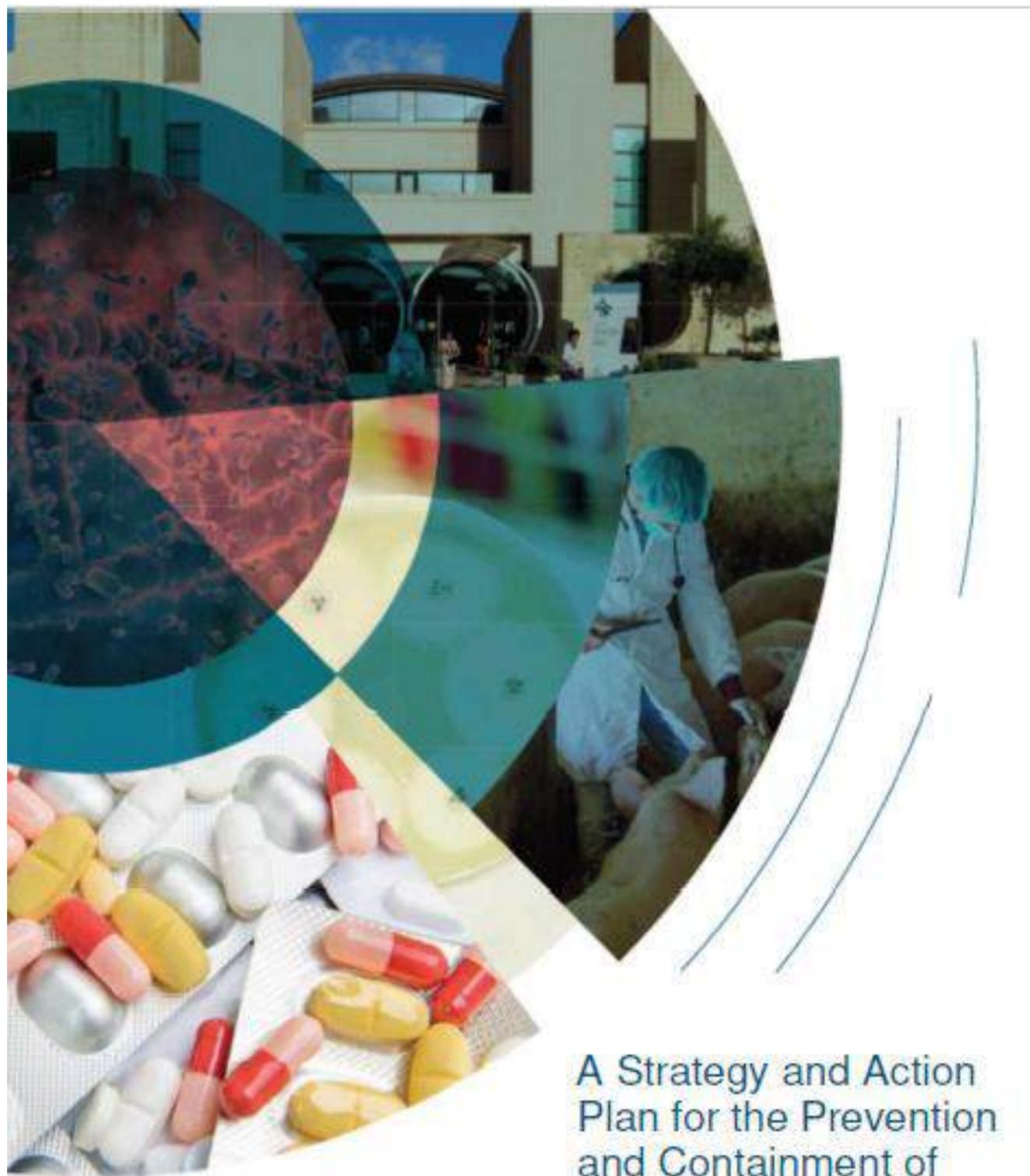


NATIONAL LAUNCH EVENT

OF THE EUROPEAN PARTNERSHIP
ON ONE HEALTH ANTIMICROBIAL
RESISTANCE





A Strategy and Action
Plan for the Prevention
and Containment of
Antimicrobial Resistance
in Malta (2020 – 2028)

MINISTRY FOR HEALTH
MINISTRY FOR AGRICULTURE, FISHERIES & ANIMAL RIGHTS



ANTIMICROBIAL RESISTANCE: FROM GLOBAL THREAT TO EUP OHAMR ACTION

Prof. Michael A. Borg
Chair
National AMR Committee
Malta

A large commercial airplane is shown on a runway, engulfed in intense orange and yellow flames. A massive, billowing plume of thick black smoke rises from the aircraft, filling the upper half of the frame. The scene is set against a bright, overcast sky. In the background, other aircraft and airport infrastructure are faintly visible.

LIVE

BREAKING NEWS

ANOTHER WEEK... ANOTHER CRASH

20:08

YEARLY DEATH TOLL STANDS AT 32,000; NO ACTION DESPITE CAUSE BEING KNOWN

Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis

*Alessandro Cassini, Liselotte Diaz Högberg, Diamantis Plachouras, Annalisa Quattrocchi, Ana Haxha, Gunnar Skov Simonsen, Mélanie Colomb-Cotinat, Mirjam E Kretzschmar, Brecht De Weert, Michele Cecchini, Driss Ait Ouakrim, Tiago Cravo Oliveira, Marc J Struelens, Carl Suetens, Dominique L Monnet, and the Burden of AMR Collaborative Group**

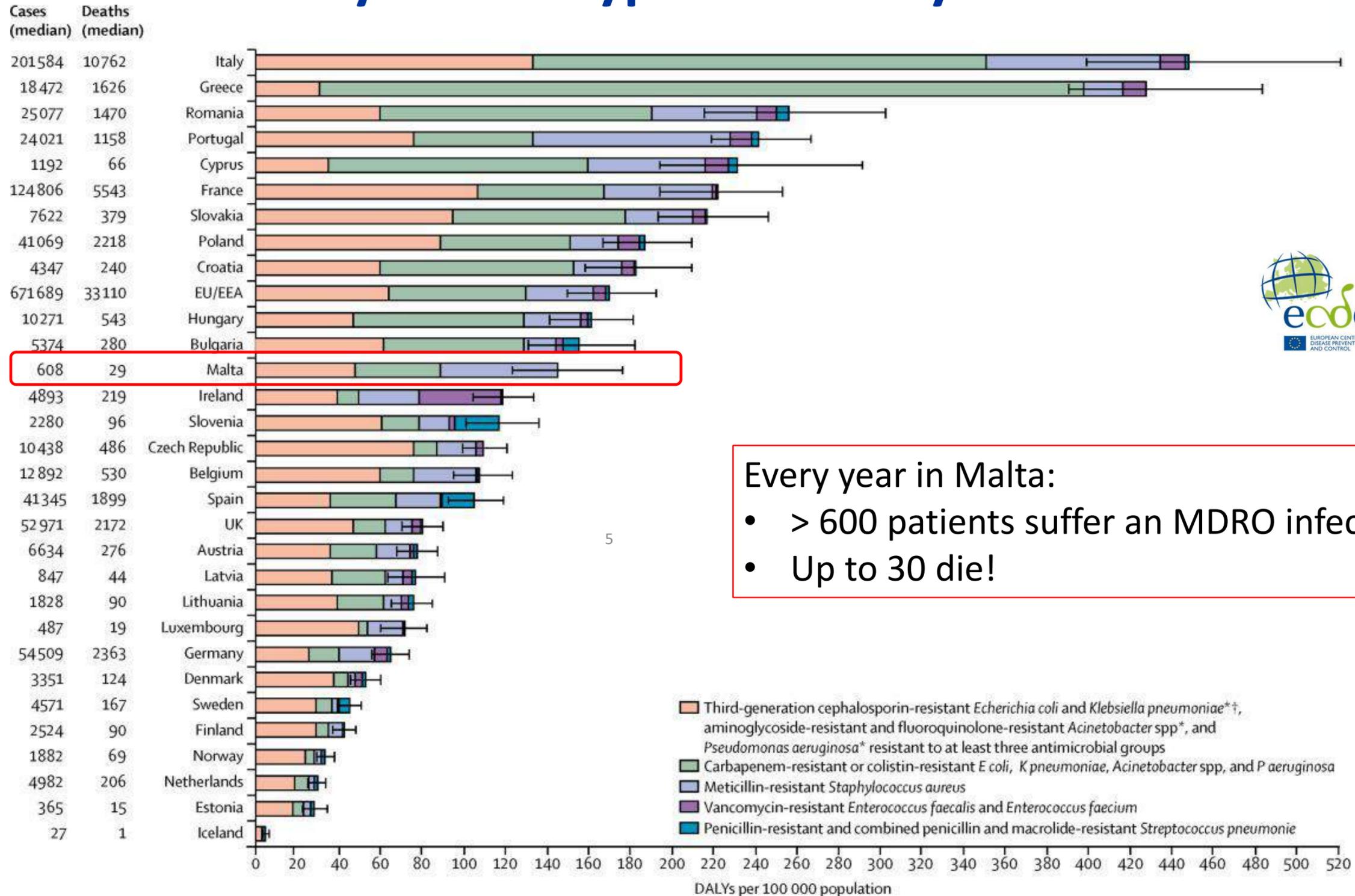
www.thelancet.com/infection Published online November 5, 2018

Every year in the EU:

- > 650,000 infections are caused by antibiotic-resistant organisms (MDROs) resulting in:
 - **30,000 attributable deaths**
 - 870,000 disability-adjusted life years (DALYs) lost



Estimated annual burden by MDRO type & country



Every year in Malta:

- > 600 patients suffer an MDRO infection
- Up to 30 die!

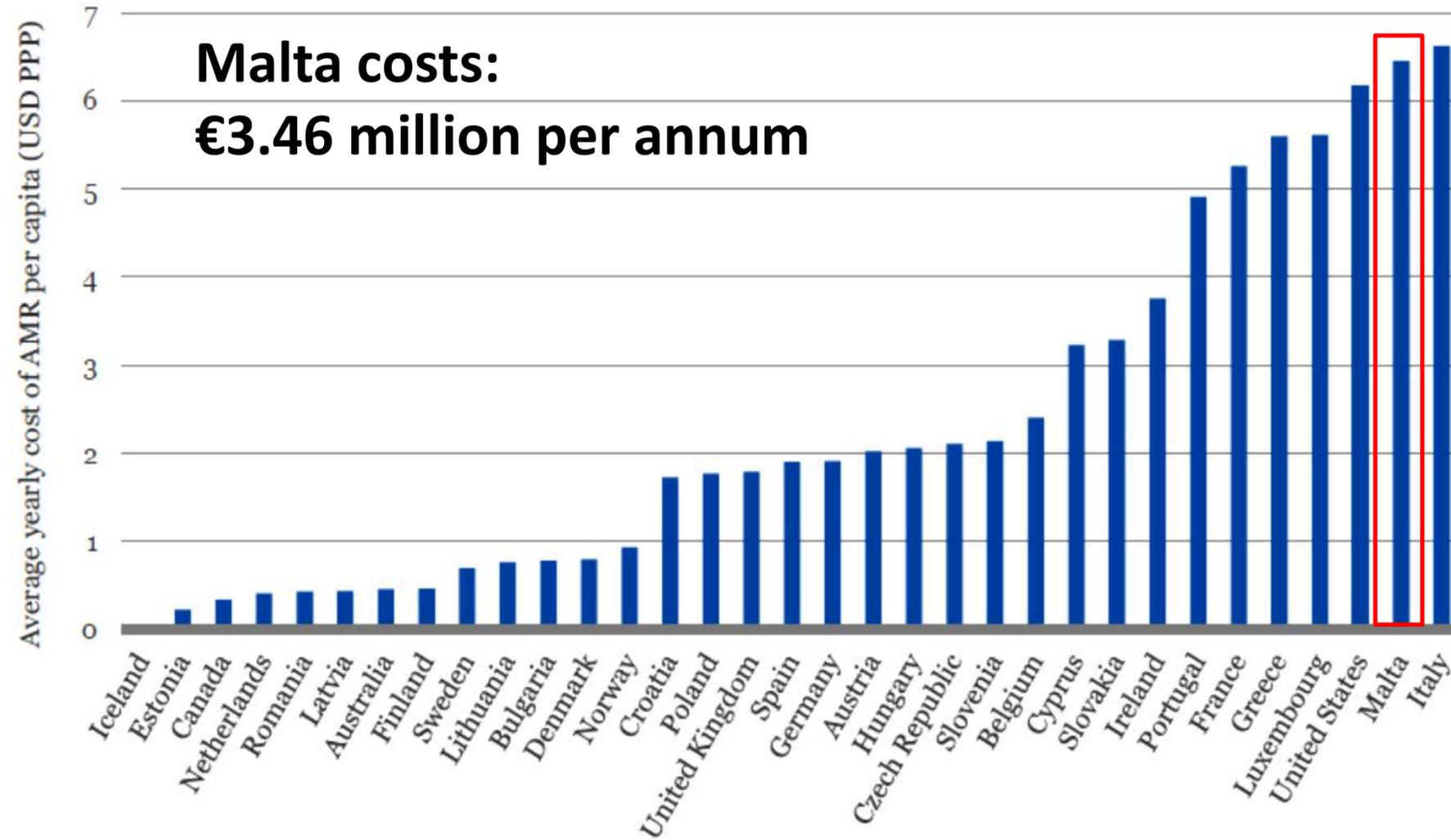
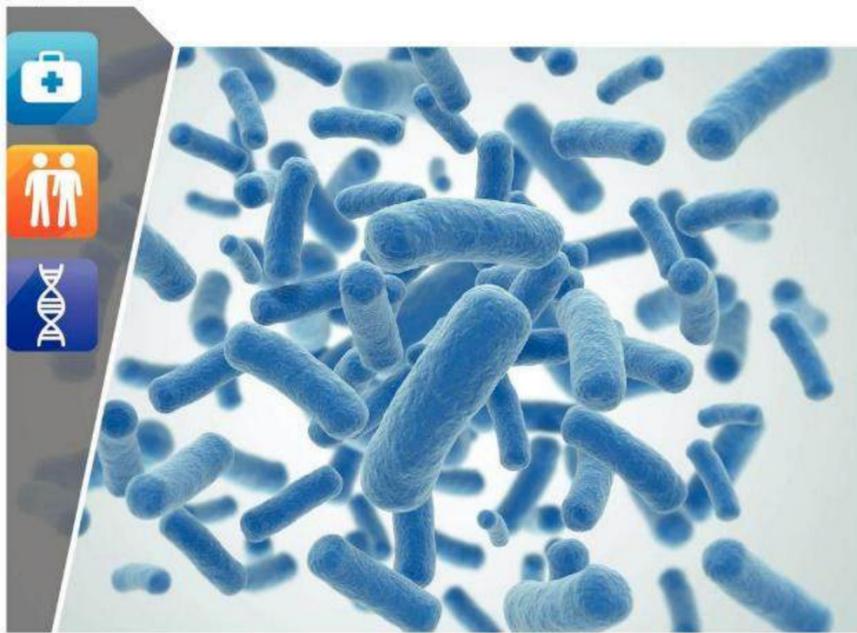


AMR burden



AMR Costs 3.5B USD PPPs per Year to the Healthcare Systems of OECD and EU Countries

OECD Health Policy Studies
Stemming the Superbug Tide
JUST A FEW DOLLARS MORE



A challenge across the EU

EU Commission national AMR reduction targets (status end 2024)

Austria	- 7.6 %	Italy	- 14.8 %
Belgium	- 23.1 %	Latvia	+ 37.2 %
Bulgaria	- 9.1 %	Liechtenstein	N/A [†]
Croatia	+ 42.4 %	Lithuania	+ 56.2 %
Cyprus	+ 145.6 %	Luxembourg	- 19.9 %
Czechia	+ 24.2 %	Malta	- 26.2 %
Denmark	- 15.1 %	Netherlands	+ 1.8 %
Estonia	+14.5 %	Norway	- 13.7 %
Finland	- 19.5 %	Poland	+ 4.4 %
France	N/A [†]	Portugal	+ 4.0 %
Germany	- 14.9 %	Romania	+ 20.1 %
Greece	+ 117.4 %	Slovakia	- 19.9 %
Hungary	+ 20.5 %	Slovenia	- 11.0 %
Iceland	+ 58.5 %	Spain	+ 42.1 %
Ireland	- 19.1 %	Sweden	- 1.7 %

Austria	- 16.6 %	Italy	- 24.1 %
Belgium	- 21.0 %	Latvia	- 22.5 %
Bulgaria	+4.2 %	Liechtenstein	N/A [‡]
Croatia	+ 132.6 %	Lithuania	+ 12.4 %
Cyprus	+ 126.3 %	Luxembourg	- 22.4 %
Czechia	- 4.6 %	Malta	- 19.0 %
Denmark	- 43.4 %	Netherlands	+ 22.5 %
Estonia	- 20.5 %	Norway	+ 88.2 %
Finland	+ 20.8 %	Poland	- 17.4 %
France	N/A [‡]	Portugal	- 35.1 %
Germany	- 31.5 %	Romania	- 12.6 %
Greece	+ 41.8 %	Slovakia	- 59.1 %
Hungary	+ 16.9 %	Slovenia	+ 36.1 %
Iceland	+ 5.1 %	Spain	+ 1.9 %
Ireland	- 19.3 %	Sweden	+ 33.6 %

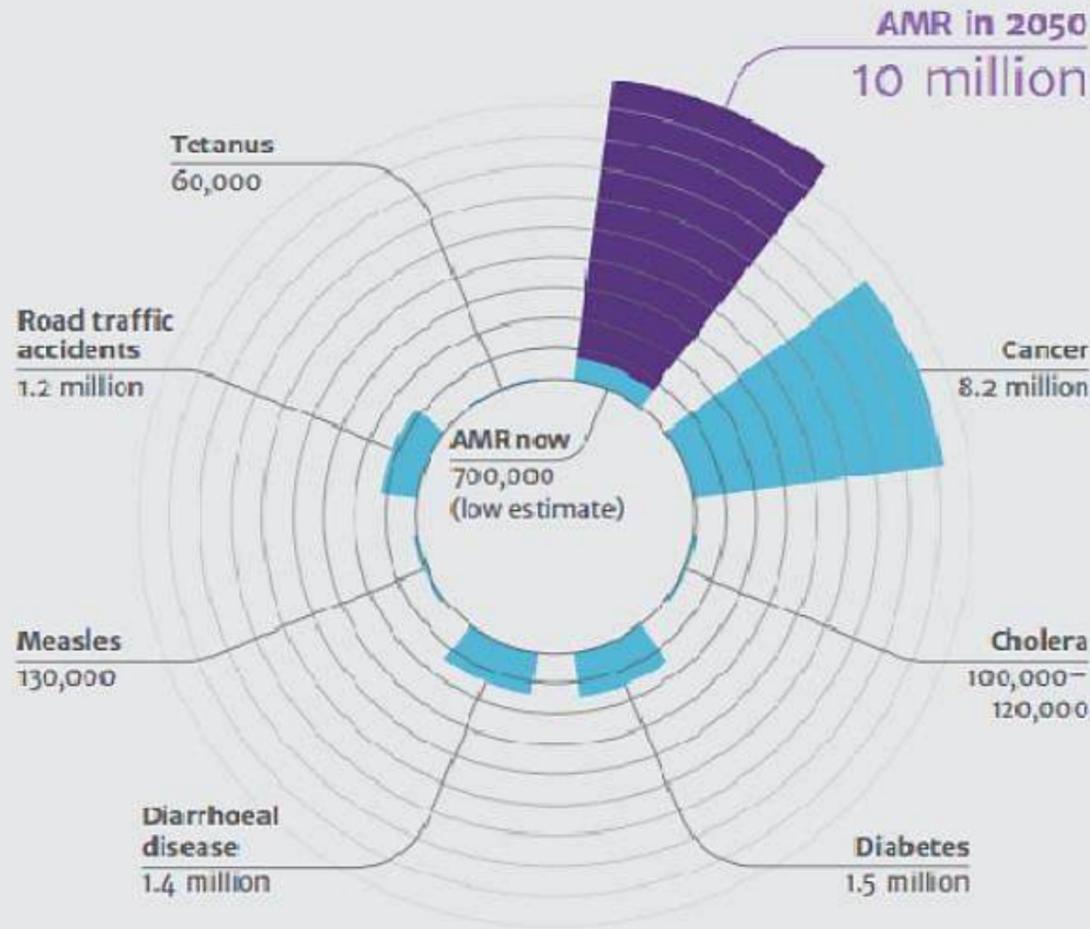
Austria	+ 45.0 %	Italy	+ 10.2 %
Belgium	+ 74.1 %	Latvia	N/A[†]
Bulgaria	+ 246 %	Liechtenstein	N/A [†]
Croatia	+ 277.5 %	Lithuania	+ 35.2 %
Cyprus	+ 275.5 %	Luxembourg	+ 87.5 %
Czechia	+ 188.9 %	Malta	- 54.5 %
Denmark	+ 14.3 %	Netherlands	+ 100 %
Estonia	N/A[†]	Norway	+ 100 %
Finland	- 66.7 %	Poland	+ 167.4 %
France	N/A [†]	Portugal	+ 43.0 %
Germany	+ 25.0 %	Romania	+ 181.2 %
Greece	+ 64.3 %	Slovakia	+ 155.8%
Hungary	+ 744.4 %	Slovenia	+ 1 140 %
Iceland	N/A [†]	Spain	+ 26.3 %
Ireland	- 63.6 %	Sweden	+ 300 %

MRSA ESBL *E. coli*

CR *Klebsiella pneumoniae*

Back to the future

Deaths attributable to AMR every year compared to other major causes of death



O'Neill: AMR Review (2014)

Administrative Patient Results			
Microbiology result:			
PRE	CLINIC	M	(Health Centre)
30-14:51	Tissue Specimen for MCS	1 or more Final Result/s Received	
MC&S		Final	Updated

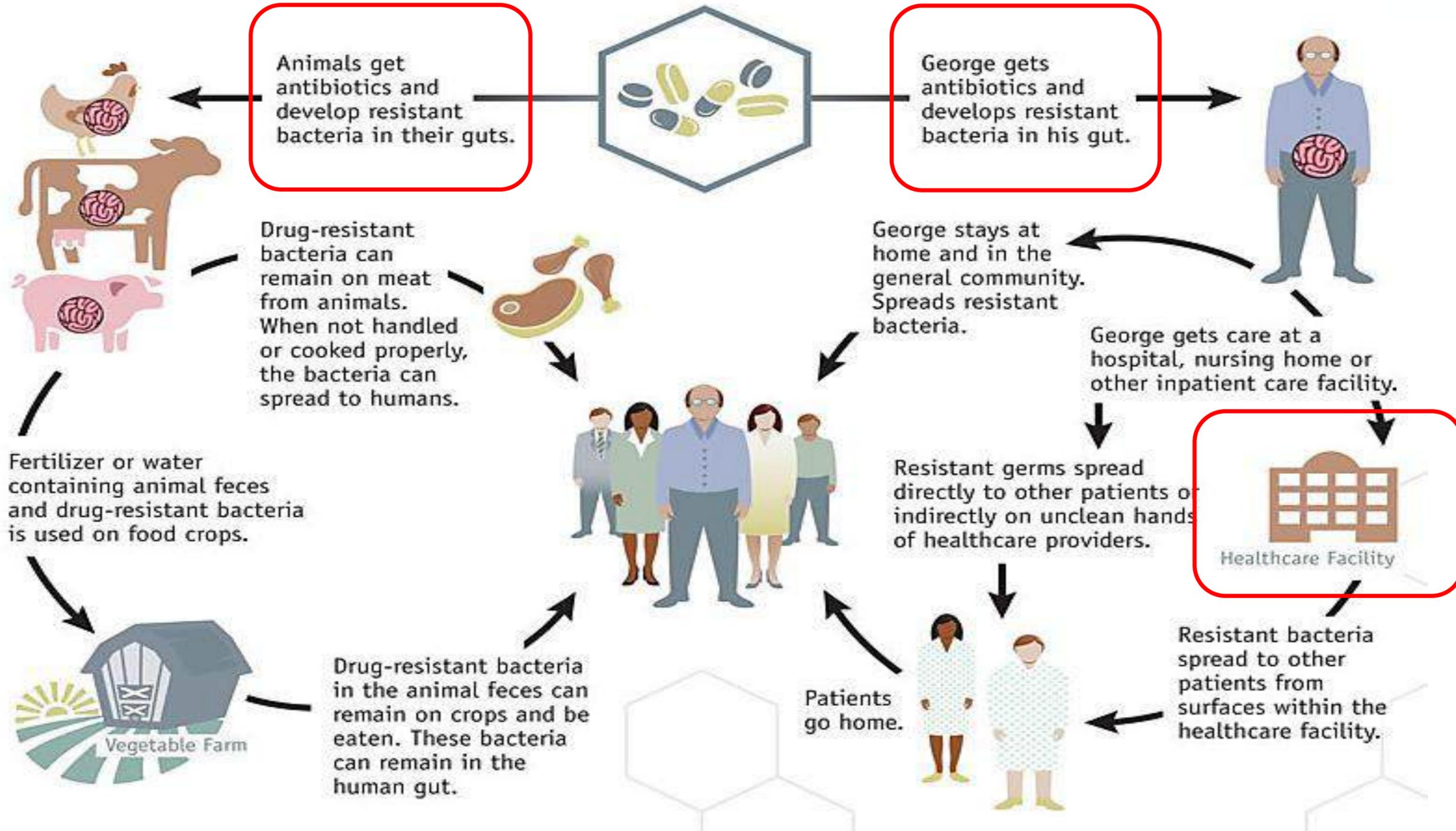
MC&S
 KPC carbapenemase-producing Klebsiella pneumoniae
 Colistin MIC: 8 (R)
 Imipenem MIC <32 (R)
 Meropenem MIC >32 (R)
 Tigecycline MIC 0.5 SEE NOTE

Co-Amoxiclav.....	R
Pip/Tazobactam.....	R
Cefotaxime.....	R
Ceftazidime.....	R
Ertapenem.....	R
Aztreonam.....	R
Imipenem.....	R
Meropenem.....	R
Amikacin.....	R
Gentamicin.....	R
Ciprofloxacin.....	R
Colistin.....	R
Trimeth Sulfa.....	R

Why is antimicrobial resistance important?

- The threat of AMR goes beyond the treatment of individual infections
 - Especially serious hospital infections
- Modern medicine depends on effective antibiotics to prevent and minimise the risk of serious bacterial infections in critical interventions
 - Complex surgery, intensive care and cancer treatment
 - Serious, life-threatening, infections are the main complication of these therapies
 - » 30 – 50%% of these patients could die if antibiotics were not available
 - The risk of mortality without access to effective antibiotics will make some treatments and surgical procedures too risky to undertake

One Health relationships



Human impact

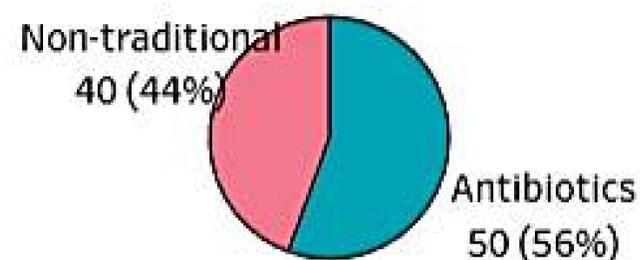
- Impact of antibiotic use in agriculture on human resistance is still generally unclear
- Latest JIACRA report suggests that it is primarily human consumption that leads to AMR in the important human pathogens
 - Carbapenem resistant *Klebsiella pneumoniae*
 - ESBL & quinolone resistant *E. coli*
- However more research is needed...

Antimicrobial class	Association between antimicrobial consumption in humans and animals	Association between antimicrobial consumption and antimicrobial resistance in humans and animals			
		<i>Klebsiella pneumoniae</i>	<i>Escherichia coli</i>	<i>Campylobacter jejuni</i>	<i>Campylobacter coli</i>
Carbapenems (a)					
Third- and fourth-generation cephalosporins					
Fluoroquinolones and other quinolones					
Polymyxins					
Aminopenicillins					
Macrolides					
Tetracyclines					

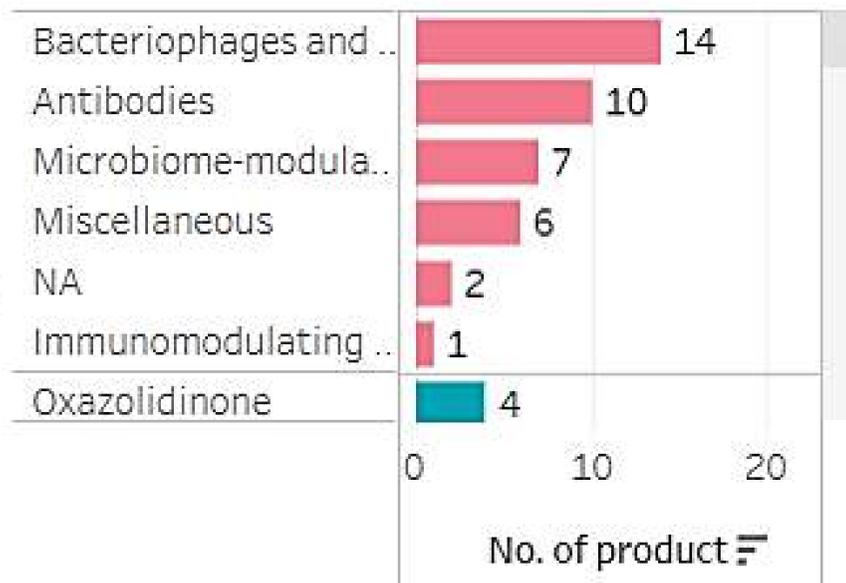
— Statistically significant in multivariate analysis
— Statistically significant in univariate analysis (when multivariate cannot be performed)
- - - Statistically significant for at least one time period in the univariate analysis, but not confirmed in the multivariate analysis
(a) Carbapenems are not authorised for use in animals in the EU

Developing new antibiotics

A.1. Products by type



A.2. No. of products by class



A.3. Products by pathogen category and phase

Pathogen category	Phase I	Phase II	Phase III	Preregis..	Total
Priority pathogens	17	26	8	3	54
Mycobacterium tuberculosis	4	15	1		20
Clostridioides diffic..	5	6	4		15
H. pylori			1		1
Total	26	47	14	3	90

According to WHO:

- ≤ 11 new antibacterial products targeting multi-resistant Gram-negative bacteria are likely to be available in the next 5 years
- Number of truly effective, innovative treatments is likely to be much lower
 - **Typically 1–3 based on past trends.**
- Many products in the pipeline are non-traditional (e.g., bacteriophages, antibodies), and their clinical effectiveness remains to be proven.

Antibiotic combinations

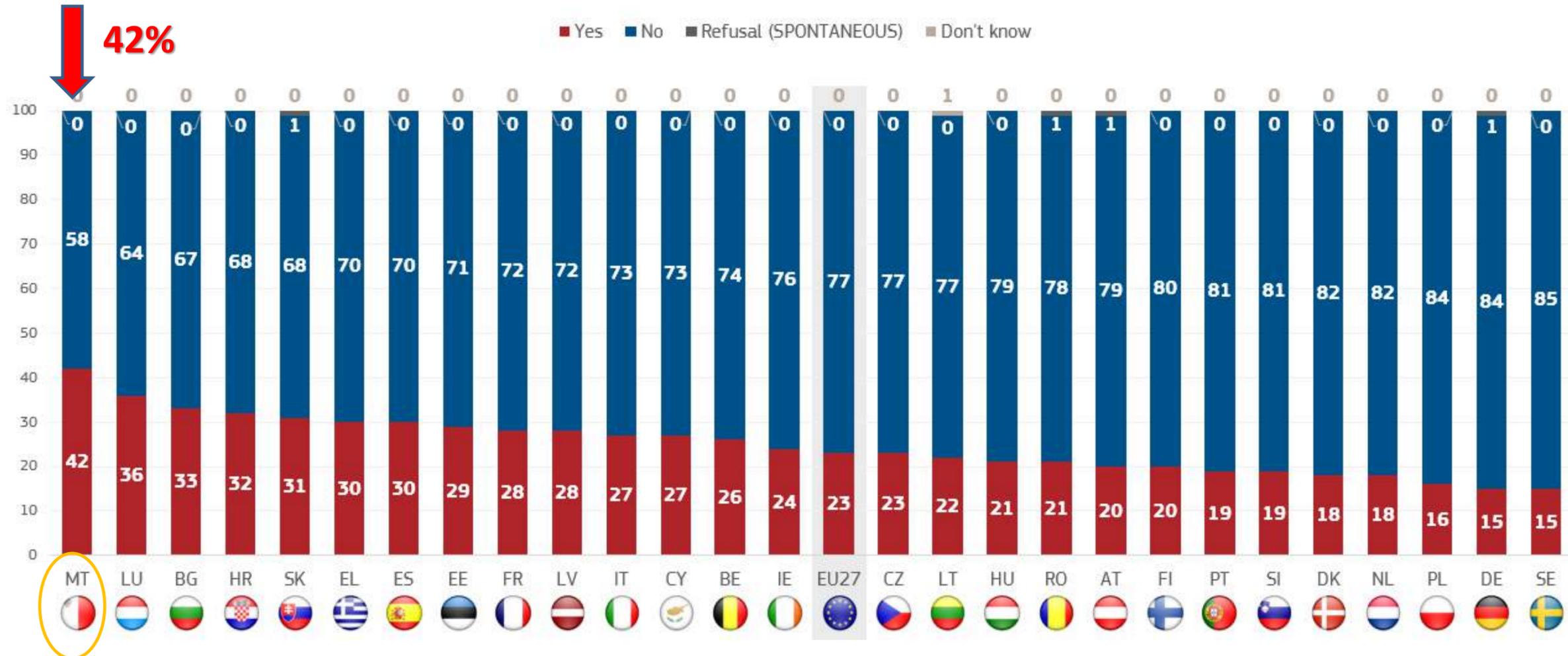
- Most “new” antibiotics over the past decade have been combinations of existing molecules rather than novel classes
 - Ceftazidime–avibactam; meropenem–vaborbactam; imipenem–relebactam; aztreonam–avibactam.....
- Re-using existing backbones:
 - Leverages existing experience.
 - Technically easier and require smaller, faster trials.
 - Regulatory pathways now well-established
 - Companies can follow a template instead of reinventing the wheel for each new agent.
- However, resistance is already a challenge even with these novel agents
 - Within ten years of the launch of ceftazidime–avibactam
 - 24.6% of carbapenem-resistant *K. pneumoniae*
 - 37.4% of carbapenem-resistant *E. coli*are resistant to (ECDC, 2025)
- New antibiotics are not the magic bullet
 - Resistance will continue to emerge if antibiotic prescribing and infection control practices are inappropriate and do not follow evidence-based science

Antimicrobial Resistance

Report

Fieldwork: February-March 2022

QC1. Have you taken any antibiotics orally such as tablets, powder or syrup in the last 12 months?
(%)



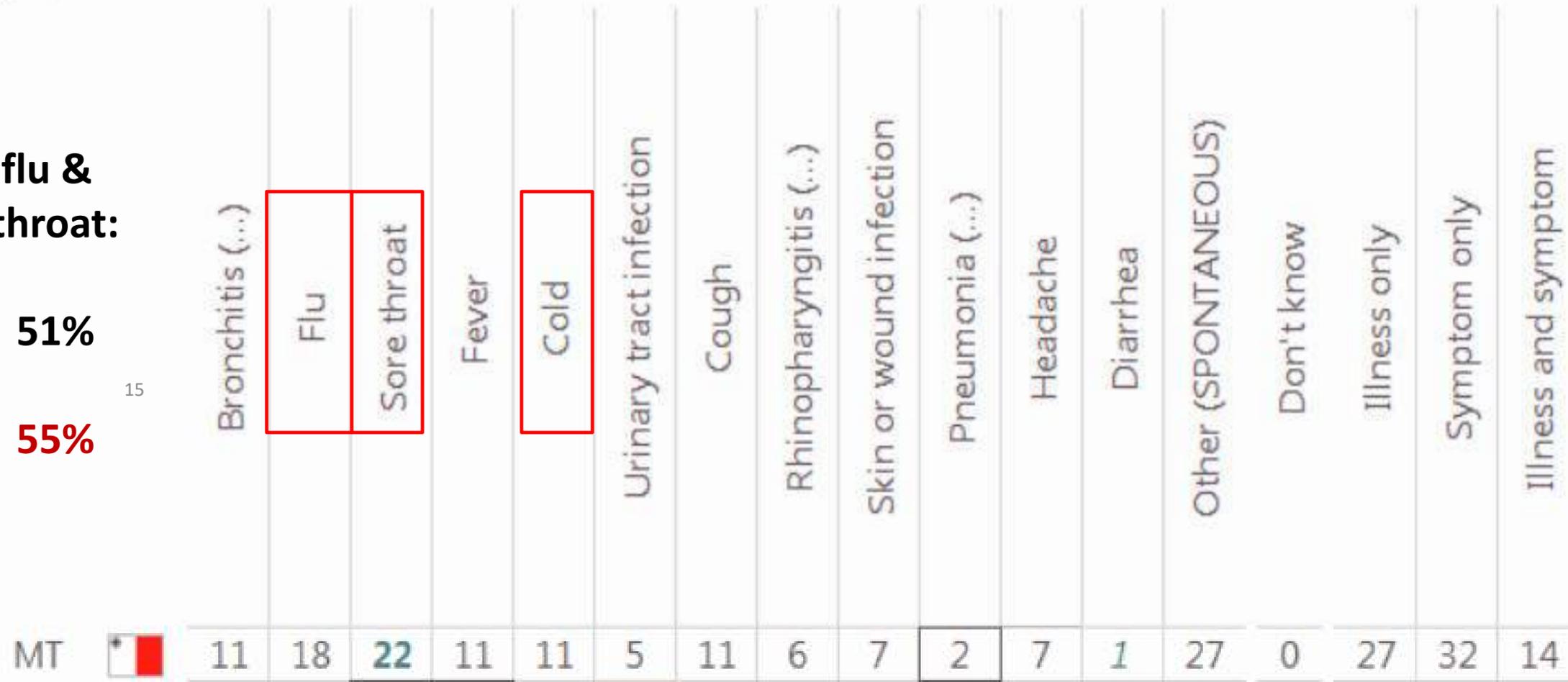
Antimicrobial Resistance

QB3 What was the reason for last taking the antibiotics that you used? (MULTIPLE ANSWERS POSSIBLE)
(%)

**Cold, flu &
Sore throat:**

2016: 51%

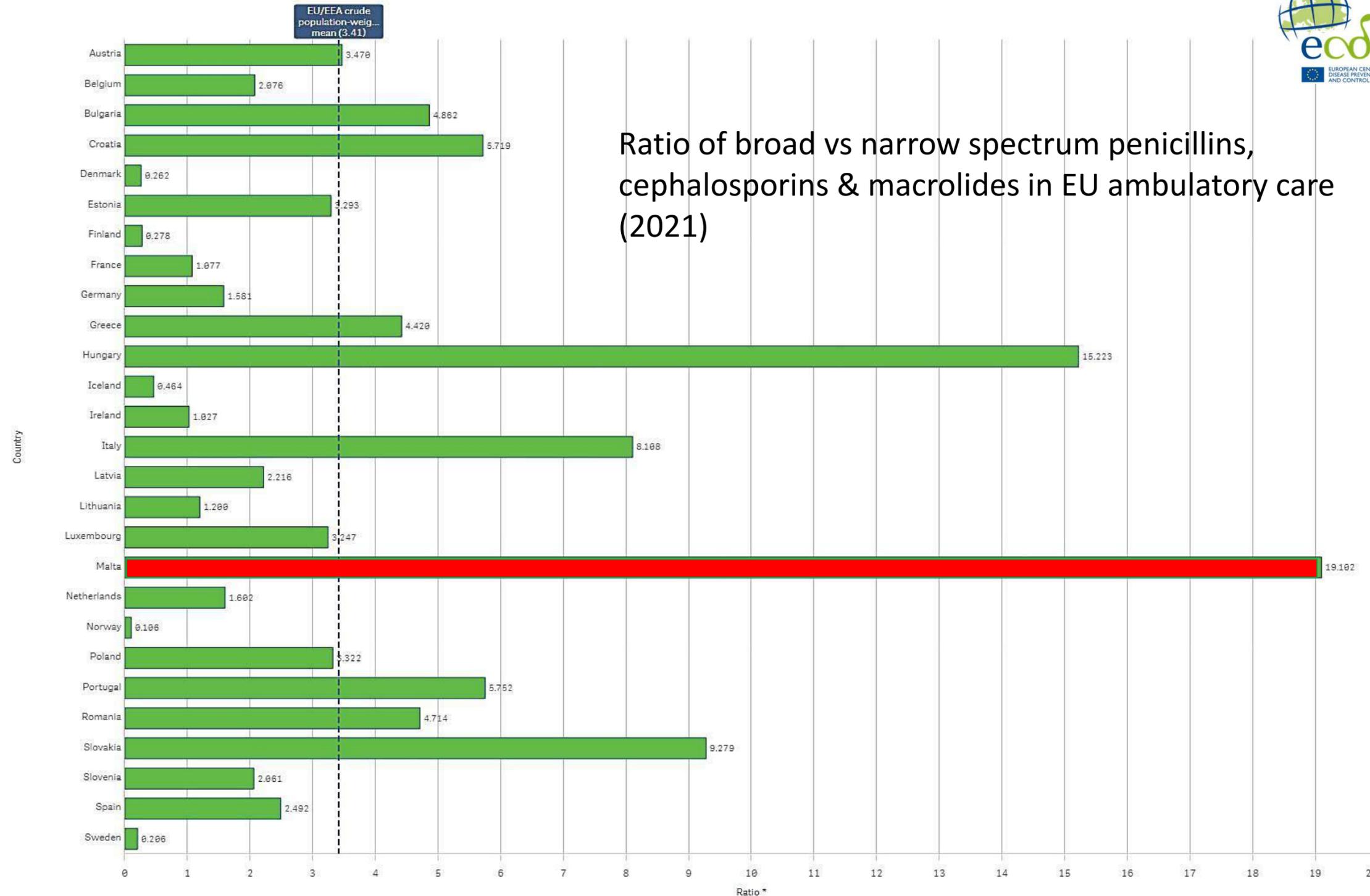
2022: 55%



2022 9 14 25 14 16 9 14 4 10 6 15 2 14 1 41 60 16

Broad spectrum antibiotic use in EU countries (community care)

ECDC/EFSA/EMA secondary indicator for consumption of antibacterials for systemic use (ATC group J01) in the community *, EU/EEA countries, 2020

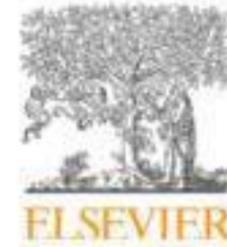


(*) The ratio of consumption of broad-spectrum antibiotics (J01[CR+DC+DD]+[F-FA01]+[MA]) to the consumption of narrow-spectrum antibiotics (J01[CA+CE+CF+DB+FA01])

National cultural dimensions as drivers of inappropriate ambulatory care consumption of antibiotics in Europe and their relevance to awareness campaigns

Michael A. Borg*

Prolonged perioperative surgical prophylaxis within European hospitals: an exercise in uncertainty avoidance?



Understanding the epidemiology of MRSA in Europe: do we need to think outside the box?

M.A. Borg^{a,*}, L. Camilleri^b, B. Waisfisz^c



Socio-economic factors, cultural values, national personality and antibiotics use: A cross-cultural study among European countries

Ümmügülsüm Gaygısız^a, Timo Lajunen^{b,*}, Esmá Gaygısız^c



BMC Health Services Research



Research article

Open Access

Are cultural dimensions relevant for explaining cross-national differences in antibiotic use in Europe?

Reginald Deschepper¹, Larissa Grigoryan², Cecilia Stålsby Lundborg³, Geert Hofstede⁴, Joachim Cohen¹, Greta Van Der Kelen¹, Luc Deliens¹ and Flora M Haaijer-Ruskamp^{*2}

Address: ¹Department of Medical Sociology and Health Sciences, Vrije Universiteit Brussel, Brussels, Belgium, ²Department of Clinical Pharmacology, University Medical Center Groningen, University of Groningen, The Netherlands, ³Division of International Health (IHCAR), Department of Public Health Sciences, Karolinska Institutet, Stockholm and Nordie School of Public Health and Apoteket AB, Göteborg, Sweden and ⁴Center for Economic Research, University of Tilburg, The Netherlands

Identification of cultural determinants of antibiotic use cited in primary care in Europe: a mixed research synthesis study of integrated design "Culture is all around us"

Pia Touboul-Lundgren^{1,2*}, Siri Jensen^{3,4}, Johann Draï^{1,2} and Morten Lindbæk^{3,4}

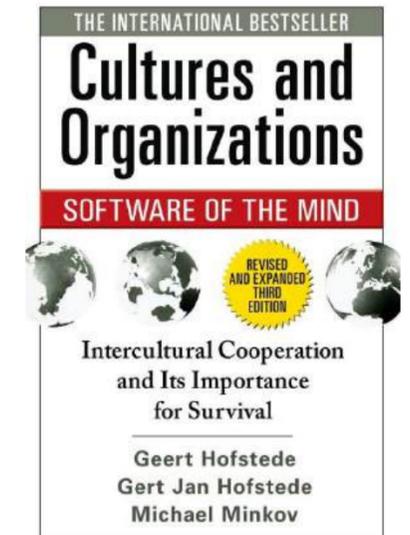
Open Access



Uncertainty Avoidance

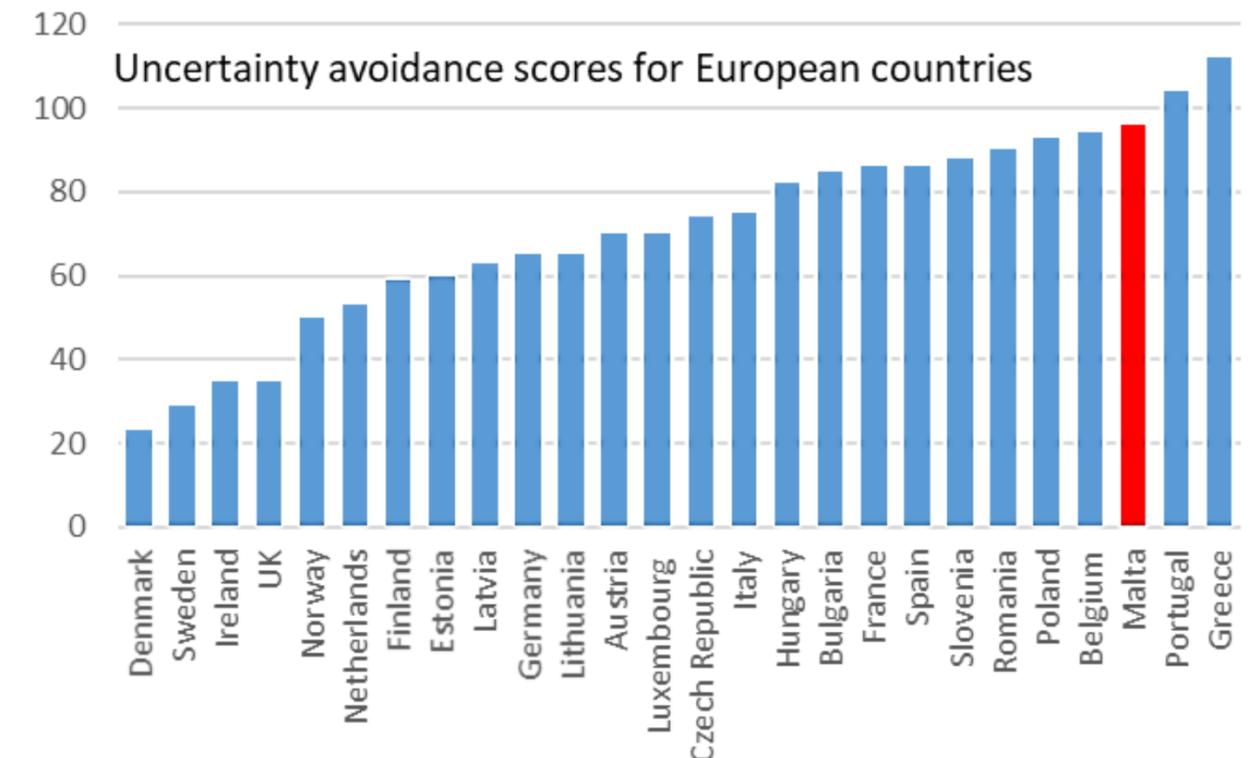


Societies differ in their ability to handle daily uncertainties of life and adapt to ambiguous situations



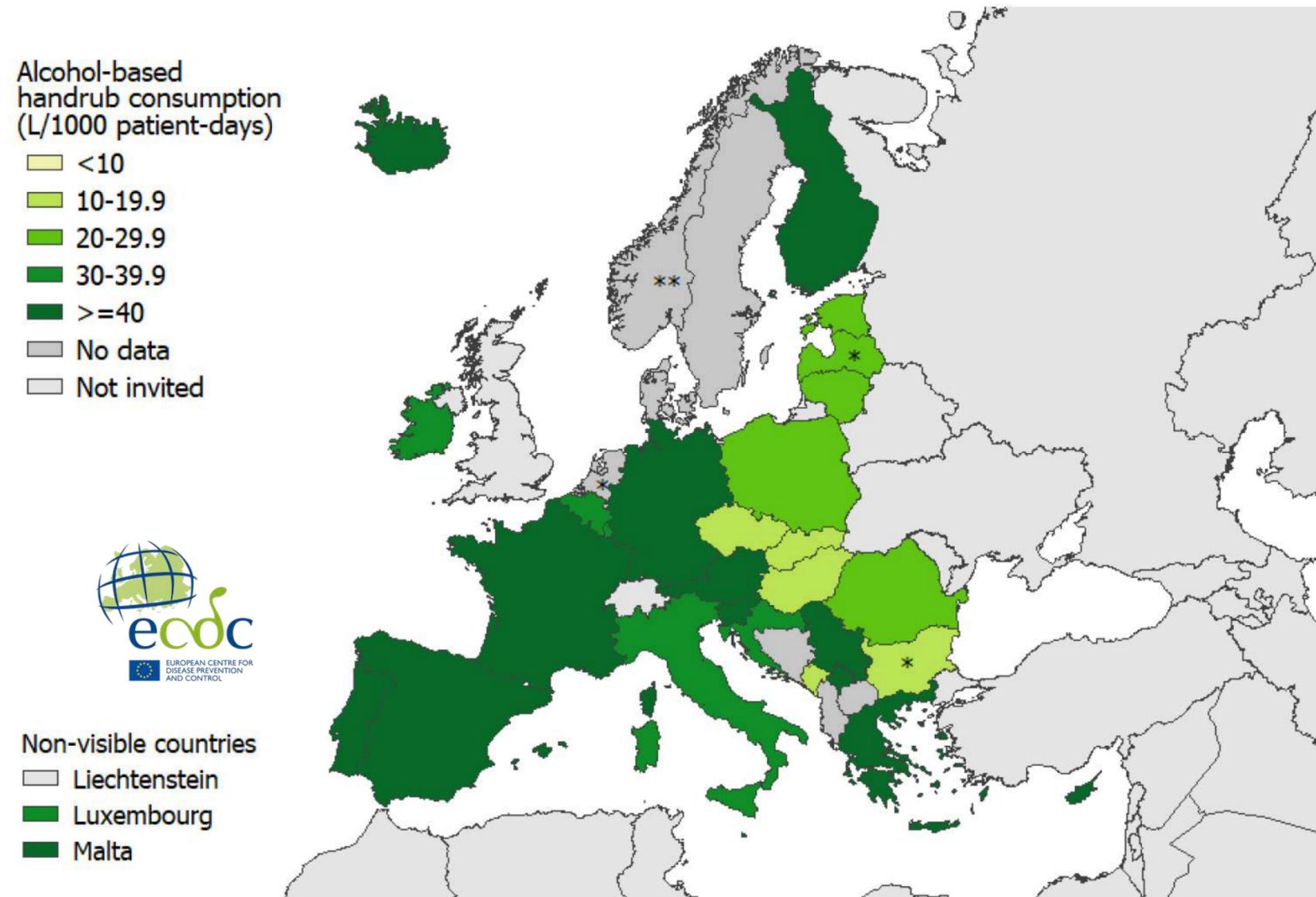
In high uncertainty avoidance countries, antibiotic prescribing is often used to reduce ambiguity for clinician & patient:

- Given even in dubious clinical presentations
 - “started antibiotics... just in case”
- Excessive use of wide spectrum formulations
 - “need the widest possible cover.... to be safe”
- Unnecessarily long treatment duration
 - “need to ensure treatment has been sufficient”



Infection prevention & control

Figure 10199. Median alcohol-based handrub consumption (litres per 1 000 patient-days), ECDC PPS 2022–2023



The most recent ECDC survey of EU hospitals suggests that, based on alcohol rub use, hand hygiene compliance remains around **25%**

Need to improve practices

- Identify reasons for poor adherence to treatment protocols and infection control protocols.
- Develop and evaluate tools and methods to improve adherence.
 - Focus on implementation sciences:
 - Digital,
 - Sociological
 - Behavioural
 - Translate research into innovation



Conclusions

- AMR is one the greatest challenges to modern medicine
 - Involves multi-factorial drivers and interactions
 - Animal \leftrightarrow Human \leftrightarrow Environment
 - Antibiotic use and cross-transmission of MDROs
- European Partnership offers opportunities to:
 - Better understand OneHealth AMR relationships
 - Impact on human health from agriculture and environment
 - Identify possible new treatments
 - New pharmaceuticals or combinations of current molecules
 - Understand and address the behavioural influences behind poor adherence to recommended practice
 - Antibiotic stewardship and infection prevention & control



Internationalisation Unit & Horizon Europe Partnerships

Ms. Christy Baldacchino
Senior Executive, Internationalisation Unit

27th November 2025

Technical Units



Space
Unit

Policy and Strategy
Unit

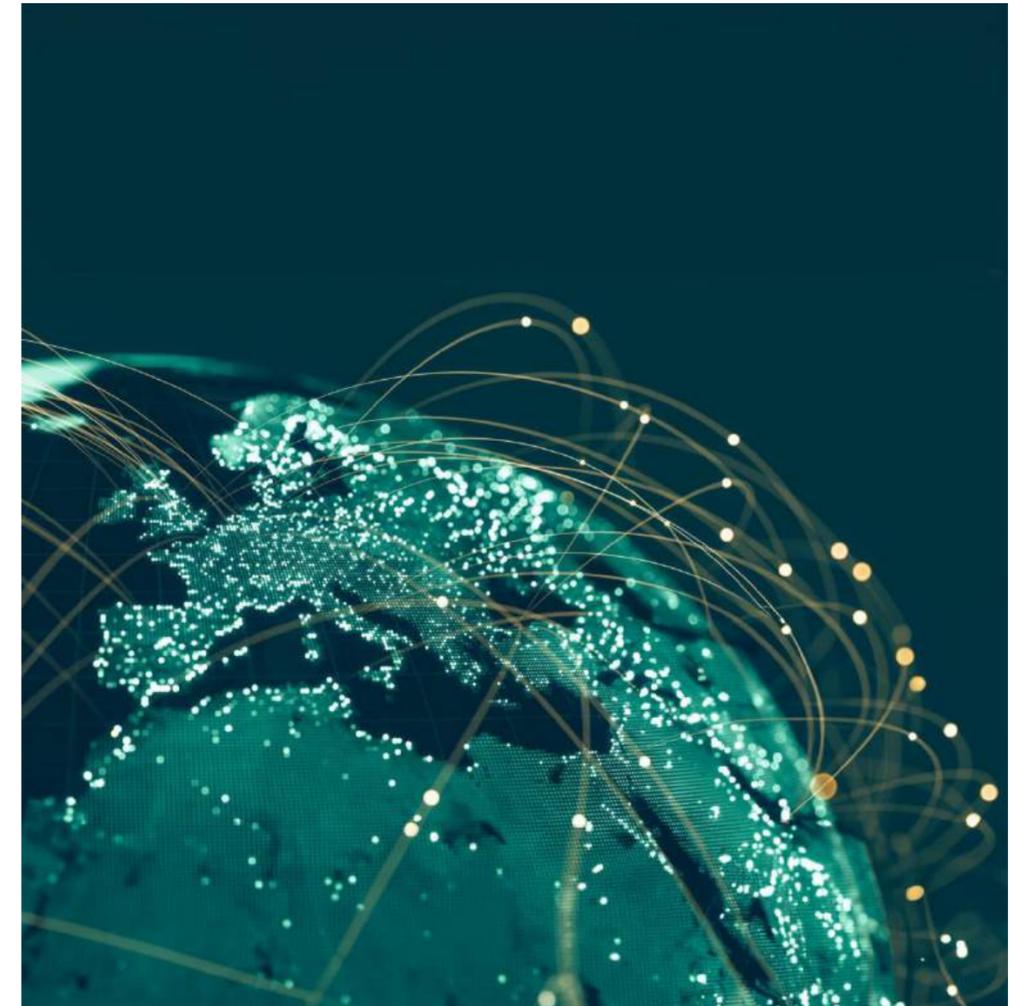
Framework
Programme Unit

Internationalisation
Unit

R&I
Unit

Internationalisation Unit

- Follow international trends in R&I through its representation in international and regional science diplomacy fora
- Strengthen international R&I collaboration amongst local and foreign researchers and stakeholders
- Implements regional and international funding programmes, using national funds, aimed at the local R&I stakeholder community



Driving Malta through R&I



Health and Well-being

Sustainable use of Resources for Climate Mitigation and Adaptation

Smart Manufacturing

Marine & Maritime Technology

Aviation and Aerospace

Future Digital Technologies

Internationalisation Funding Portfolio



European Partnerships



Part of Horizon Europe
(2021-2027)



EC + national & private
partners join forces



Addressing pressing EU challenges

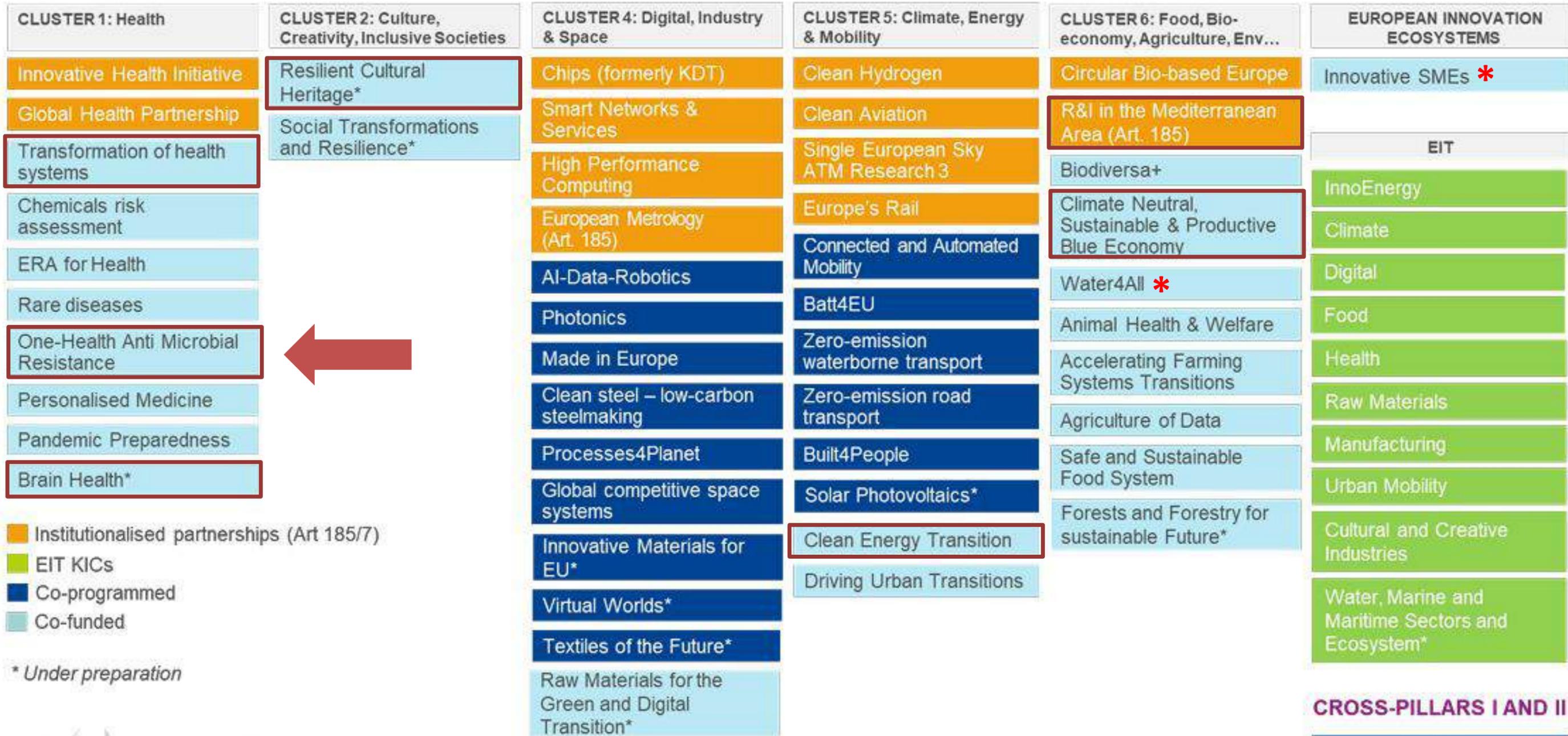
Climate Health
Energy Innovation



Implementing Joint Transnational Calls

PILLAR II - Global challenges & European industrial competitiveness

PILLAR III - Innovative Europe



■ Institutionalised partnerships (Art 185/7)

■ EIT KICs

■ Co-programmed

■ Co-funded

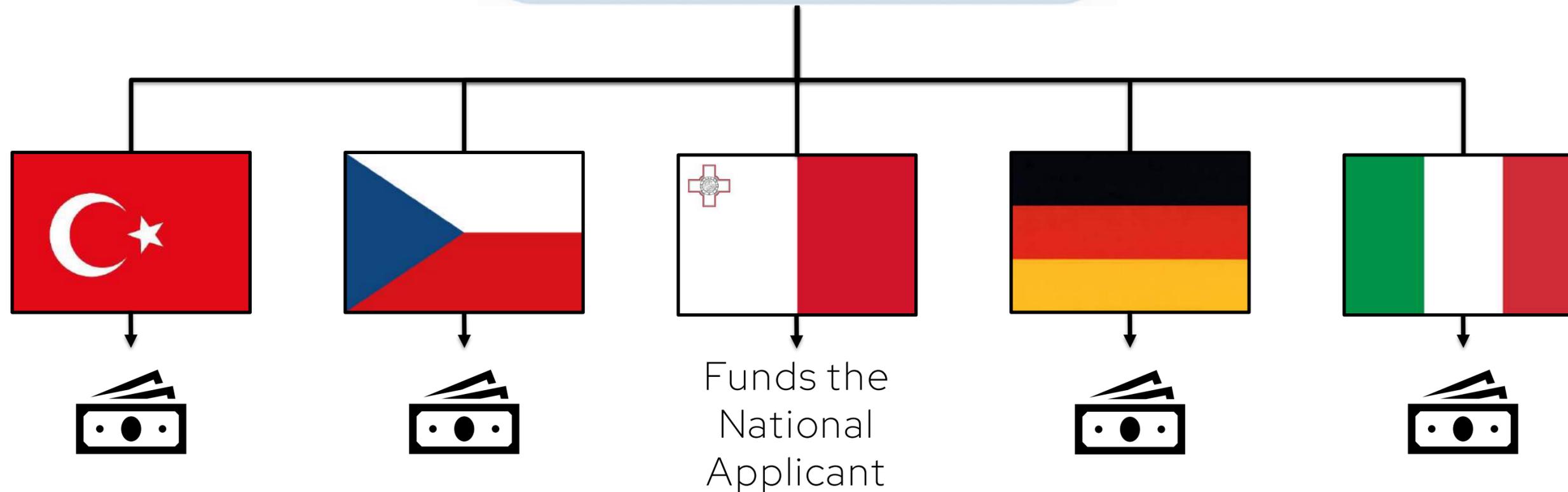
* Under preparation



CROSS-PILLARS I AND II

European Open Science Cloud

Joint Transnational Call



National Partners collaborate through a common call, each beneficiary funded by their own national funding agency

Joint Transnational Projects

General Requirements

- Minimum 3 partners from at least 3 different countries
- One coordinator
- Self-funded partners allowed
- TRL generally around 1-8

Call Overview

- Consortium Proposal - Call Secretariat
- National Application - Xjenza Malta
- National rules apply to each partner
- Evaluation by the Call Secretariat



European Partnership on
One Health Antimicrobial
Resistance & 2026 Joint
Transnational Call

EUP OHAMR - Introduction (1)

Vision: reduce the burden of AMR

Mission: boost One Health R&I, leading to:

- Improved surveillance of resistant pathogens
- Better diagnostics
- Effective treatment of infections
- Prevention measures to reduce the use of antimicrobials

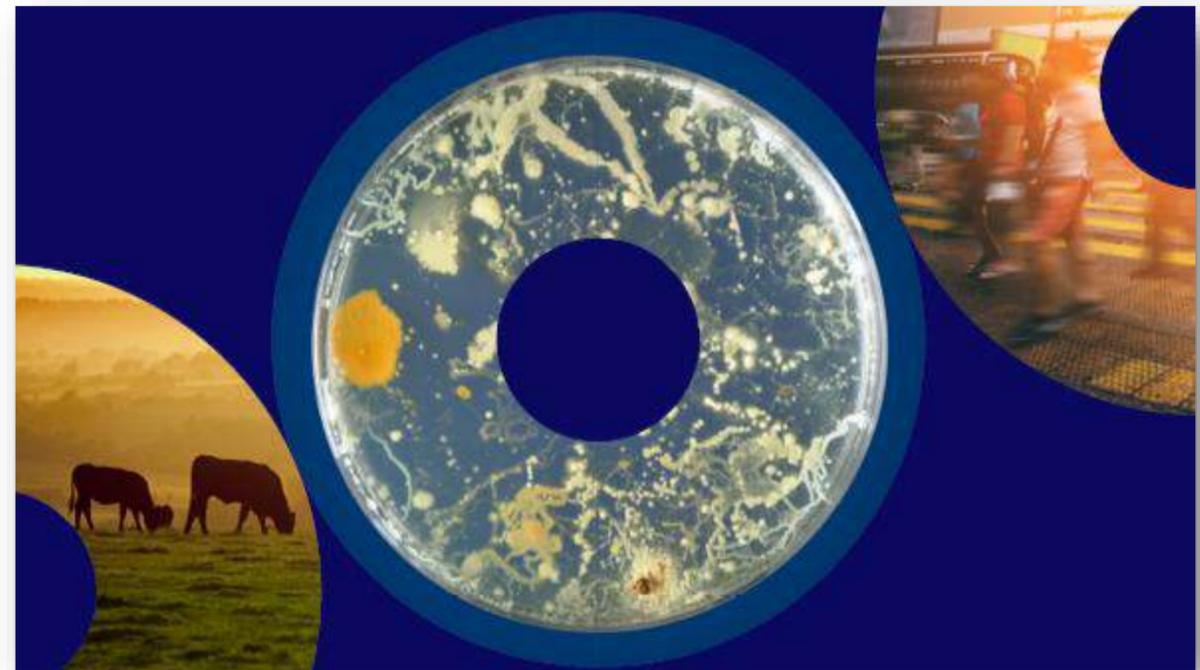
- 53 partners from 30 countries (EU and beyond)
- Coordinated by the Swedish Research Council
- Planned budget EUR 250 M over 10 years – EUR 3 M from Malta
- Launching 6 JTCs (2026–2031)



EUP OHAMR - Introduction (2)

Three Focus Areas:

1. Prevent the emergence and spread of AMR
2. Strengthen the appropriate use of antimicrobials and infection prevention and control
3. Provide innovative and cost-effective treatment options and interventions



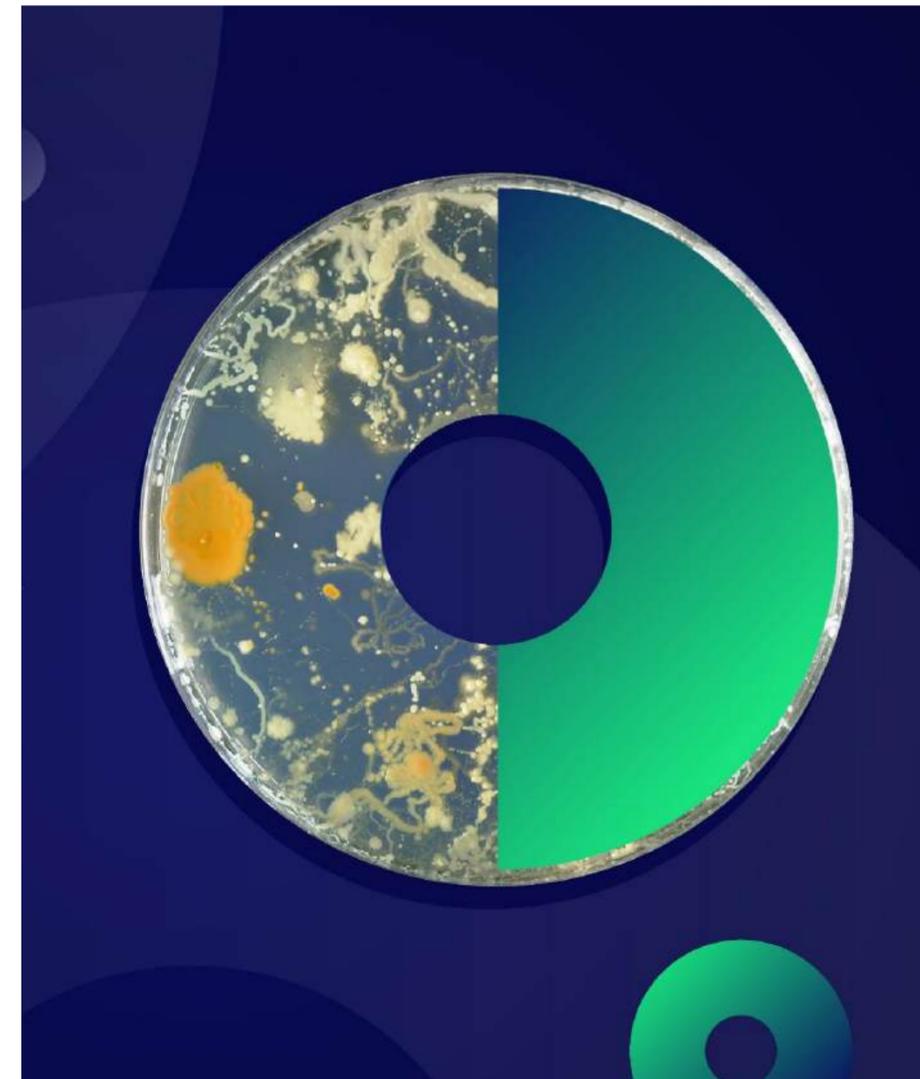
2026 Joint Transnational Call (1)

Treatments and Adherence to Treatment Protocols

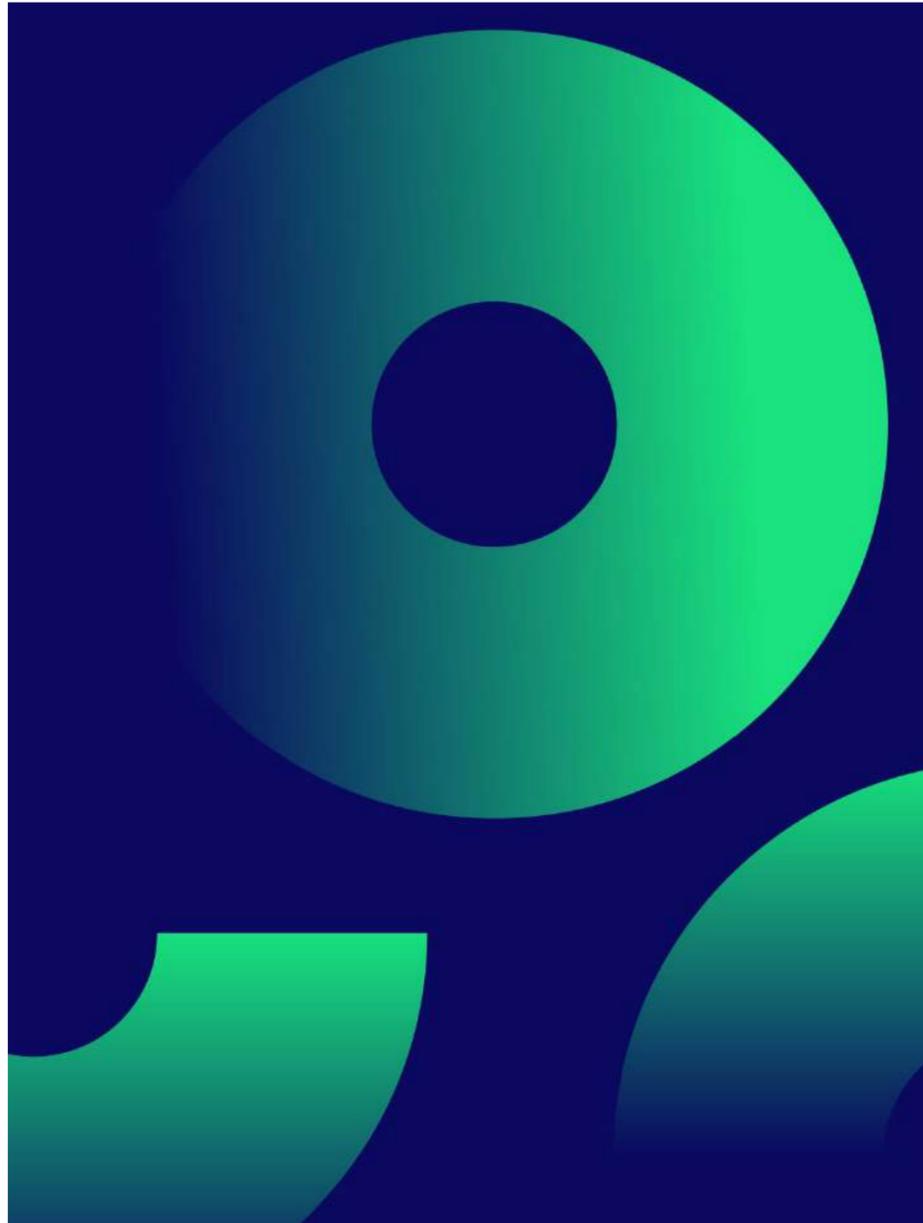
Identify and develop new combination treatments using existing or innovative antimicrobials or antimicrobial with adjunctive treatments

Develop tools and methods to improve adherence to treatment protocols (end-user engagement is mandatory)

Assess the impact of antimicrobials for veterinary and agricultural use on the risk of AMR transmission to humans and the environment to inform policies



2026 Joint Transnational Call (2)



General Call Specifications:

- 2-Stage Call
- Involving national & transnational application
- 500,000 EUR per project for Malta-based applicants
- At least 3 independent legal entities from at least 3 Countries participating in the Call
- Projects up to 36 months

2026 Joint Transnational Call (3)

28 Countries

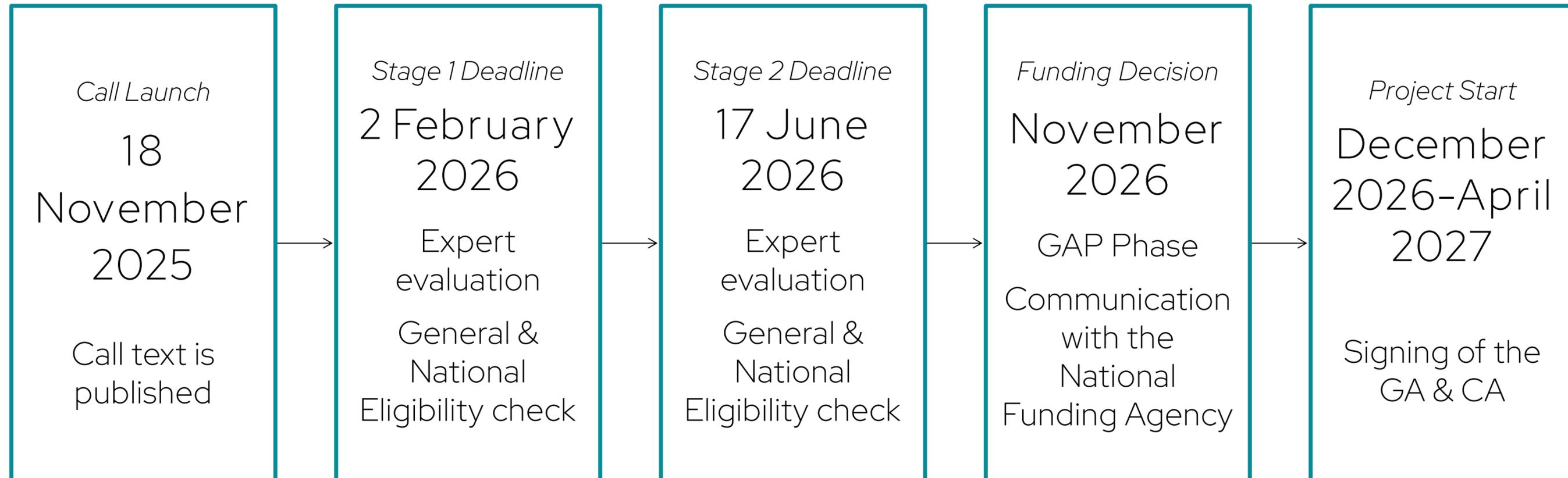
Member States: *Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Ireland, Latvia, Lithuania, **Malta**, Netherlands, Poland, Portugal, Slovakia, Spain, and Sweden.*

Associated Countries/Non-EU Countries: *Canada, Israel, Moldova, Norway, South Africa, Switzerland, Turkey, and United Kingdom.*



Access the complete call documentation at: <https://ohamr.eu/calls/call-2026-new-treatments-to-tackle-amr/>

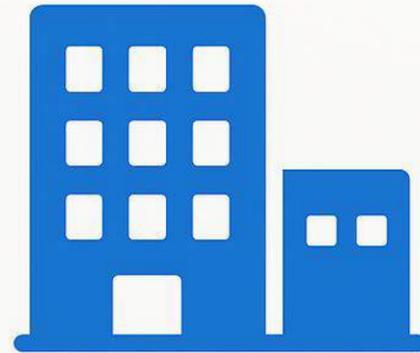
Call Timeline



Eligible Entities



**Public & Private
Research
Organisations**



**SMEs & Large
Enterprises**

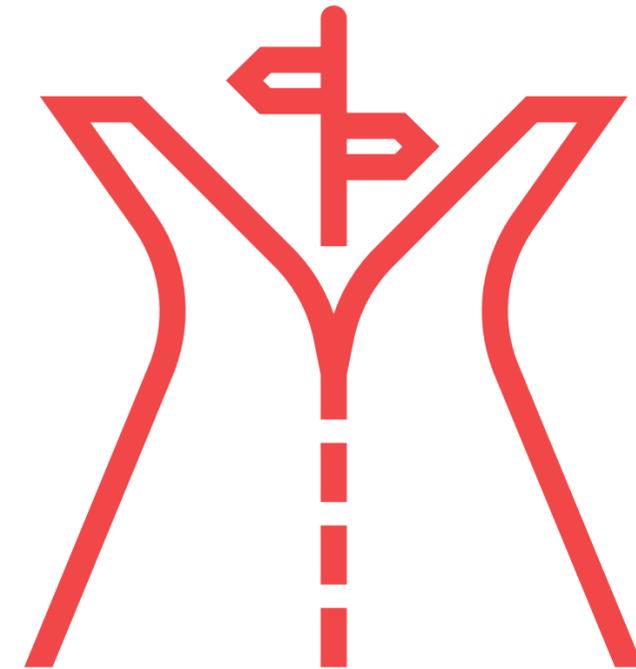


**NGOs &
Professional Bodies
Engaged in
Research and
Innovation**

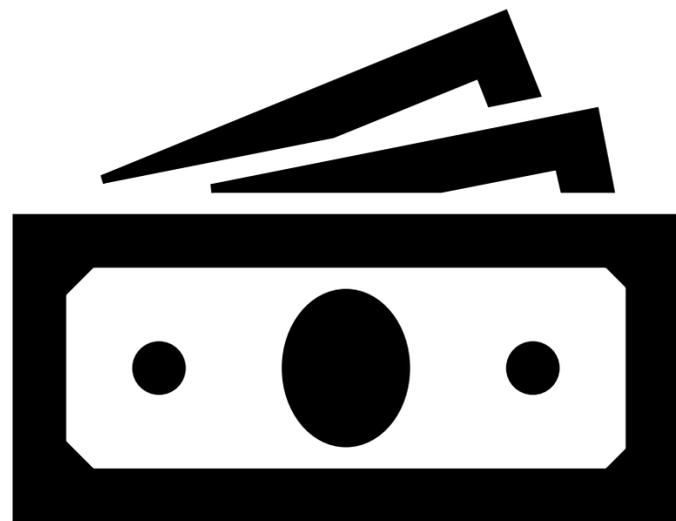
Must be registered and have an operating base in Malta – comply with National Rules based on the nature of the entity. For full details, consult the [National Rules – Xjenza Malta](#)

Funding Modalities

- Non-economic entities (e.g., public entities and public research organisations):
Up to 100%
- Economic entities (e.g., private entities):
Up to 70% or 75%



Eligible Costs



Personnel

Specialised
Equipment &
Consumables

Subcontracting

Costs of IP &
Knowledge
Transfer
activities

Travel &
Subsistence

Overheads &
Other Operating
Expenses

Getting Acquainted & Finding Partners

OHAMR
European Partnership on One Health Antimicrobial Resistance



 plumtri

<https://www.plumtri.org/member/login>

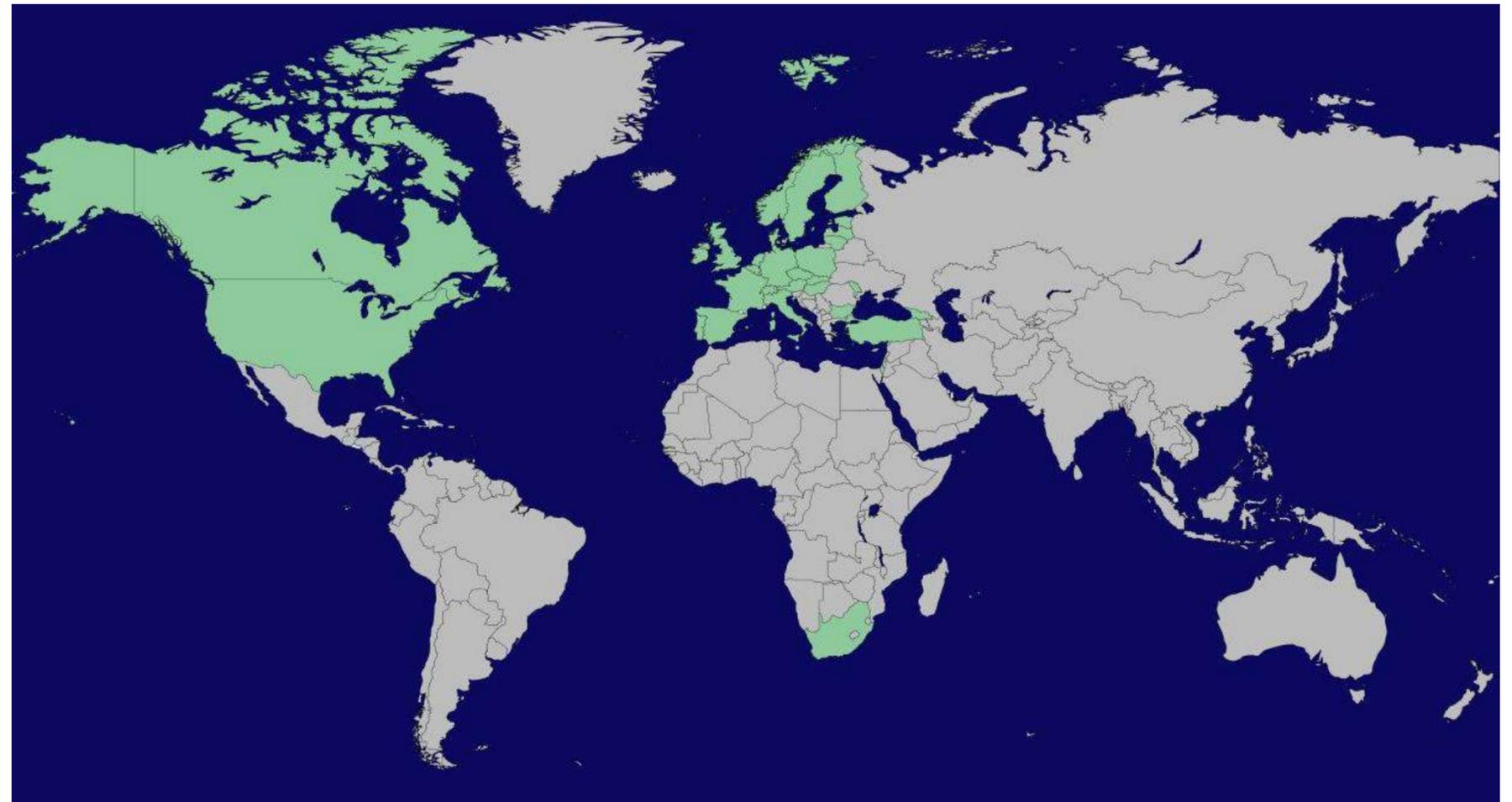
<https://www2.ncn.gov.pl/partners/ohamr-2026/>

Join Our Online
Information Session
Friday 5th December @11:00

Participate in the EUP OHAMR survey

Access the survey
on gaps in
strengthening
research capacity
in the field of AMR

<https://shorturl.at/ixoEJ>





CONTACT



xjenzamalta.mt



eusubmissions.xjenzamalta@gov.mt



christy.baldacchino.2@gov.mt



oksana.pachomcik@gov.mt



XJENZA MALTA
VILLA BIGHI, DAWRET FRA GIOVANNI BICHI
KALKARA, KKR 1320

