European Food Safety Authority

Updates on EFSA's activities on AMR monitoring

Annual Workshop of the EURL on AMR

Copenhagen, 6-7 April 2014

Outline

- Brief overview of the 2014 EUSR on AMR
- Mandate on randomised sampling for AMR monitoring
- ECDC, EFSA and EMA joint analyses of the relationship between antimicrobial consumption and resistance

AMR in animals and food in 2012

Short Summary

- 'Former' EUCAST Ecoffs used to interpret resistance: *new legislation*
- AMR commonly found in zoonotic bacteria from humans, animals and food
- Low levels of **Clinical Resistance** to critically important antimicrobials in humans
- **Microbiological Resistance** to critically important antimicrobials detected in *Salmonella* and *Campylobacter* in animals and food
  - **Moderate to high** levels for **fluoroquinolones** from broilers and meat
  - **Low** levels for **macrolides** in *Campylobacter* *(2011-2012 increases in C. coli from broilers)*
  - **Low** levels for **3rd generation cephalosporins**
- Consistent increasing (decreasing) trends in resistance to Cip/Nal in *C. jejuni*, *C. coli* and *E. coli* in broilers and pigs in a number of countries
- Low co-resistance levels to CIAs in *Salmonella*, *Campylobacter* and *E. coli*
- Presentation and Analysis of the multi-drug resistance profiles

Outline

- Feedback from Scientific Network meeting on antimicrobial resistance, 27-28 February 2014
- Mandate on randomised sampling for AMR monitoring
- ECDC, EFSA and EMA joint analyses of the relationship between antimicrobial consumption and resistance

Enhancement of AMR monitoring in the EU

Decision 2013/625/EU

- Further harmonisation of monitoring and reporting of AMR
  - o Active monitoring programmes in healthy animals, based on random sampling plans stratified by age and/or production stage/type, domestically produced
    - o *e.g.* broilers vs. laying hens *vs.* breeders / fattening veal calves *vs.* dairy cows

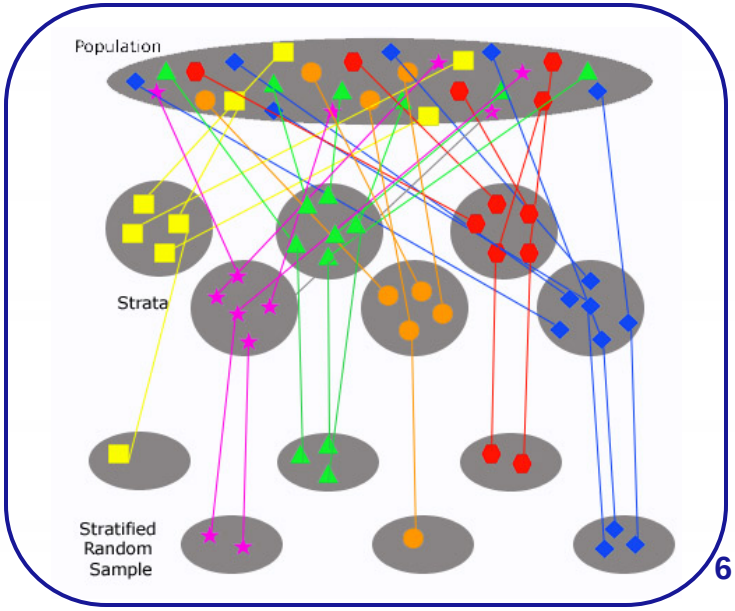
- EC Mandate to EFSA
  - o To propose harmonised randomisation procedures for AMR monitoring in samples collected at different stages of the food production chain
  - o To provide practical guidance for risk managers in the different Member States for the planning of monitoring programs based on randomised sampling design
    - ➢ at slaughterhouse for sampling of carcases and caeca of broilers, fattening turkeys, slaughter pigs and calves under 1 year of ages
    - ➢ at retail, on fresh meat of broilers, pigs and beef

Randomised Sampling Strategies

mandate from the EC

European Food Safety Authority

- General approach
  - Compromise between ‘good statistical practices’ and practical issues
  - Simple and single robust randomised sampling procedure proposed
  - (Two-stage) stratified sampling strategy with proportional allocation
  - Even distribution over the 4 quarters of the year
  - Practical examples of proportional allocations presented in the report



Randomised Sampling Strategies

mandate from the EC

- Exemplary approaches
  - stratified sampling strategy with proportional allocation

	Caeca at slaughter	Meat samples at retail
1st stage (strata)	Slaughterhouses (60% of national throughput)	NUTS 3 area
Proportional allocation	Sample size proportionate to the SH throughput	Sample size proportionate to the NUTS 3 area population
2nd stage	Slaughter batches	Retailers
Sample	caecal sample(s) from distinct batches	1 meat sample per retailer
Over-time sample collection	Even sampling every quarter of the year	Even sampling every quarter of the year

Randomised Sampling Strategies

mandate from the EC

Random Sampling of *Salmonella* isolates obtained from *National Control Programmes* in broilers and fattening turkey flocks

- Two possible Approaches are proposed:

  1. *Simple Random Sampling (SRS) in the sampling frame of positive flocks performed every quarter (a (central) database of positive flocks needed)*

     - Isolates transmitted from the official laboratories to AMR laboratory
     - One isolate per positive flock: no clustering issue

  2. *Simple Random Sampling of isolates within the isolate collection of the official laboratories with proportional allocation of the number of isolates*

     - Once isolates have been randomly selected, checking that selected isolates were recovered from differing flocks (epidemiological unit)

Randomised Sampling Strategies

mandate from the EC

Random Sampling of *Salmonella* isolates derived from *carcasses of broilers, fattening turkeys, fattening pigs and bovines under 1 year of age in accordance with the relevant points of Chapter 2 of Annex I to Regulation (EC) No 2073/2005*

- *Salmonella* isolates should derive from official samples collected by the Competent Authority for verification of compliance with process hygiene criteria and/or,
- In the absence of a sufficient number of isolates, isolates deriving from samples collected by food business operators. Salmonella isolates obtained by food business operators are to be provided to the Competent Authority, at its specific request.

➢ *Simple Random Sampling of isolates within the isolate collection of the official laboratories with proportional allocation of the number of isolates*

- Once isolates have been randomly selected, checking that selected isolates were recovered from differing plant/epidemiological unit.

Outline

- Feedback from Scientific Network meeting on antimicrobial resistance, 27-28 February 2014

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- ECDC, EFSA and EMA joint analyses of the relationship between antimicrobial consumption and resistance

Analysis of antimicrobial use and resistance

Request of the EC

European Food Safety Authority

- Collaboration between sister agencies of the EU: ECDC, EFSA and EMA

- Common analysis of the relationship between consumption of antimicrobial agents and the occurrence of resistance in humans, animals and food in the EU

ecdc
EUROPEAN CENTRE FOR DISEASE PREVENTION AND CONTROL

European Antimicrobial Resistance Surveillance Network (EARS-Net)

European Surveillance of Antimicrobial Consumption Network (ESAC-Net)

efsa
European Food Safety Authority

Task Force on Zoonoses Data Collection

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)

Agreement between Agencies

- Include data obtained through the surveillance programmes coordinated by EMA, EFSA and ECDC.
- **The respective surveillance networks of the agencies will be informed regularly.**
- The European Union Reference Laboratory for AMR will be informed on the working process.
- The joint report is to be endorsed by EMA, EFSA and ECDC.
- Final version to be delivered to the Commission in 2014.
- The joint report will not substitute the current reports produced by the three agencies.

Characteristics of the future first report

- This first joint report is the first of a series of reports to be produced at regular intervals.
- Due to the complexity of the tasks and limited resources is not envisaged to produce them yearly, but on a multi-annual basis.
- The early stage of maturity of some of the systems for collecting and analysing data is acknowledged.
- Is foreseen that in the future, as the work of each of the networks progresses towards a more detailed and accurate gathering and analysis of data, a more refined report will be produced.

Origin of the data

- The ECDC has provided data on antimicrobial consumption in humans as well as resistance monitoring data on human isolates.
- The EFSA has provided data on monitoring antimicrobial resistance in food and animals
- The EMA has provided data obtained from Member States on antimicrobial consumption in animals (ESVAC data).

Content of the report (1)

- Description of the existing monitoring/surveillance data
- Reporting and limitations of the data
- Complexity of addressing the link between consumption and resistance. Overview of use of antimicrobials in animals and humans
- Which AMs are used – comparison humans *vs.* animals

Content of the report (3)

- Comparison of sales and resistance in animals
- Comparison of antimicrobial use and resistance in humans
- Identification of critical points for integrated analysis of antimicrobial consumption and resistance obtained from monitoring/surveillance data
- Selected combinations of classes (or subclasses) of antimicrobials and bacteria

Key points

- Collaboration of the 3 Agencies on sales and resistance to antimicrobials.
- The report will identify areas for further collaboration and improvement.
- To be published at the end of 2014
- On going project, be patient!

Thank you
for
your attention!