LECTURE 3

JVARM
Japan's Veterinary AMR and AMU Surveillance System

VETERINARY AMR CENTER, NVAL

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CENTER

TOPICs

- NATIONAL ACTION PLAN
- JVARM
- MISCELLANEOUS

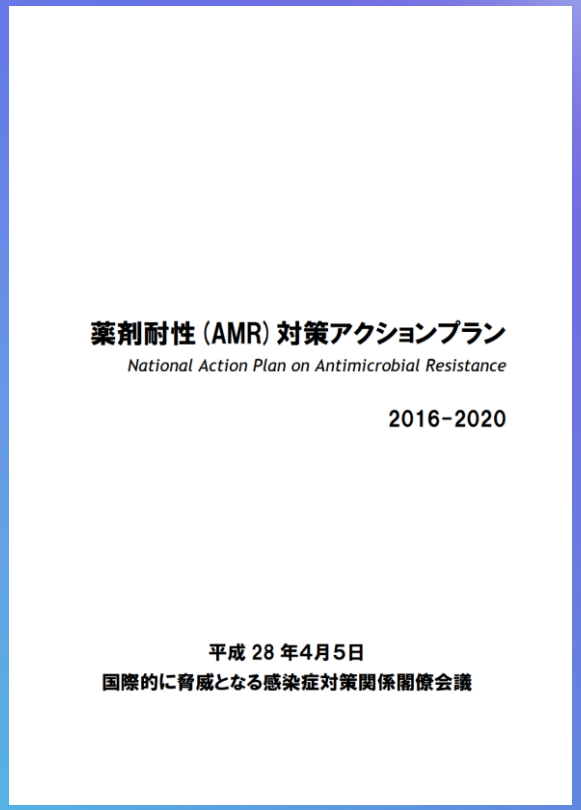
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AMR
CENTER

National Action Plan on AMR

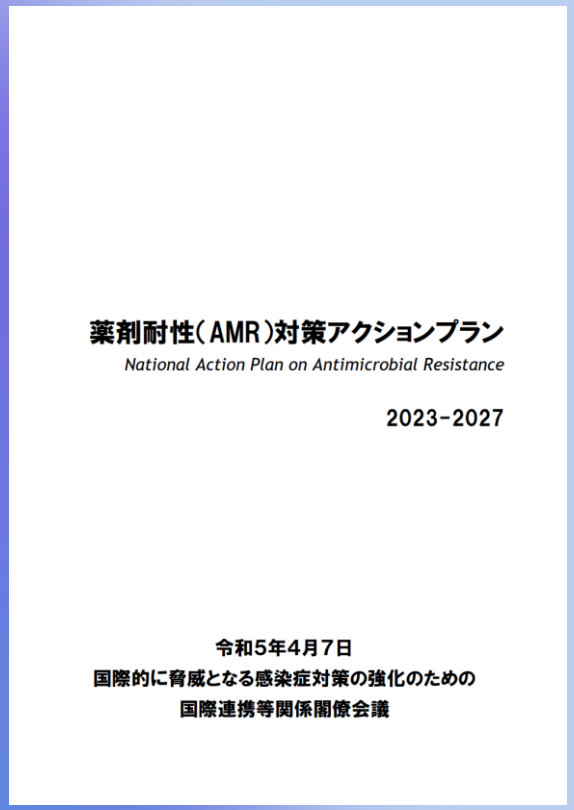
WHO 2015



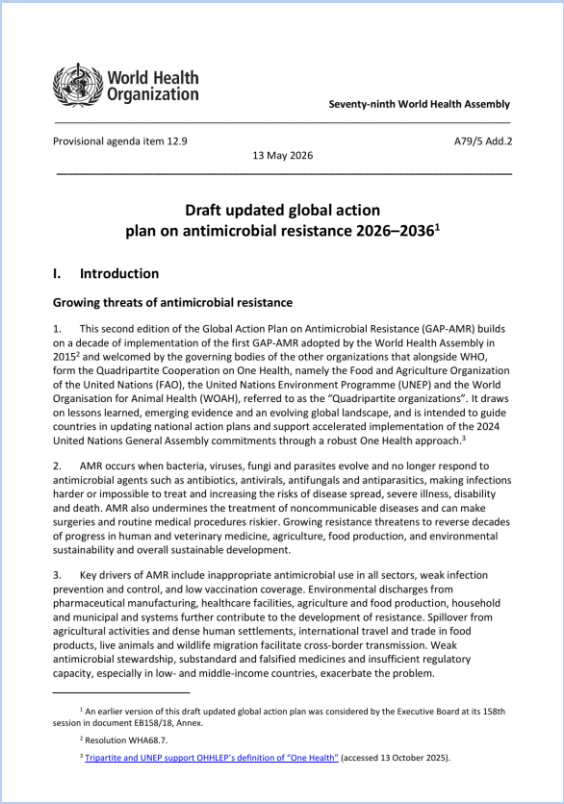
Japan 2016



Japan 2023



Quadripartite 2026



World Health Organization

Seventy-ninth World Health Assembly

Provisional agenda item 12.9 — A79/5 Add.2

13 May 2026

Draft updated global action plan on antimicrobial resistance 2026–2036[1]

I. Introduction

Growing threats of antimicrobial resistance

1. This second edition of the Global Action Plan on Antimicrobial Resistance (GAP-AMR) builds on a decade of implementation of the first GAP-AMR adopted by the World Health Assembly in 2015[2] and welcomed by the governing bodies of the other organizations that alongside WHO, form the Quadripartite Cooperation on One Health, namely the Food and Agriculture Organization of the United Nations (FAO), the United Nations Environment Programme (UNEP) and the World Organisation for Animal Health (WOAH), referred to as the "Quadripartite organizations". It draws on lessons learned, emerging evidence and an evolving global landscape, and is intended to guide countries in updating national action plans and support accelerated implementation of the 2024 United Nations General Assembly commitments through a robust One Health approach.[3]

2. AMR occurs when bacteria, viruses, fungi and parasites evolve and no longer respond to antimicrobial agents such as antibiotics, antivirals, antifungals and antiparasitics, making infections harder or impossible to treat and increasing the risks of disease spread, severe illness, disability and death. AMR also undermines the treatment of noncommunicable diseases and can make surgeries and routine medical procedures riskier. Growing resistance threatens to reverse decades of progress in human and veterinary medicine, agriculture, food production, and environmental sustainability and overall sustainable development.

3. Key drivers of AMR include inappropriate antimicrobial use in all sectors, weak infection prevention and control, and low vaccination coverage. Environmental discharges from pharmaceutical manufacturing, healthcare facilities, agriculture and food production, household and municipal and systems further contribute to the development of resistance. Spillover from agricultural activities and dense human settlements, international travel and trade in food products, live animals and wildlife migration facilitate cross-border transmission. Weak antimicrobial stewardship, substandard and falsified medicines and insufficient regulatory capacity, especially in low- and middle-income countries, exacerbate the problem.

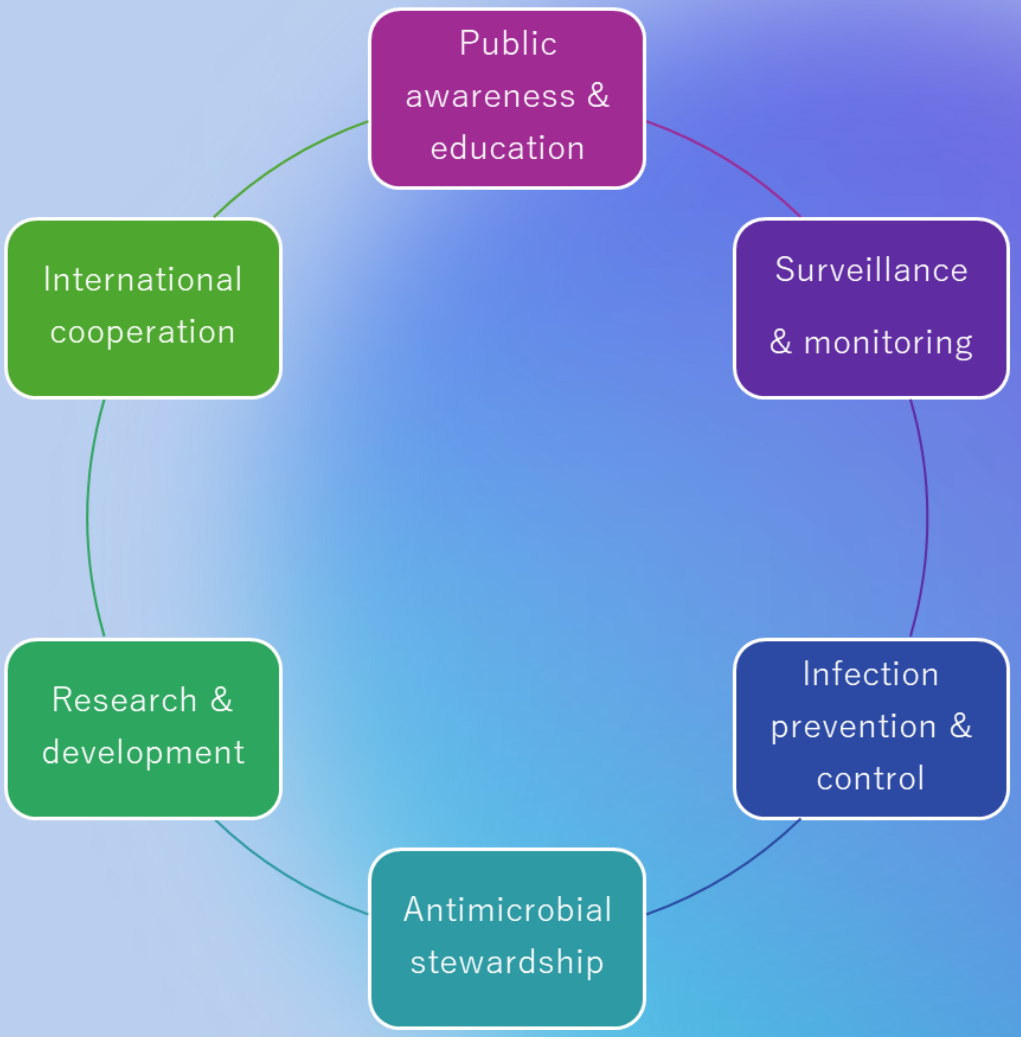
[1] An earlier version of this draft updated global action plan was considered by the Executive Board at its 158th session in document EB158/18, Annex.

[2] Resolution WHA68.7.

[3] Tripartite and UNEP support OHHLEP's definition of "One Health" (accessed 13 October 2025).

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6 Targets of National Action Plans on AMR



Goal 1	Improve Public Awareness and Understanding, and Promote Education and Training of Professionals
Goal 2	Continuously Monitor Antimicrobial Resistance and Use of Antimicrobials, and Appropriately Understand the Signs of Change and Spread of Antimicrobial Resistance
Goal 3	Prevent the Spread of Antimicrobial-resistant Organisms by Implementing Appropriate Infection Prevention and Control
Goal 4	Promote Appropriate Use of Antimicrobials in the Fields of Healthcare, Livestock and Aquaculture
Goal 5	Promote Research on Antimicrobial Resistance and Foster Research and Development to Secure the Means to Prevent, Diagnose and Treat the Antimicrobial-resistant Infections
Goal 6	Enhance Global Multidisciplinary Countermeasures against Antimicrobial Resistance

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Outcome Indices of National Action Plans

Category	Metric	2020	2027 Target Year
AMR	Tetracycline resistance of *E. coli*	Cattle 19.8% Pig 62.4% Chicken 52.9%	Cattle ≦20% Pig ≦50% Chicken ≦45%
AMR	3rd-gen. cephalosporin resistance of *E. coli*	Cattle 0.0% Pig 0.0% Chicken 4.1%	Cattle ≦1% Pig ≦1% Chicken ≦5%
AMR	Fluoroquinolone resistance of *E. coli*	Cattle 0.4% Pig 2.2% Chicken 18.2%	Cattle ≦1% Pig ≦2% Chicken ≦15%
AMU	Use of veterinary antibiotics in the livestock field	626.8 tonnes	15% reduction
AMU	Use of second-line drugs in the livestock field	26.7 tonnes	≦27 tonnes

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Japanese Veterinary Antimicrobial Resistance Monitoring

JVARM

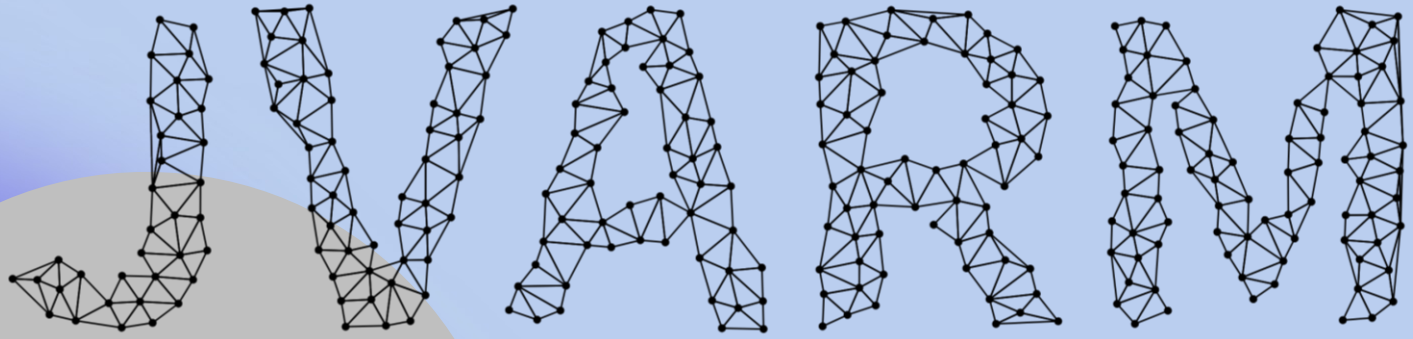
SINCE 1999

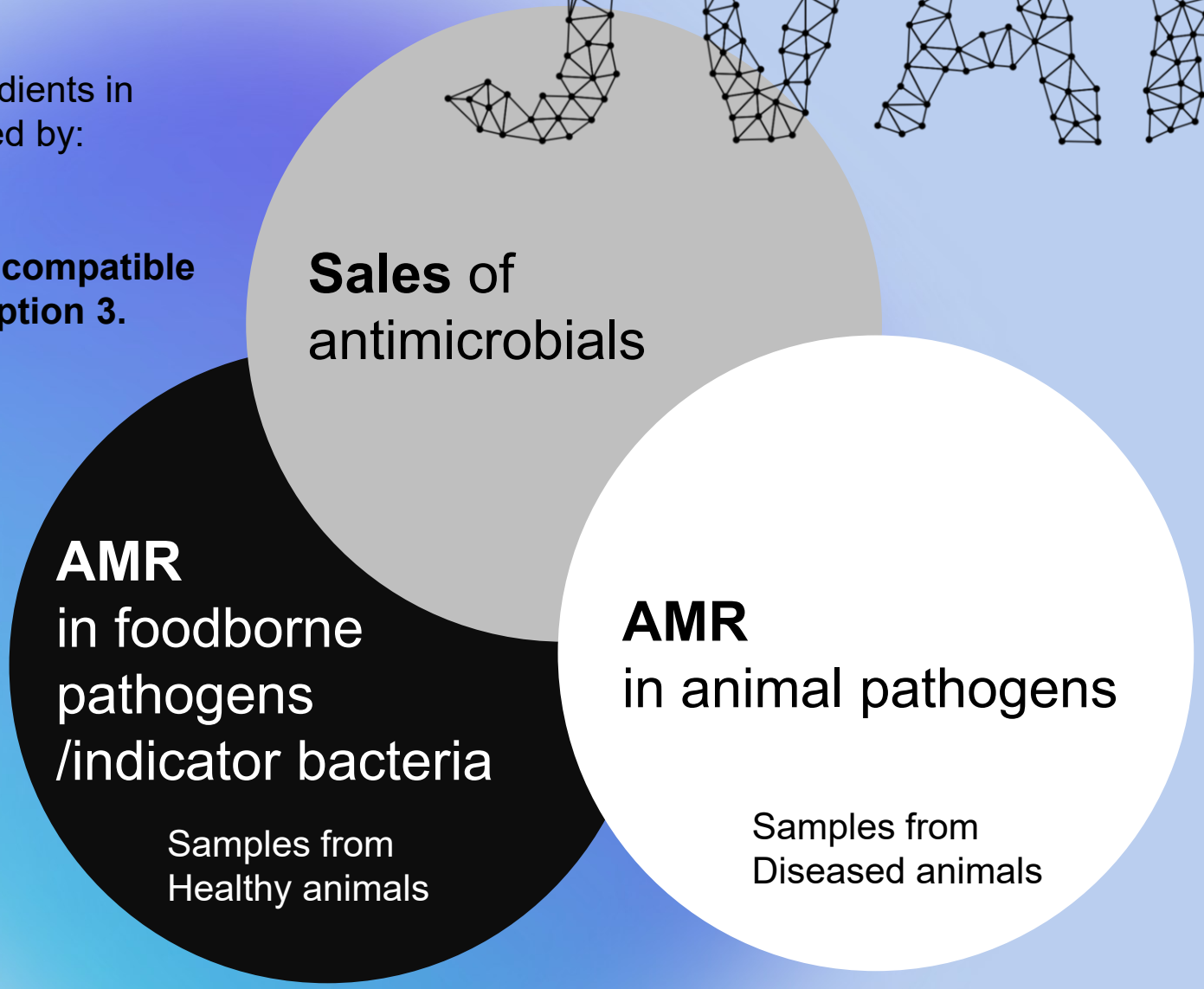
16 years ahead of the Global Action Plan (2015)

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The weight of active ingredients in veterinary drugs is reported by:
- Animal species
- Route of administration

This reporting format is compatible with WOAH ANIMUSE Option 3.





Animals are
- Pigs
- Cattle
- Chickens
- **Dogs & Cats since 2017**
- Fish

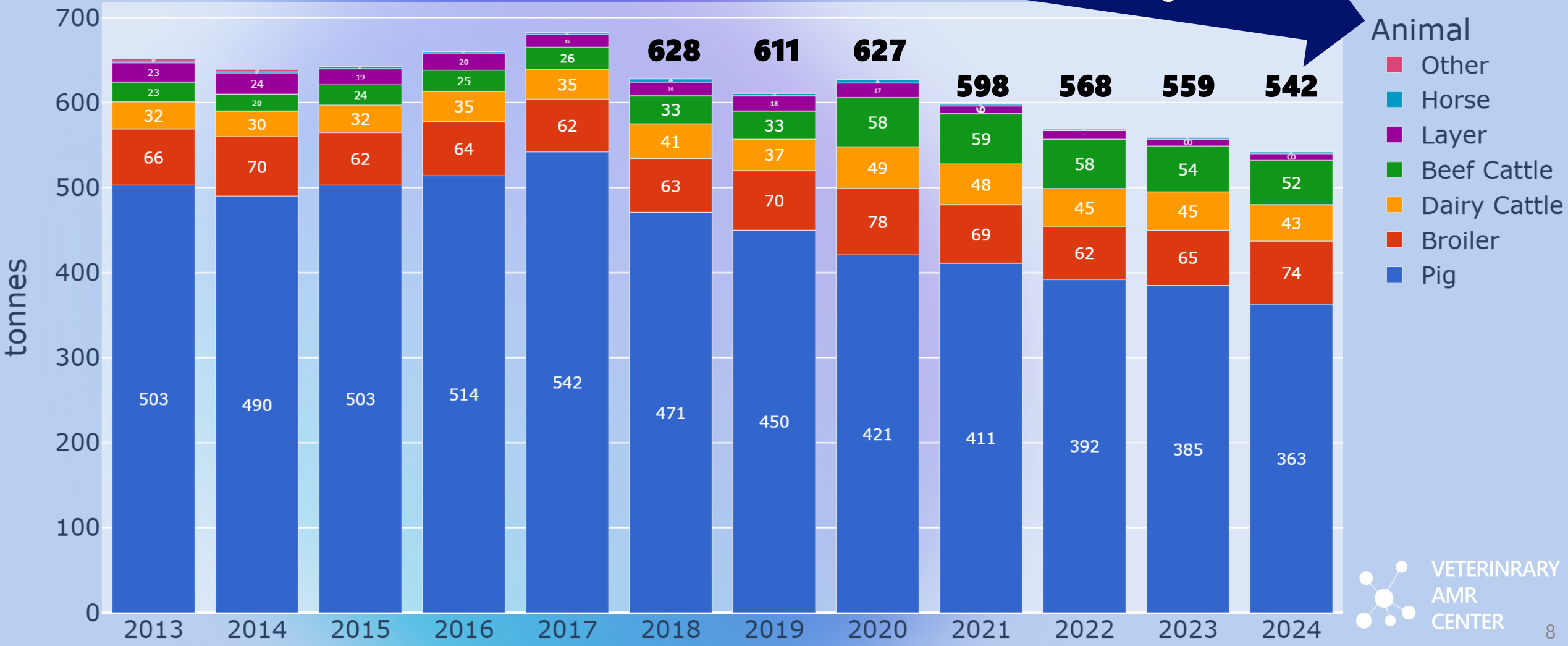
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Trend of Antimicrobial Use for Livestock

JVARM

Target is 533 tonnes as of 2027 (-15% of 2020)

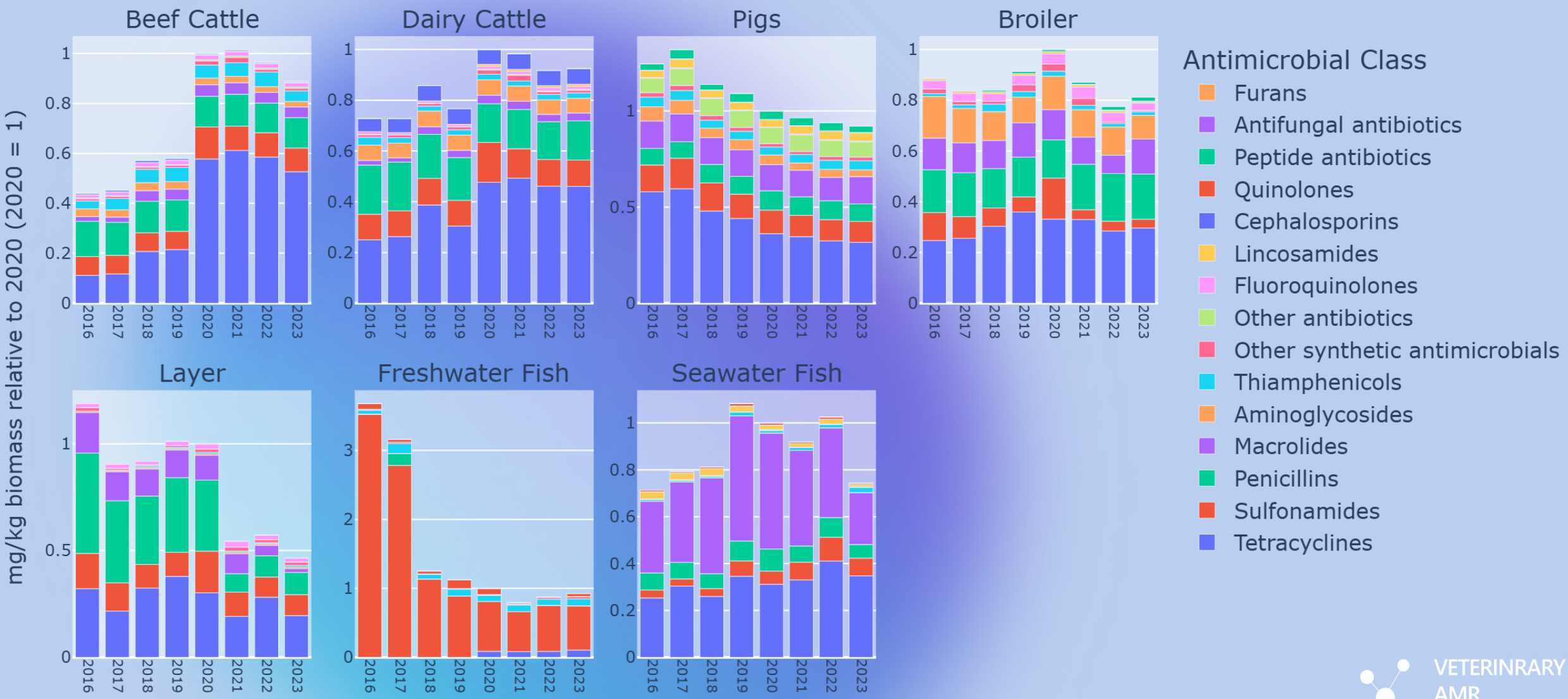
Declining since 2018



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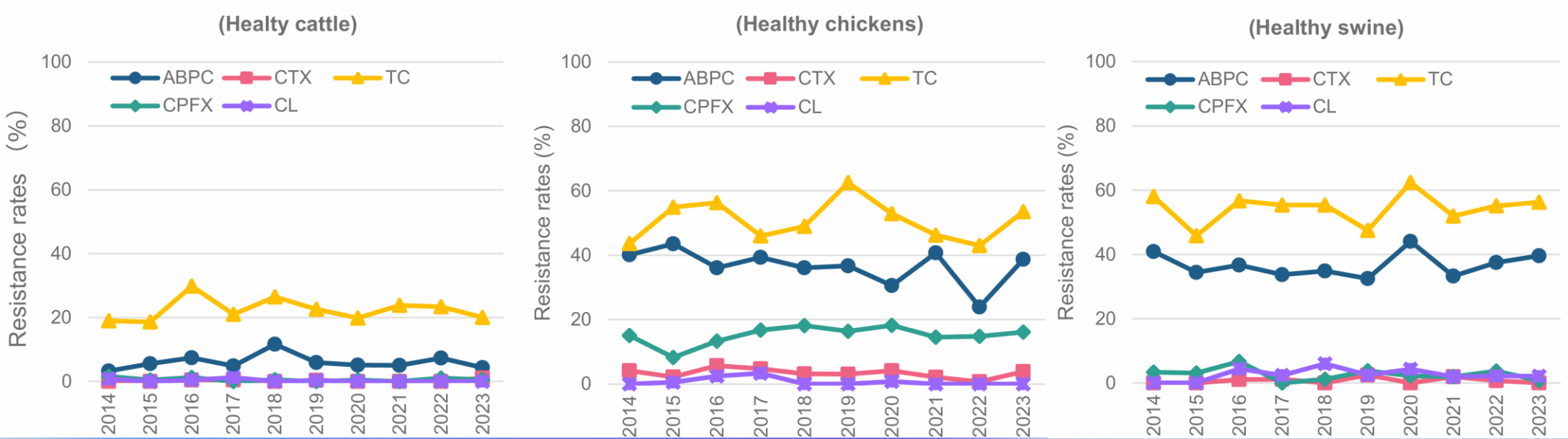
Trend of Antimicrobial Use by Animal Species

JVARM

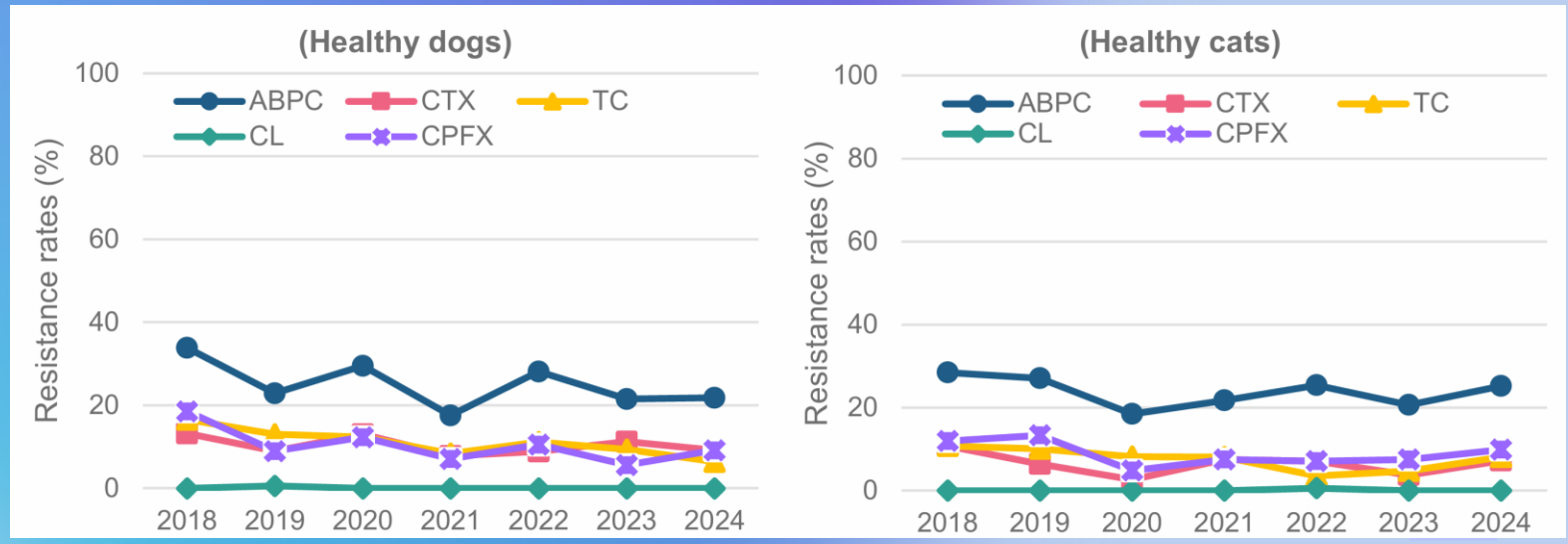


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Trend of Resistance Rate of *Escherichia coli*



Abbr.	Drug
ABPC	Ampicillin
CTX	Cefotaxime
TC	Tetracycline
CPFX	Ciprofloxacin
CL	Colistin



JVARM

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Making AMR Data Accessible to the Public through Our Online Dashboard

日本の動物に対する耐性率モニタリング

菌種(Strain)
Escherichia coli

由来(Health / Disease)
健康(Healthy)

畜種(animal species)
牛(Cattle)

薬剤(Antimicrobial agent)
すべて

期間(Year)
すべて

すべてのスライサーをクリア

材料(Sample)
直腸便(Rectal)

由来(Collected from)
と畜場(Slaughterhouse)

試験方法(Suszeptibility test method)
微量液体希釈法(Microdilution)

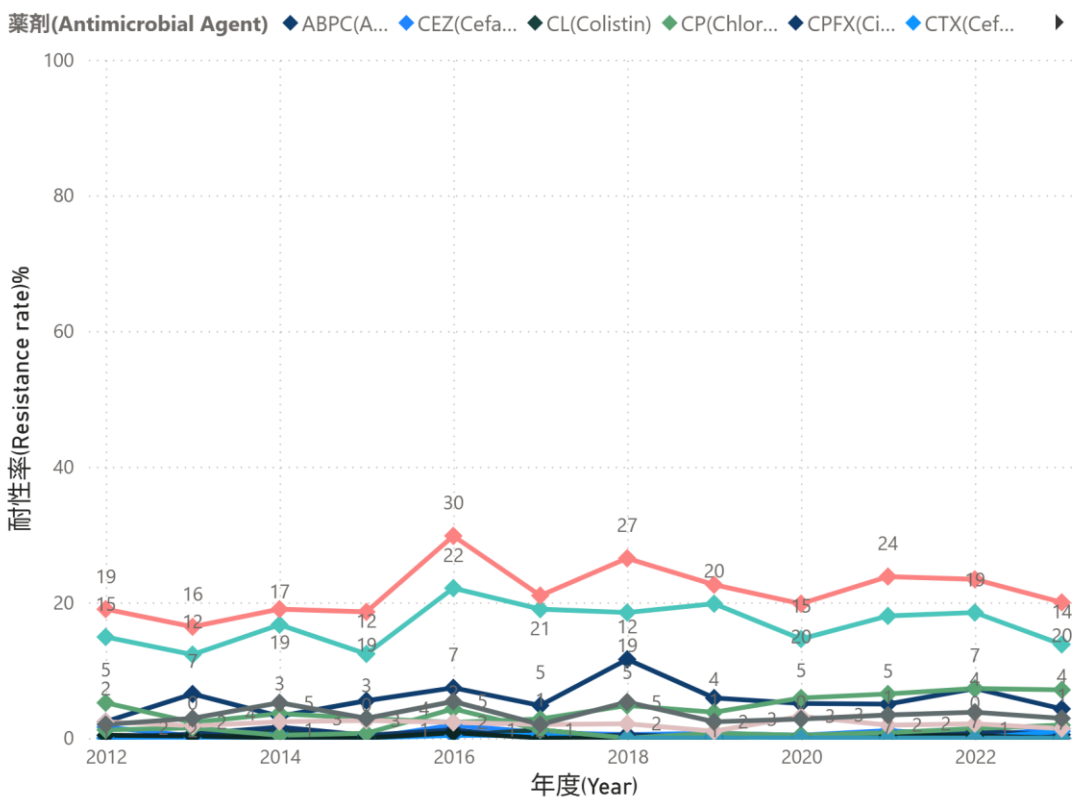
判定値(Judjement value)
ABPC(Ampicillin) S≤8, I=16, R≥32 CLSI M100-Ed34

耐性率(Resistance rate)%

薬剤(Antimicrobial Agent)	21	2022	2023
ABPC(Ampicillin)	.00	7.30	4.30
CEZ(Cefazolin)	.10	0.30	1.40
CL(Colistin)	.00	0.00	0.00
CP(Chloramphenicol)	.50	7.30	7.10
CPFX(Ciprofloxacin)	.00	1.00	0.50
CTX(Cefotaxime)	.00	0.00	1.00
GM(Gentamicin)	.40	0.30	0.00
KM(Kanamycin)	.80	1.40	1.90
MEPM(Meropenem)	.00	0.00	0.00
NA(Nalidixic acid)	.90	2.10	1.40
SM(Streptomycin)	.00	18.50	13.80
ST(Sulfamethoxazole-trimethoprim)	.40	3.80	2.90
TC(Tetracycline)	.80	23.40	20.00

最大株数(Max number of strain)

畜種(Animal Species)	2012	2013	2014	2015	2016
牛(Cattle)	248	341	252	274	258



JVARM
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Risk Assessment and management

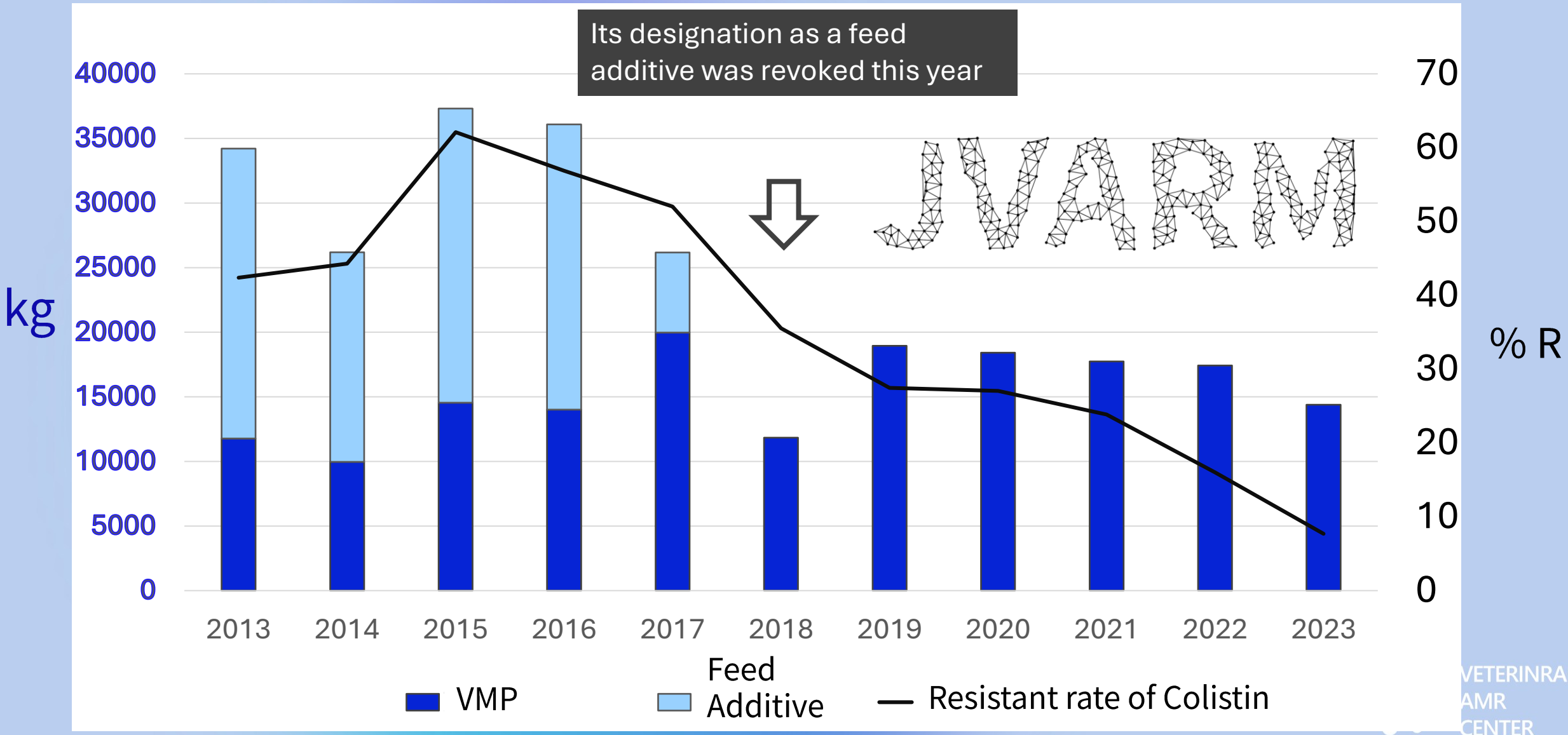
Risk management measures are based on risk assessments conducted by the Food Safety Commission of Japan (FSC), and our risk analysis framework is aligned with Codex guidelines and the WOAH Code.

<table>
<tr><th>Risk Assessment Result</th><th>Veterinary drugs</th><th>Feed additives</th></tr>
<tr><td rowspan="2">High</td><td>- Prohibition of use etc.</td><td rowspan="4">Prohibition of use</td></tr>
<tr><td rowspan="2">- Restriction of usage
(e.g. application period,
target disease)</td></tr>
<tr><td rowspan="2">Medium</td></tr>
<tr><td>- Strict use as a second choice drug
- Enhanced monitoring</td></tr>
<tr><td>Low</td><td rowspan="2">- Continued monitoring</td><td rowspan="2">Continued monitoring</td></tr>
<tr><td>Negligible</td></tr>
</table>

- The use of feed additives is regulated. Specific requirements, including prohibitions on use in milking cows and laying hens, are set out in the Feed Safety Act.
- The use of veterinary drugs is also restricted, and specific requirements—such as withdrawal periods prior to the shipment of livestock—are stipulated in the Act on Pharmaceuticals and Medical Devices.

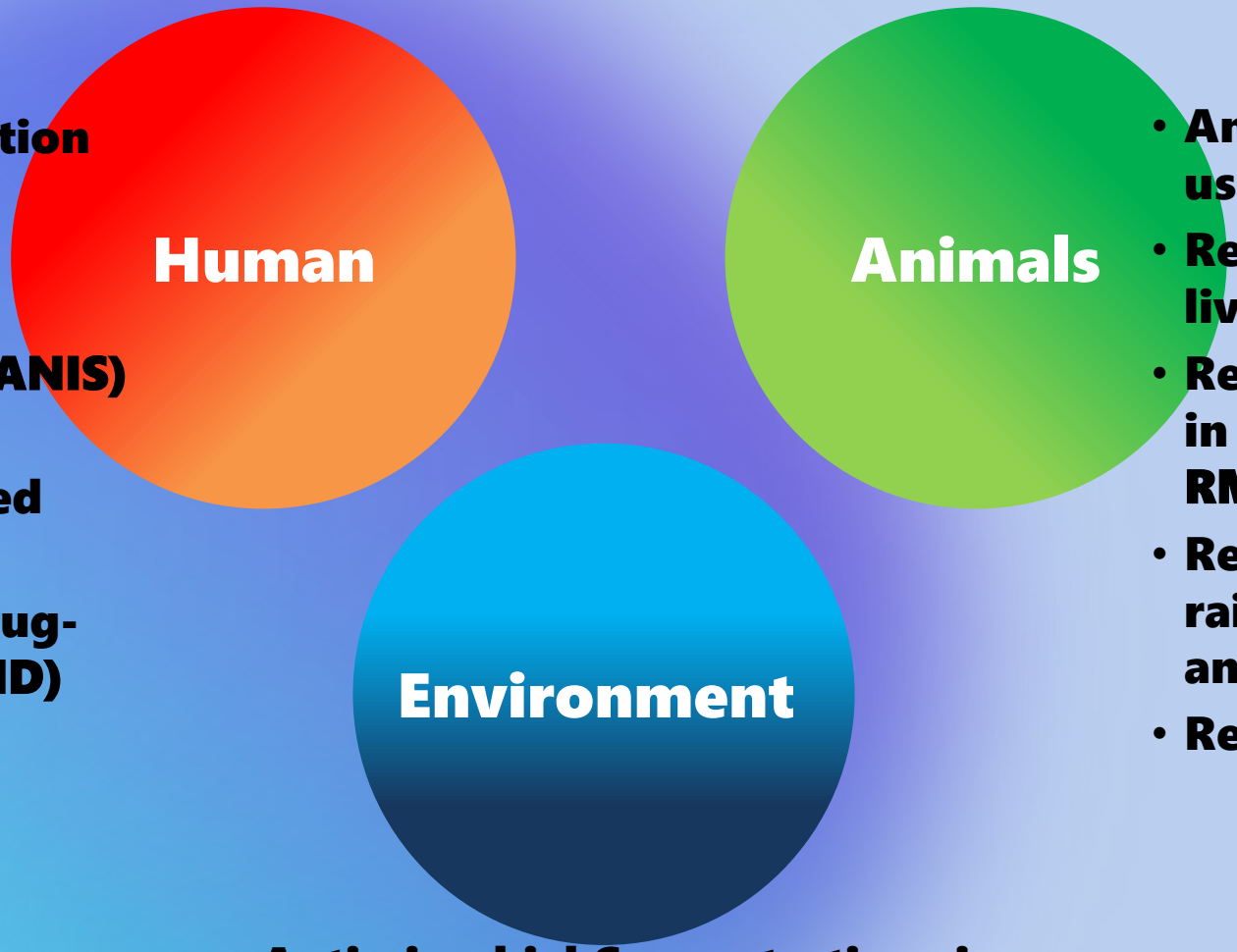
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Sales Volume and Resistance Rates of Colistin in *E. coli* from Diseased Pigs



One Health Approach in Japan

AMR One Health Surveillance



- Antimicrobial Consumption Surveillance in Humans (JSAC/J-SIPHE)
- Resistant organisms in hospitalized patients (JANIS)
- Healthcare-Associated Infections in Hospitalized Patients (JANIS)
- Infections Caused by Drug-Resistant Bacteria (NESID)

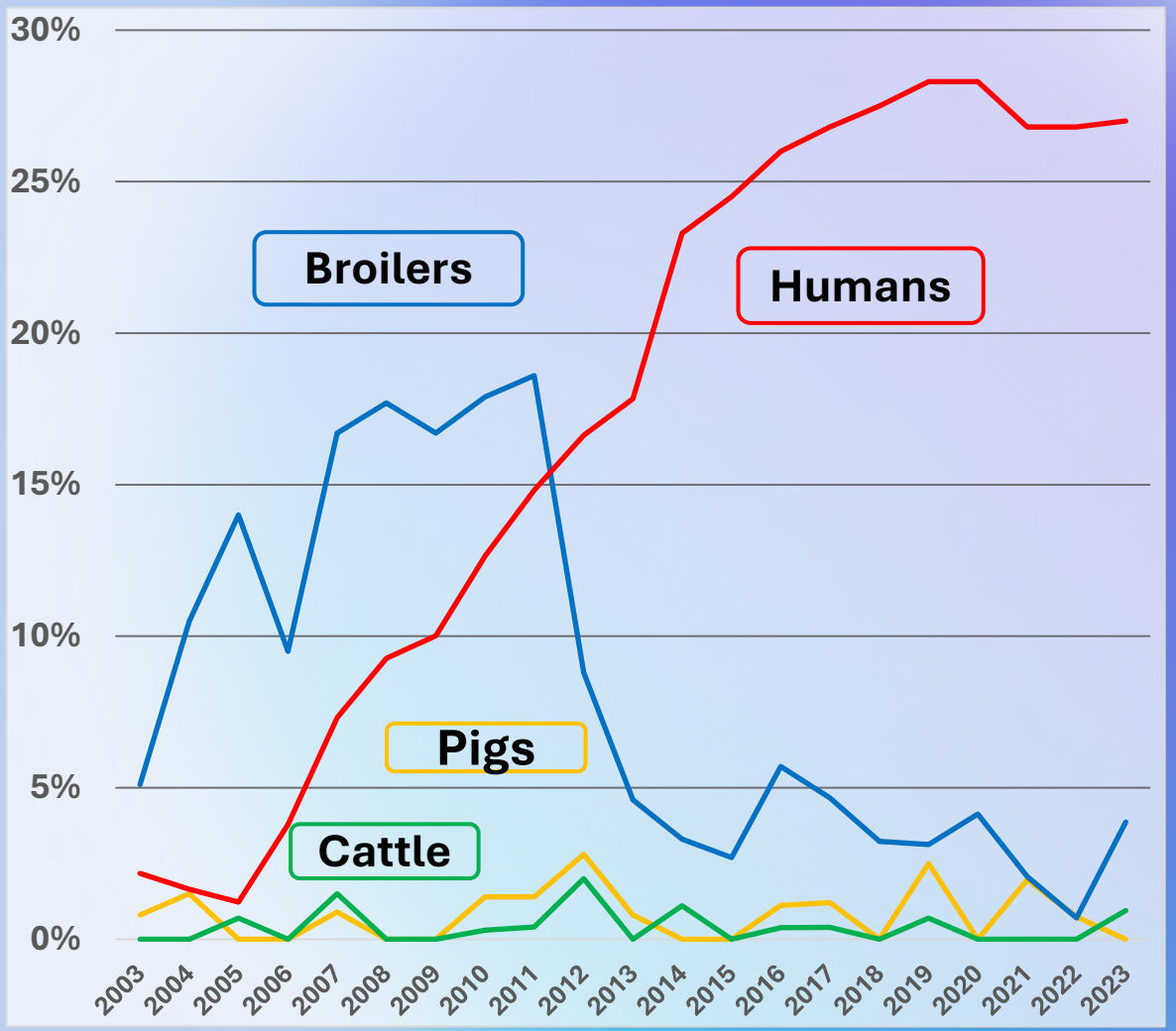
- Amount of antimicrobials used in animals (JVARM)
- Resistant bacteria of livestock animals (JVARM)
- Resistant bacteria in companion animals(JVARM)
- Resistant bacteria in farm-raised aquatic animals(JVARM)
- Resistant bacteria in food

•Antimicrobial Concentrations in the Environment etc.

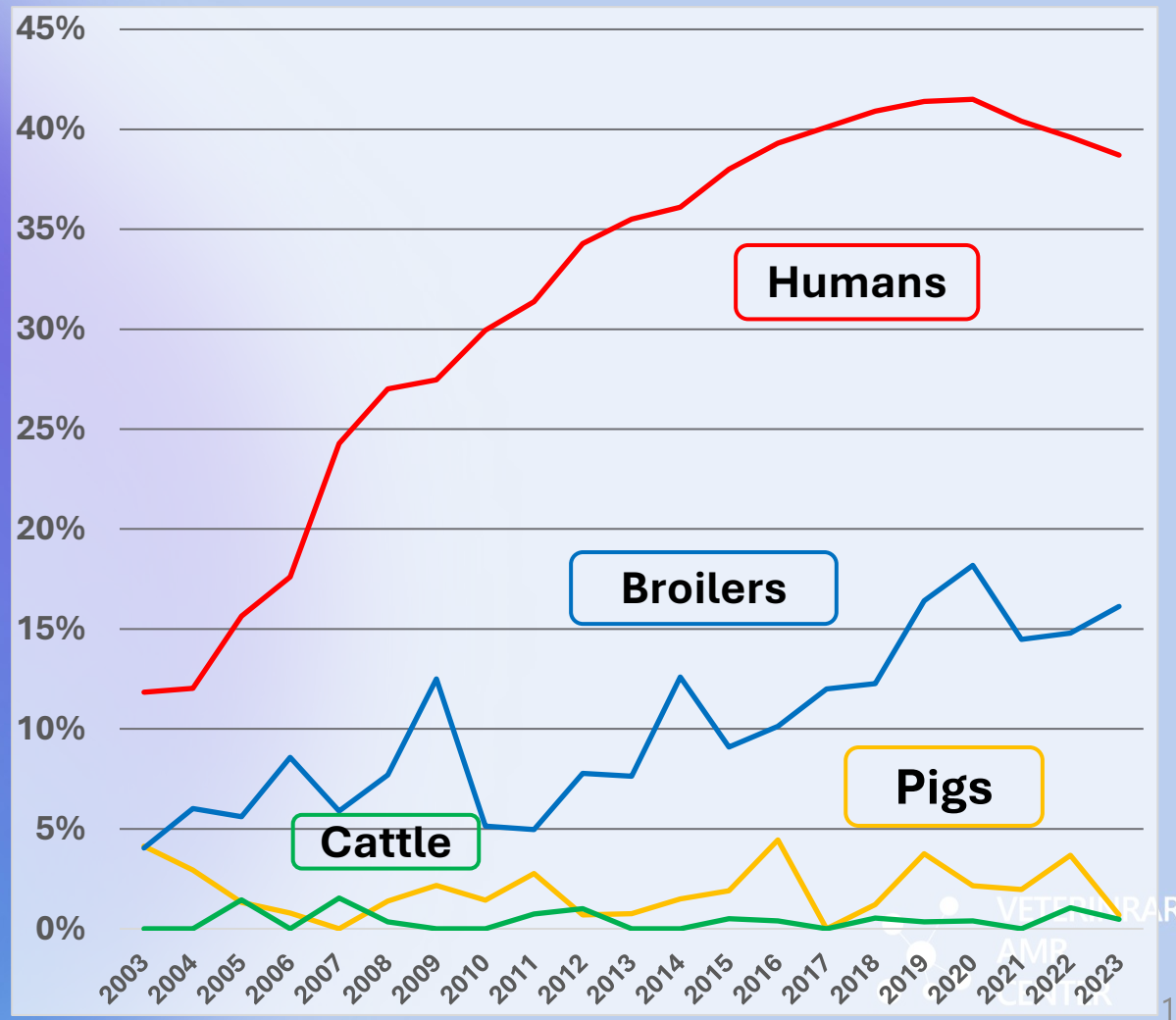
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Comparison of the Resistant Rates in *Escherichia coli* From Humans and Food-producing Animal

3rd cephalosporins



Fluoroquinolones



International Cooperation

NVAL HAS BEEN ACTIVE AS THE WOAH – COLLABORATING CENTRE SINCE 2010.

TRAININGS ARE HELD FOR AMR INSPECTORS FROM ASIA AND THE PACIFIC COUNTRIES.

- 2016 - 2018: Short-term Training (14 countries)
- 2019 - 2020: long-term Training (1 country)
- 2021: Online training (1 country)
- 2022: Regional short-term training (15 countries and regions)
- 2023: Regional short-term training (15 countries)
- 2024: Regional short-term advanced training (5 countries)
- 2025: Regional short-term training (4 countries)
- 2026: Regional short-term training (1st 1 country & 2nd 7countries)



MICHIKO KAWANISHI: MEMBER OF WOAH AMR WORKING GROUP SINCE 2025

YUTA HOSOI: MEMBER OF WOAH ELECTRONIC TECHNICAL GROUP (ETG) ON ANTIMICROBIAL USE DATA COLLECTION SINCE 2024

WOAH FOCAL POINT OF VETERINARY PRODUCT

MARI MATSUDA: FORMER MEMBER OF WOAH ELECTRONIC TECHNICAL GROUP (ETG) ON ANTIMICROBIAL USE DATA COLLECTION 2020—2023

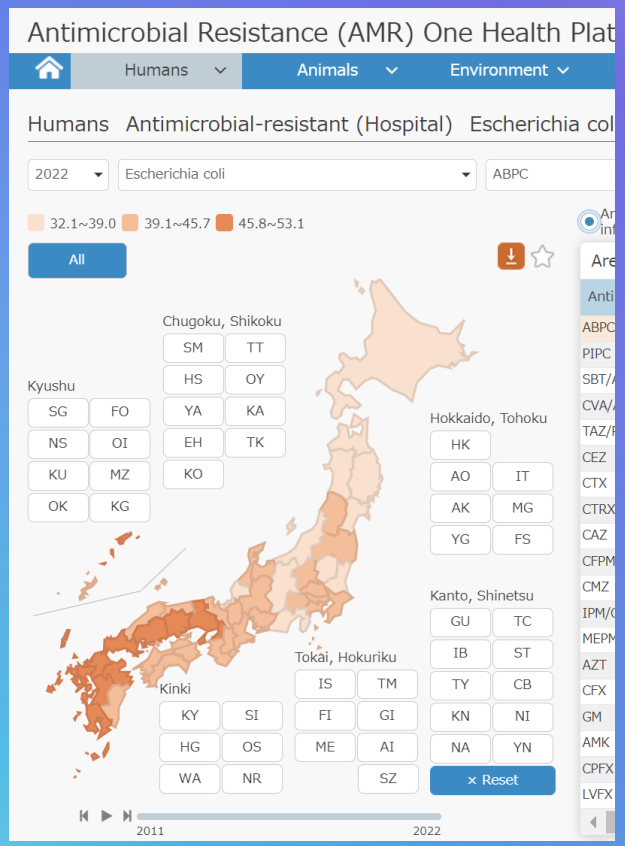
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Data Sharing

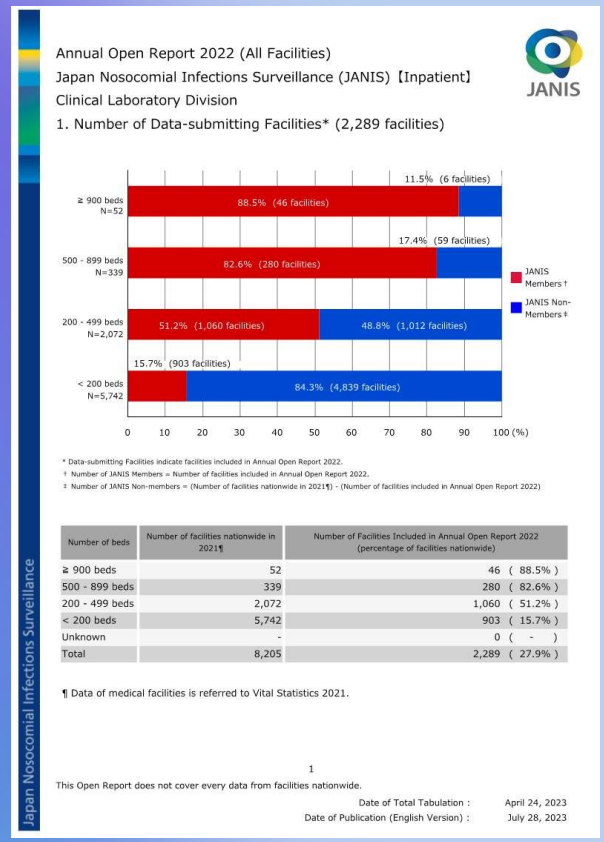
One health report
Report of AMR
Combining human, veterinary and environmental medicines



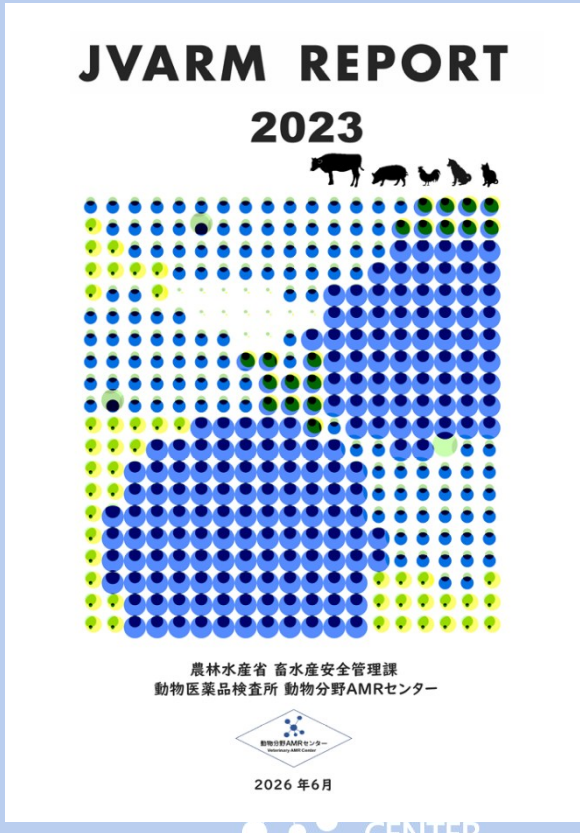
One health platform
Dashboard of AMR



JANIS report
Japan Nosocomial Infections Surveillance



JVARM report



Communication

For Medical Professions

- Guidelines
- Reports
- Infographics



For Veterinary professions

Guidelines



For General population

campaign held in a shopping mall



Youtube



For Pet owners



Posters

For Farmers

Youtube



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Questions?

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