Update from EFSA

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EURL-AR – 14 April 2016

European Food Safety Authority

www.efsa.europa.eu

Outline

- Highlights of the 2014 EUSR on AMR
- 2015 AMR Data reporting
- Reference testing exercise
- EFSA Trainings
- Timetable

2014 EU SUMMARY REPORT ON AMR …

… in a nutshell!

- New legislation successfully implemented by MSs
  - Enlarged scope of AMR monitoring
  - Specific focus on poultry populations in 2014
- Frequent resistance to Fluoroquinolones observed
- Low resistance to other Critically Important Antimicrobials
- Low co-resistance to CIAs
- Low occurrence of ESBL/AmpC producers
- No carbapenemase producers detected!
- Transferable resistance to colistin recently reported!

MARKED VARIATIONS…

… between *Salmonella* serovars

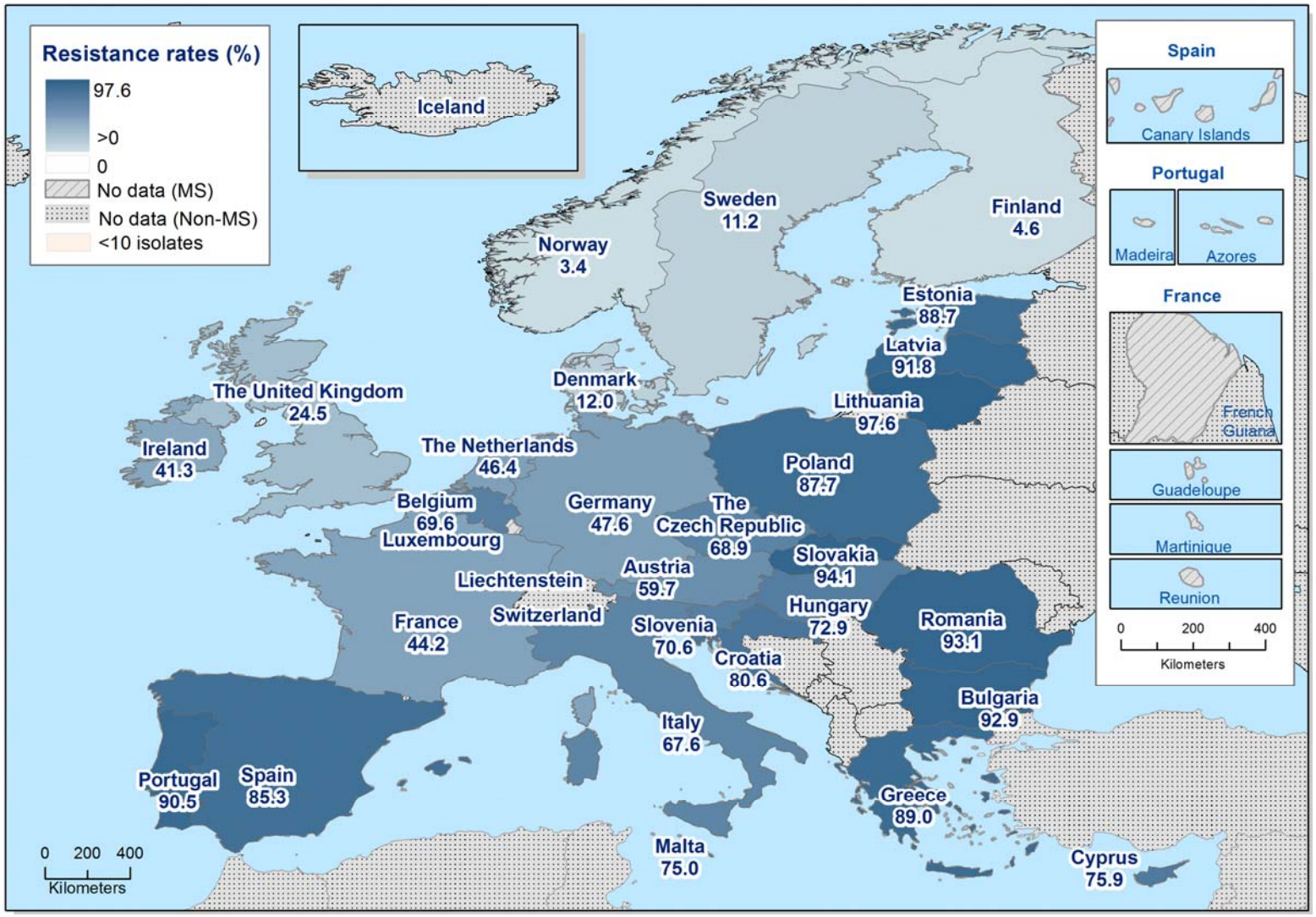
- *S.* Infantis and *S.* Kentucky …
  - … contribute significantly to the overall numbers of multi-resistant *Salmonella*
  - … both display high-level resistance to **Cip**

… between reporting countries

- Higher resistance …
  in Eastern and Southern Europe …

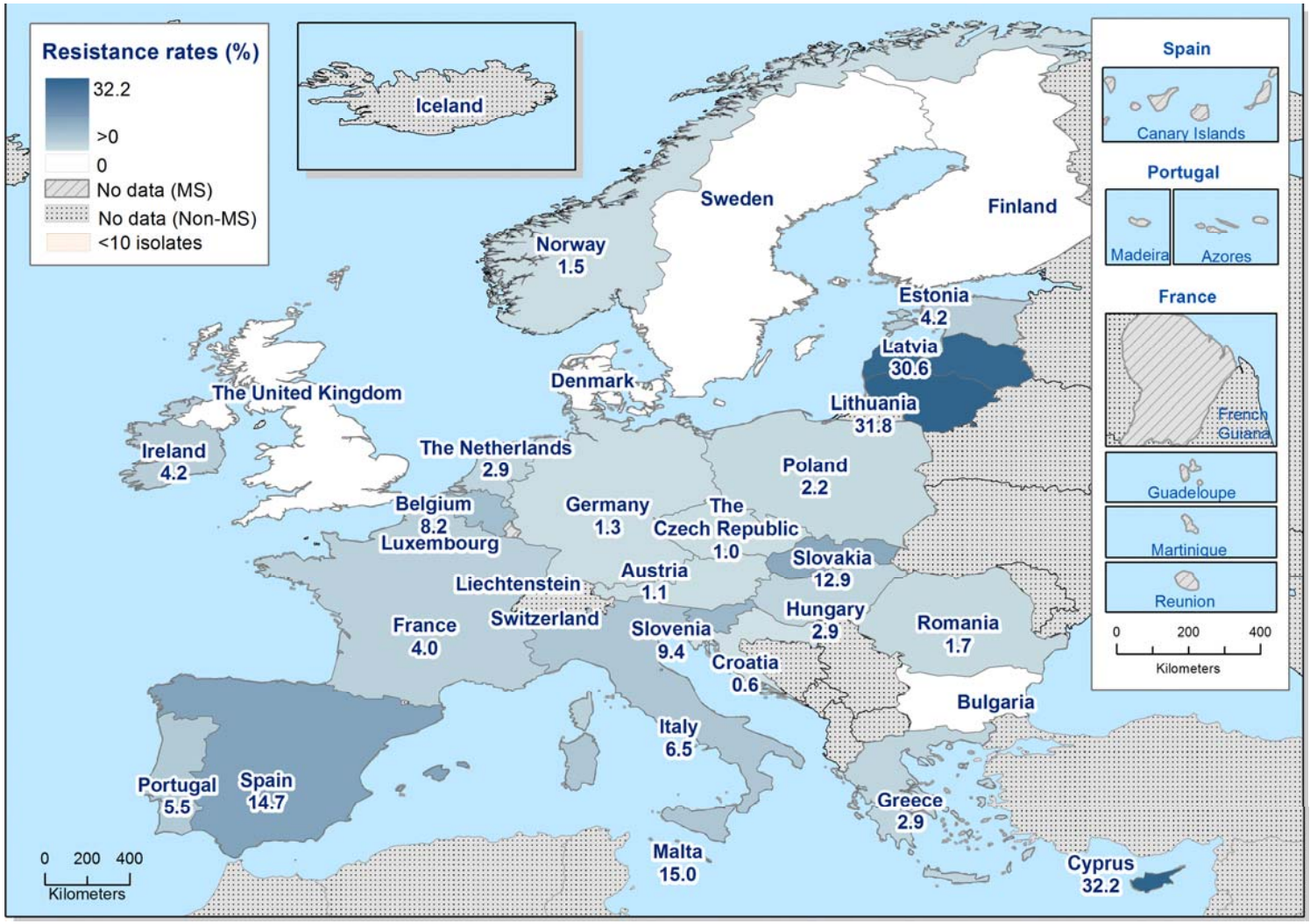
INDICATOR *E. COLI* IN POULTRY

Cip resistance in *E. coli* - broilers



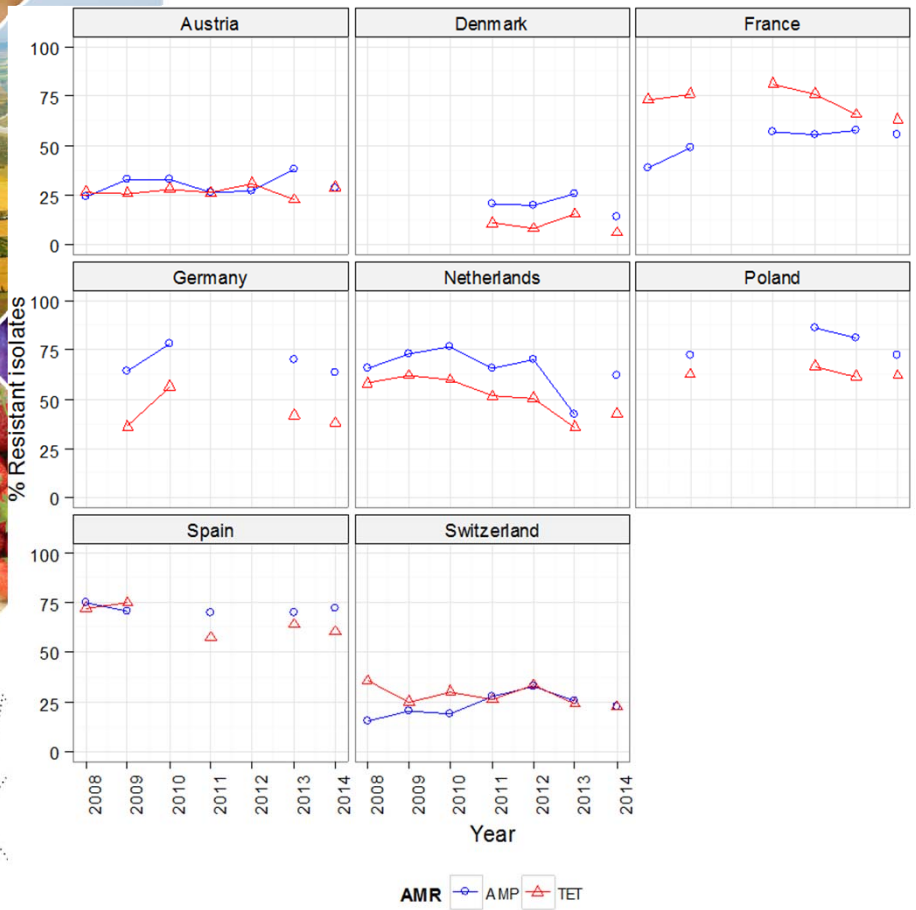
INDICATOR *E. COLI* IN POULTRY

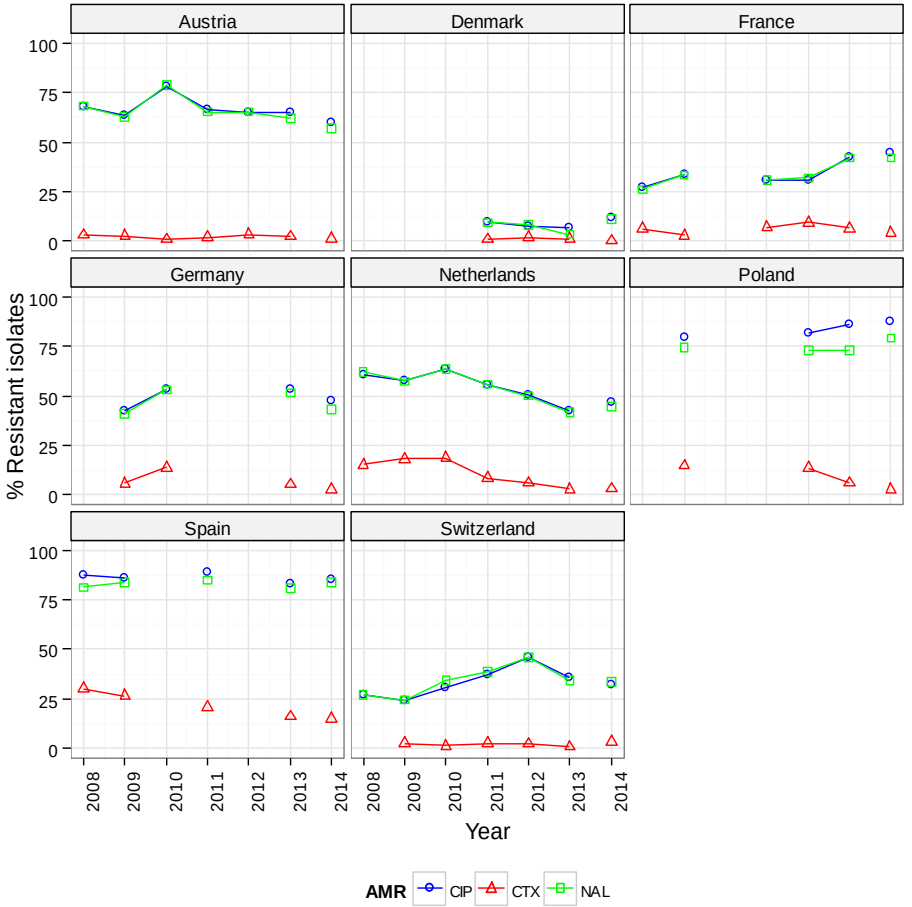
Ctx resistance in *E. coli* - broilers



INDICATOR *E. COLI* IN ANIMALS AND FOOD

Trends in *E. coli* from broilers





AMR IN *SALMONELLA* AND *CAMPYLOBACTER* FROM HUMANS

In *Campylobacter*

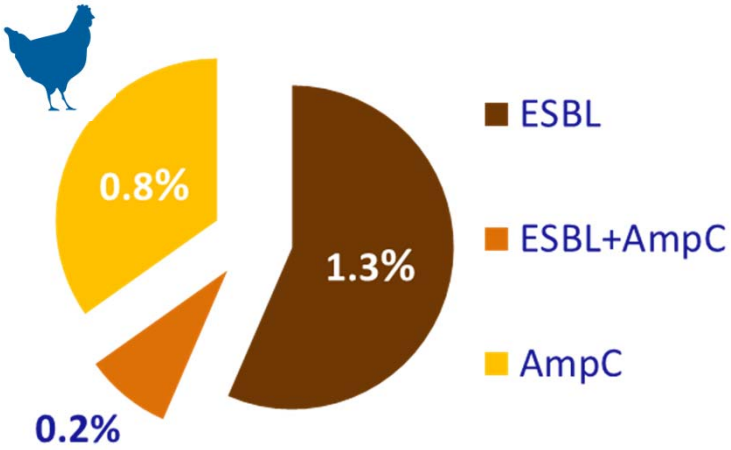
- **High** resistance to **Cip**
  - 60% in *C. jejuni* and 69% in *C. coli*
  - **Reduced effective treatment options in certain MSs**
- **Low to moderate** resistance to **Ery**
  - 1.5% in *C. jejuni* and 14.6 % in *C. coli*
- Overall **co-resistance** to **Cip and Ery**
  - **Low** in *C. jejuni* (0.3%) and **moderate** in *C. coli* (13.6%)

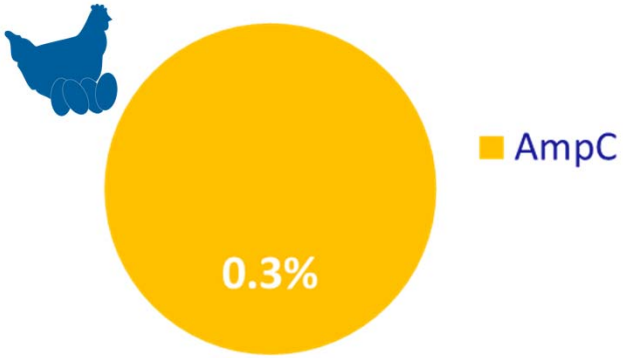
In *Salmonella*

- **Low** resistance to **Cip :** 8.8%
- **Low** resistance to **Ctx:** 1.1%
- **Very low co-resistance** to **Cip and Ctx**
  - 'Clinical' co-resistance: 0.5%
  - 'Microbiological' co-resistance: 0.6%

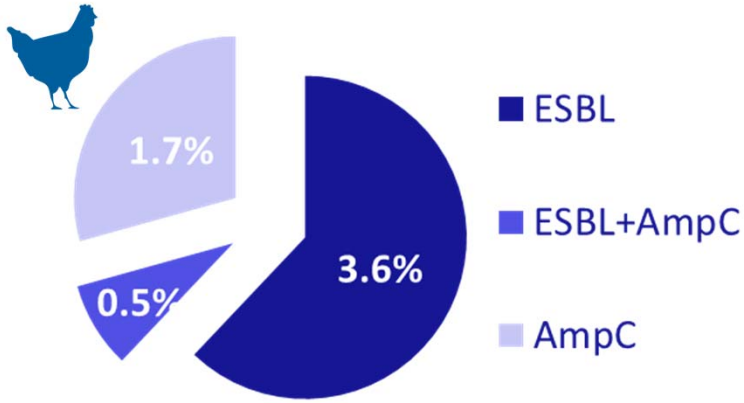
PHENOTYPIC CHARACTERISATION OF 3RD-GENERATION CEPHALOSPORIN RESISTANCE

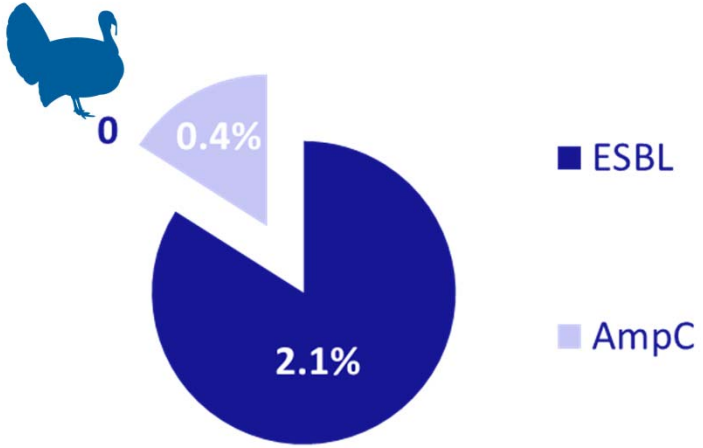
Salmonella spp.





E. coli





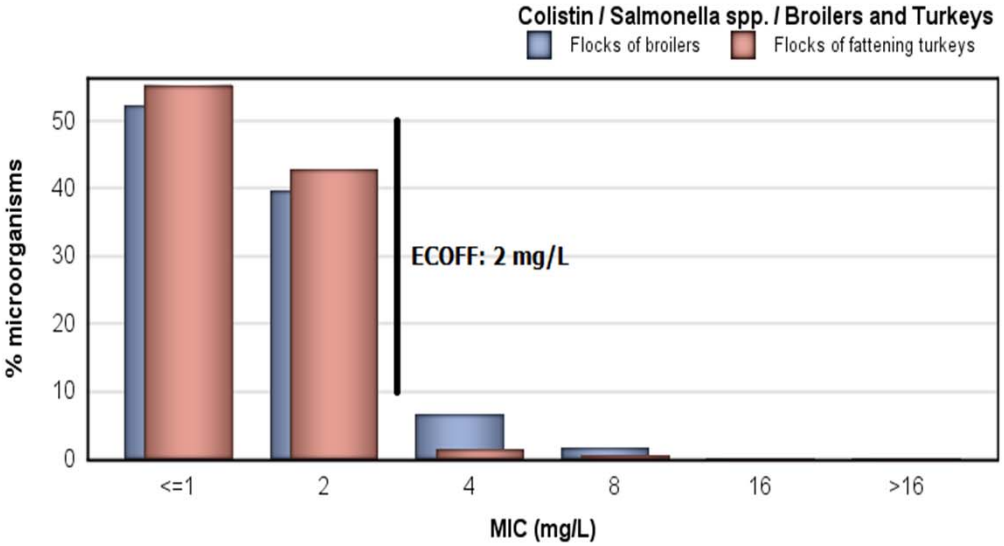
Low occurrence of ESBL/AmpC producers!

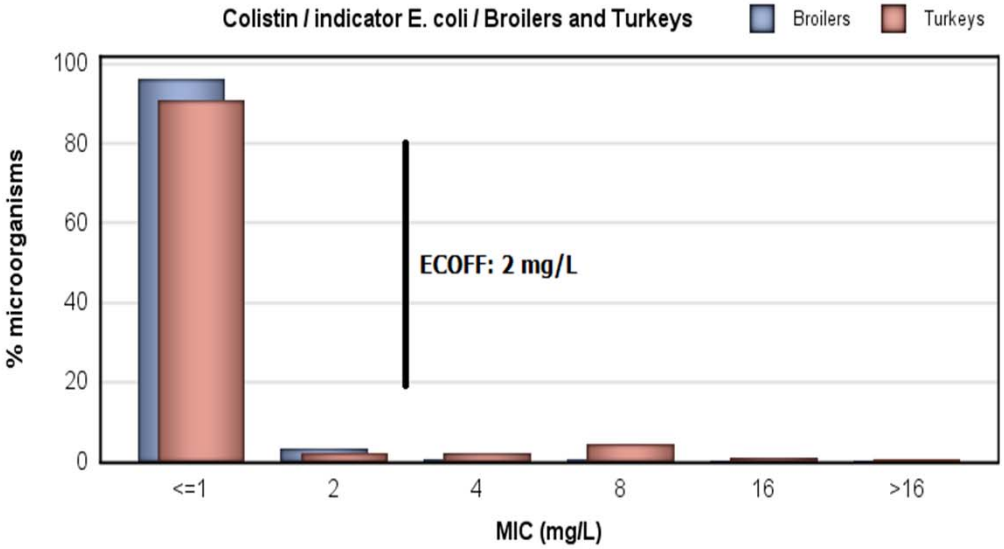
HORIZON SCANNING

Transferable resistance to … … colistin and erythromycin

- Recently, however, interbacterial transfer has been described in Asia for
  - Colistin resistance in Enterobacteriaceae (Liu et al., 2015), and
  - Erythromycin resistance in *Campylobacter* (Wang et al., 2015).
- These are important developments!
- Plasmid-mediated resistance can spread rapidly between different bacterial strains leading to widespread dissemination
- Erythromycin resistance in *Campylobacter* and colistin resistance in Enterobacteriaceae are both of public health significance, but occur at low, very low or undetected levels in many MSs.

RESISTANCE TO COLISTIN IN *SALMONELLA* AND *E. COLI*





- A number of colistin-resistant isolates have undergone further testing at the EURL-AR or at the MS level, for the presence of *mcr-1* gene.
- More detailed data are going to be available later this year.
- EMA is currently working on an update of its 2013 advice on the use of colistin in animals.

2015 AMR DATA EXPECTED TO BE REPORTED

Mandatory Data (1)

- ***Salmonella***
  - Carcases of fattening pigs → Swabs (Reg. 2073/05 ➔ FBO isolates possible)
  - Carcases of calves* →Swabs (Reg. 2073/05 ➔ FBO isolates possible)

*for MSs producing >10,000 tonnes slaughtered per year.

2015 AMR DATA EXPECTED TO BE REPORTED

Mandatory Data (2)

- **Indicator *E. coli***
  - Fattening pigs → caecum (slaughterhouse)
  - Calves* → caecum (slaughterhouse)
- **Specific** monitoring of **ESBL-/AmpC-/CP-producing *E. coli***
  - Fattening pigs → caecum (slaughterhouse)
  - Calves* → caecum (slaughterhouse)
  - Samples of fresh pig meat gathered at retail
  - Samples of fresh bovine meat gathered at retail

*for MSs producing >10,000 tonnes slaughtered per year.

2015 AMR DATA EXPECTED TO BE REPORTED

Scope of the 2015 EUSR on AMR

- To primarily focus on AMR data to be reported mandatorily for the year 2015 and therefore, on AMR data in bacteria from **Pigs** and **Calves**.

- If important number of **voluntary AMR data** is available, it may worth analysing and including them in the 2015 report…

  … census of available data

MS DATA VALIDATION …

… before submitting data

- Indicative list of criteria for data validation (discrepancies)
- If any **Carbapenem resistance**: please, re-test!
  - MEM-R in Panel 1, but no carbapenem-resistance in Panel 2?
  - ETP and/or IMI in the 2nd, no MEM-R (close to the ECOFF?)
  - One level of difference MIC or more?
- **If any discrepancies** between results for **Ctx, Caz and/or Mero** from Panel 1 and Panel 2
  - Look also for data ampicillin, cefoxitin and synergy…
  - R vs. S because one level of difference MIC or more?

…please, re-test!

- If differences in the results regard categorization on R *vs.* S, please, submit the re-testing data.

CLOSE COORDINATION WITH THE EURL-AR

EUSR production ⇔ Reference Testing exercise

- 150 – 200 strains offered to Reference Testing
- List of strains of interest (available in June)
- Collection of strains from MSs (in July-August)
- MIC values of reference available in September
  - Accounting for the MIC values of reference in the EUSR
- WGS results available in November
  - Accounting for the most important results only
  - *e.g.* presence of carbapenemase-producers

REFERENCE TESTING

Strain selection

- Indicative list of criteria for strain selection
  - Quality checking
  - Mechanisms of resistance
  - Presumptive profiles of ESBL, AmpC, carbapenemase prod.
  - Detection of clones: R. to colistin, azithromycin etc.
- Objective
  - Pre-selection by the MSs (*e.g.* colistin: NO, AT)
  - To limit # of isolates selected for quality checking
- Criteria for inference of presumptive profiles of ESBL … producers
  - To be presented and discussed tomorrow!

EFSA TRAININGS IN MSs

Trainings on AMR Data Collection

- 14 MSs visited and trained so far
- 3 MSs to visit in the coming weeks (CZ, SK and LU)
- 2 Web-trainings: IS (+ FR and northern Ireland)
- New data model for reporting
  - Mandatory information to be reported
  - Reporting of carbapenemase and ESBL
- Detailed information and clarifications
  - 'Isolation date'
  - The results of the retested isolates in case of discrepancies between the 1st and 2nd panels
  - Mandatory text forms to be reported
  - Missing ECOFF
  - Checking and validation of data submitted

TIMETABLE FOR REPORTING 2015 DATA

- The reporting period started: **1 April 2016**
- The national zoonoses data and text forms should be submitted at last by Tuesday **31 May 2016**
- On Friday **3 June 2016**, EUSRs tables will be created for your validation
- One letter of feedback will be send to the reporting officer on your 2015 zoonoses-FBO-AMR data submissions, on **13 June 2016** at the latest, so as to enable EFSA to lock all final data by **4 July 2016**
- List of strains of interest for 'Reference Testing' (**June**)

EFSA HELPDESK / SUPPORT

Should you encounter any difficulty or have any question about reporting,

- Please, contact the **EFSA zoonoses helpdesk**:
  - by telephone: **+39 0521 036 136**
  - by e-mail: zoonoses_support@efsa.europa.eu

EFSA office hours:
Monday to Friday 9.00 - 17.30

THANK YOU FOR YOUR ATTENTION !

- Acknowledgements
- 2014 EU Summary Report on AMR
  - www.efsa.europa.eu

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