESAN OA – **Spain**
- Laboratory veterinarian| Dep. Animal health and antibiotic strategies - Swedish Veterinary Agency – **Sweden**



ONLINE VISUALISATION TOOLS: DASHBOARDS & STORY MAPS

- 2022 visualisation tools

STORY MAPS



DASHBOARDS



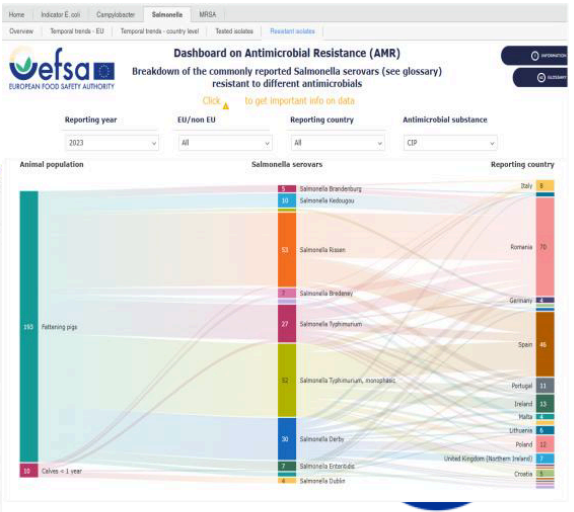
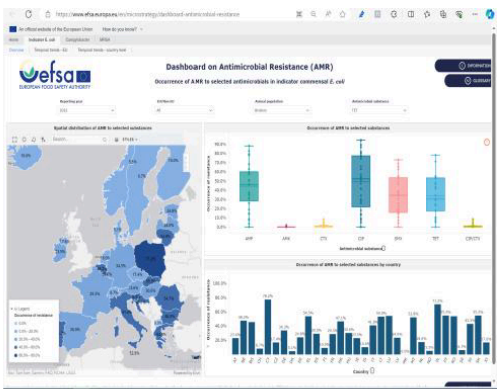
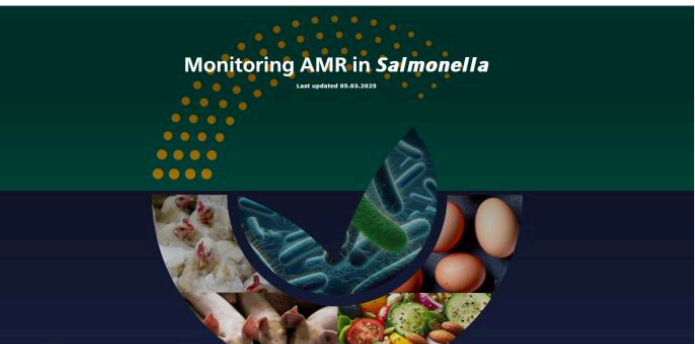
Data VIZ

Levels of the resistance of *Salmonella* spp., *E. coli* and *Campylobacter* spp. in food, animals and humans



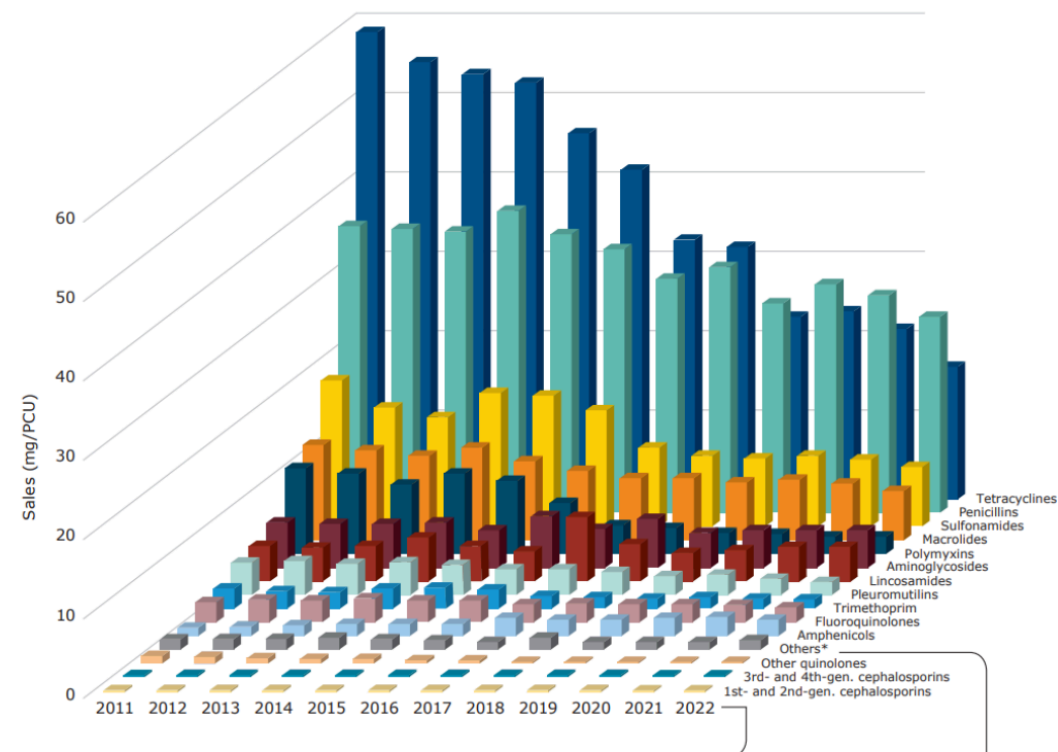
- 2023 Visualisation tools

New: story map on AMR in *Salmonella* spp.

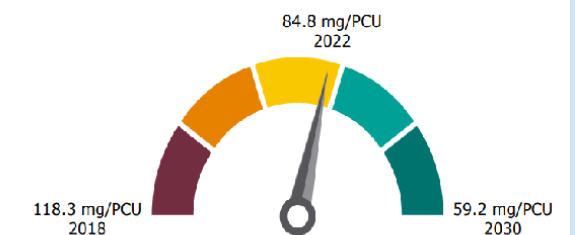


CONSUMPTION IN ANIMALS

Figure 16. Trends of aggregated sales (mg/PCU) by antibiotic class in 25 European countries¹ from 2011 to 2022²



Farm-to-Fork goal: reduce EU sales of antimicrobials for farmed animals + aquaculture by 50% by 2030



- The ESVAC project formally comes to an end in November 2023 with the publication of its final report.
- From January 2024, all EU / EEA MSs must report their data on the volume of sales and use of antimicrobial medicinal products in animals, in line with the Veterinary Medicinal Products Regulation.
- EU / EEA MSs must use **EMA's Antimicrobial Sales and Use Platform** to report their data.



14



Joint reporting on the consumption of antimicrobial agents and occurrence of AMR in bacteria from humans and food-producing animals (JIACRA)

- As part of the implementation of the EU action plans on AMR, the **European Center for Disease Prevention and Control (ECDC)**, the **European Food Safety Authority (EFSA)** and the **European Medicines Agency (EMA)** have been requested by the European Commission to analyse possible relationships between the **consumption of antimicrobial agents** and the **occurrence of antimicrobial resistance** in humans and food-producing animals.
- JIACRA builds on previous collaboration between the three EU agencies, including harmonisation of approaches, expertise and previous joint publications on related subjects.
- So far, four JIACRA reports have been published, with a fifth report expected to be delivered end of 2026.



AMR ANIMAL PATHOGENS: EFSA OUTPUTS

8 Scientific Opinions:

0–33%	33–66%	66–100%
Not listed	Uncertainty about listing	Listed
Any probability range that crosses into the 33–66% zone		

From recent Council Recommendations:
"Continue to assess, on the basis of follow-up to several recent scientific opinions EFSA, animal diseases caused by bacteria resistant to antimicrobials, to ascertain if it is needed to list any of those diseases in Regulation (EU) 2016/429 ('Animal Health Law') with a view to categorise them for any regulatory surveillance, control or other management measures."

Antimicrobial-resistant bacterium	Animal species	Link	Date published	Outcome of the assessment on listing (probability range)
Staphylococcus pseudintermedius	Dogs and cats	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7080	01/02/2022	Uncertain (33–90%)
Rhodococcus equi	Horses	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7081	02/02/2022	Uncertain (10–66%)
Enterococcus faecalis	Poultry	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7127	21/02/2022	Uncertain (33–66%)
Enterococcus cecorum	Poultry	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7126	25/02/2022	Uncertain (33–75%)
Brachyspira hyodysenteriae	Swine	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7124	15/03/2022	Uncertain (33–66%)
Pseudomonas aeruginosa	Dogs and cats	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7310	03/05/2022	Uncertain (33–90%)
Escherichia coli	Dogs and cats, horses, swine, poultry, cattle, sheep and goats	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7311	10/05/2022	Uncertain (33–66%)
Staphylococcus aureus	Cattle and horses	https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/j.efsa.2022.7312	10/05/2022	Uncertain (60–90%)



- Our ambition: **Paralleling EARS-Net in the human sector, we aim to close a gap on AMR surveillance in clinical isolates from animals**, in order to:
 - Complement the existing EFSA monitoring in the food chain
 - Support development of veterinary antimicrobial guidelines
 - Support risk assessment, e.g. zoonotic risks
 - Advise EU-level policy making
 - Monitor interventions
 - Etc.

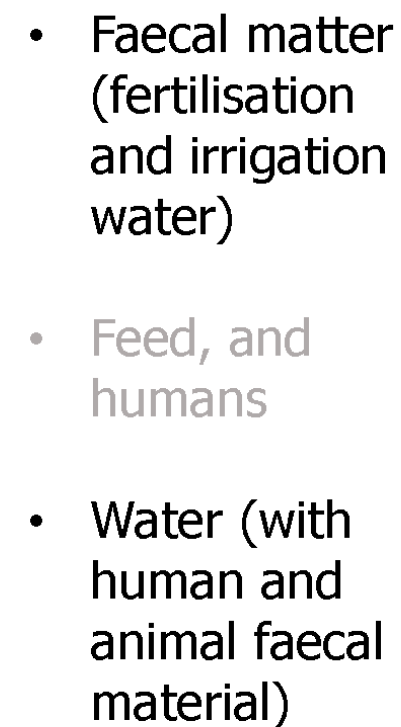


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doi: 10.2903/j.efsa.2021.6651

EFSA Panel on Biological Hazards (BIOHAZ),
Konstantinos Koutsoumanis, Ana Allende, Avelino Alvarez-Ordóñez, Declan Bolton,
Sara Bover-Cid, Marianne Chemaly, Robert Davies, Alessandra De Cesare, Lieve Herman,
Friederike Hilbert, Roland Lindqvist, Maarten Nauta, Giuseppe Ru, Marion Simmons,
Panagiotis Skandamis, Elisabetta Suffredini, Hector Arguello, Thomas Berendonk,
Lina Maria Cavaco, William Gaze, Heike Schmitt, Ed Topp, Beatriz Guerra, Ernesto Liebana,
Pietro Stella and Luisa Peixe

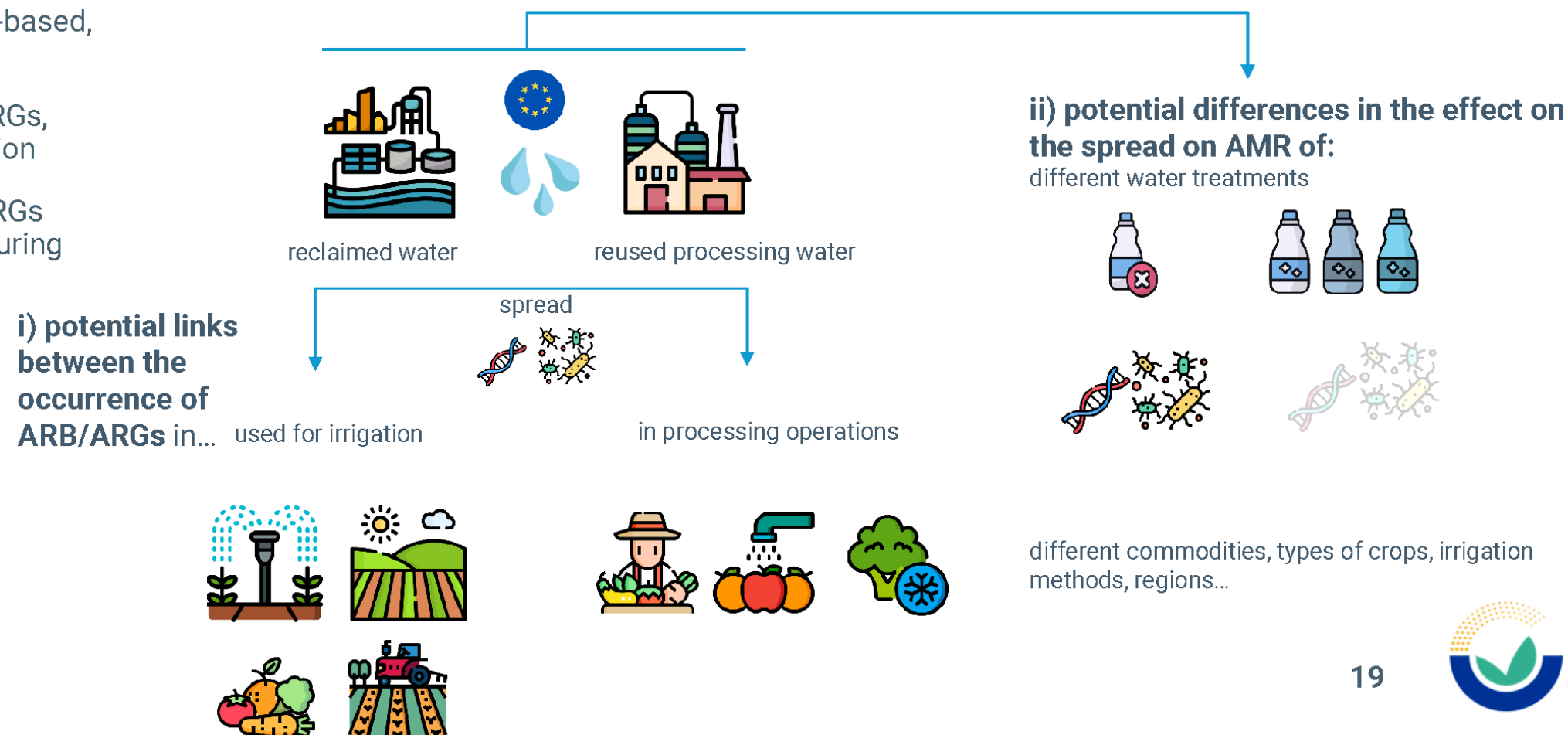


Direct contract, 950,000 €, ...to gain insights on the occurrence/variety of ARB and ARGs...in order to help to assess the role of this water in the spread of ARB and ARGs to fruits/vegetables/ herbs (FVH) in different European regions.

Objective 1: Optimize ARB/ARGs detection methods: culture, PCR-based, metagenomics).

Objective 2: Occurrence ARB/ARGs, using reclaimed water for irrigation

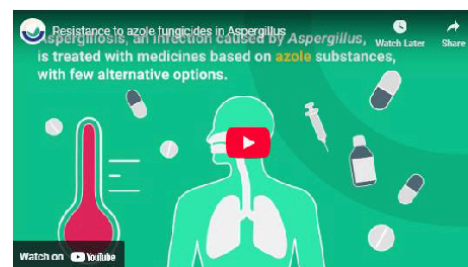
Objective 3: Occurrence ARB/ARGs using "reused/recycled" water during handling/processing



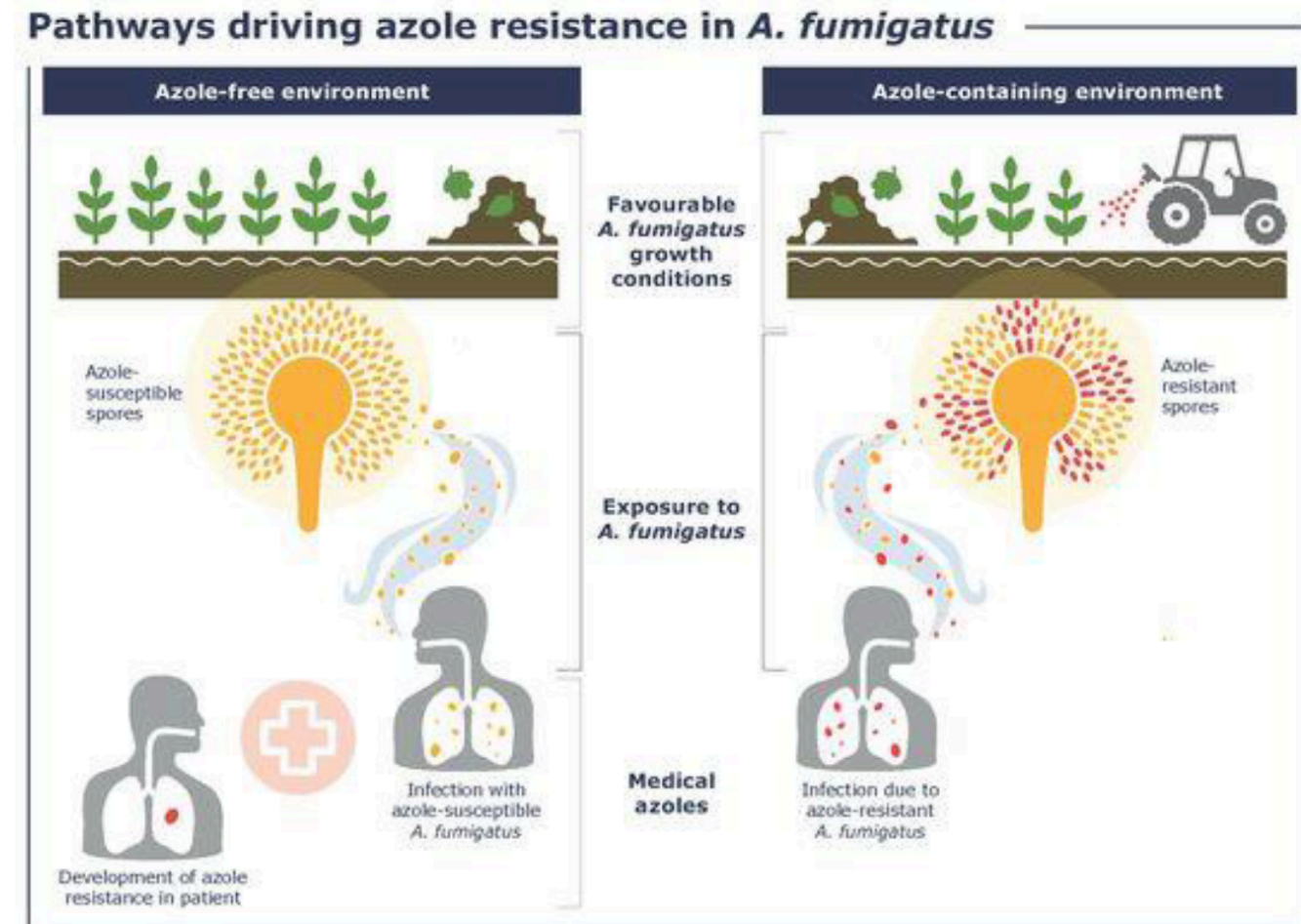
BACKGROUND

Azoles are broad-spectrum antifungals:

Human medicinal products	✗
Veterinary medicinal products (VMPs)	
Plant protection products (PPPs)	
Biocidal products (BPs)	
Industrial chemicals	



https://www.youtube.com/watch?v=-mIGuNbN_ss



Classified as ECDC NORMAL

20



TERMS OF REFERENCE

Experimental studies
by JRC

ToR 1
Use of azole fungicides

ToR 2
Resistance mechanisms
and link use-infections

ToR 3
Epidemiology of human
infections

ToR 5
Environmental hotspot

ToR 4
Risk assessment for
human health

ToR 6
Prevention and
control options

ToR 7
Studies by applicants

ToR 8
Data gaps and
recommended actions

Approved: 13 December 2024
DOI: 10.2903/j.efsa.2025.6200

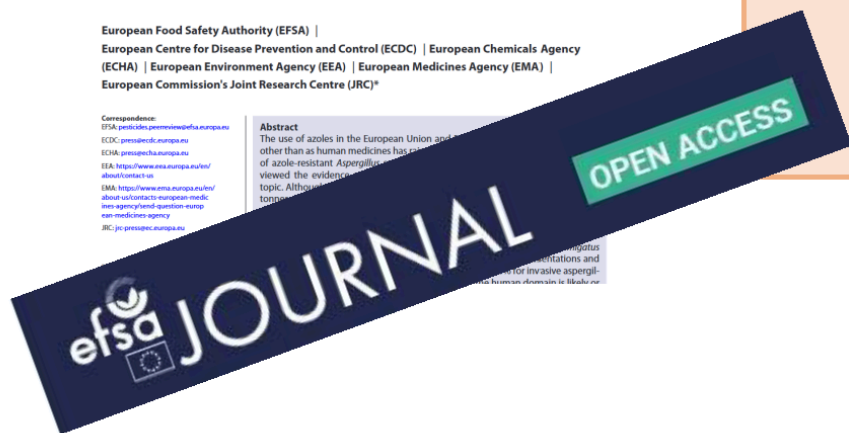
SCIENTIFIC REPORT

Impact of the use of azole fungicides, other than as human medicines, on the development of azole-resistant *Aspergillus* spp.

European Food Safety Authority (EFSA) |
European Centre for Disease Prevention and Control (ECDC) | European Chemicals Agency (ECHA) | European Environment Agency (EEA) | European Medicines Agency (EMA) |
European Commission's Joint Research Centre (JRC)*

Correspondence:
EFSA: pesticides.permanview@efsa.europa.eu
ECDC: pesticides@ecdc.europa.eu
ECHA: pesticides@echa.europa.eu
EEA: https://www.eea.europa.eu/en/about/contact-us
EMA: https://www.ema.europa.eu/en/about-us/contact-us
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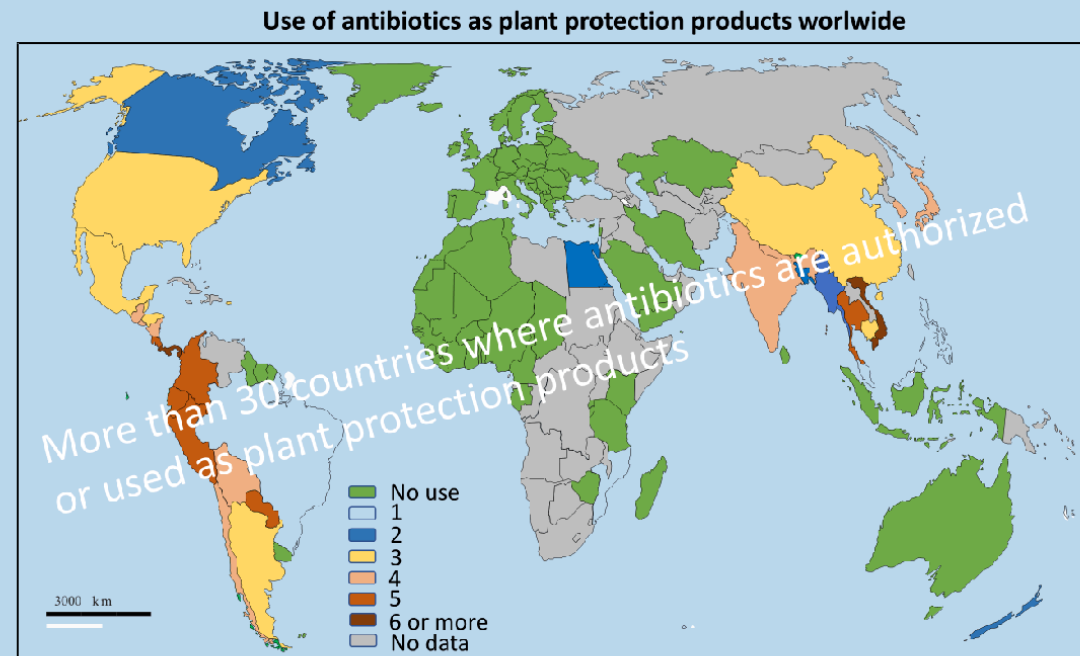
Abstract
The use of azoles in the European Union and other than as human medicines has caused the development of azole-resistant *Aspergillus* spp. This report reviewed the evidence on the link between the use of azole fungicides and the development of azole-resistant *Aspergillus* spp. and the risk of invasive aspergillosis. The report also provides recommendations for the prevention and control of azole-resistant *Aspergillus* spp. and for the management of invasive aspergillosis.



Classified as ECDC NORMAL



THE PLANTIBIO PROJECT



External Scientific Report



APPROVED: 11 December 2023
doi: 10.2903/sp.efsa.2024.EN-8522

Data collection on antibiotics for control of plant pathogenic bacteria

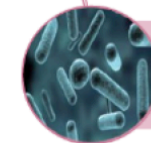
Verhaegen, M., Mahillon, J., Caulier, S., Mingeot-Leclercq*, M.-P., Bragard, C.

UCLouvain, Earth&Life Institute-Applied microbiology, Louvain Drug Institute*

Collection, analysis and synthesis of data about...



Antibiotic use for control of PPB



Antibiotic resistance in PPB



Alternatives and innovative treatments for control of PPB

<https://efsa.onlinelibrary.wiley.com/doi/epdf/10.2903/sp.efsa.2024.EN-8522>

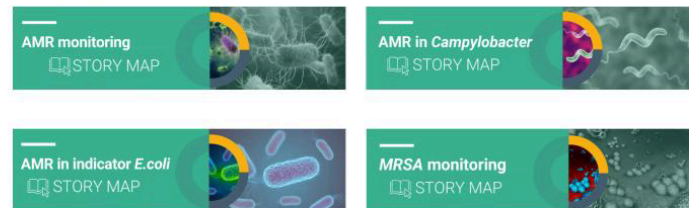


22



JOIN EFFORTS: IMPROVING COMMUNICATION, EDUCATION AND STAKEHOLDER ENGAGEMENT

Storymaps

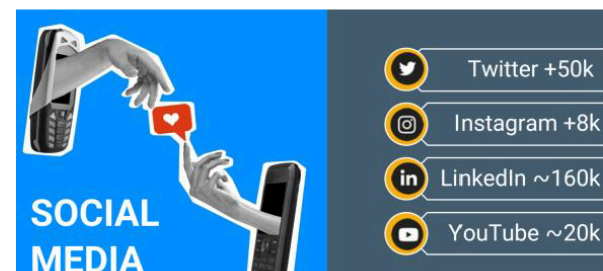
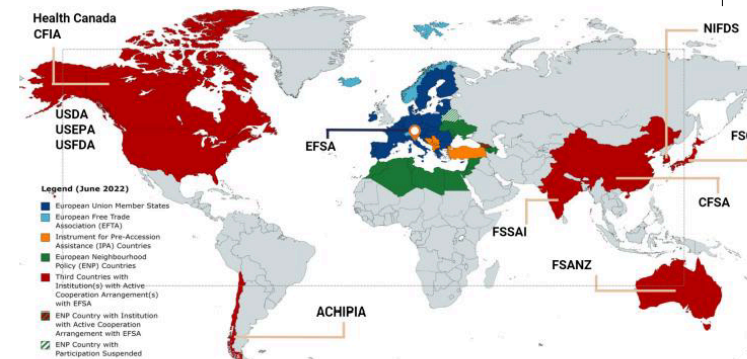


EFSA Stakeholder Engagement Approach



Podcast | 17 April 2023

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23



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Azucena Mora

Full professor of Microbiology at University of
Santiago de Compostela

Member of the Scientific Committee of AESAN
(Spanish Food Safety Agency)

From Farm to Fork: Understanding and Mitigating Antimicrobial Resistance across the Food Chain

Dr. Azucena Mora, Full Professor of Microbiology (USC), Member of the
Scientific Committee of the Spanish Agency for Food Safety & Nutrition
(AESAN)



Reference Laboratory of E. coli (LREC)
Facultad de Veterinaria de Lugo, USC





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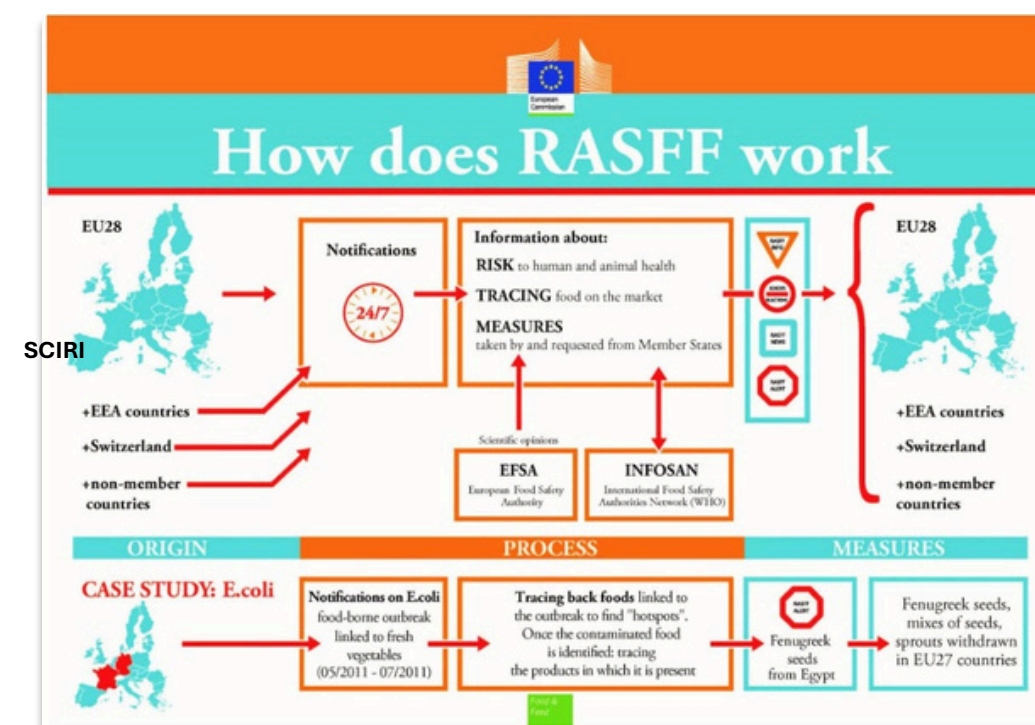
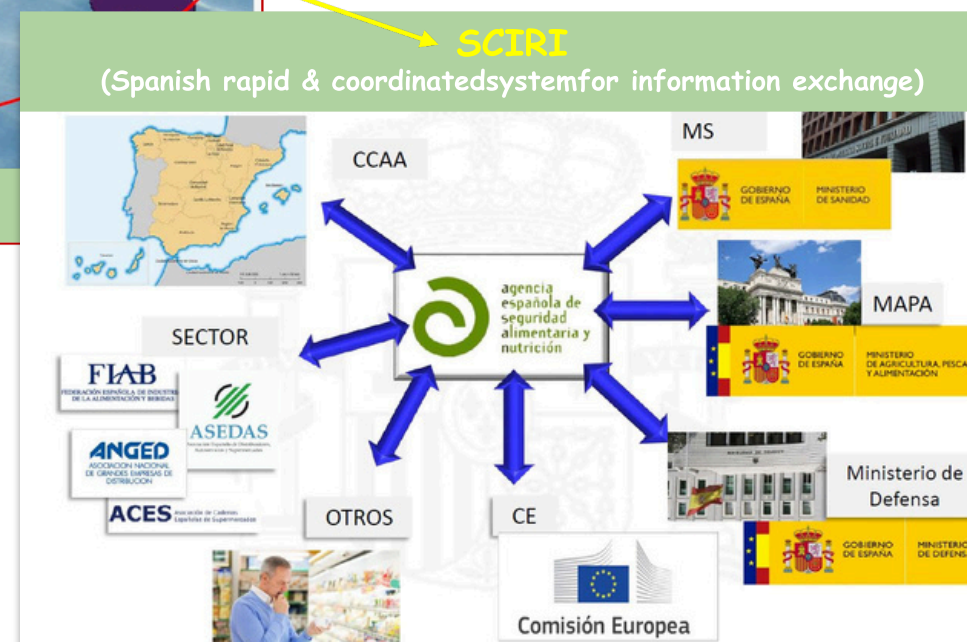
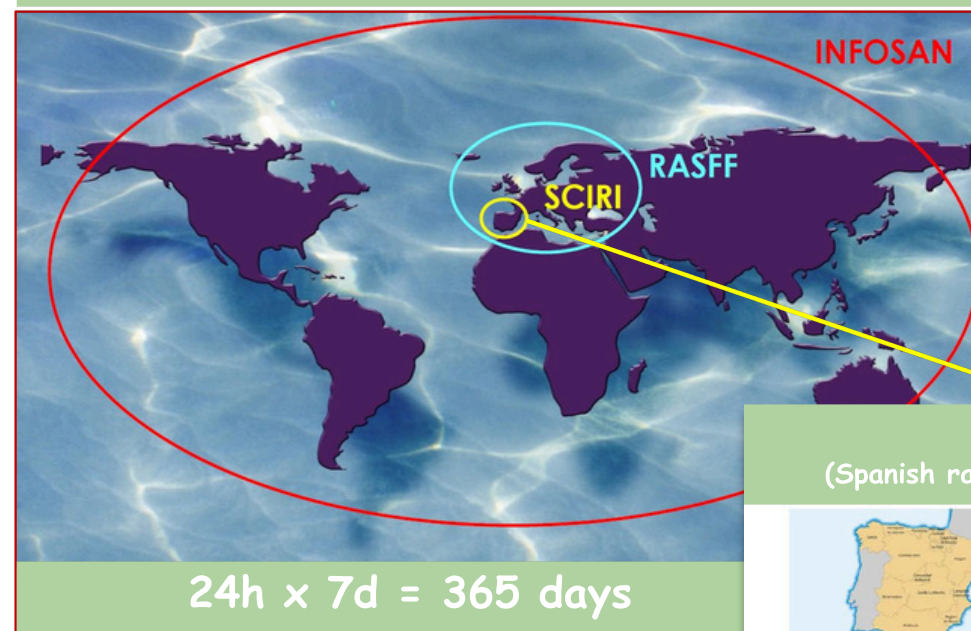
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FOOD ALERT NETWORKS



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National Plan for Official Control of the Food Chain 2021-2025



GOBIERNO DE ESPAÑA
MINISTERIO DE INDUSTRIA, COMERCIO Y TURISMO
MINISTERIO DE AGRICULTURA, PESCA Y ALIMENTACIÓN
MINISTERIO DE SANIDAD
MINISTERIO DE CONSUMO

The competent authority responsible for coordination for the achievement of this objective is the Spanish Agency for Food Safety & Nutrition (AESAN), Ministry of Consumer Affairs (MCO)

A. STRATEGIC OBJECTIVES

The strategic objectives that make up high-level objective 2 and the programmed provided for to achieve the following:

- **Strategic objective 2.1:** Improve compliance with the food hygiene regulation and animal welfare in food establishments.
 - Programme 2.1. Inspection of food establishments
 - Programme 2.2. Audits of in-house control systems
 - Programme 2.3. Slaughterhouses, game handling establishments and meat processing establishments
- **Strategic objective 2.2:** Improve compliance with the legislation so that food products to be made available to consumers contain the food safety information established in legal provisions.
 - Programme 2.4. Labelling of food and materials in contact with food.
 - Programme 2.5. Allergens and substances that cause intolerance
 - Programme 2.6. Release of Genetically Modified Organisms (GMOs)
 - Programme 2.7. Notification, labelling and composition of food supplements
- **Strategic objective 2.3:** To reduce, where possible and in all cases to acceptable levels, the exposure of consumers to biological and chemical risks present in food.
 - Programme 2.8. Biological hazards in food
 - Programme 2.9. Anisakis
 - Programme 2.10. Supervision of antimicrobial resistance of zoonotic food agents
 - Programme 2.11. Contaminants in foods
 - Programme 2.12. Control of technological ingredients
 - Programme 2.13. Materials in contact with foods
 - Programme 2.14. Pesticide residue in foods
 - Programme 2.15. Veterinary medicine and other substances in foods of animal origin
 - Programme 2.17. Control of irradiated food
- **Strategic objective 2.4:** Promote healthy and sustainable eating through the fostering of nutritional quality and control thereof in school meals and in food and drink in vending machines and cafeterias.
 - Programme 2.16. School meals, vending machines and cafeterias in schools
- **Strategic objective 2.5:** To reduce, where possible and in all cases to acceptable levels, the exposure of consumers to emerging risks or risk of special concern and difficult to control.

National Plan for Official Control of the Food Chain 2021-2025 (V2-2022)

2

HIGH-LEVEL OBJECTIVE



Spanish zoonosis report



EFSA Spain zoonosis & AMR report



EU One Health zoonosis & AMR report



Azucena Mora USC
UNIVERSIDADE DE SANTIAGO DE COMPOSTELA





Meeting of the Scientific Committee No. 100



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Volume 2, Issue 2
April 2024
0027E

Technical report | Open Access |

Report of the Scientific Committee of the Spanish Agency for Food Safety and Nutrition (AESAN) on the microbiological criteria for *Vibrio cholerae*, as additional control measures at border control posts, applicable to imported frozen prawns and other fishery products

Antonio Valero Díaz, Rosa María Capita González, Baltasar Mayo Pérez, Azucena del Carmen Mora Gutiérrez, María Dolores Rodrigo Aliaga

First published: 07 May 2024 | <https://doi.org/10.2903/fr.efsa.2024.FR-0027>



FOOD RISK ASSESS EUROPE
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Volume 3, Issue 3
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0069E

Technical report | Open Access |

Report of the Scientific Committee of the Spanish Agency for Food Safety and Nutrition (AESAN) on the effects of climate change on the risk of transmission of foodborne pathogens

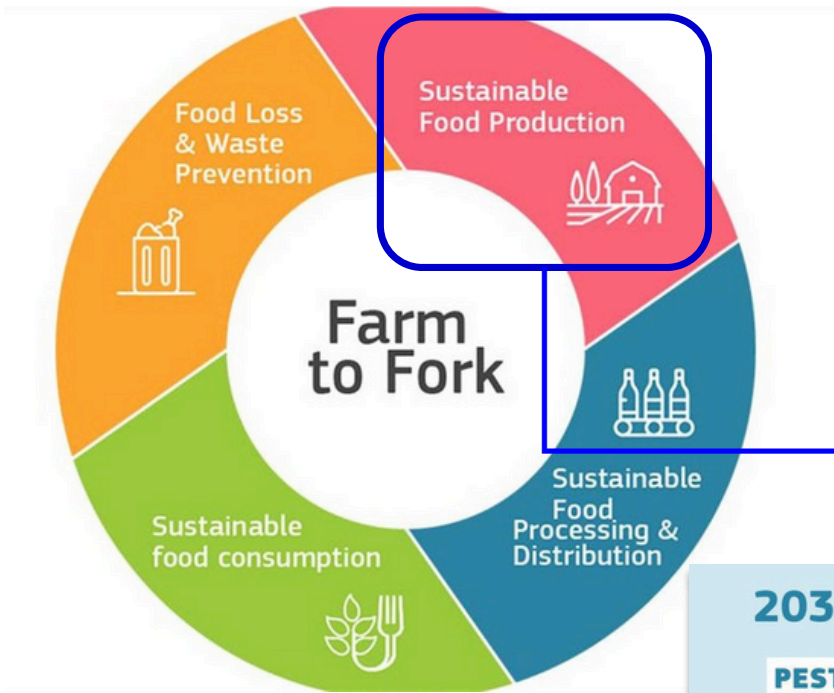
Antonio Valero Díaz, Rosa María Capita González, Baltasar Mayo Pérez, Azucena del Carmen Mora Gutiérrez, María Dolores Rodrigo Aliaga, Gloria Sánchez Moragas, Paula Arrabal Durán ... [See fewer authors](#) ^

First published: 15 September 2025 | <https://doi.org/10.2903/fr.efsa.2025.FR-0069>

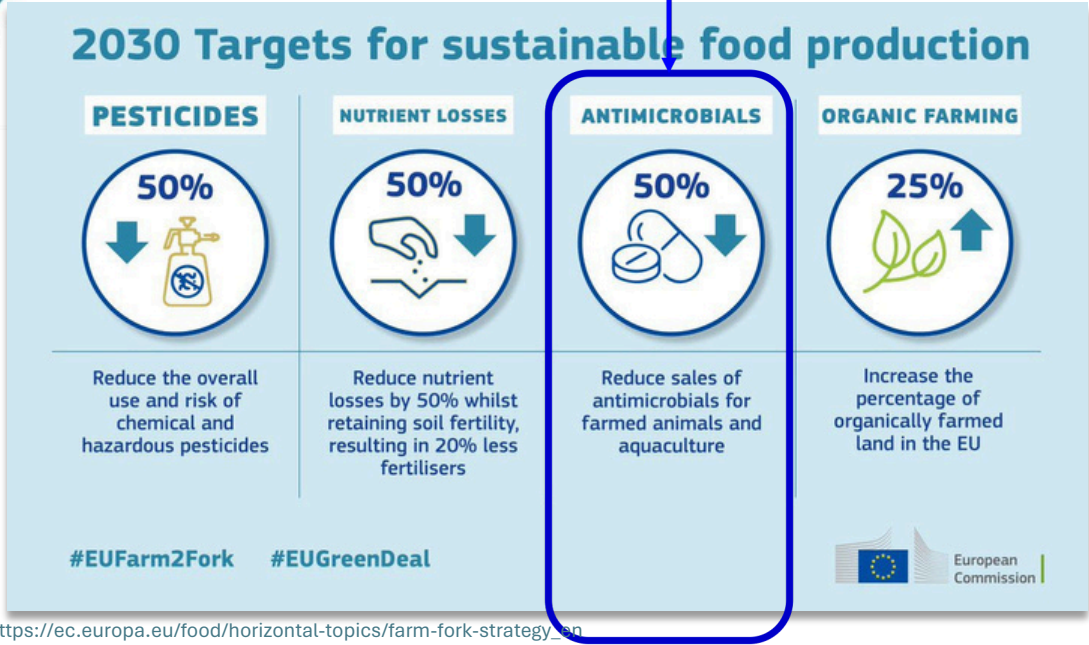
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From Farm to Fork: Understanding Antimicrobial Resistance



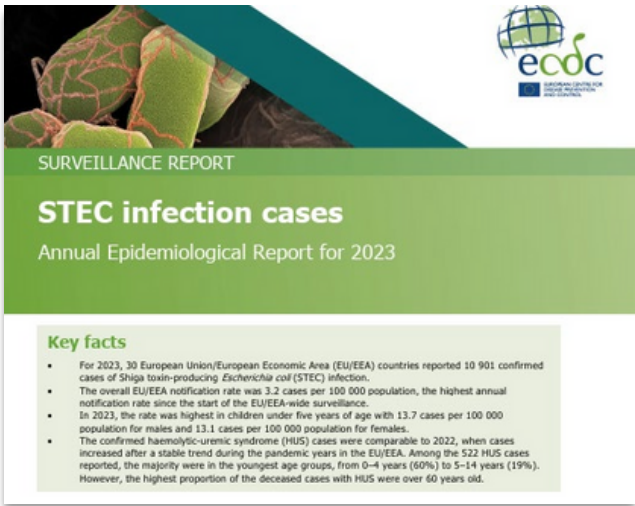
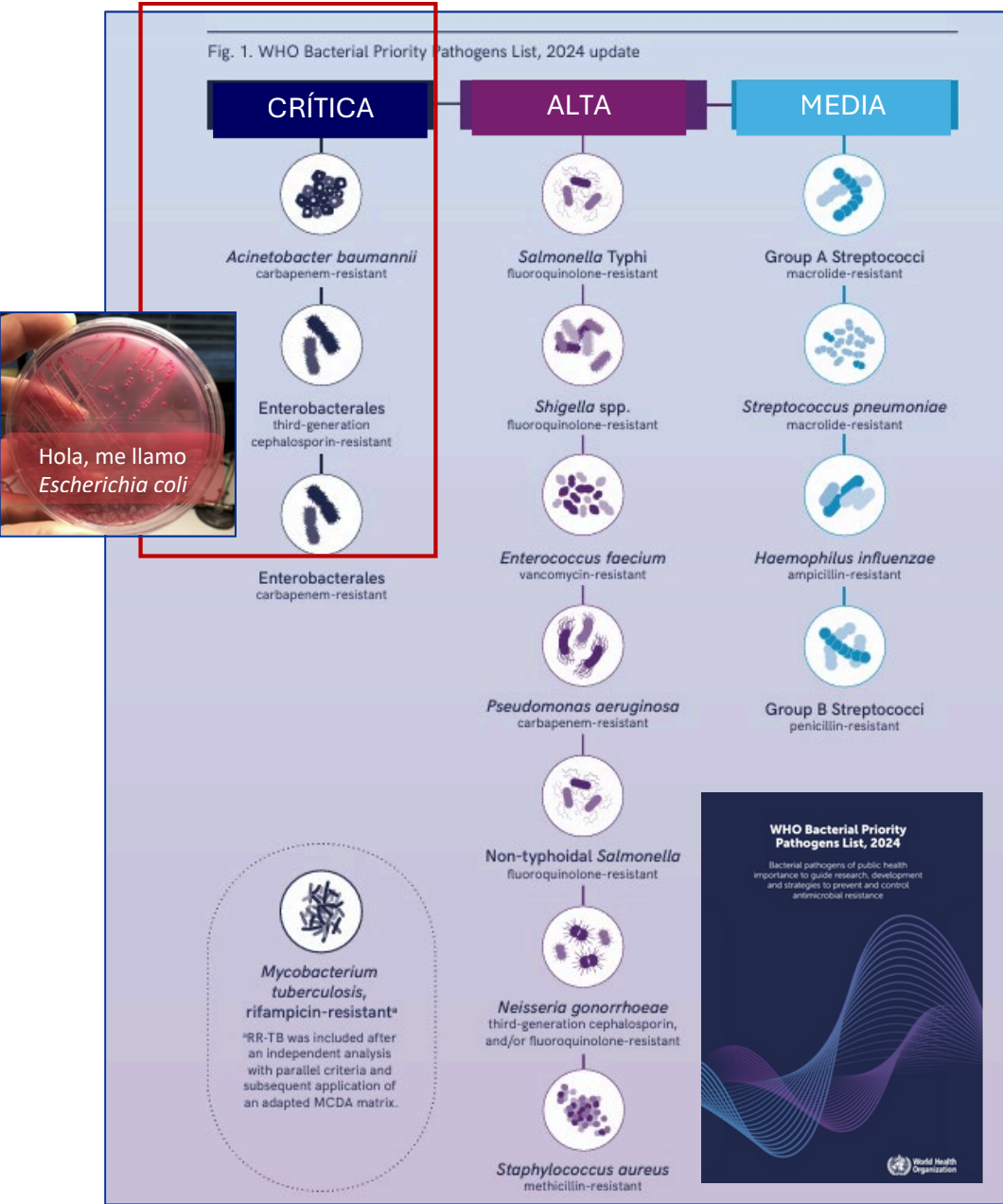
“The farm to Fork Strategy is at the heart of the **EuropeanGreenDeal**.
We are moving towards a more healthy and sustainable EU Food system”



https://ec.europa.eu/food/horizontal-topics/farm-fork-strategy_en



Why *Escherichia coli*? E. coli at the Nexus of One Health and AMR Surveillance



Comparative Medicine
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by the American Association for Laboratory Animal Science

Vol 71, No 1
February 2021
Pages 3–45

Overview

A One Health Perspective for Defining and Deciphering *Escherichia coli* Pathogenic Potential in Multiple Hosts

Alexis García^{1,2,*} and James G Fox²



Economic Research Service U.S. DEPARTMENT OF AGRICULTURE

Total cost of foodborne illness estimates for 15 leading foodborne pathogens

	Mean estimates, 2018	
	Cases	Cost
<i>Campylobacter</i> spp. (all species)	845.024	\$2,181,485.783
<i>Clostridium perfringens</i>	965.958	\$384,277.856
<i>Cryptosporidium</i> spp. (all species)	57.616	\$58,394.152
<i>Cyclospora cayentanensis</i>	11.407	\$2,571.518
<i>Listeria monocytogenes</i>	1.591	\$3,189,686.110
Noravirus	5,461.731	\$2,566,984.191
<i>Salmonella</i> (non-typhoidal species)	1,027.561	\$4,142,179.161
<i>Shigella</i> (all species)	131.254	\$159,202.402
Shiga toxin-producing <i>Escherichia coli</i> O157 (STEC O157)	63.153	\$31,701.852
non-O157 Shiga toxin-producing <i>Escherichia coli</i> (STEC non-O157)	112.752	\$3,744,008.907
<i>Toxoplasma gondii</i>	86.686	\$45,735.332
<i>Vibrio parahaemolyticus</i>	34.664	\$359,481.557
<i>Vibrio vulnificus</i>	96	
<i>Vibrio</i> non-cholera species other than <i>V. parahaemolyticus</i> and <i>V. vulnificus</i>	17.56	\$81,749.064
<i>Yersinia enterocolitica</i>	4	\$313,297.920
	97.65	
Total for all 15 pathogens	8,6914.713	\$17,571.792.712



Advancements and Technologies in Pig and Poultry Bacterial Disease Control 2021, Pages 1-23

1 - The economic cost of bacterial infections

Jarkko K. Niemi

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<https://doi.org/10.1016/B978-0-12-818030-3.00010-6>

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Human burden from AMR (GLOBALLY)

AMR in deaths in 2021

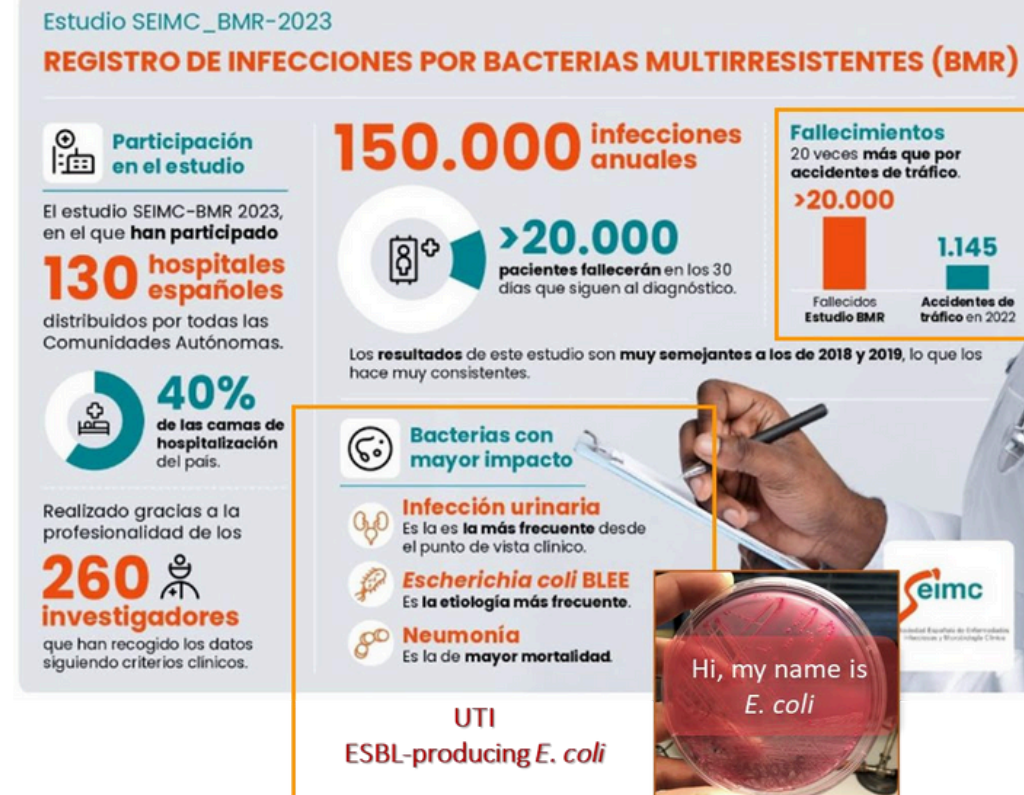
4.71 million associated

1.14 million attributable

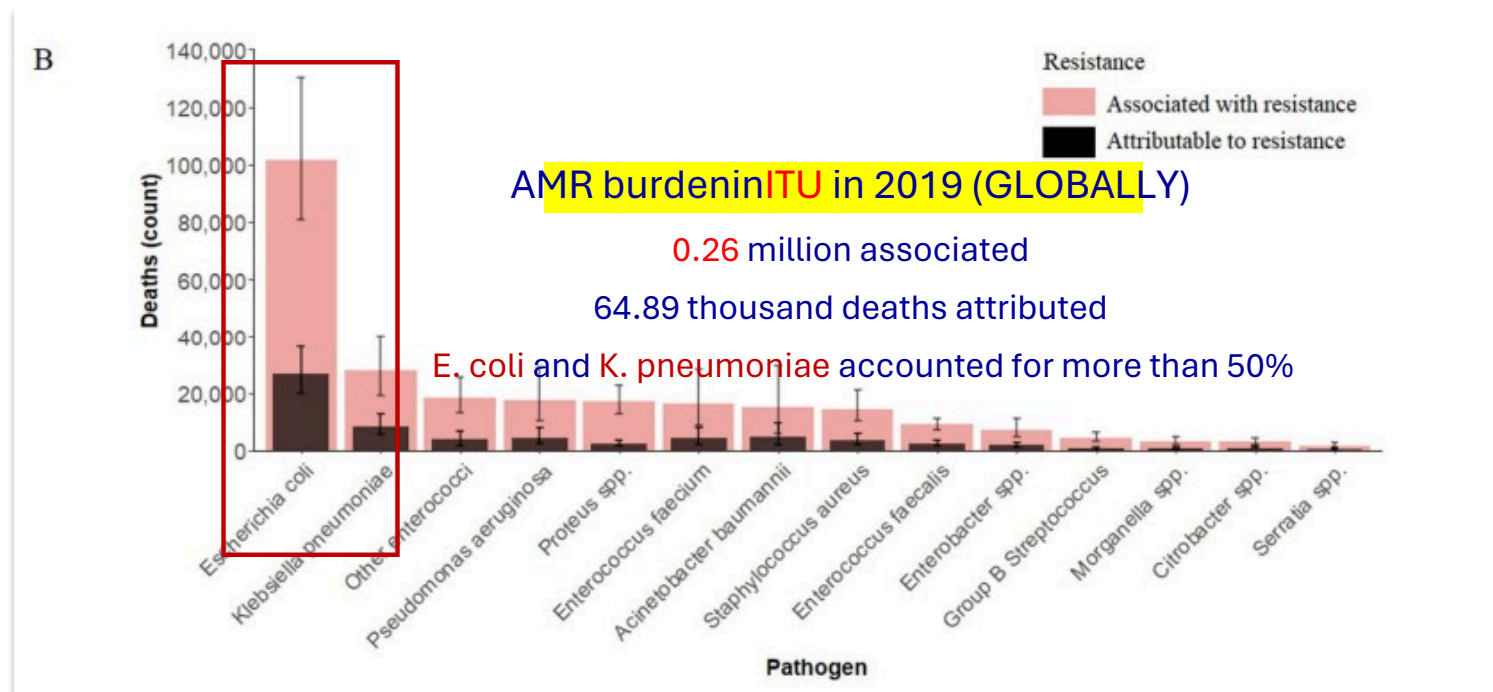
Global Burden of Disease 2021 Antimicrobial Resistance Collaborators. Global burden of bacterial antimicrobial resistance 1990–2021: a systematic analysis with forecasts to 2050. **Lancet 2024; 404: 1199-1226.**



SPANISH SUPERBUGS CAUSE 20x more DEATHS than traffic accidents



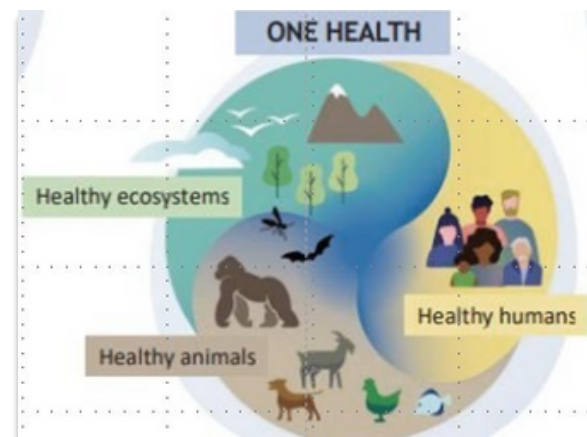
AMR = 23,000 deaths/year



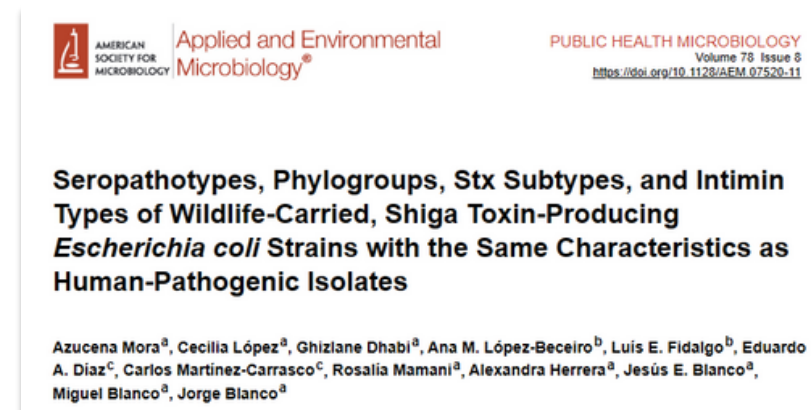
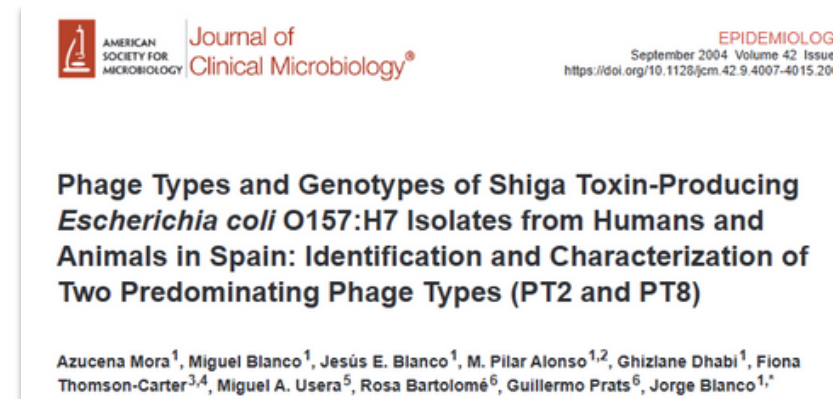
J. Clin. Med. 2022, 11, 2817. <https://doi.org/10.3390/jcm11102817>

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Integrated monitoring of *antibioresistance* and intervention targets *from the environment, to the farm and to the table*

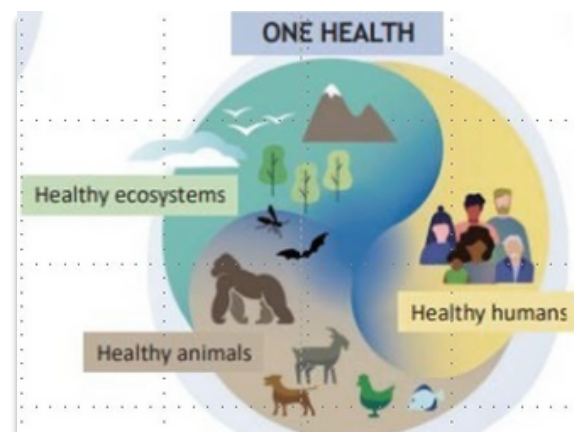
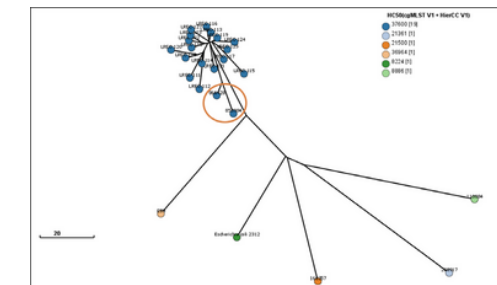


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"from farm to fork to environment"



Integrated monitoring of antibioresistance and intervention targets from the environment, to the farm and to the table



WE ARE STILL RECOVERING THIS HYBRID *E. COLI* CLONE IN MEAT

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FOOD as THE One Health link
par excellence

Food Control 123 (2021) 107713

Contents lists available at ScienceDirect

Food Control

journal homepage: www.elsevier.com/locate/foodcont

Microbiological risk assessment of Turkey and chicken meat for consumer: Significant differences regarding multidrug resistance, *mcr* or presence of hybrid aEPEC/ExPEC pathotypes of *E. coli*

Dafne Díaz-Jiménez^{a,b}, Isidro García-Meniño^{a,b}, Alexandra Herrera^{a,c}, Luz Lestón^{a,b}, Azucena Mora^{a,b,*}

Microbiological risk assessment 0 → 6

1 *E. coli* counts > 500 cfu/g

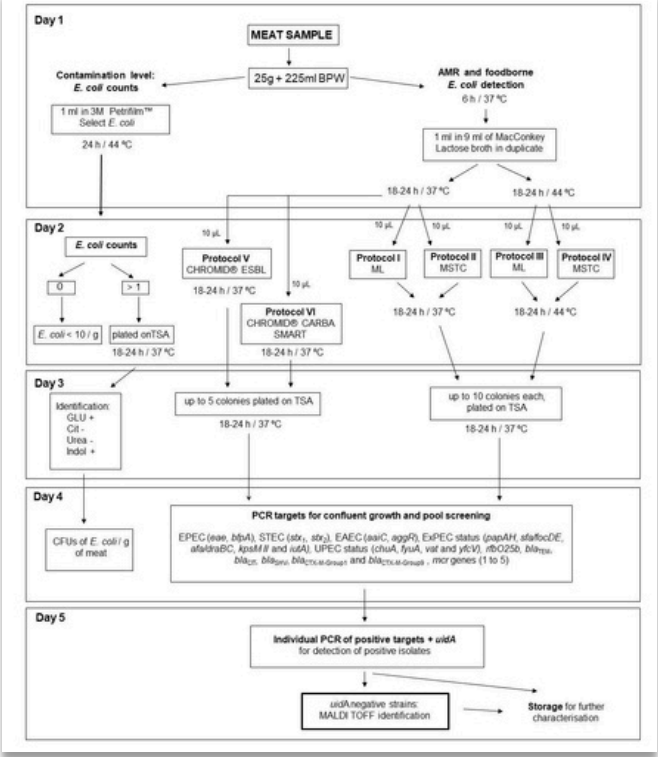
2 Presence of isolates resistant to antibiotics of Category A or B (EMA)

3 Recovery of ≥ 2 *E. coli* positive for ESBL, AmpC or *mcr*

4 Identification of high-risk *E. coli* clones reported in human infections

5 Recovery of *E. coli* isolates conforming the ExPEC status

6 Recovery of *E. coli* conforming the UPEC status



International Journal of Food Microbiology 331 (2020) 108750

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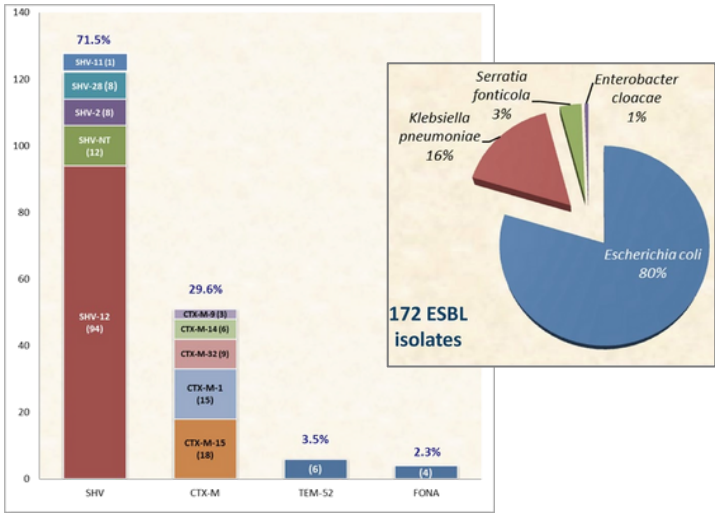
International Journal of Food Microbiology

journal homepage: www.elsevier.com/locate/ijfoodmicro

Chicken and turkey meat: Consumer exposure to multidrug-resistant Enterobacteriaceae including *mcr*-carriers, uropathogenic *E. coli* and high-risk lineages such as ST131

Dafne Díaz-Jiménez^{a,b,1}, Isidro García-Meniño^{a,b,1}, Javier Fernández^c, Vanesa García^{a,b,d}, Azucena Mora^{a,b,*}

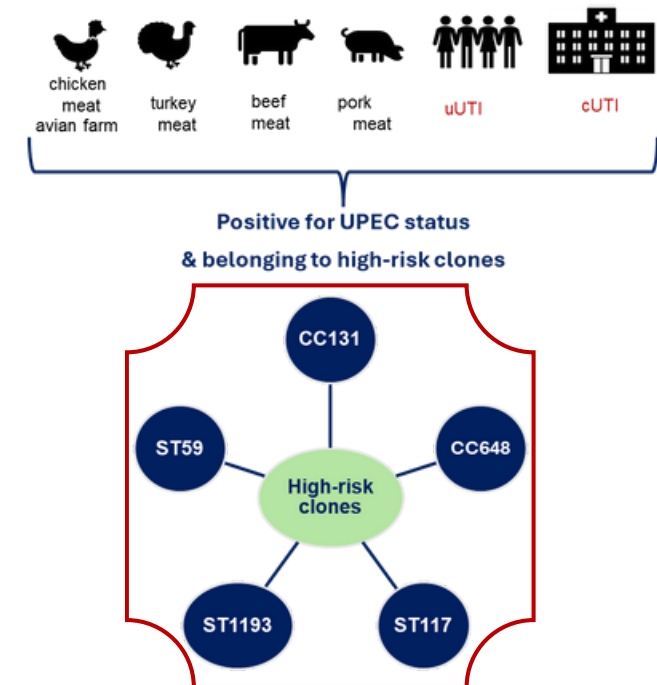
8 Spanish supermarkets (2016-2017)



82% samples positive for ESBL-producing Enterobacteriaceae
27% samples positive for ESBL-producing *K. pneumoniae* (including ST147 & ST307)
17% samples positive for potentially uropathogenic *E. coli* (UPEC)



Uropathogenic capability of animal-derived isolates?
comparison with those of clinical origin



- Highlights
- Food-borne transmission of uropathogenic *E. coli* (UPEC).
 - High-risk *E. coli* clones from food-producing animals are able to infect bladder cells.
 - Bladder-cell infection assays, combined with genomics, might predict uropathogenicity.

One Health 16 (2023) 100558

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Genomics, biofilm formation and infection of bladder epithelial cells in potentially uropathogenic *Escherichia coli* (UPEC) from animal sources and human urinary tract infections (UTIs) further support food-borne transmission

Vanesa García ^{a,b}, Luz Lestón ^a, Ana Parga ^c, Isidro García-Meniño ^{a,b,d}, Javier Fernández ^{e,f,g,h}, Ana Otero ^c, John E. Olsen ⁱ, Ana Herrero-Fresno ^{i,1}, Azucena Mora ^{a,b,*}

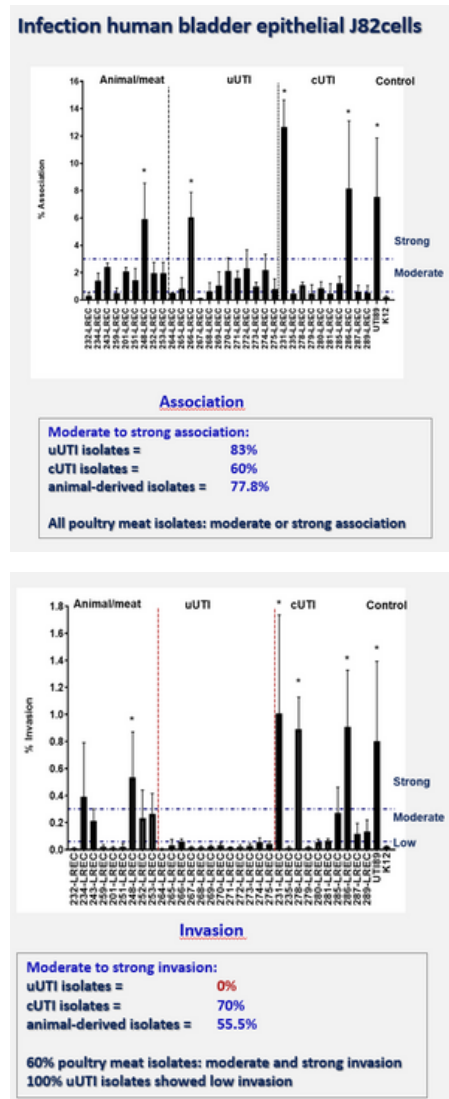
Virulome: genomic similarities of UPEC virulence-associated genes

Isolate	Sample origin	Phylogroup	ST/CC	Dr adhesins										P fimbriae										Type 1 fimbriae										Curli fibers										Biofilm										Toxins										Iron uptake										Protectin										Others																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
				afnA	afnB	afnC	afnD	afnE	afnF	afnG	afnH	afnI	afnJ	afnK	afnL	afnM	afnN	afnO	afnP	afnQ	afnR	afnS	afnT	afnU	afnV	afnW	afnX	afnY	afnZ	afnAA	afnAB	afnAC	afnAD	afnAE	afnAF	afnAG	afnAH	afnAI	afnAJ	afnAK	afnAL	afnAM	afnAN	afnAO	afnAP	afnAQ	afnAR	afnAS	afnAT	afnAU	afnAV	afnAW	afnAX	afnAY	afnAZ	afnBA	afnBB	afnBC	afnBD	afnBE	afnBF	afnBG	afnBH	afnBI	afnBJ	afnBK	afnBL	afnBM	afnBN	afnBO	afnBP	afnBQ	afnBR	afnBS	afnBT	afnBU	afnBV	afnBW	afnBX	afnBY	afnBZ	afnC1	afnC2	afnC3	afnC4	afnC5	afnC6	afnC7	afnC8	afnC9	afnC10	afnC11	afnC12	afnC13	afnC14	afnC15	afnC16	afnC17	afnC18	afnC19	afnC20	afnC21	afnC22	afnC23	afnC24	afnC25	afnC26	afnC27	afnC28	afnC29	afnC30	afnC31	afnC32	afnC33	afnC34	afnC35	afnC36	afnC37	afnC38	afnC39	afnC40	afnC41	afnC42	afnC43	afnC44	afnC45	afnC46	afnC47	afnC48	afnC49	afnC50	afnC51	afnC52	afnC53	afnC54	afnC55	afnC56	afnC57	afnC58	afnC59	afnC60	afnC61	afnC62	afnC63	afnC64	afnC65	afnC66	afnC67	afnC68	afnC69	afnC70	afnC71	afnC72	afnC73	afnC74	afnC75	afnC76	afnC77	afnC78	afnC79	afnC80	afnC81	afnC82	afnC83	afnC84	afnC85	afnC86	afnC87	afnC88	afnC89	afnC90	afnC91	afnC92	afnC93	afnC94	afnC95	afnC96	afnC97	afnC98	afnC99	afnC100	afnC101	afnC102	afnC103	afnC104	afnC105	afnC106	afnC107	afnC108	afnC109	afnC110	afnC111	afnC112	afnC113	afnC114	afnC115	afnC116	afnC117	afnC118	afnC119	afnC120	afnC121	afnC122	afnC123	afnC124	afnC125	afnC126	afnC127	afnC128	afnC129	afnC130	afnC131	afnC132	afnC133	afnC134	afnC135	afnC136	afnC137	afnC138	afnC139	afnC140	afnC141	afnC142	afnC143	afnC144	afnC145	afnC146	afnC147	afnC148	afnC149	afnC150	afnC151	afnC152	afnC153	afnC154	afnC155	afnC156	afnC157	afnC158	afnC159	afnC160	afnC161	afnC162	afnC163	afnC164	afnC165	afnC166	afnC167	afnC168	afnC169	afnC170	afnC171	afnC172	afnC173	afnC174	afnC175	afnC176	afnC177	afnC178	afnC179	afnC180	afnC181	afnC182	afnC183	afnC184	afnC185	afnC186	afnC187	afnC188	afnC189	afnC190	afnC191	afnC192	afnC193	afnC194	afnC195	afnC196	afnC197	afnC198	afnC199	afnC200	afnC201	afnC202	afnC203	afnC204	afnC205	afnC206	afnC207	afnC208	afnC209	afnC210	afnC211	afnC212	afnC213	afnC214	afnC215	afnC216	afnC217	afnC218	afnC219	afnC220	afnC221	afnC222	afnC223	afnC224	afnC225	afnC226	afnC227	afnC228	afnC229	afnC230	afnC231	afnC232	afnC233	afnC234	afnC235	afnC236	afnC237	afnC238	afnC239	afnC240	afnC241	afnC242	afnC243	afnC244	afnC245	afnC246	afnC247	afnC248	afnC249	afnC250	afnC251	afnC252	afnC253	afnC254	afnC255	afnC256	afnC257	afnC258	afnC259	afnC260	afnC261	afnC262	afnC263	afnC264	afnC265	afnC266	afnC267	afnC268	afnC269	afnC270	afnC271	afnC272	afnC273	afnC274	afnC275	afnC276	afnC277	afnC278	afnC279	afnC280	afnC281	afnC282	afnC283	afnC284	afnC285	afnC286	afnC287	afnC288	afnC289	afnC290	afnC291	afnC292	afnC293	afnC294	afnC295	afnC296	afnC297	afnC298	afnC299	afnC300	afnC301	afnC302	afnC303	afnC304	afnC305	afnC306	afnC307	afnC308	afnC309	afnC310	afnC311	afnC312	afnC313	afnC314	afnC315	afnC316	afnC317	afnC318	afnC319	afnC320	afnC321	afnC322	afnC323	afnC324	afnC325	afnC326	afnC327	afnC328	afnC329	afnC330	afnC331	afnC332	afnC333	afnC334	afnC335	afnC336	afnC337	afnC338	afnC339	afnC340	afnC341	afnC342	afnC343	afnC344	afnC345	afnC346	afnC347	afnC348	afnC349	afnC350	afnC351	afnC352	afnC353	afnC354	afnC355	afnC356	afnC357	afnC358	afnC359	afnC360	afnC361	afnC362	afnC363	afnC364	afnC365	afnC366	afnC367	afnC368	afnC369	afnC370	afnC371	afnC372	afnC373	afnC374	afnC375	afnC376	afnC377	afnC378	afnC379	afnC380	afnC381	afnC382	afnC383	afnC384	afnC385	afnC386	afnC387	afnC388	afnC389	afnC390	afnC391	afnC392	afnC393	afnC394	afnC395	afnC396	afnC397	afnC398	afnC399	afnC400	afnC401	afnC402	afnC403	afnC404	afnC405	afnC406	afnC407	afnC408	afnC409	afnC410	afnC411	afnC412	afnC413	afnC414	afnC415	afnC416	afnC417	afnC418	afnC419	afnC420	afnC421	afnC422	afnC423	afnC424	afnC425	afnC426	afnC427	afnC428	afnC429	afnC430	afnC431	afnC432	afnC433	afnC434	afnC435	afnC436	afnC437	afnC438	afnC439	afnC440	afnC441	afnC442	afnC443	afnC444	afnC445	afnC446	afnC447	afnC448	afnC449	afnC450	afnC451	afnC452	afnC453	afnC454	afnC455	afnC456	afnC457	afnC458	afnC459	afnC460	afnC461	afnC462	afnC463	afnC464	afnC465	afnC466	afnC467	afnC468	afnC469	afnC470	afnC471	afnC472	afnC473	afnC474	afnC475	afnC476	afnC477	afnC478	afnC479	afnC480	afnC481	afnC482	afnC483	afnC484	afnC485	afnC486	afnC487	afnC488	afnC489	afnC490	afnC491	afnC492	afnC493	afnC494	afnC495	afnC496	afnC497	afnC498	afnC499	afnC500	afnC501	afnC502	afnC503	afnC504	afnC505	afnC506	afnC507	afnC508	afnC509	afnC510	afnC511	afnC512	afnC513	afnC514	afnC515	afnC516	afnC517	afnC518	afnC519	afnC520	afnC521	afnC522	afnC523	afnC524	afnC525	afnC526	afnC527	afnC528	afnC529	afnC530	afnC531	afnC532	afnC533	afnC534	afnC535	afnC536	afnC537	afnC538	afnC539	afnC540	afnC541	afnC542	afnC543	afnC544	afnC545	afnC546	afnC547	afnC548	afnC549	afnC550	afnC551	afnC552	afnC553	afnC554	afnC555	afnC556	afnC557	afnC558	afnC559	afnC560	afnC561	afnC562	afnC563	afnC564	afnC565	afnC566	afnC567	afnC568	afnC569	afnC570	afnC571	afnC572	afnC573	afnC574	afnC575	afnC576	afnC577	afnC578	afnC579	afnC580	afnC581	afnC582	afnC58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Adhesion

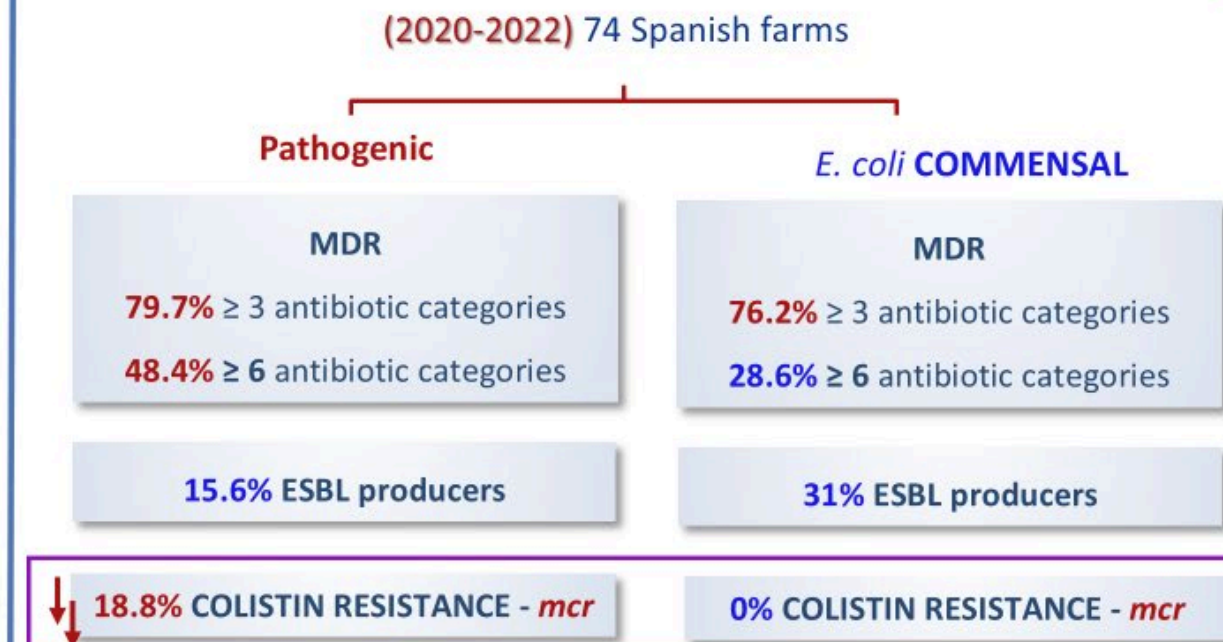
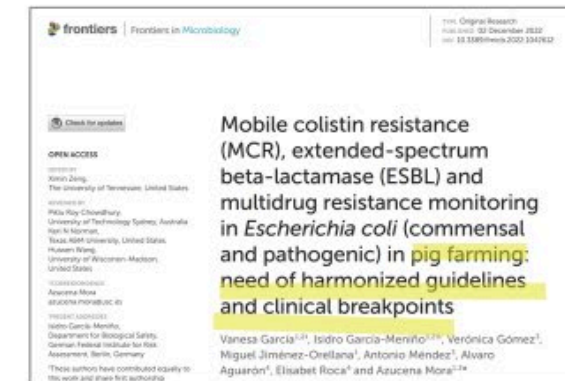
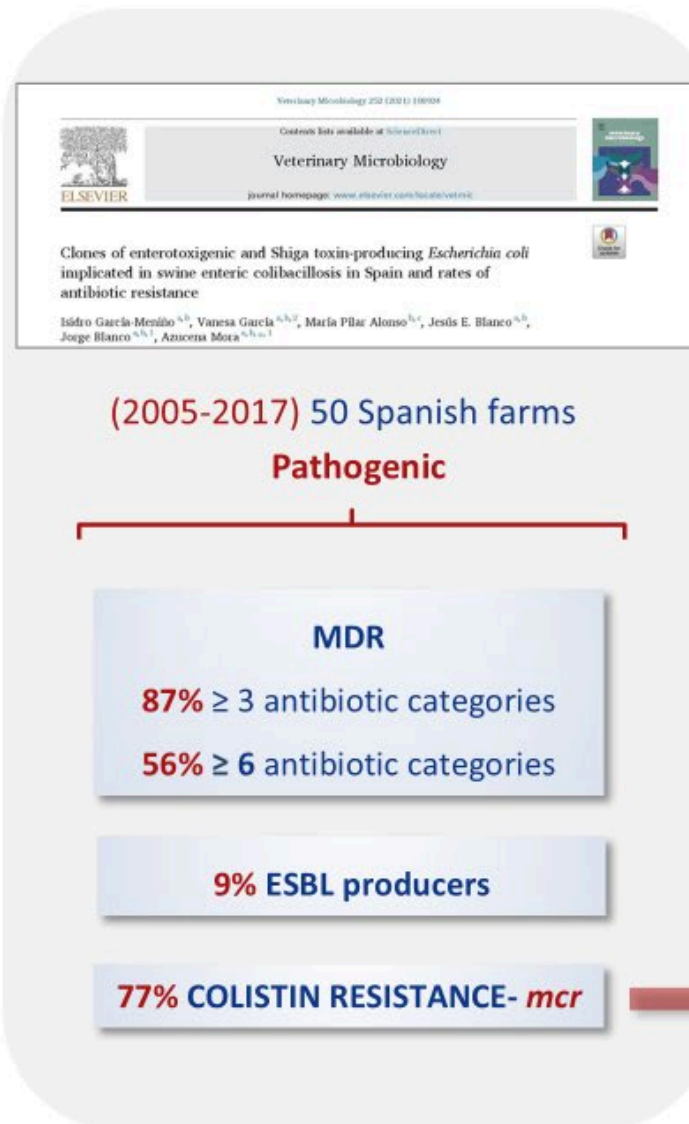
Biofilm

Siderophores
Aerobactin
Enterobactin
Yersiniabactin





"Porcine" news: impressively rapid disappearance of *mcr* in *E. coli* due to near-total reduction in colistin consumption, but still multidrug-resistance (MDR) and lack of standards



EUROPEAN CONGRESS OF
CLINICAL MICROBIOLOGY
AND INFECTIOUS DISEASES
34th ECCMID
Azucena Mora USC

Barcelona, Spain
27 – 30 April 2024



#EAAD #EAAD2025 #WAAW #WAAW2025 #WorldAMRWeek #AMRWeek



Results. Swine colibacillosis last 2 YEARS (2022-2024)

N = 251 samples → 78.9% (198) positive for diarrheagenic *E. coli*

PREVALENCE / VIRULENCE GENES (PCR)
N = 198 POSITIVE SAMPLES



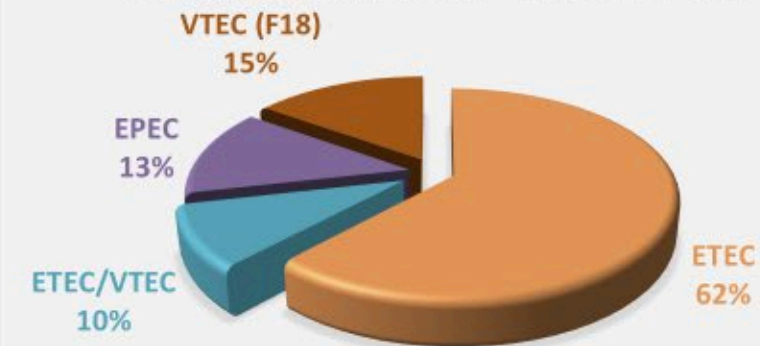
- ↑ESBLEC: 18.5% → (4% *ctx-m/mcr*)
- ↓COLISTIN resistance (*mcr*): 7.0%

mcr-1 (4.5%); *mcr-5* (2.5%); *mcr-4* (1.9%)

157 pathogenic *E. coli* colonies (from 110 samples)

14.5% of 110 samples, carriers of > 1 pathotype

E. COLI PATHOTYPES (N = 110 SAMPLES)



157 colonies: Phylogenetic distribution

A	B1	C	D	E
43.3%	23.6%	5.7%	14.0%	13.4%

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EMERGING ExPEC & HYBRID PATHOTYPES of *E. coli* in swine ??? 2023-2025



Cases associated with extraintestinal isolation



- Lactation
- Transition
- Fattening

- Meningitis
- Arthritis
- Respiratory and neurological clinical signs/symptoms
- Sudden death

VTEC/ExPEC
ETEC/ExPEC
ETEC/VTEC
ExPEC

- A
- B1
- C
- D
- E
- F

- MDR ≥ 3 categories = 65%
- ESBL = 8.5% including *bla*_{CTX-M} *mcr-1* (3.4%)

iutA iroN iss hlyF

vt2e F18 KpsM-K5

iutA

papAH iutA iroN iss hlyF

vt2e F18 KpsMII-K5 hlyA

Sta Stb vt2e F18 hlyA

iroN hlyA

sfa/focDE iutA iroN iss hlyF

sfa/focDE papAH iutA iroN iss hlyA hlyF cnf1

sfa/focDE papAH iutA iroN iss hlyF

sfa/focDE iutA hlyF

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Spain, 2023-2025

Key elements

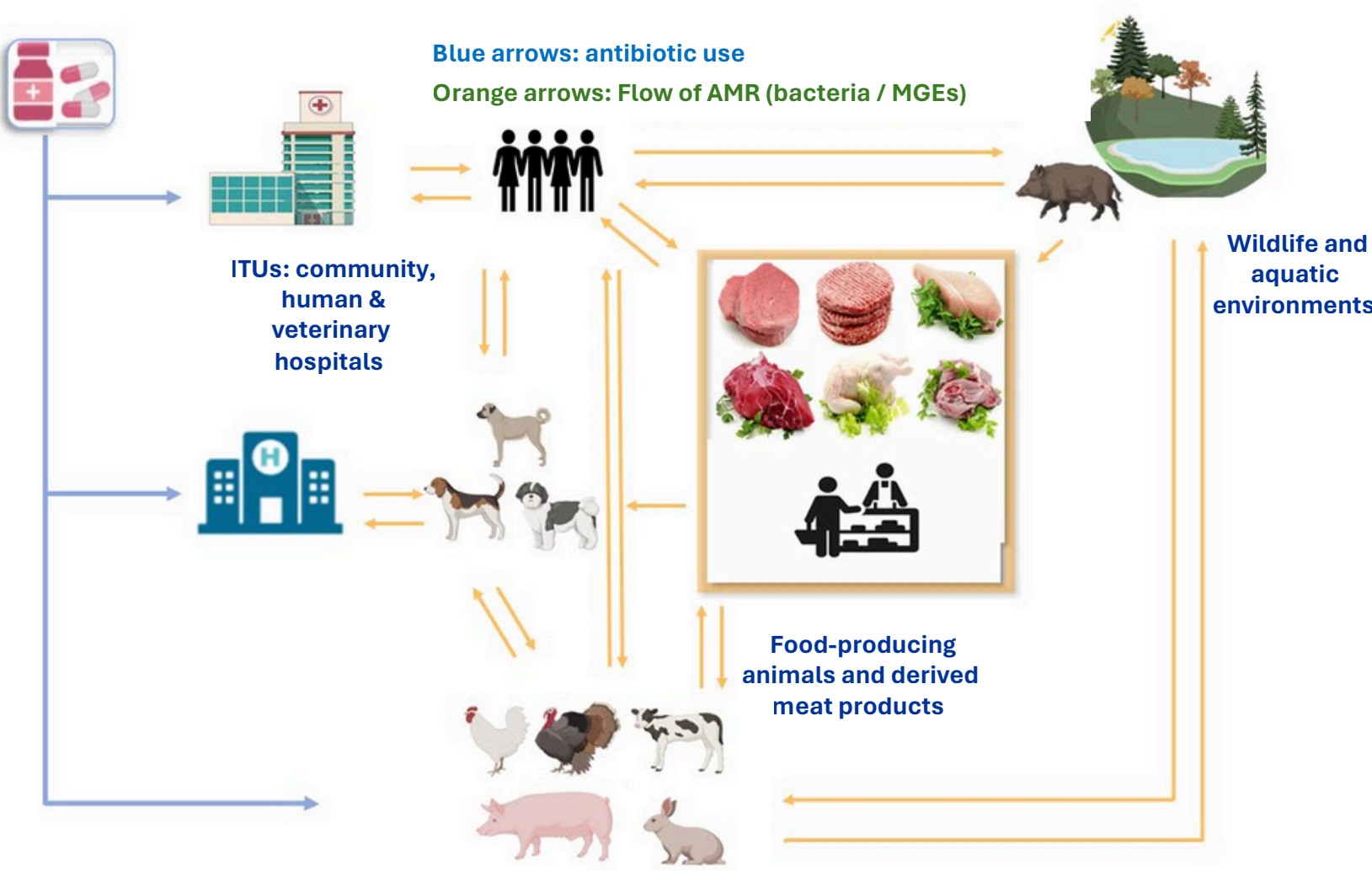
- MDR commensal & pathogenic *E. coli*
- MDR *K. pneumoniae*
- Farm animals
- Meat samples (Pork, Beef, turkey, chicken, rabbit)
- Human UTIs
- Companion animal UTIs
- Wild boar (faecal swabs, meat)
- Water from WWTP

Methods

- Conventional Microbiology
- WGS (Illumina, ONT)
- *In vitro*: cellular infections / biofilm
- *In vivo* virulence: mouse / pig models

Interventions

- One Health vaccines
- Phage alternatives



Proyecto Nacional RETOSPID2022-143041OB-100

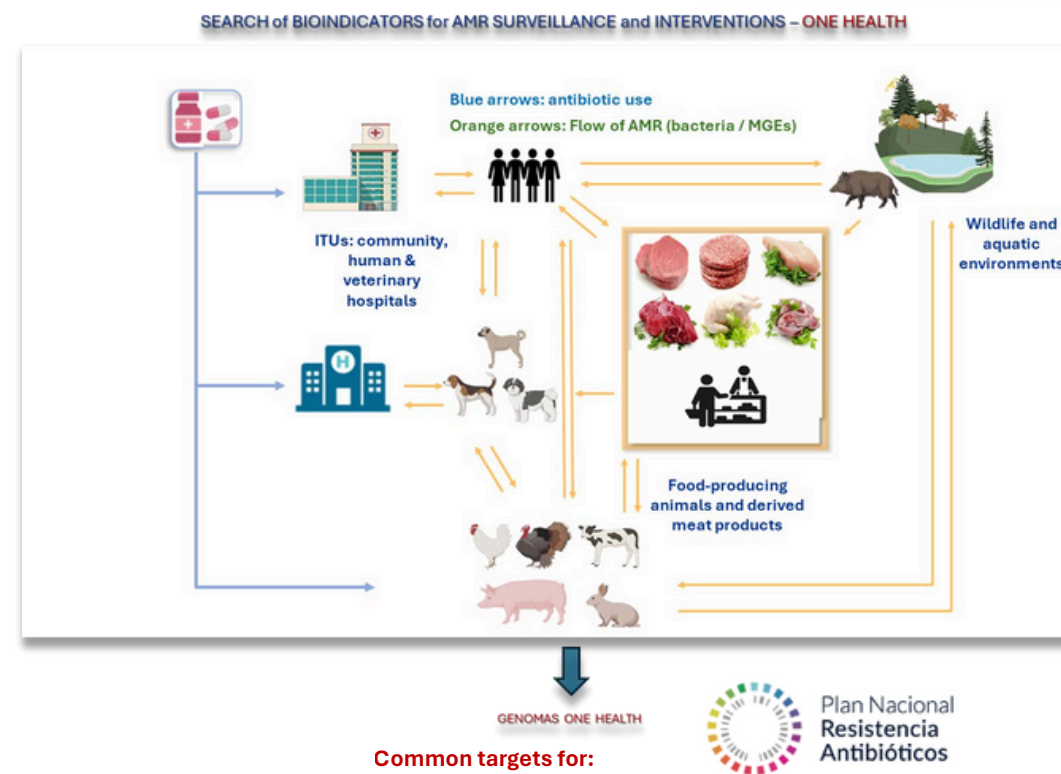
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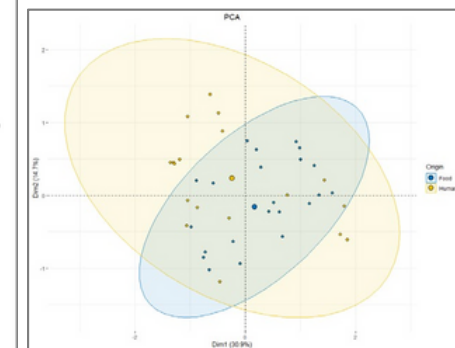
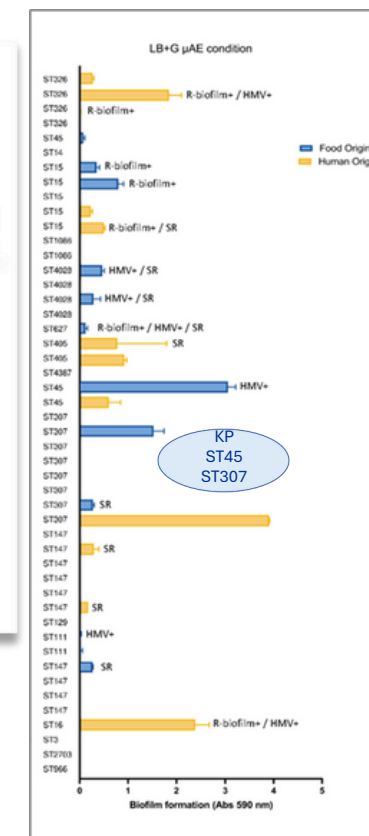
From Farm to Fork: Mitigating Antimicrobial Resistance

Highly similar ESBL/Carba/AmpC genomes.

MDR K. pneumoniae •ST147 (Human ITU, WW)
•ST307 (Human ITU, game meat) •ST392 (Human ITU, pet ITU) •ST469 (Human ITU, WW) **MDR E. coli**
•ST131 (Human ITU, game meat, WW) •ST20, ST24 (game meat) •ST34 (Human ITU, WW) •ST73 (Human ITU, pet ITU, game meat) •ST93 (Human ITU, faecal wild boar, WW) •ST117 (Human ITU, game meat, WW) •ST127 (Human ITU, pet ITU, faecal wild boar) •ST162 (Human ITU, game meat) •ST372 (pet ITU, WW) •ST410 (Human ITU, WW) •ST744 (game meat, WW) •ST1236 (Human ITU, faecal wild boar, game meat) •ST1431 (pet ITU, game meat)



- diagnosis,
- prevention,
- the reduction of AMR spread

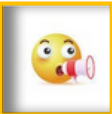


Principal component analysis (PCA) performed on the AMR profile antibiogram data showing that both population overlap

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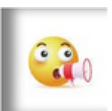
OUR TAKE-HOME MESSAGE *Tackling AMR requires a Transversal Strategy centered on key indicators*

 **STRATEGIC PILLAR ➔ TRANSVERSAL ACTION ACROSS HUMAN, ANIMAL, & ENVIRONMENTAL HEALTH**

 **SURVEILLANCE** Robust, gene-based AMR monitoring to track resistance flow across all sectors.

 **HARMONIZATION** Aligning global and regional policies, data collection, and regulatory standards to ensure a coordinated response.

 **PREVENTION** Prioritizing measures to achieve **NO INFECTION** and reduce the selective pressure on antimicrobials.

 **ALTERNATIVES** Investing in new tools, such as diagnostics, enhanced biosecurity, and **VACCINATION** strategies GLOBALLY.

 **COMUNICACIÓN & EDUCACIÓN** Fostering integrated knowledge sharing and accountability across governments, industry, and the public to drive behavioral change.



Azucena Mora 



Thank you!

*“From the farm to the fork, antimicrobial
resistance connects animals, food, and people:
Safeguarding One means protecting All”*



Reference Laboratory of *E. coli* (LREC)
Facultad de Veterinaria de Lugo, USC



Azucena Mora Gutiérrez, DVM, PhD
Full Professor

Reference Laboratory of *E. coli* (LREC)

Correo: azucena.mora@usc.es

Twitter: [@Azumora3](https://twitter.com/Azumora3)

iARCUS Aquatic One Health Research Center
Member of the Scientific Committee of AESAN

Education officer of EFWISG from ESCMID





Presentation



Wannes Vanderhaeghen

Head of Data Analysis Unit at AntiMicrobial
Consumption and Resistance in Animals

Wannes Vanderhaeghen

data Science and analysis unit

<https://amcra.be/en/home/>

Wannes.vanderhaeghen@amcra.be

info@amcra.be

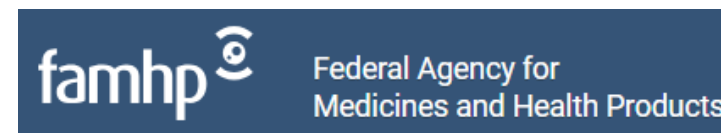


About AMCRA

- Non-profit organisation founded in 2012
- Board of directors: scientists, veterinarians, farmers, industry



- Steering committee: government



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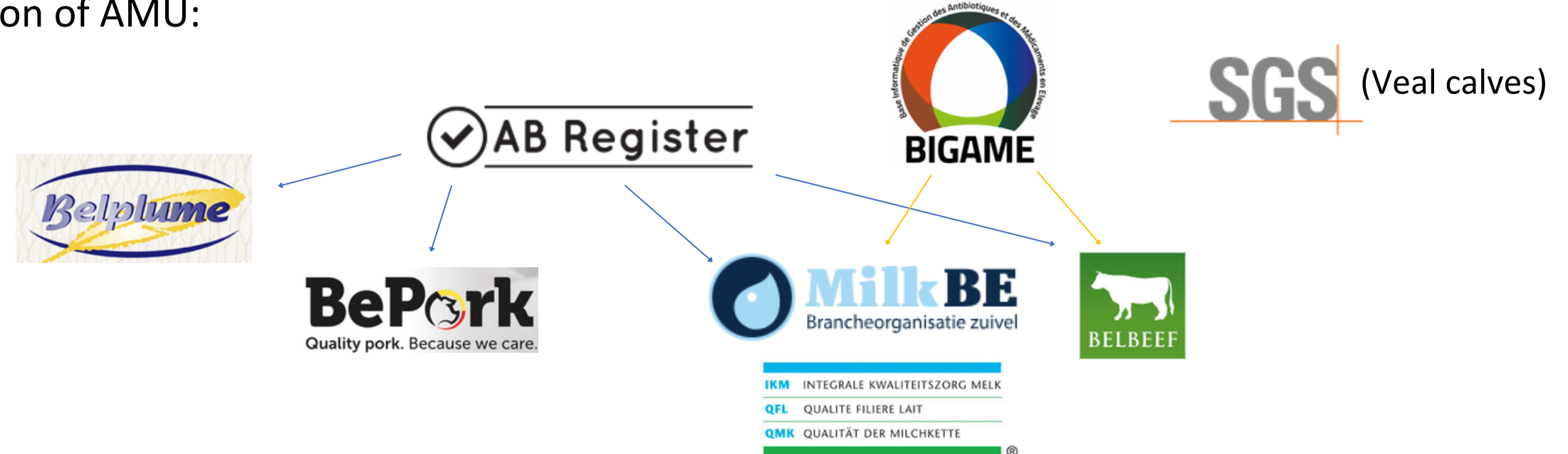


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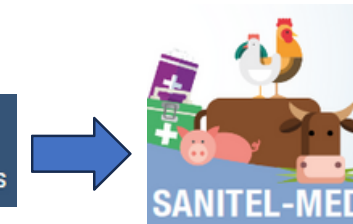
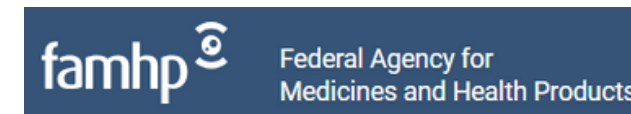
Approach to tackling AMR in the veterinary sector in Belgium

- AMCRA central in bottom-up approach
 - Technical working groups, advising, communication, sensibilisation
 - Science-based discussed supported by different stakeholders involved
- Sector and government initiatives
 - Private data-collection of AMU:



Approach to tackling AMR in the veterinary sector in Belgium

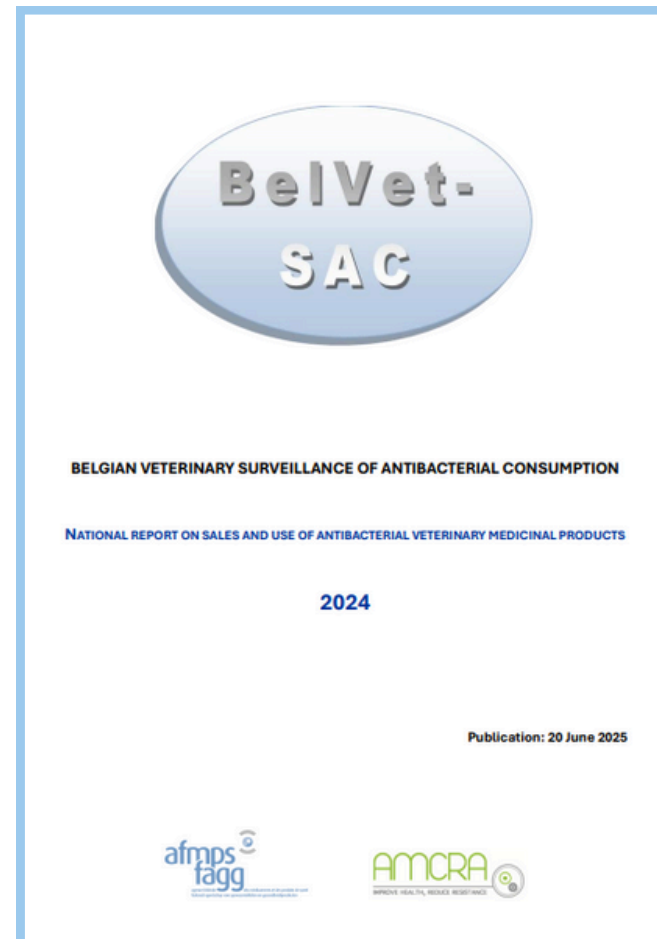
- Mix of sector- and government initiatives
 - Private data-collection of AMU
 - Governemental data-collection of AMU:
- AMCRA data science and analysis
 - Scientific, concerted and uniform approach for analysis, benchmarking and reporting of AMU in food producing animals
 - Farm-level benchmarking reports
 - National level



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Approach to tackling AMR in the veterinary sector in Belgium



https://www.fagg-afmps.be/nl/DIERGENEESKUNDIG_gebruik/geneesmiddelen/geneesmiddelen/goed_gebruik/Antibiotica_0



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Approach to tackling AMR in the veterinary sector in Belgium

Evolution in standardised antibacterial sales since 2011
mg active substance / kg biomass

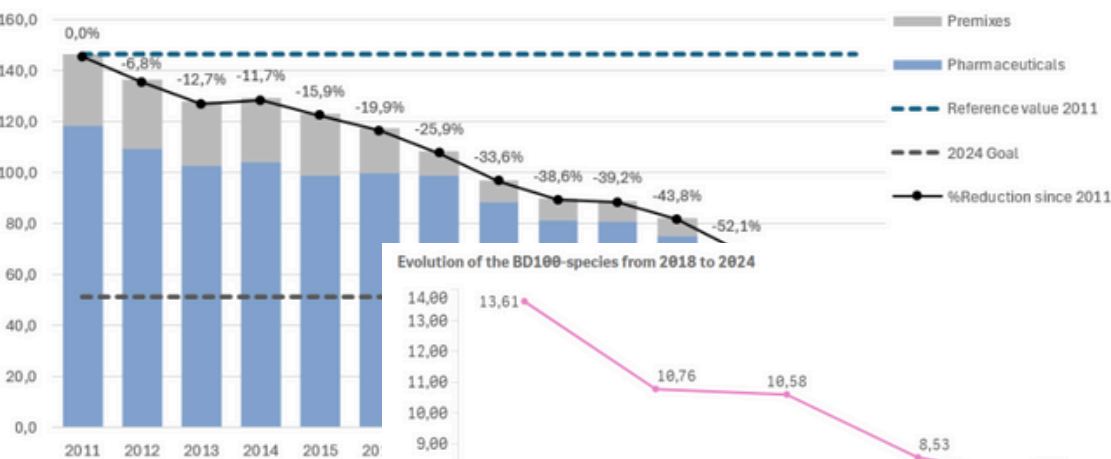


Figure 38. Year-to-year results of total sales as a reference year.

Evolution of the BD100-species from 2018 to 2024

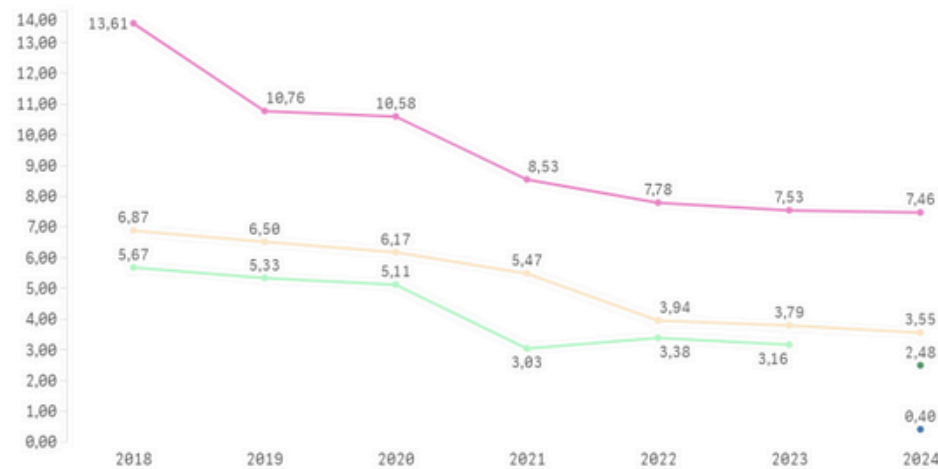


Figure 14. Antibacterial use (BD₁₀₀-species) from 2018 to 2024 in pigs, poultry and veal calves, and in dairy and beef cattle in 2024.

Evolution in standardised colistin sales since 2012
mg active substance / kg biomass

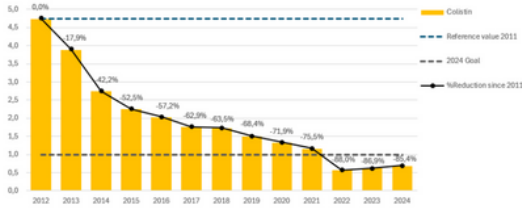


Figure 41. Evolution of colistin sales (mg active substance/kg biomass) and current progress regarding the 2024 reduction target of 1 mg colistin/kg biomass.

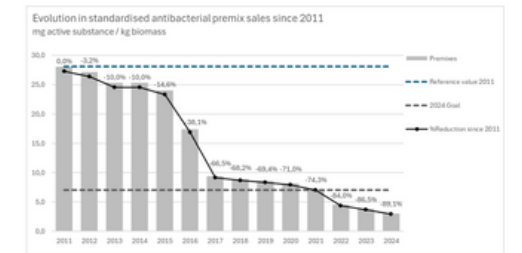


Figure 42. Evolution of antibacterial premix sales (mg active substance/kg biomass) and current progress regarding the 2024 reduction target of 75 % reduction since the reference year 2011.

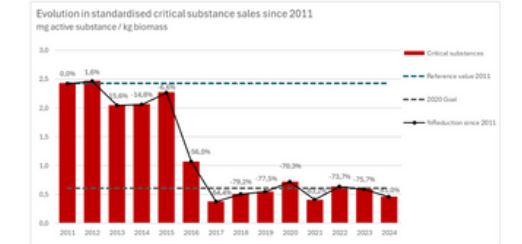
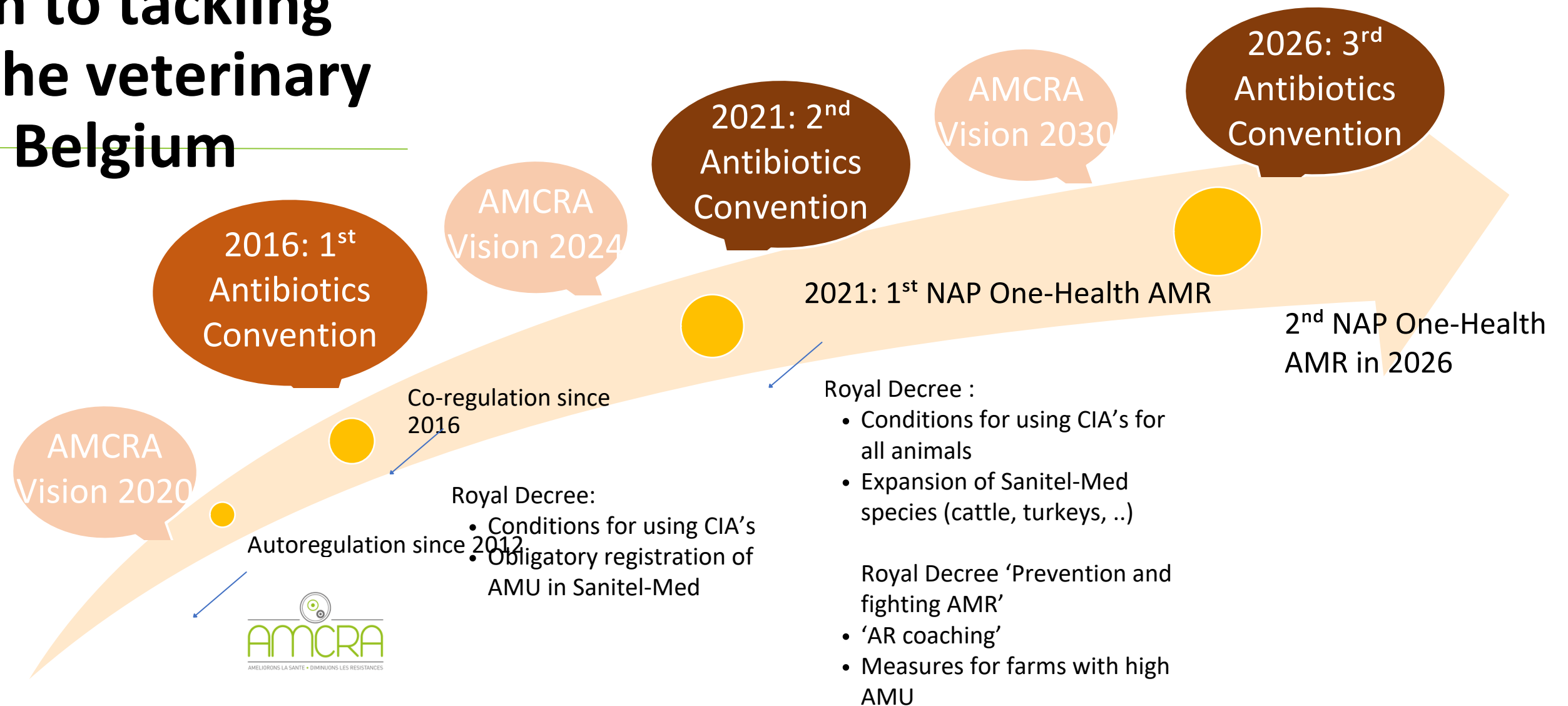


Figure 43. Evolution of the sales of CIs (quinolones and 3rd and 4th generation cephalosporins) in mg active substance/kg biomass since the reference year 2011.

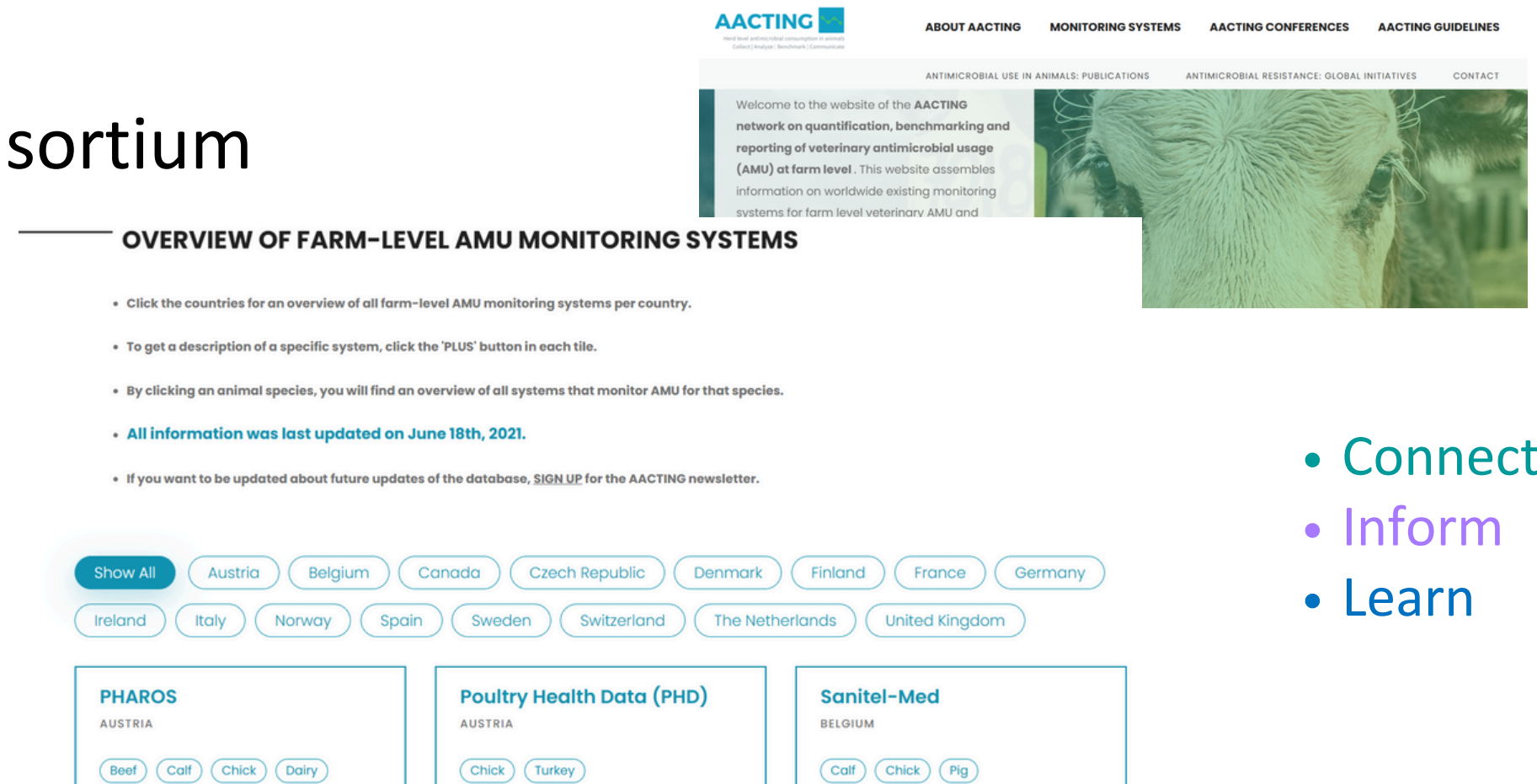


Approach to tackling AMR in the veterinary sector in Belgium



Other approaches are possible...

- ... and successful
- AACTING project/consortium



- Connect
- Inform
- Learn



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Other national reports on antibacterial sales and/or use in animals

- Recently:



Autoriteit Diergeneesmiddelen

SDa Nieuwsbrief

NIEUWSBRIEF VAN DE AUTORITEIT DIERGENEESMIDDELEN OKTOBER 2025



SDa-rapport 2024 (Eng.)

De jaarlijkse SDa-rapportage die in juni jl. is uitgekomen, is nu ook beschikbaar in het Engels:

[SDa-report - Usage of Antibiotics in Agricultural Livestock in 2024](#)





Autoriteit Diergeneesmiddelen





AMR<amr@vmd.gov.uk>

Tue 2025-11-18 15:35

Flagged Start by 2025-11-18. Due by 2025-11-18.

You forwarded this message on Tue 2025-11-18 23:08 [View conversation](#)

UK-VARSS_2024_Highlights_Re... 2 MB

You don't often get email from amr@vmd.gov.uk. [Learn why this is important](#)

Dear all,

I hope this email finds you well.

I am pleased to share with you this year's UK Veterinary Antibiotic Resistance Report. The UK-VARSS 2024 Report, together with the Material can be found [here](#).

For your convenience, I have attached the Highlights Report to this email.

Headlines from this year's report include:



Veterinary Medicines Directorate

Highlights

UK-VARSS 2024
Published November 2025



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International reports on antibacterial sales and/or use in animals



¹ Sales data subject to mandatory reporting, which only concerns substances with antibiotic activity.
² Countries' codes according to ISO 3166 — Codes for the representation of names of countries and their subdivisions.

 World Organisation
for Animal Health

ANIMUSE

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HOME COUNTRY DATA FREQUENTLY ASKED QUESTIONS RESOURCES AMU FIELD LEVEL

Annual Report on Antimicrobial Agents Intended for Use in Animals

Every year, WOAHA publishes a report to present the global and regional trends on antimicrobial intended for use in animals. This report follows the annual round of data collection, which takes place between September and May.

The latest report, published in May 2025, provides specific information on the global use of antimicrobial agents adjusted for animal biomass for the year 2022 and presents the overall findings of the eighth annual data collection on the use of antimicrobial agents in animals.

Contributions to our database have grown from reporting data from 130 Members for the first report in 2016 to 154 participants for the latest report.

[The Ninth WOAHA Annual Report on Antimicrobial Agents Intended for Use in Animals](#)



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(Inter)national reports from One-Health perspective



<https://letstalkantibiotics.be/belmap-report/>



Analysis of antimicrobial consumption and resistance ('JIACRA' reports)

The European Medicines Agency (EMA) works closely with the European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC) to analyse the potential relationship between the consumption of antimicrobials by humans and animals and the occurrence of antimicrobial resistance.

[Veterinary](#) [Antimicrobial resistance](#)

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Closing remarks

15:55 – 16:00



Jaisalmer de Frutos Lucas
Policy Manager at EPHA

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Tackling Antimicrobial Resistance in Food Production: A One Health Perspective

Thank you for attending!



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