



Update on European Agencies activities in the field of AMR

R. M. Peran (EMA)
D. Plachouras (ECDC)
P.-A. Belœil (EFSA)

European AMR One Health Network Meeting

26 October 2018, 10:00 – 17:00

Conference Center A. Borschette - Rue Froissart, 36 - Brussels



EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH

Stratification of sales data of antimicrobials by animal species

**One Health Network meeting
Brussels, 26 October 2018**

Presented by Rosa M. Peran (SNE)
Veterinary Medicines Department

An agency of the European Union





Summary

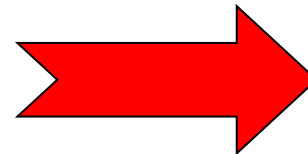
1. ESVAC report
2. Stratification of sales data of AM by animal species
3. Antimicrobial Advice Ad Hoc Expert Group (AMEG)



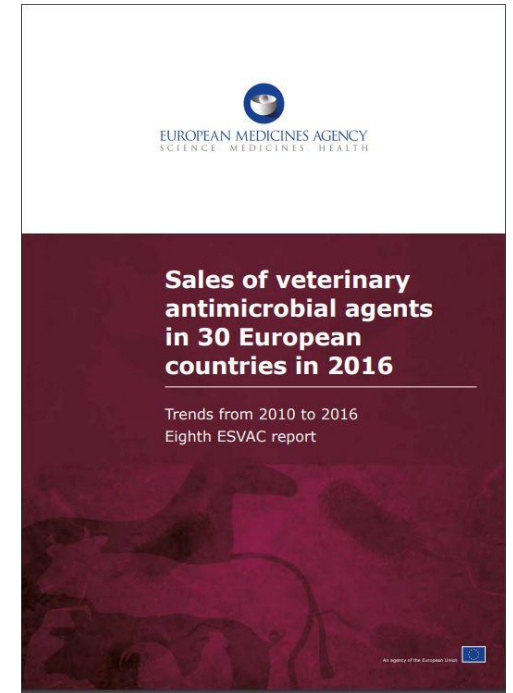
1. ESVAC



9 countries
(2009)



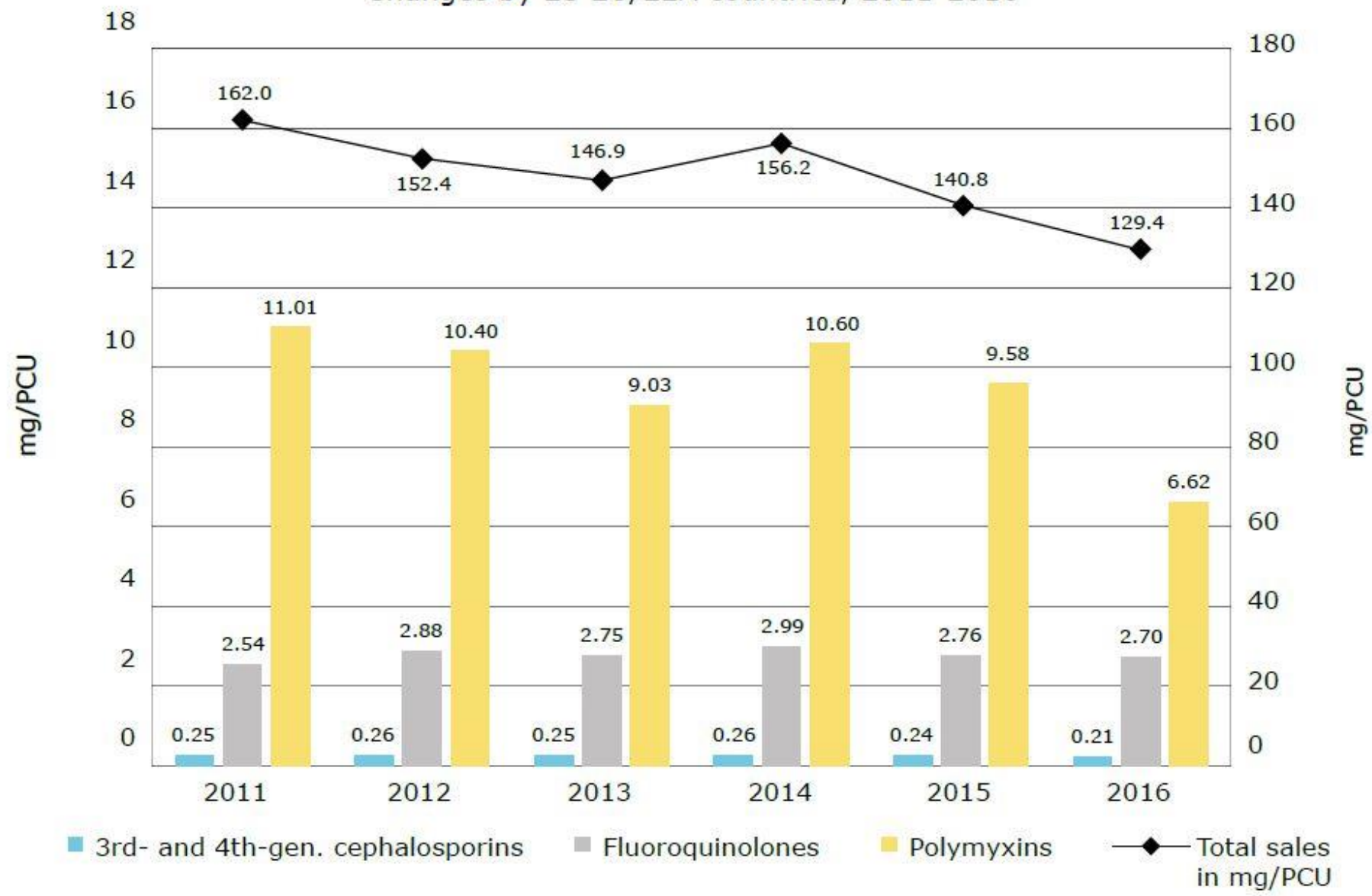
30 countries
(2018)



- An overall drop in sales (mg/PCU) of 20%
- Sales in 2016 varied from 2.9 to 453.4 mg/PCU (median=57.0 mg/PCU)
- Malta will join the network with 2017 data



Changes by 25 EU/EEA countries, 2011-2016



¹ Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Netherlands, Norway, Poland, Portugal, Slovakia, Slovenia, Spain, Sweden and United Kingdom.



2. Stratification of sales data by animal species

What is stratification?

- “Estimation” of consumption per animal species
- Based on an approximate allocation of the proportion (%) of total sales that are used in each species for which an AM is indicated/used



Why stratifying sales data by species?

- Purpose:
 - Understand AM use (trends) per animal species (food producing animals/pets)
 - Information for risk analysis process (risk assessment and risk management)
- Interim/complementary approach until systems to collect data on use by species are in place (request in new veterinary regulation)



Stratification approach

- Estimate of % AM consumption/species
 - Product authorised for one species only → attributed directly to the species (unless indicated by the data provider)
 - products authorised for more than one species → estimation must be made of the sales proportion per species
- Estimation done by:
 - Marketing authorisation holders: based on knowledge on % of sales/animal species
 - Other sources of data/approaches: prescription, wholesalers, feed mills, etc.



Stratification approach

- Expertise provided by the ESVAC network, ESVAC sales EAG, 6 volunteers
- Pilot project: AT, CZ, DK, ES, FR, NL
 - Experience in stratification; “use data” for validation
 - Collection retrospective stratification data 2016
 - Development of protocol, analyse data collected, etc.
- All MS:
 - Collection stratification data 2017; same timeline as ESVAC data collection (September 2018)
 - Modified ESVAC template
 - Protocol published July 2018 (EMA/284404/2018)



Stratification approach

- Species chosen for stratification
 - Main species (“mandatory”): cattle, pigs, poultry
 - Other: sheep/goats, fish, horses, rabbits, cats/dogs, other/unknown
- Units of measurement:
 - Tonnes
 - mg/PCU (total, species)
 - DDDvet/DCDvet (and national values)
- Other information:
 - Antimicrobial classes
 - Forms

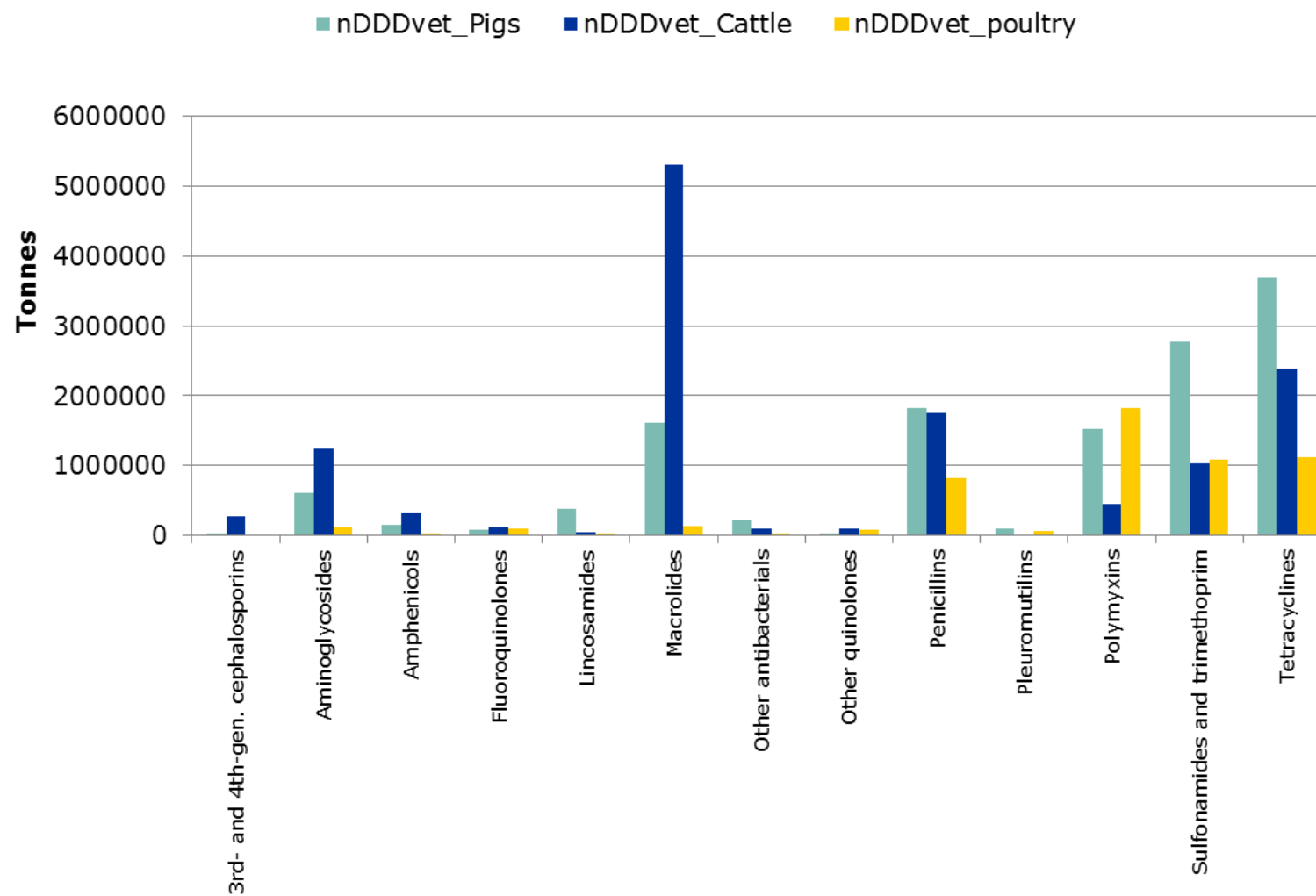


Example of expanded ESVAC template to include species categories

PRODUCT INFORMATION					Stratification												
COUNTRY	YEAR	MA	PRESENTATION_ID	NAME	Cattle	Pigs	Poultry	Sheep & Goats	Fish	Horses	Rabbits	Cats & Dogs	All other animal species or unknown	Poultry chicken	Poultry turkeys	Additional Information	Total, %
			1	Presentation_1	5%	12%	80%						3%	20%	60%		100%
			2	Presentation_2	0%	0%	0%					95%	5%				100%
			3	Presentation_3	0%	0%	90%					10%					100%
			4	Presentation_4	0%	85%	0%						15%				100%
			5	Presentation_5	0%	0%	0%	23%		22%			55%				100%
			6	Presentation_6	25%	25%	25%	25%									100%
			7	Presentation_7	0%	0%	0%	100%									100%
			8	Presentation_8	0%	15%	0%		15%				70%				100%
			9	Presentation_9	0%	0%	20%						80%				100%



Invented Example



Lessons learned so far

- **Strengths**

- Collection of data can be run in parallel with current collection of national sales
- Low cost → **50-135 hours** expended by participating countries
- Verification of estimates (e.g. by comparison to data at farm level, prescription)
- DDDvet / DCDvet can be applied
- Possibility to harmonise approach internationally: USA, Canada and Japan
- Comparison with humans

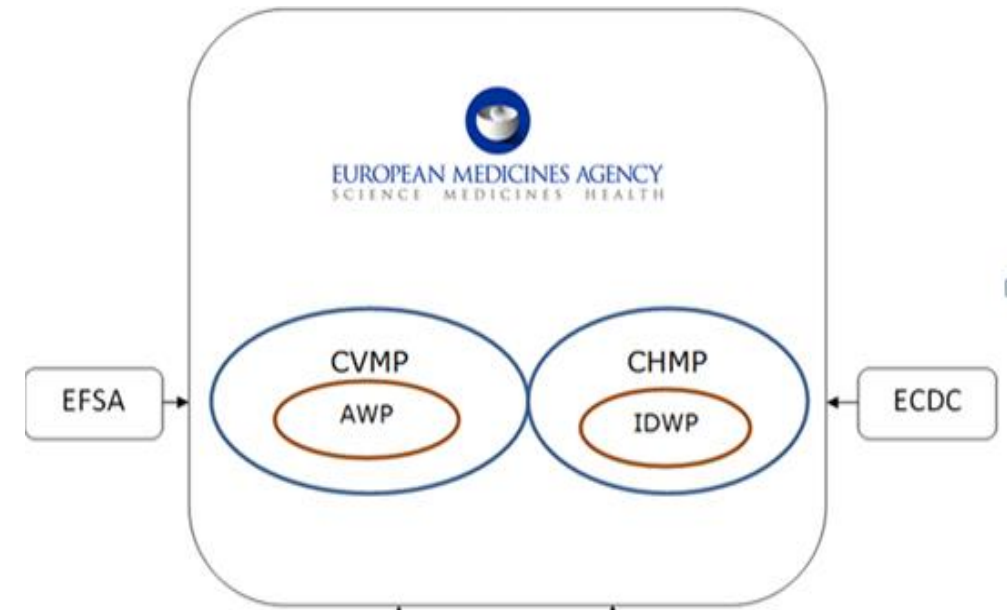
- **Caveats**

- Not a substitute for data at farm level (e.g. benchmarking)
- Uncertainty (choosing best suitable unit of expression of data)



3. Antimicrobial Advice Ad Hoc Expert Group (AMEG)

- 2013-16: Scientific advice on the impact of the use of antibiotics in animals on public health and animal health and measures to manage the possible risk to humans.
- 2017-19: Revision (Q2): **Categorisation** of the WHO's critically important antimicrobials according to the risk that their use in animals poses to human health
 - Adoption at CVMP + CHMP → Dec. 2018
 - Public consultation → Dec. 2018 - March 2019
 - Publication expected → Summer 2019





Thank you for your attention!

European Medicines Agency

30 Churchill Place • Canary Wharf • London E14 5EU • United Kingdom

Telephone +44 (0)20 3660 6000 **Facsimile** +44 (0)20 3660 5555

Send a question via our website www.ema.europa.eu/contact

Follow us on  **@EMA_News**

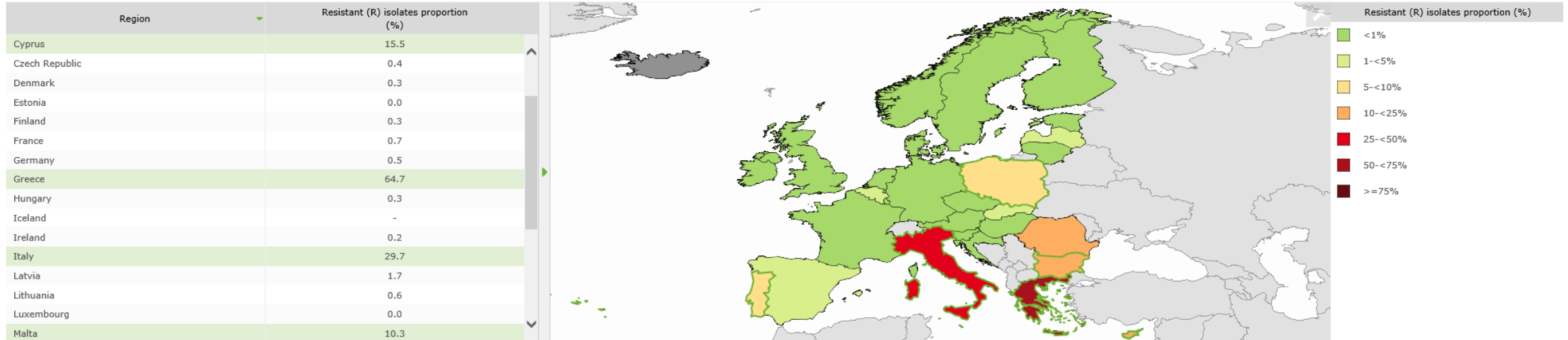
Update on European Agencies activities in the field of AMR - ECDC

Diamantis Plachouras, Surveillance and Response Support Unit, ECDC
Working Group AMR One Health Network, Brussels, 26 November 2018

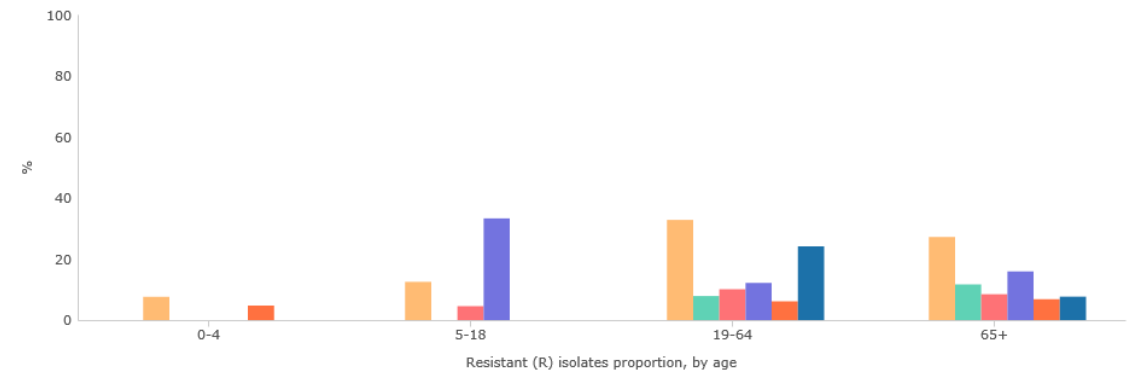
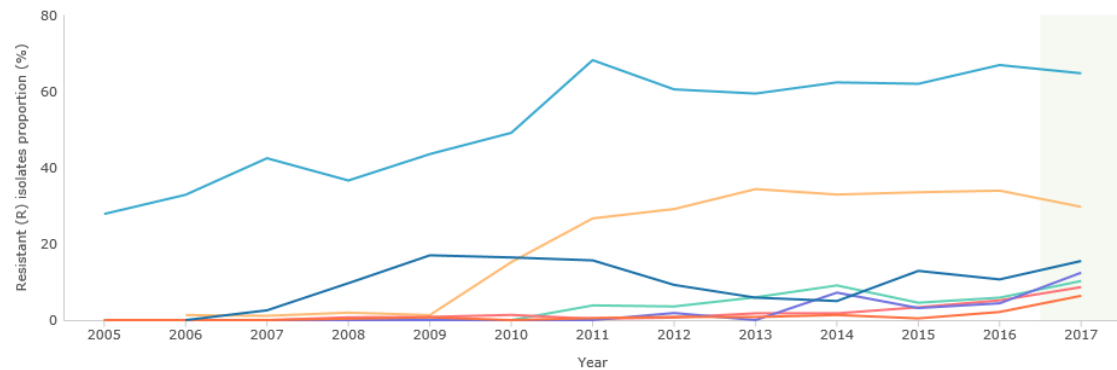
Antimicrobial resistance surveillance in Europe, 2017

Surveillance Atlas of Infectious Diseases

← → Antimicrobial resistance ▼ Klebsiella pneumoniae ▼ Carbapenems ▼ Resistant (R) isolates proportion ▼ 2017 ▼



Resistant (R) isolates proportion, by age ▼ Bar ▼



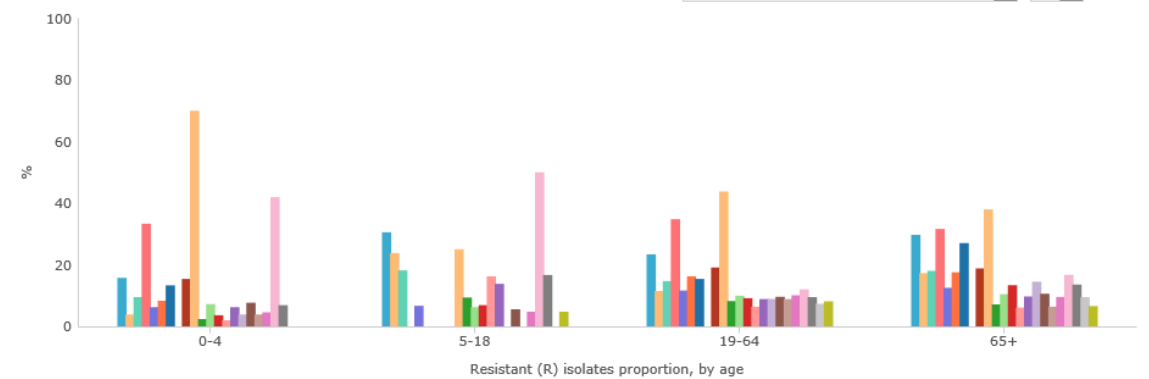
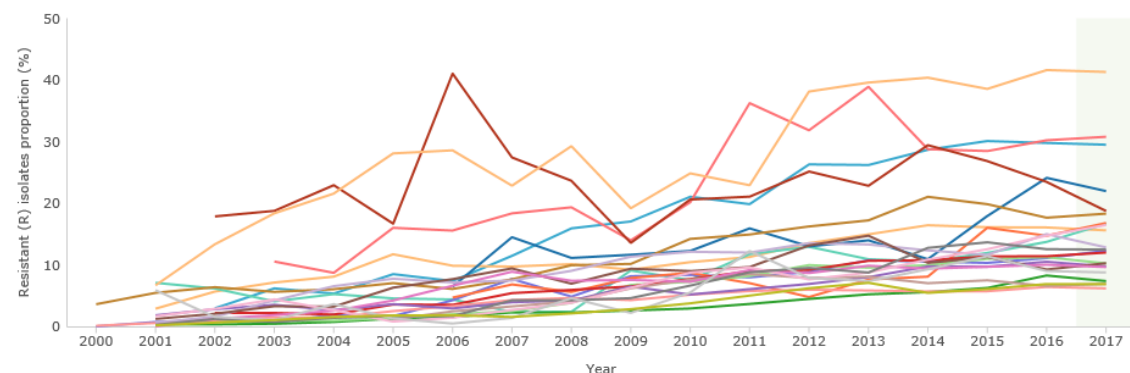
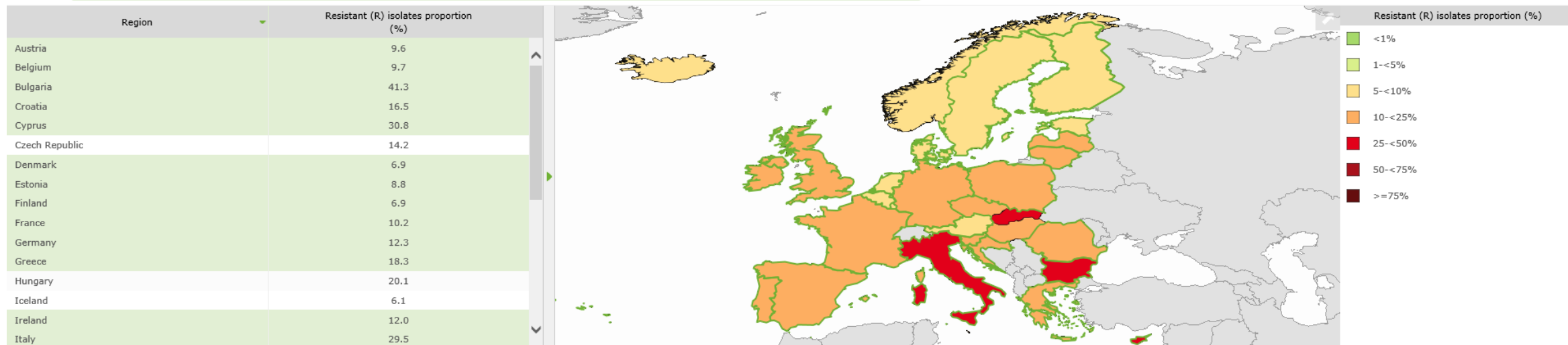
■ Greece ■ Italy ■ Malta ■ Portugal ■ Bulgaria ■ Poland ■ Cyprus

Antimicrobial resistance surveillance in Europe, 2017



Surveillance Atlas of Infectious Diseases

← → Antimicrobial resistance ▼ Escherichia coli ▼ Third-generation cephalosporins ▼ Resistant (R) isolates proportion ▼ ▶ ◀◀ 2017 ▶▶ ⋮



Upcoming ECDC publications



- **EARS-Net** data for AMR in 2017
- **ESAC-Net** data for antimicrobial consumption in 2017
- Results of the **point prevalence surveys** of healthcare-associated infections and antimicrobial use in acute care hospitals and in long term care facilities, 2016-2017
- Estimate of the **burden of AMR** in EU/EEA (cases, deaths and disability adjusted life years - DALYs)

2008 – 2018

**EUROPEAN
ANTIBIOTIC
AWARENESS DAY**

A EUROPEAN
HEALTH INITIATIVE

18 November 2018

antibiotic.ecdc.europa.eu

E-mail: EAAD@ecdc.europa.eu
Facebook: EAAD.EU
Twitter: @EAAD_EU (#EAAD #KeepAntibioticsWorking)
Global Twitter: #AntibioticResistance

WORLD ANTIBIOTIC AWARENESS WEEK
12-18 NOVEMBER 2018

**ANTIBIOTICS
HANDLE WITH CARE**

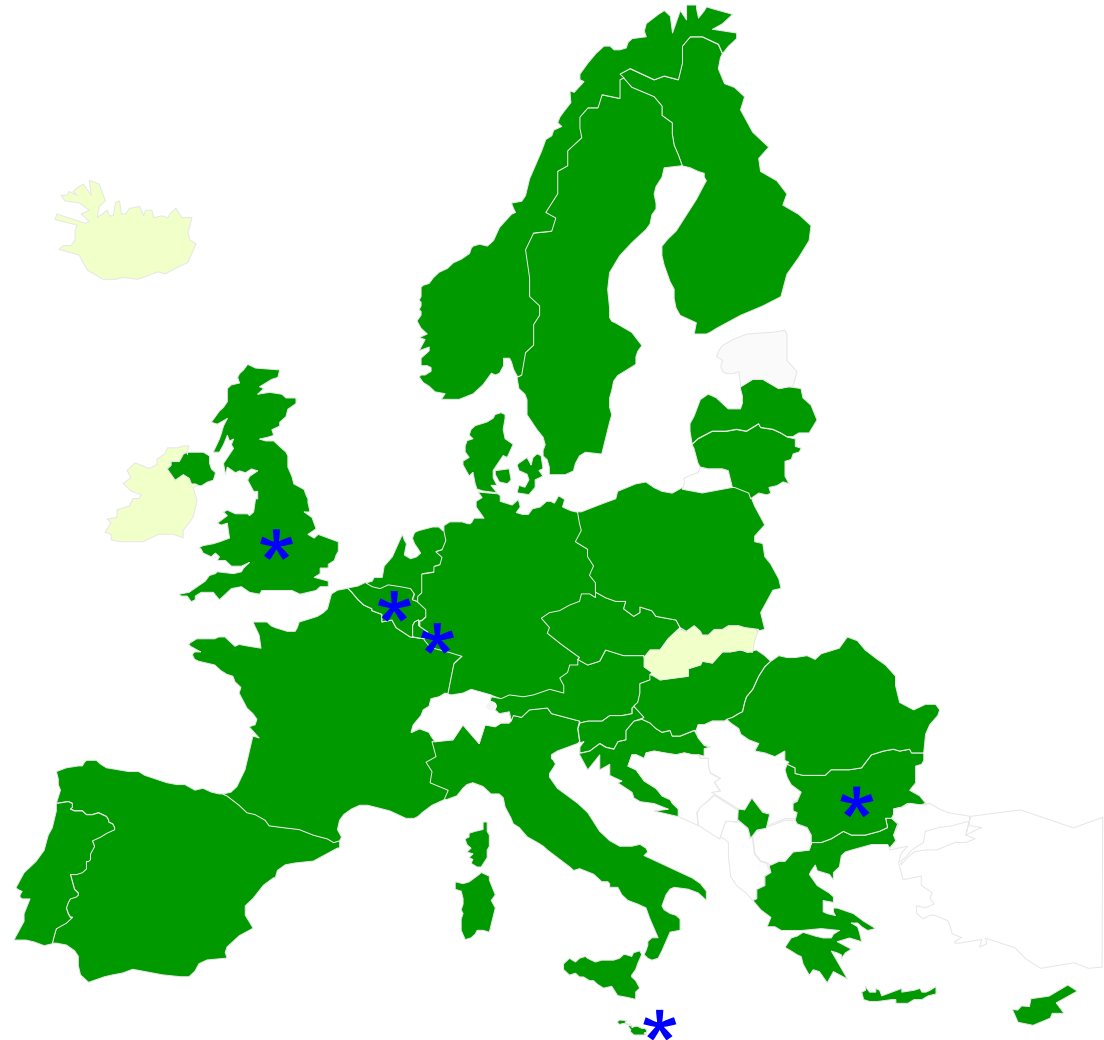
The banner features a central illustration of a blue and green medical cart with a stethoscope. The background is filled with various medical icons like pills, syringes, and band-aids. The ECDC logo is present in the top right and bottom right corners.

Country visits to discuss antimicrobial resistance (AMR) issues, 2006-2018

- Based on Council Recommendation of 15 November 2001 on the prudent use of antimicrobial agents in human medicine (2002/77/EC)
- Reports (observations, conclusions, suggestions, examples of best practice)
- **25 EU Member States, 1 EEA country** and 1 EU enlargement country
- 5 follow-up visits (Greece × 2 and Hungary × 2, Malta)

2019: 6 visits*
jointly with DG SANTE/F5,
in a One Health perspective

- Done
- Discussed
- * Jointly with DG SANTE/F



Third Joint Interagency Antimicrobial Consumption and Resistance Analysis (JIACRA)



- Collaboration of EFSA, EMA and ECDC
- Request received in February 2018
- Publication by December 2020



EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY

Director-General

Brussels
19.02.2018
sante.ddg2.g.4/AP/md(2018)931086

AMR2018 937010

Dear Ms Ammon, Dear Mr Url, Dear Mr Rasi,

Dear colleagues,

Subject: Third Joint Inter-agency Antimicrobial Consumption and Resistance Analysis (JIACRA) Report

As you know, Antimicrobial Resistance (AMR) remains very high on the political agenda and belongs to Commission's top priorities. In June 2017, the Commission adopted the new EU One Health Action Plan against AMR¹. It calls on the Commission to provide evidence-based data, with the support of the ECDC, the EFSA and the EMA,

Thank you

EUROPEAN ANTIBIOTIC AWARENESS DAY



A EUROPEAN
HEALTH INITIATIVE

18 November 2018

antibiotic.ecdc.europa.eu

E-mail: EAAD@ecdc.europa.eu
Facebook: [EAAD.EU](https://www.facebook.com/EAAD.EU)
Twitter: [@EAAD_EU](https://twitter.com/EAAD_EU) (#EAAD #KeepAntibioticsWorking)
Global Twitter: [#AntibioticResistance](https://twitter.com/EAAD_EU)

WORLD ANTIBIOTIC AWARENESS WEEK

12-18 NOVEMBER 2018

**ANTIBIOTICS
HANDLE WITH CARE**





Updates on European Agencies activities in the field of AMR - EFSA

P-A. Belœil

AMR One Health Network

EC Working Group: 26 October 2018

Brussels, Belgium

Monitoring AMR: Legal and Technical Bases

EFSA Scientific Opinions on AMR

EFSA Tech. Spec. on the harmonised monitoring and reporting of **AMR** in *Salmonella*, *Campylobacter*, indicator commensal *E. coli* and *Enterococcus* spp. transmitted through food

EFSA Tech. Spec. on the harmonised monitoring and reporting of **MRSA** in food-producing animals and food

EFSA Tech. Spec. on **randomised sampling** for harmonised monitoring of AMR in zoonotic and commensal bacteria

2012

2014

Directive 2003/99/EC

Art. 7(3) and 9(1) + Annexes II (B) IV

EU Implementing Legislation:
 Decision 2013/652/EU
 2014 - 2020



2011-2016
Action Plan against
 the rising threats of AMR



- . EQAAs (AST)
- . Protocols

→ Harmonisation

- . Susceptibility Testing (microdilution)
- . Set of substances tested and dilution ranges
- . Interpretative criteria of resistance (ECOFFs)
- . Representative sampling designs

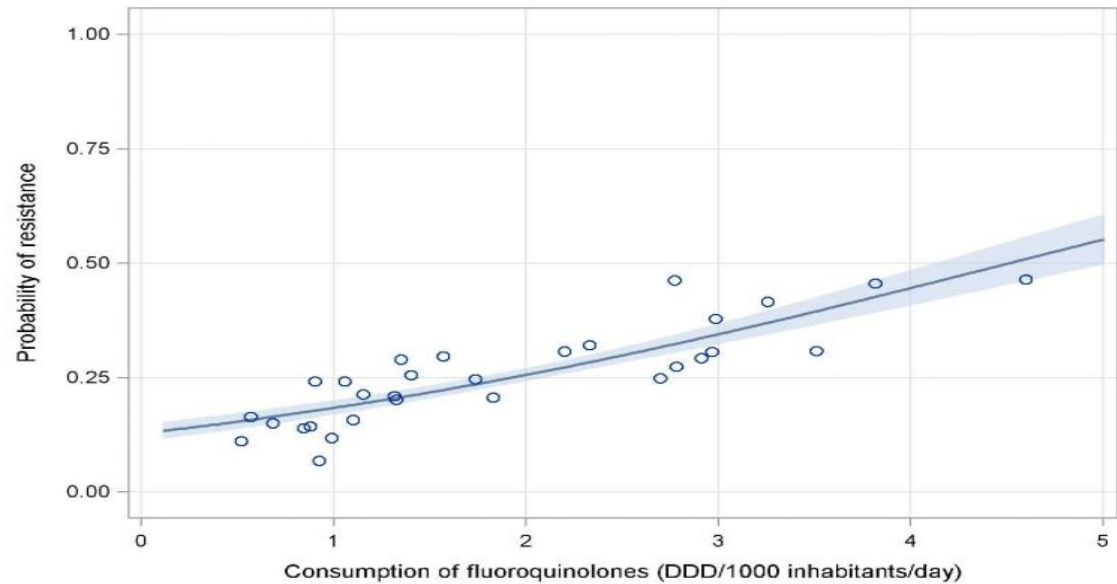
Terms of reference (1)

- To update:
 - 2012 EFSA Tech. Spec. on harmonised monitoring of AMR in ...
 - 2012 EFSA Tech. Spec. on harmonised monitoring of MRSA
 - 2014 EFSA Tech. Spec. on randomised sampling for ...

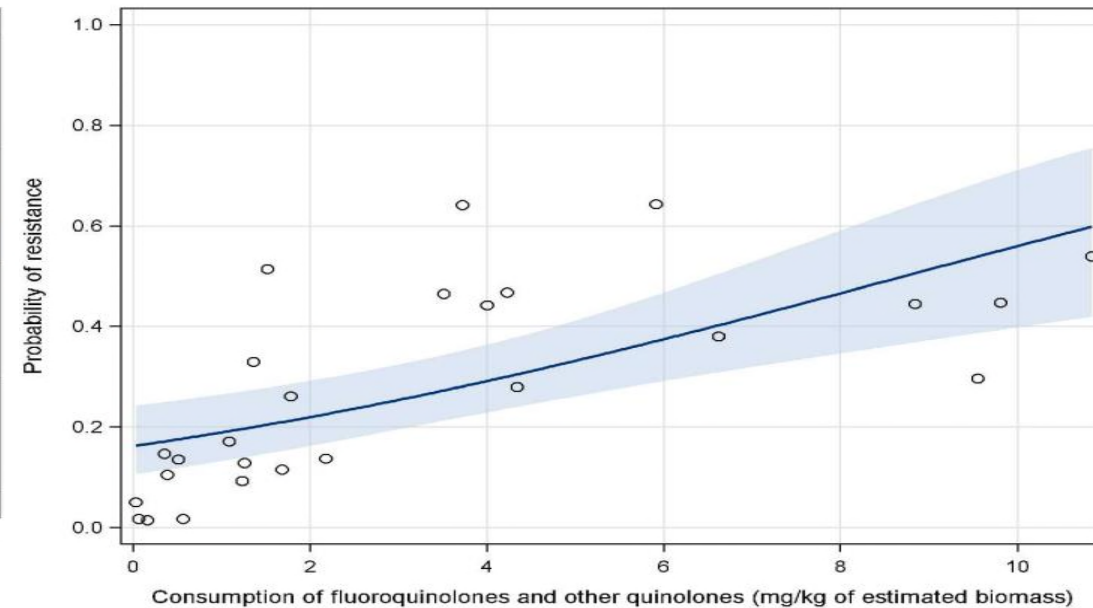
- ... Ensuring that the proposed developments
 - Enhance the JIACRA performed by ECDC, EFSA and EMA
 - = Analysis of the relationships between antimicrobial use and resistance

CONSUMPTION VS. RESISTANCE TO (FLUORO)QUINOLONES

In humans
Invasive *E. coli*, 2015

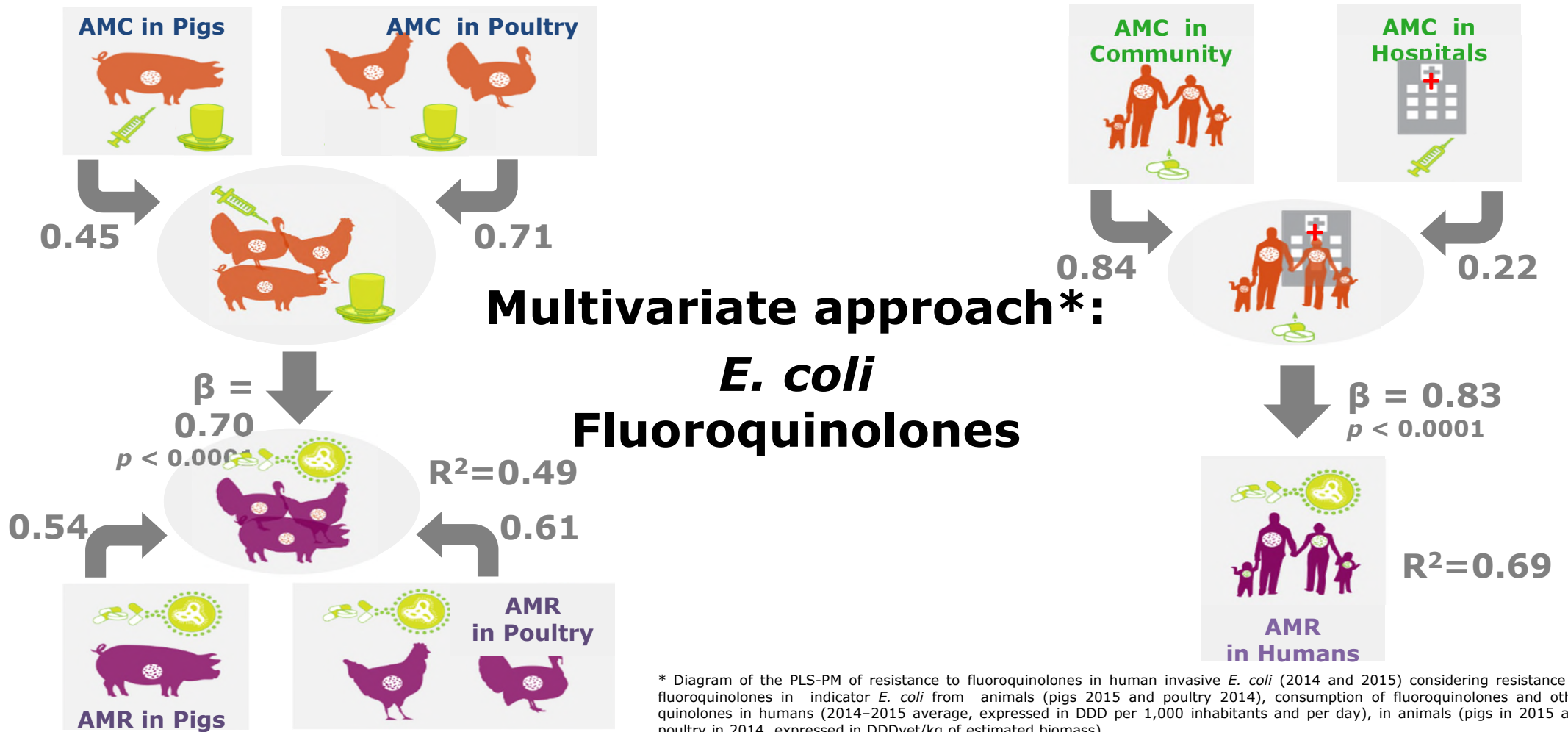


In food-producing animals*
Indicator *E. coli*, 2014-2015



* The category 'food-producing animals' includes broilers, turkeys, pigs and calves for 2014-2015.

The dots represent the EU/EEA MSs involved in the analysis.



* Diagram of the PLS-PM of resistance to fluoroquinolones in human invasive *E. coli* (2014 and 2015) considering resistance to fluoroquinolones in indicator *E. coli* from animals (pigs 2015 and poultry 2014), consumption of fluoroquinolones and other quinolones in humans (2014–2015 average, expressed in DDD per 1,000 inhabitants and per day), in animals (pigs in 2015 and poultry in 2014, expressed in DDDvet/kg of estimated biomass)

Terms of reference (2)

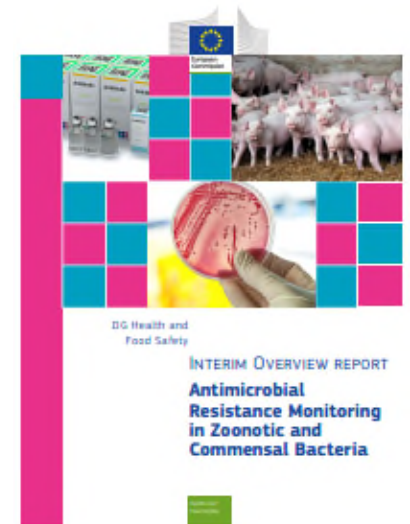
- ... Taking into account **new scientific developments**
 - Recent trends in AMR
 - Relevance for public health
 - Recent EFSA Scientific Opinions
 - *Joint Scientific Opinion on Outcome Indicators of AMC and AMR*
 - Technological developments

❖ To address the use of **molecular typing methods!**

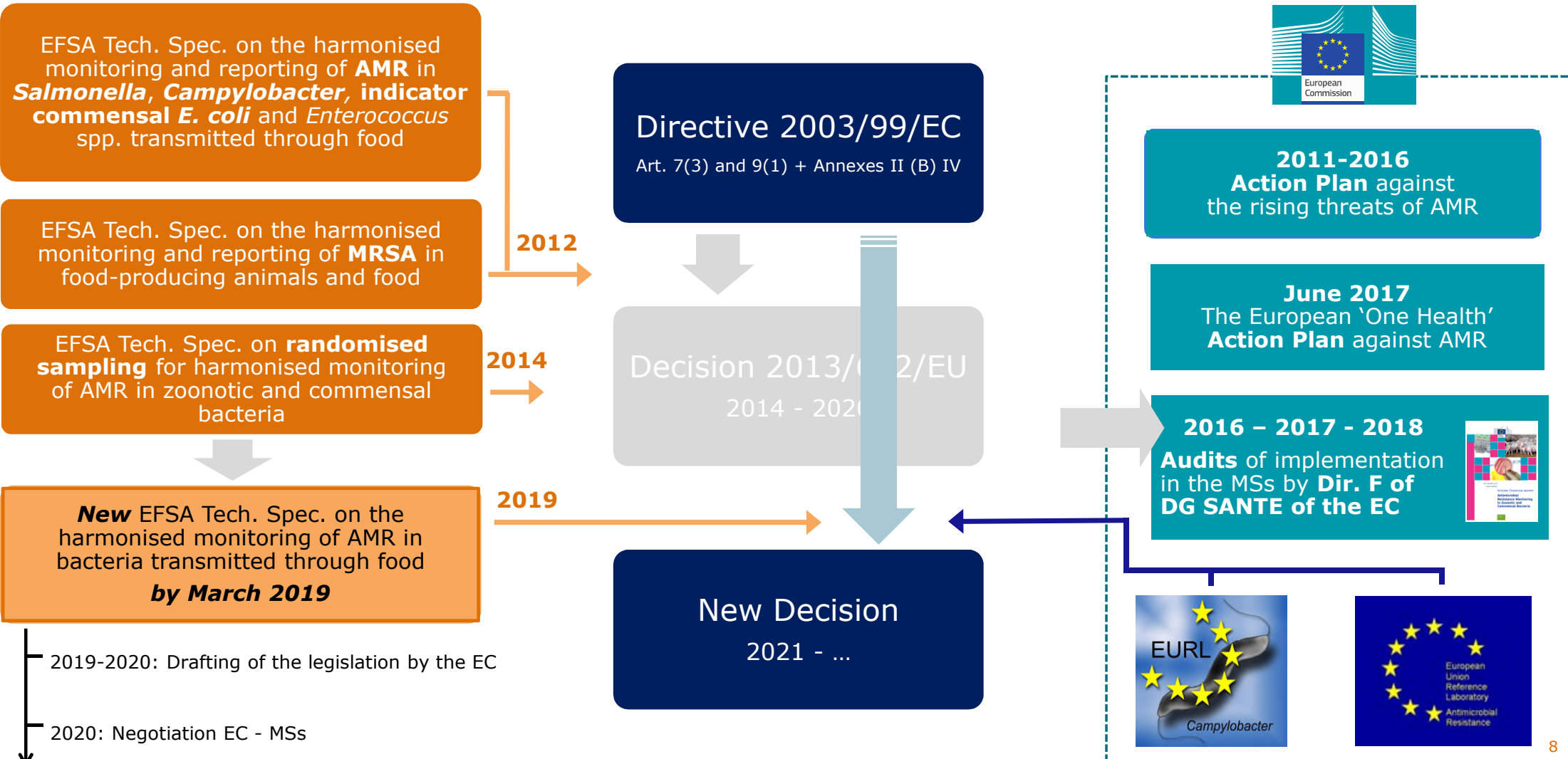
- To complement and/or replace the phenotypic methods
- To ensure the comparability between the results of technics
- To integrate molecular data with past/future phenotypical data

Terms of reference (3): Audits by dir. F of DG Santé

- ... Taking into account **data collection needs**
 - Audits: *Interim Overview Report* (July 2017)
 - Main 'key implementation barriers'
 - ❖ Achieving the minimum required number of samples/isolates
 - ❖ **Prev_{C. coli} >> Prev_{C. Jejuni} in certain production sectors/MSs**
 - ❖ **Salmonella spp.**
 - ❖ Processing samples within 48 hours of collection



Outcome



Next Steps

- EFSA Network meeting on AMR monitoring (Nov. 2018)
- Consultation of EFSA Network (Feb. 2019)
- Constant liaison with EURL-AR
- Constant liaison with EURL-*Campylobacter*
- Liaison with ECDC

Upcoming EFSA publications on AMR

- 2017 EU Summary Report on AMR (February 2019)
 - Zoonotic *Salmonella* and *Campylobacter*
 - Indicator *E. coli*
 - Fattening Pigs and Veal Calves
- EFSA Scientific Report on AMR monitoring (April 2019)



Thank you for your attention!

