Better Training for Safer Food

Initiative

Antimicrobial Resistance One Health approach

JIACRA REPORT

BTSF

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Food safety

Malaga, Spain – 25-28 November 2019

European Commission

Joint Interagency Antimicrobial Consumption and Resistance Analysis (JIACRA) report: Results, conclusions and recommendations

European Commission

Background

I would therefore propose issuing a second JIACRA report by June 2017, including 2013/2014 and, in addition, 2015 data analysis. Despite the limitations of data the report would still provide the Commission and the Member States with very valuable information on yearly trends as regards AMR. If needed, you may also consider omitting foodborne pathogen related data from the analysis and include it at a later stage.

I would therefore appreciate if this report, including data analysis for 2013, 2014 and 2015 could be issued **by June 2017** at the latest.

I am looking forward to continuing our collaboration.

Yours sincerely,

Xavier Prats Monné

- 1st JIACRA report published by ECDC, EFSA and EMA in January 2015

- New request from DG SANTE to the three agencies for a 2nd JIACRA report (data 2013, 2014 and 2015)

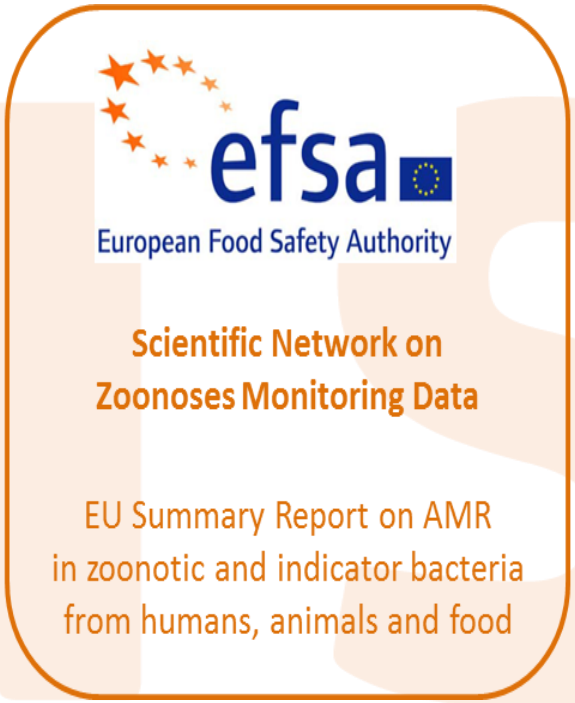
- 2nd report to the Commission by 30 June, 2017

Contents of the JIACRA report

- Results of analysis to assess the relationship between antimicrobial consumption (AMC) and antimicrobial resistance (AMR) in animals and humans

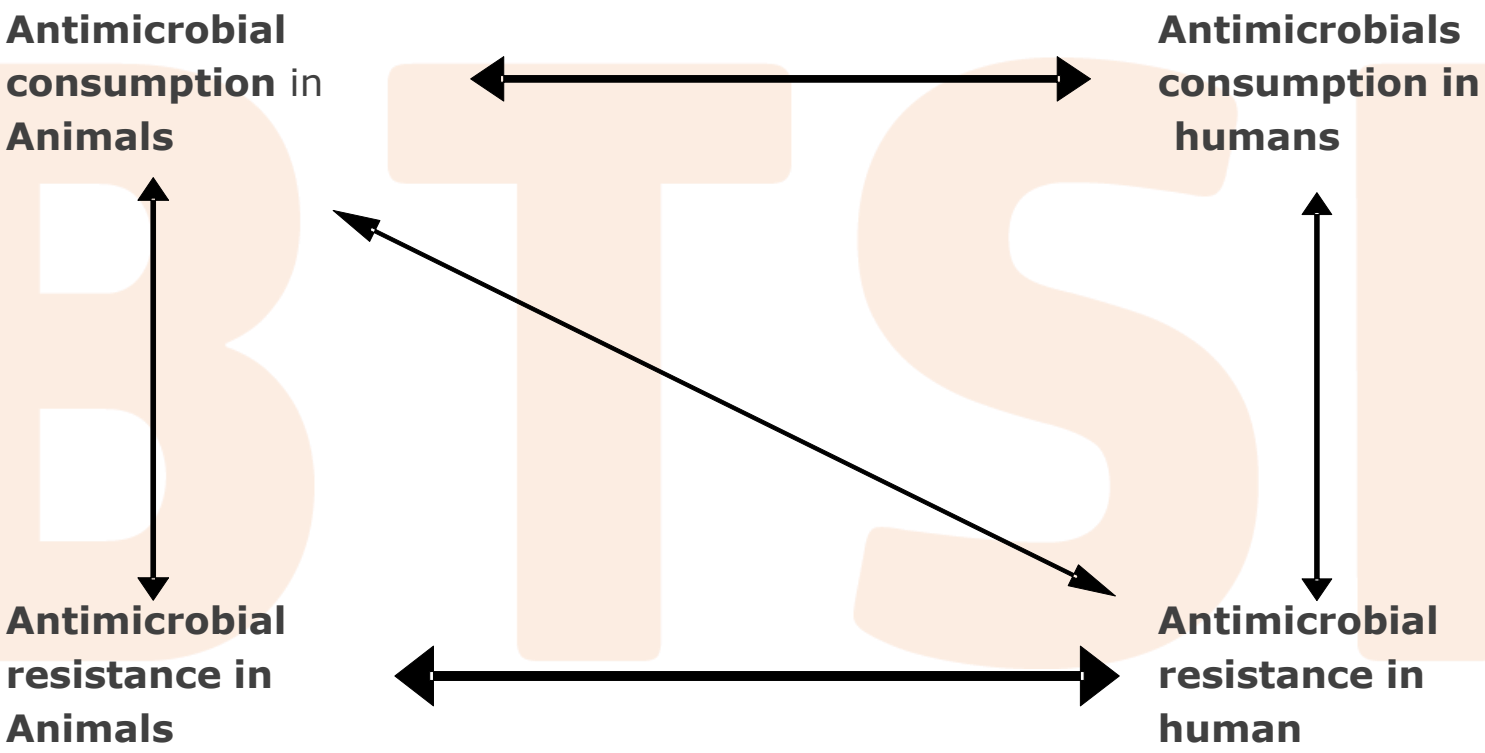
- Conclusions and recommendations in a one-health perspective based on results of integrated analysis of data (logistic regression and multivariate analysis)

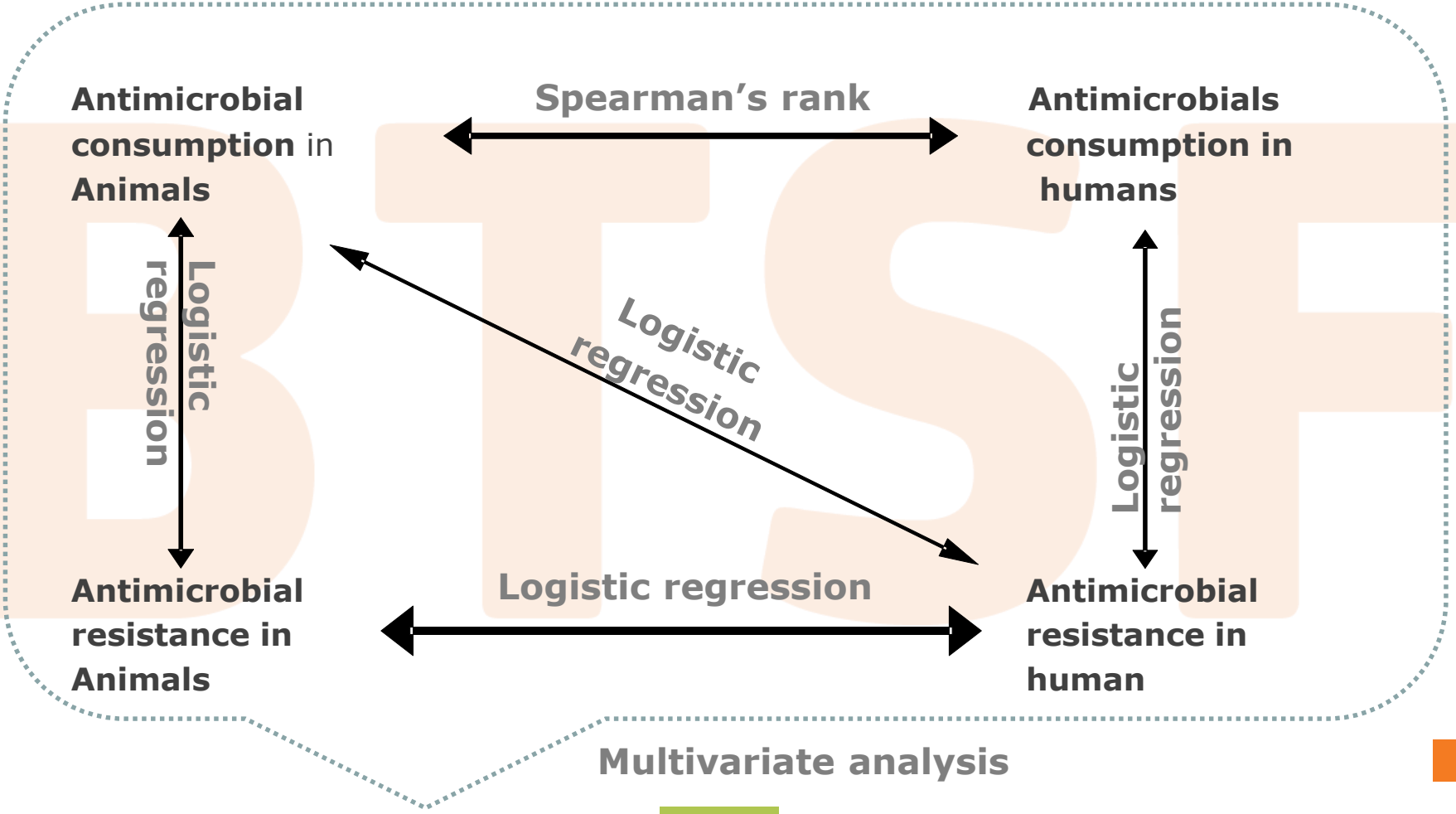

ecdc
EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL
European Antimicrobial Resistance Surveillance Network (EARS-Net)
European Surveillance of Antimicrobial Consumption Network (ESAC-Net)
Food- and Water-borne Diseases Network (FWD-Net)


efsa
European Food Safety Authority
Scientific Network on Zoonoses Monitoring Data
EU Summary Report on AMR in zoonotic and indicator bacteria from humans, animals and food


EUROPEAN MEDICINES AGENCY
SCIENCE MEDICINES HEALTH
European Surveillance of Veterinary Antimicrobial Consumption (ESVAC)

Data sources

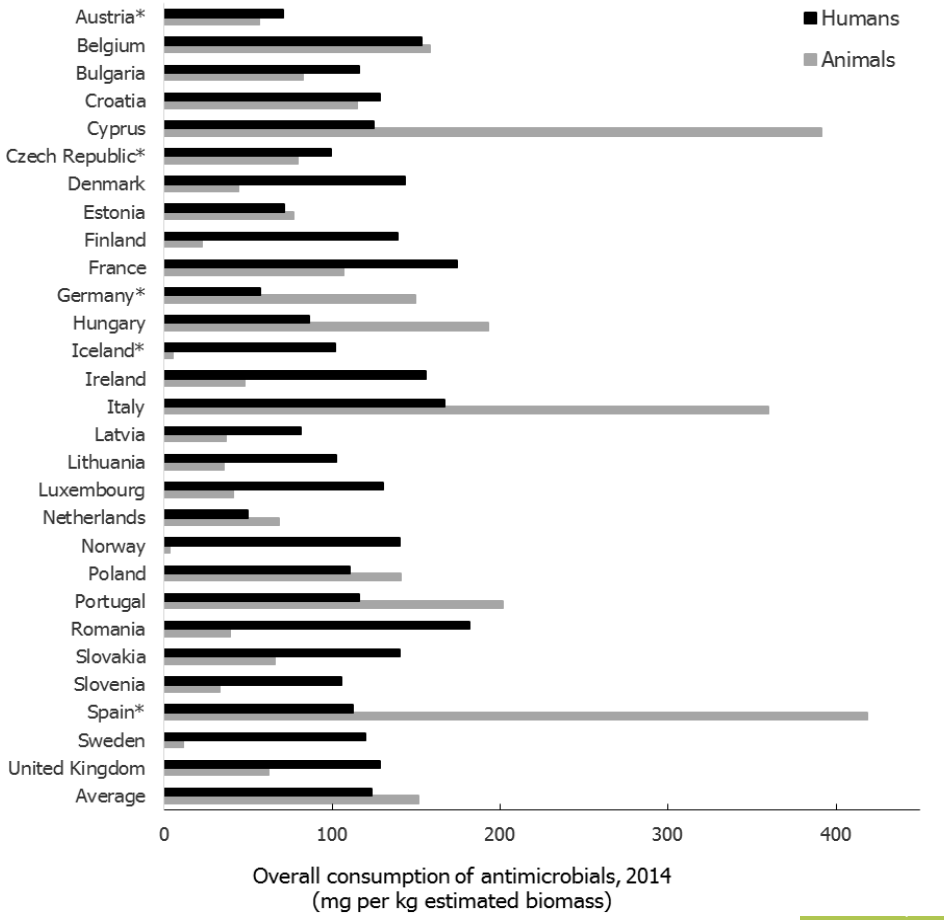



Antimicrobial consumption in Animals
Spearman's rank
Antimicrobials consumption in humans
Logistic regression
Logistic regression
Logistic regression
Antimicrobial resistance in Animals
Logistic regression
Antimicrobial resistance in human
Multivariate analysis

Changes in the second report

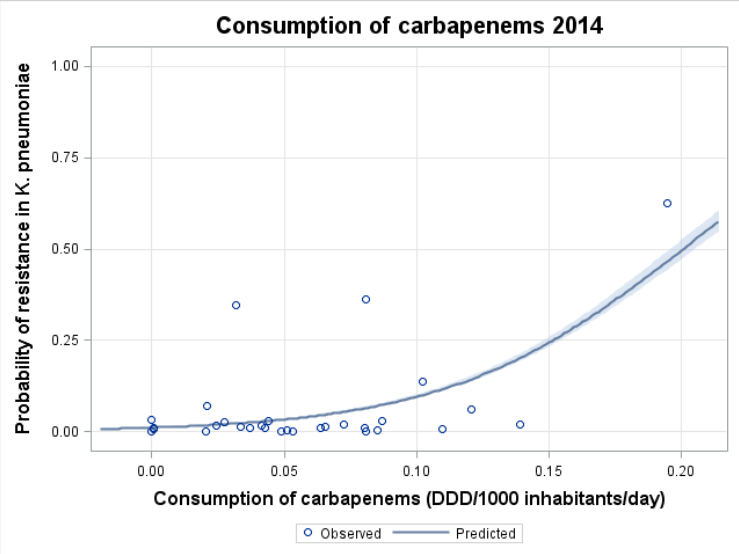
- Results of analysis to assess the relationship between antimicrobial consumption (AMC) and antimicrobial resistance (AMR) in animals and humans
- Vet consumption by animal species (DDDvet)
- Improved resistance data from EFSA
- Special section for colistin
- More analysis including multivariate analysis
- New structure for the report

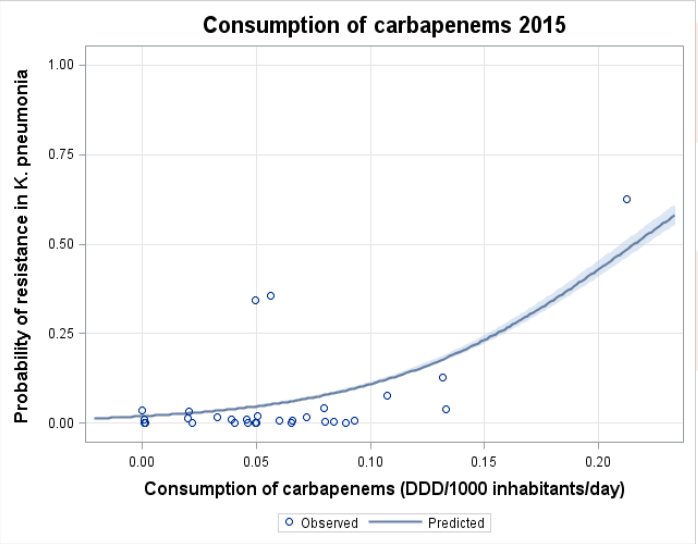
Biomass-corrected antimicrobial consumption in humans and animals, EU/EEA, 2014



- **Humans: 124 mg/kg** (range: 50 – 182 mg/kg)
- **Animals: 152 mg/kg** (range: 3 – 419 mg/kg)

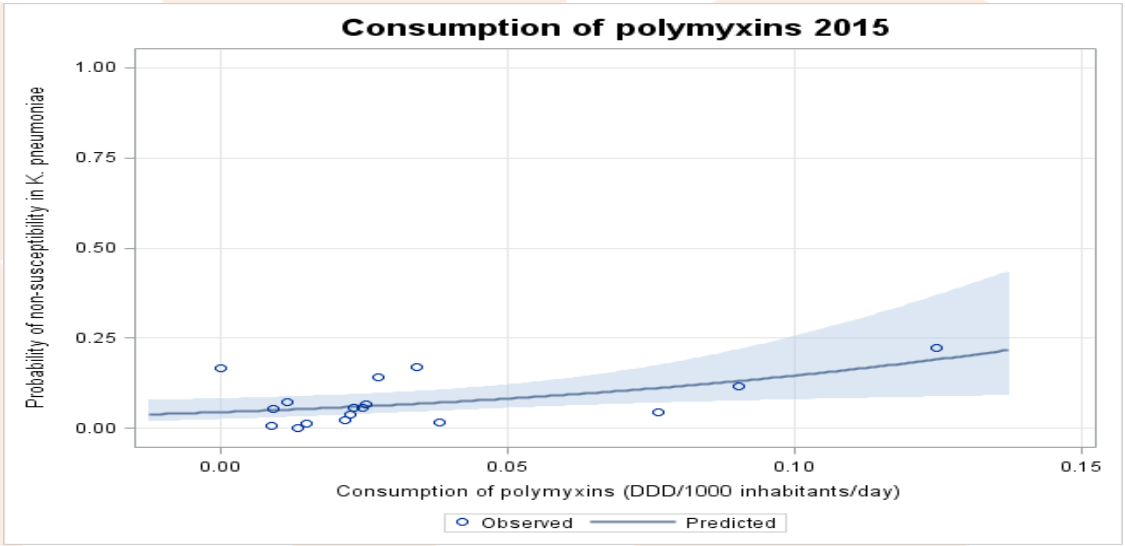
Logistic regression Carbapenems/*K. pneumoniae*





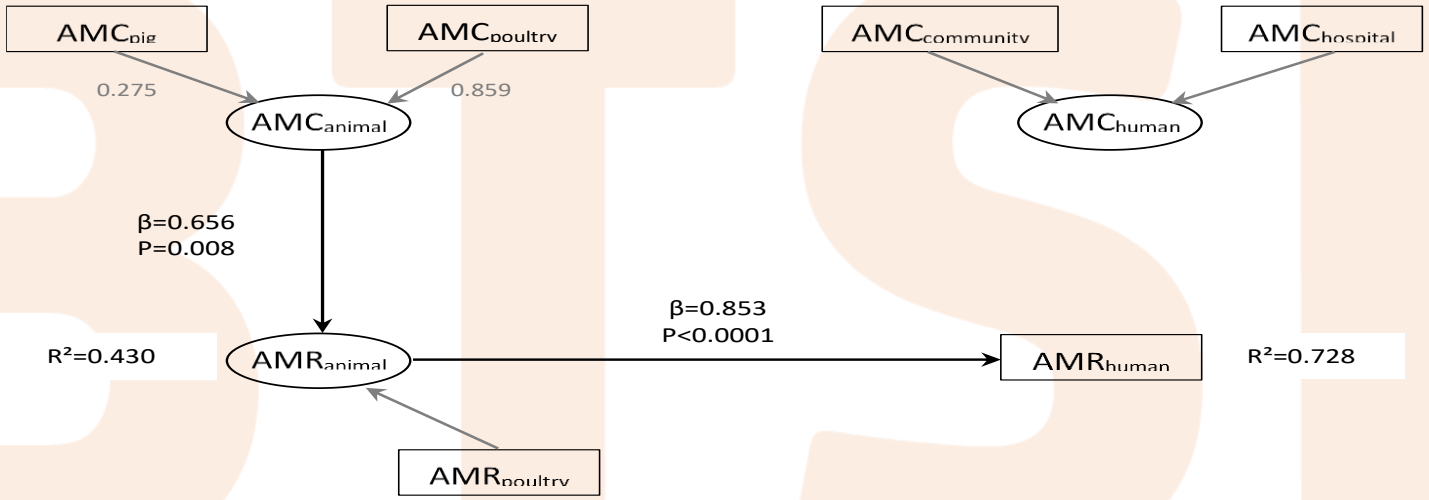
Conclusion: Consumption of carbapenems in humans was strongly associated with resistance to carbapenems in *K. pneumoniae* from humans (2014, 2015) (P<0.001).

Logistic regression Polymyxins/*K. pneumoniae*



Conclusion: Consumption of polymyxins in hospitals was strongly associated with resistance to polymyxins in *K. pneumoniae* from humans (2015) (*P*=0.001).

Multivariate analysis
Fluoroquinolones/*Campylobacter*



Conclusion: Fluoroquinolone resistance in *Campylobacter* from humans was mainly explained by resistance to fluoroquinolones in *Campylobacter* from animals. No significant effect of consumption of fluoroquinolones in humans.

Conclusions

- There is a link between consumption of antimicrobials in animals and humans and occurrence of resistance.
- There are still important differences in the consumption of antimicrobials in animals and humans across EU countries.
- The report emphasizes the need to **promote responsible use of antibiotics** in both humans and animals. Reducing their unnecessary use will have an impact on the occurrence of resistance. In addition, the three agencies recommend further research to understand better how use of antibiotics and resistance affect one another.

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AENOR INTERNACIONAL

6, Genova street. 28004. Madrid, SPAIN
Tel: +34 91 432 61 25
Mail: 20169607_amr@aenor.com
www.btsf-aenor.com

AENOR agencia española de medicamentos y productos sanitarios

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European Commission
Consumers, Health, Agriculture and Food Executive Agency
DRB A3/042
L-2920 Luxembourg

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