Scientific Network for Zoonoses Monitoring Data
Minutes of the 4th specific meeting on Antimicrobial Resistance data reporting

Held on 18-19 March 2015, Parma
(Agreed on 1st May 2015)

Participants

- **Network Representatives of Member States (including EFTA Countries):**

Country	Name
Austria	Peter Much
Belgium	Luc Vanholme
Bulgaria	Hristo Daskalov
Cyprus	Despoina Theodoridou
Croatia	Gordan Kompes
Czech Republic	Tomas Cerny
Estonia	Jelena Sõgel
Finland	Suvi Nykasenoja
France	Sophie Granier
Germany	Bernd-Alois Tenhagen
Greece	Tzani Myrsini
Hungary	Katalin Czeibert
Iceland	Vigdís Tryggvadóttir
Ireland	Eileen O'Dea
Ireland	Caroline Garvan
Italy	Antonio Battisti
Latvia	Tatjana Ribakova
Lithuania	Asta Pereckien
Luxembourg	Carlo Geirges
Malta	Jessica Gauci
Netherlands	Olaf Stenvers
Norway	Berit Heier
Poland	Kinga Wieczorek
Portugal	Maria Fatima Cordeiro Silva
Portugal	Lurdes Clemente
Romania	Ioana Neghirla
Slovakia	Andrea Brtkova
Slovenia	Maja Kokalj
Spain	José Luis Sáez Llorente
Spain	Emma Martín Denia
Sweden	Bjorn-Olof Bengtsson
Switzerland	Sabina Buettner
Switzerland	Kay Torriani
United Kingdom	Christopher Teale

- **Hearing Experts:** NA
- **European Commission:** NA
- **EFSA:**

Biological Hazards and Contaminants (BIOCONTAM) Unit: Pierre-Alexandre Belœil (Chair), Frank Boelaert* and Krisztina Nagy.

Evidence Management (DATA) Unit: Mary GILSENAN (HoU)*, Anca-Violeta Stoicescu (Scientific secretary), Cristina Rodríguez Pinacho, Doreen Dolores Russell* and Enikő Varga*

*(*attended only partly to the meeting)*

Assessment and Methodological Support (AMU) Unit: Jane Richardson and José Cortinas Abrahantes who participated in agenda point 5.2.

Corporates Services (CORSER) Unit: Cinzia Percivaldi who participated in agenda point 6.1.

- **Others:** Hasselt University: Marc Aerts who participated in agenda point 5.2.

1. Welcome and apologies for absence

The Chair welcomed the participants to the Scientific Network for Zoonoses Monitoring Data, the 4th specific meeting on Antimicrobial Resistance data reporting. Apologies were received from Birgitte Helwigh – Denmark representative.

2. Adoption of agenda

The agenda was adopted without changes. No further items were added.

3. General introduction

Pierre-Alexandre Belœil gave a general introduction on antimicrobial resistance (AMR) monitoring activities at the European Union (EU) level, underlining the enhanced collaboration between EU Agencies (e.g. European Centre for Disease Prevention and Control (ECDC) and European Medicines Agency (EMA)). The preparatory activities of the Member States (MSs) and EFSA paved the way for proposing and adopting new EU legislation (Commission Implementing Decision 2013/652/EU) on harmonised monitoring and reporting of AMR in animals and food. The main provisions of the new legislation, which applies from 1 January 2014, were also summarised.

EFSA shortly recalled the preparatory work in support of MSs' implementation of the new monitoring and reporting of 2014 data (e.g. publication of Technical specifications on randomised sampling for harmonised monitoring of AMR, training of MSs on isolate-based data reporting, etc.), with a view to make this process as smooth as possible.

The main aim of the 4th Network meeting on AMR monitoring was therefore to present and discuss the past and future activities related to AMR.

4. Topics for discussion (first day)

4.1. Publication of 2013 EU Summary Report on AMR

Pierre-Alexandre Belœil briefly presented the main findings on AMR from humans, food and animals from the 2013 EU Summary Report (EUSR) on AMR. It was underlined that, for the first time, similar criteria were used by ECDC and EFSA to interpret microbiological resistance in humans, animals and food, enhancing comparability between human and animal data on AMR. Microbiological resistance was assessed using

epidemiological cut-off (ECOFF) values in animal and food isolates and, where possible, in human isolates.

4.2. Feedback on the reporting season of 2013 AMR data and supporting activities of EFSA

Cristina Rodríguez Pinacho presented an update on the number of MSs and non-MSs that used the Data Collection Framework (DCF) to submit AMR data in the period 2011-2013. Isolate-based data reporting by DCF worked well and no major problems were encountered during the 2014 reporting season. The EFSA's supporting activities (e.g. trainings on using the Excel mapping tool developed by EFSA) were also presented and MSs gave positive feedback on the support offered by EFSA during 2013 data reporting.

4.3. Joint ECDC/EFSA/EMA analyses of the relationship between antimicrobial resistance and consumption in humans, animals and food

Pierre-Alexandre Belœil briefly presented the results from the first joint ECDC/EFSA/EMA report on the analysis of the relationship between antimicrobial consumption and resistance in humans, animals and food, published in January 2015. Combined 2011 and 2012 available data on antimicrobial consumption and corresponding resistance in animals and humans in EU MSs and reporting countries were analysed using logistic regression models for selected combinations of bacteria and antimicrobials. A summary indicator of the proportion of resistant bacteria in the main food-producing animal species was calculated for the analysis, as consumption data in food-producing animals were not available at the species level. The consumption of several antimicrobials extensively used in animal husbandry was higher in animals than in humans, while consumption of antimicrobials critically important for human medicine was higher in humans. In both humans and animals, positive associations between consumption of antimicrobials and the corresponding resistance in bacteria were observed for the majority of the combinations investigated. In some cases, a positive association was also found between antimicrobial consumption in animals and resistance in bacteria from humans. It was highlighted that the results should be interpreted with caution owing to current data limitations and the complexity of the AMR phenomenon, which is influenced by several factors apart from antimicrobial consumption. Discussions focused on how to address current data limitations for analyses.

4.4. Milestones for the production of the 2014 EU SR on AMR

Krisztina Nagy presented the timelines for 2014 AMR data validation and consultation, which, overall, are brought forward by one month as compared with those for 2013 EUSR on AMR. It was agreed with MSs that the opening of reporting systems for 2014 data reporting is on 1 April 2015, while the legal reporting deadline is 31 May 2015. For the first time, AMR data submitted through the DCF will not be migrated to the Web Application to generate aggregated data. Instead, they will be validated through the reports created in Microstrategy.

EFSA is to implement a one-step data validation. Therefore, on 13 May 2015 already all occurrence resistance tables will be produced for the first time and displayed to MSs for information on their progress made on data reporting. On 3 June 2015 all occurrence resistance tables will be created for the second time and multi-drug resistance tables will be created for the first time; after this date MSs will have four weeks to amend their data, until 3 July 2015. EFSA will thereafter validate all data submitted by 3 June 2015 (against a number of criteria) and provide feedback to MSs, if needed, by sending letters requesting clarifications and/or amendments, on 12 June 2015. After 3 July 2015 data cannot be changed any more, as the data extracted on this date will be used to draft the summary report.

It was agreed that the report consultation period will be extended to three weeks (from 27 November 2015 until 11 December 2015). The 2014 EUSR on AMR needs to be published by January 2016.

MSs were supportive and positive with regards to the timelines set and asked EFSA to strictly adhere to those, thus enabling MSs to plan the work at national level.

4.5. 2015 reporting of 2014 AMR data

Anca Stoicescu presented the Antimicrobial Resistance (AMR) isolate-based data model for the submission of 2014 AMR data, including a summary of the fields and catalogues of the model. Compared with the previous year, adaptations have been made to account for the provisions in the new Commission Decision 2013/652/EU on harmonised AMR monitoring and reporting. All alterations made to the data model were presented to MSs in detail. In particular, the status of some fields has changed from optional to mandatory. An updated version of the Excel mapping tool developed by EFSA was presented, highlighting that the transmission of isolate-based data through the DCF is mandatory for the reporting of 2014 data.

Further to the discussions with the MSs' representatives, it was agreed that EFSA will provide "proxy" epidemiological cut-off values (ECOFFs), to be used only for data reporting purposes for the substances for which harmonised ECOFFs have not been presented in the legislation. In any case, it would be desirable that quantitative minimum inhibitory concentration (MIC) data reported by the MSs be used to construct MIC distributions to assist in determining the values of missing EUCAST ECOFFs.

There were discussions on what is considered 'a dataset submitted on time' and on the question of possible discrepancies in the number of isolates tested reported in the financial report to the EC versus the number of isolates accepted and validated in the EFSA database/EUSR on AMR. It was acknowledged that these points should be further addressed and discussed at the next EC Working Group (WG) meeting in Brussels and that EFSA will inform the EC in that sense prior to the EC WG meeting.

MSs were requested to anticipate the 2014 data collection and validation activities, to submit data subset by subset during the month of May, prioritising the submission of important subsets of data, and communicate as soon as possible to EFSA any problem related to data reporting/submission, so that any issue may be solved before the end of May.

A tour de table was organised on the MSs'/reporting countries' intentions regarding AMR data intended to be reported (combinations of zoonotic and indicator bacteria, animal populations, food categories and sampling stage) giving a clear overview of the data expected to be submitted.

5. Topics for discussion (second day)

5.1. Draft plan of analysis for the 2014 EUSR on AMR

Pierre-Alexandre Belœil presented a proposal for the plan for 2014 data analysis. The 2014 EUSR on AMR is the first EUSR on AMR to be based on AMR data collected and reported in accordance with the provisions of Decision 2013/652/EU. Compared with the plan of analysis of the 2013 EUSR on AMR, complementary aspects should be covered to account for the new types of data collected in 2014, although it is proposed that the general approach remains the same. The main objectives for the drafting of the 2014 EUSR on AMR are: 1. to account for new legislative provisions and new data collected; 2. to maintain follow-up of national situations, if possible; 3. to enhance comparison with human data; 4. to keep the report as concise as possible.

The 2014 EUSR on AMR will primarily focus on AMR data to be reported mandatorily for the year 2014 and therefore, on AMR data on bacteria from poultry. Nevertheless, if a

sufficient number of voluntary AMR data is available, it may worth analysing and including them in the 2014 report.
The general analysis approach remains similar to that applied for the previous reports. Descriptive analyses of the AMR occurrence will be performed per combinations of bacteria-animal populations/food categories. AMR will be interpreted according to ECOFFs presented in the legislation. Multi-drug resistance and co-resistance will be analysed. Some slight amendments to the approach accounting for the new data collected (in particular, new substances and new dilution ranges) were proposed as follows: 1. tables on 'occurrence of resistance' (partly in Appendices); 2. construction of minimum inhibitory concentration (MIC) distributions for sulfamethoxazole and azithromycin to help establish appropriate ECOFFs; 3. temporal trends graphs (ECOFFS of the legislation/important substances); 4. spatial distributions (most important substances); 5. MDR: full susceptibility/MDR/co-resistance to 'CIAs' (ECOFFs and clinical breakpoint); 6. data on ESBL/AmpC; 7. 'main findings' further developed and narrative texts shortened.

5.2. Development and application of statistical methodology for the analysis of the phenomenon of multi-drug resistance in the EU: demonstration of analytical approaches using antimicrobial resistance isolate-based data

Marc Aerts from Hasselt University updated the Network on the objectives and statistical methodologies proposed in the framework of an EFSA procurement project on 'Development and application of statistical methodology for analysis of the phenomenon of multi-drug resistance in the EU: demonstration of analytical approaches using antimicrobial resistance isolate-based data'. The overall objective was to provide an in-depth study of the phenomenon of multi-drug resistance in *Salmonella* serovars, *Campylobacter* species, indicator *E. coli*, and enterococci species. The proposed methodology and some preliminary analyses based on reported data from isolates of *E. coli* in broilers, for the years 2010-2013, were shown. A corresponding External Scientific Report from this project is scheduled to be published after the consultation of the Network Members in 2016.

5.3.1. Livestock associated Meticillin-resistant *Staphylococcus aureus* in Germany – the current situation

Bernd-Alois Tenhagen, German representative, presented some aspects related to the livestock associated (LA) meticillin-resistant *Staphylococcus aureus* (MRSA) in Germany. The presentation focused on the prevalence of MRSA in livestock in Germany, the carry-over of MRSA along the food chain, and the consequences for public health. In order to evaluate the risk posed to humans and to assess possible routes of transmission, several studies have been undertaken to estimate the prevalence of LA-MRSA in Germany and it was concluded that LA-MRSA is widespread. Currently, there is no evidence of the spread of MRSA into the human population via food; occupational exposure is a relevant issue in primary production. MRSA types differ substantially between humans and animals.

5.3.2. A longitudinal field trial assessing the impact of feeding waste milk

Christopher Teale, United Kingdom representative, presented the results of a longitudinal field trial carried out on a farm known to harbour cefotaximase (CTX-M)-positive *Escherichia coli*, in order to assess the impact of feeding waste milk containing antibiotic residues on the prevalence of these bacteria in the faeces of calves. The findings indicated that feeding with waste milk containing antibiotic residues increased the amount of resistant bacteria shed in the faeces. Shedding of CTX-M-positive *E. coli* persisted longer in calves fed with waste milk containing antibiotic residues, and persisted after weaning.

6. Any Other Business

6.3. EFSA's 2nd Scientific Conference

Cinzia Percivaldi presented the programme of a three-day EFSA Scientific Conference that will take place in October 2015 in Milan in connection with the main theme 'Feeding the Planet, Energy for Life' of the 2015 World EXPO. She also presented the role of EFSA and the broad interest in this event. The limitation in available places was highlighted; however, MSs were encouraged to participate in this conference. The support initiatives for young scientists were also mentioned.

6.4. Dates for next meetings

The dates for 2015 meetings were presented, e.g. Zoonoses and AMR meetings: 11—13 November 2015. EFSA proposed that the Scientific Network for Zoonoses Monitoring Data – 5th specific meeting on IT data reporting - to be held on 7–8 December 2015, to provide trainings on electronic data transmission using the Excel Mapping Tool.

7. Conclusions

An overview of the main discussions and agreements reached during the meeting was presented. The Chair requested the Network members to complete the form on the expected 2014 AMR data and the meeting evaluation form and to submit ideas for further discussion points at the future Network meetings.

8. Closure of the meeting

The Chair thanked the Network members for an intensive and productive meeting, which was closed at 13:00 as foreseen in the agenda.