National Focal Point for Scientific and Technical Matters for EFSA efsa.focalpoint@land.gov.sk



# Antimicrobial Resistance - Activity of the National FP

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28<sup>TH</sup> MEETING OF THE FOCAL POINT NETWORK 2016, Parma

#### Background for Risk Assessment Report on zoonoses and zoonotic agents in the Slovak Republic



- In SR, the consumers express an interest in the are of zoonotic diseases and in microbial resistance (according to EU Barometer)
- The National report on zoonoses, foodborne and waterborne diseases in the Slovak Republic
- Annual report from 2008
- Cooperation of experts from the control and research in the human and veterinary field
- Content:
- by causative agents
- human epidemiological situation
- > animals epizootological situation
- ➢ foodstuffs
- ➤ feed
- > environment

## > ANTIMICROBIAL RESISTANCE

28<sup>TH</sup> MEETING OF THE FOCAL POINT NETWORK 2016, Parma

# Report on state of antimicrobial resistance in SR

- crucial to link human, veterinary, food and microbiological areas
- joint work and cooperation (use the data)
- released in 2016, web, electronic version with ISBN
- the report evaluate the situation in antimicrobial resistance in Slovakia
- the report describes the state of resistance in human, veterinary and food sector and in the environment
- basis for national risk assessment in this area.

Stav mikrobiálnej rezistencie v Slovenskej republike

Ministerstvo pôdohospodárstva a rozvoja vidieka SR, Národný kontaktný bod pre vedecků a technicků spoluprácu s EFSA Regionálny úrad verejného zdravotnictva Banská Bystrica Regionálny úrad verejného zdravotnictva Košice Regionálny úrad verejného zdravotnictva Trenčín Slovenská technická univerzita, Fakulta chemickej a potravinárskej technológie Štátna veterinárna a potravinová správa SR Veterinárny a potravinový ústav, Bratislava Veterinárny a potravinový ústav, Dolný Kubín Univerzitná nemocnica L. Pasteura, Košice Úrad verejného zdravotnictva SR

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# **Background for risk assessment**

## State of antimicrobial resistance in Slovak Republic

24 experts from 11 scientific and control organizations.

- Ministry of agriculture and rural development of SR National focal point for EFSA
- Regional public health authority in Banská Bystrica
- Regional public health authority in Košice
- Regional public health authority in Trenčín
- Slovak University of Technology, Faculty of chemical and food technology
- State Veterinary and Food Administration of SR
- Veterinary and Food Administration in Bratislava
- Veterinary and Food Administration in Dolný Kubín
- Louis Pasteur University Hospital in Košice
- Public Health Authority SR
- Institute for State Control of Veterinary Biologicals and Medicaments Nitra

#### ISBN 978-80-89738-07-6

28<sup>TH</sup> MEETING OF THE FOCAL POINT NETWORK 2016, Parma



#### Content:

- 1. General part
- 1.1 Humane area
- 1.1.1 Characteristics of the population in Slovakia
- 1.1.2 Morbidity of infectious diseases
- 1.1.3 Comparison of antibiotic consumption with EU Member States
- **1.2 Veterinary part**
- **1.2.1 Characteristics of livestock**
- 1.2.2 Consumption of antimicrobial agents in Slovakia
- **1.2.3 Comparison of Antimicrobial agents Consumption with EU Member States**
- 1.3 Environment
- **1.3.1 Medical Facilities**
- **1.3.2 Food Processing Facilities**
- **1.3.3 Sewage Treatment Plant**

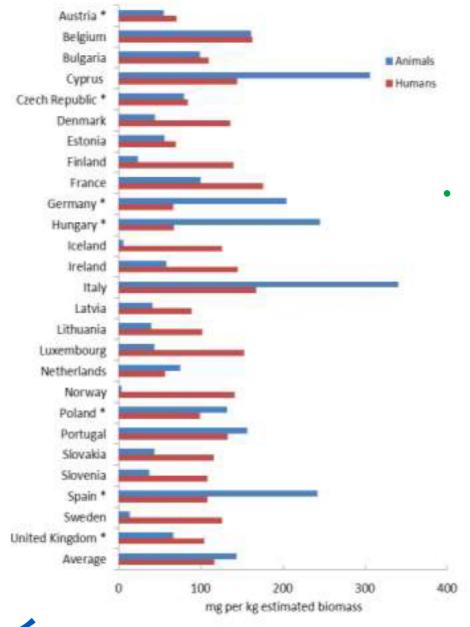
#### 1.3.4 Bathwater

- 2. Control of microbial resistance
- 2.1 The system of control in the area of public health
- 2.2 The system of control in the area of animal health and food
- 2.3 The systems of control in the area of feed
- 2.4 System of control Environment
- 3. Programs designed to minimize resistance
- 3.1 Humane area
- 3.2 Veterinary part
- 3.3 Environment
- 4. Current state and trends of resistance in Slovakia for particular types of drugs
- 4.1 Humane area
- 4.2 Animals and food
- 4.3 Environment
- 5. Summary of the resistance of selected pathogen
- 6. Summary of research in the area microbial resistance
- 7. Summary of current regulations concerning microbial resistance





Comparison of biomass-corrected consumption of antimicrobials (milligrams per kilogram estimated biomass) in humans and food-producing animals by country in 26 EU/EEA countries



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 consumption of veterinary antimicrobial agents in Slovakia is by more than half lower than is the average consumption in the EU

# Escherichia coli



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#### Human (2014)

resistance to aminopenicilins 56,6% (EU); 64,5% (SR). resistance to fluoroquinolons 22,4% (EU); 43% (SR). resistance to cephalosporins 31,8% (3rd.generation SR). resistance to aminoglycosides 9,4% (EU); 22,8% (SR).

#### Poultry (2014)

resistance to ampiciline 67% (SR), 33% (in pigs).

resistance to fluoroquinolons was comparable to the resistance in human.

Resistance to ciprofloxacin 55% (EU); 44% (SR), 7% (in pigs).

- percentages related to the isolates from animals, namely a poultry show low resistance to gentamicin
- isolates of E.coli from poultry showed a highest percentage of resistance to the sulfamethoxazole, trimethoprim and tetracycline
- Highest resistance in E.coli isolates from pigs were related to tetracycline and sulfamethazol

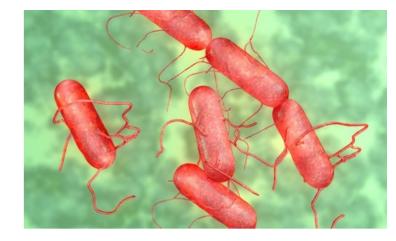
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## Salmonella spp.

#### Human (2014)

resistance to tetracyclines 30,3% (EU); 12,3% (SR). resistance to ampiciline 28,2% (EU); 12,1% (SR). resistance to cephalosporins 1,1% (EU); 1,5% (SR). resistance to fluoroquinolons 8,8% (EU); 1,2% (SR).



- a higher percentages of resistance reported in Slovakia than was the EU average was recorded for cephalosporins – 1,5% of resistant isolates to cefotaxime.
- 30,8% was resistant to chloramphenicol in human isolates and this value was also the highest percentage among all of the EU states.

#### Poultry (2014)

- no resistance of Salmonella spp. to cefotaxime and chloramphenicol was recorded among the broilers
- The resistance of Salmonella spp. to ciprofloxacin in isolates from broilers in 2014 was higher than the EU average (78,9%).
- the percentage of resistance to tetracyclines from human isolates was 12,3% the percentage in broilers was 68,4%.

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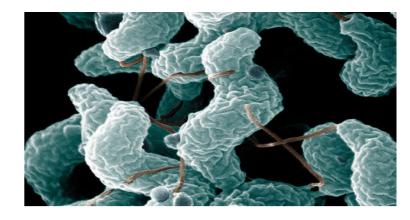
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## Campylobacter spp

## Human (2014)

*C. jejuni* resistance to ciprofloxacin 60,2% (EU); 50,6% (SR). resistance to tetracycline 46,4% (EU); 25,5% (SR) *C. coli* 

resistance to ciprofloxacin 68,9% (EU); 61,4% (SR). resistance to tetracycline 53,8% (EU); 31,3% (SR).



- Campylobacterioses are most commonly associated with C.jejuni and C.coli.
- highest resistance of *C.jejuni* in EU countries in 2014 was recorded at the human isolates to ciprofloxacin and tetracycline.

#### Broilers (2014)

*C. jejuni* resistance to ciprofloxacin 69% (EU); 45% (SR). resistance to tetracycline 54% (EU); 27% (SR) *C. coli* resistance to ciprofloxacin 74% (EU); 92% (SR). resistance to tetracycline 59% (EU); 44% (SR).

• no isolate of *C. jejuni* and *C. coli* from slaughter broilers were resistant to gentamicin 28<sup>TH</sup> MEETING OF THE FOCAL POINT NETWORK 2016, Parma

## Staphylococcus aureus

- in 2014, the presence of MRSA in human isolates 28% (SR) 18,3% (EU)
- the waste water from hospitals contained up to 83% of S. aureus resistant to vancomycin, 67% resistant to erythromycin
- Strains resistant to methicilin, penicilin, erythromycin, gentamycin and vancomycin were dominating in 2014 and their level of resitance ranged from 38 to 98%
- In Slovakia, MRSA has been monitored since 2012, in samples of food from sales network and in drinking water while the percentage of MRSA ranges from 3 to 19%
- Monitoring of MRSA in livestock and pet animals has been performed since 2013

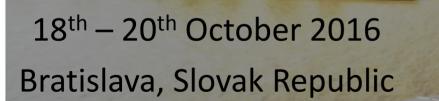
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5<sup>th</sup> Annual Scientific Congress on

## ZOONOSES, FOODBORNE AND WATERBORNE DISEASES -PROTECTION OF PUBLIC AND ANIMAL HEALTH



#### **2016 EU Slovak Presidency**

#### Meetings, conferences and workshops organised by the Slovak Focal Point for EFSA



- 1. Advisory Forum, 27.-29.09.2016
- 2. Advisory Forum Communication Working Group, 04.-05.10.2016
- 3. HoA, 21.10.2016
- 4. Scientific network EREN, 14.-15.11.2016
- 1. 5th Annual Scientific Congress on zoonoses, foodborne and waterborne diseases protection of public and animal health, 18.-20.10.2016
- 2. Workshop The spread of harmful organisms in terms of protection of the human and animal health, 16.11.2016
- 3. 9th Annual Scientific Conference for young scinetists -Safety of the food chain, 06.-07.12.2016

**Conferences and** workshops

Meetings



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