18/12/2015

European Union comments on

CL 2015/21-CAC:

Codex Work on Antimicrobial Resistance (AMR)

Mixed Competence
European Union Vote

The European Union and its Member States (EUMS) welcome the Circular Letter and the opportunity to submit comments on several aspects of the existing Codex Standards. Fighting Antimicrobial Resistance (AMR) has long been and still is a priority for the EUMS.

The EUMS have being promoting the prudent use of antimicrobials for many years. The EU has adopted comprehensive legislation covering the authorisation, distribution, marketing, advertising, prescription use and pharmacovigilance of veterinary pharmaceutical products (VMPs) including antimicrobials. A revision of the legal framework for veterinary medicinal products is ongoing at the EU level[1]. Amongst others the purpose of this revision will be to have an improved response to antimicrobial resistance related to the use of veterinary medicines.

Acknowledging that the use of antimicrobials can result in the development of AMR and that the risk increases if such antimicrobials are used inappropriately, the EU launched a five-year EU Action Plan to combat AMR in 2011 in line with relevant International Organisations recommendations and guidelines. This EU Action Plan involves all sectors and aspects of AMR – public health, food safety, bio-safety, environment, research and innovation, international cooperation, animal health and welfare. It aims to further strengthen the prevention and control of AMR across all sectors, while securing the availability of new antimicrobial agents.

Now, nearly four years since the EU Action Plan was launched, important progress has been made in Europe and several EUMS have implemented action plans at national level. Furthermore, the Action Plan has certainly been instrumental in increasing international awareness of the issue. The evaluation of the Action Plan was launched recently. This should lead to make informed decisions on what additional measures could and should be taken to combat AMR in the EU and possibly across the world. The Circular Letter has come at a critical point in time in our assessment of our action within the EU. The EUMS will be pleased to offer additional comments, following the evaluation of the above-mentioned Action Plan, in the coming months.

1. Review the extent to which Code of Practice to Minimise and Contain Antimicrobial Resistance (CAC/RCP 61-2005) and Guidelines on Risk Analysis of Foodborne Antimicrobial Resistance (CAC/GL 77-2011) have been adopted and applied.

The EUMS consider the two documents, CAC/RCP 61-2005 and CAC/GL 77-2011, to be highly relevant and important tools in developing strategies to contain antimicrobial resistance and perform risk analysis of foodborne AMR, respectively. Both documents have been

[1] Proposal for a Regulation of the European Parliament and of the Council on veterinary medicinal products http://ec.europa.eu/health/veterinary-use/rev_frame_index_en.htm

incorporated into EU law and into EUMS national legislation and are being applied to a large extent at the EU level.

The EUMS have acted within the remits of the EU legislation, and with their own initiatives to fight AMR. Some have in place national action plans to reduce the use of antimicrobials, encourage their prudent use, increase their surveillance and monitoring in the various stages of marketing, distribution and administration. Training all actors involved in the distribution and administration chain seems equally part of the national plans. National plans also provided for closer collaboration within all the national administrations involved, in particular between the Ministries of Health and Agriculture.

Some examples of measures taken by EUMS can be found in Annex 1.

The EUMS would like to offer the following comments:

Code of Practice to Minimise and Contain Antimicrobial Resistance (CAC/RCP 61-2005)

Authorisation

All VMPs placed on the market in the EU are subject to an authorisation process and must be granted a Marketing Authorisation (MA) in accordance with Directive 2001/82/EC as last amended by Regulation (EC) No 596/2009, and Regulation (EC) 726/2004 as last amended by Regulation (EU) No 1027/2012. Implementing guidelines that facilitate the smooth running of the authorisation process in the EU are in place.

In accordance with EU legislation, any VMP intended for use in food-producing species may only be prescribed by a veterinarian or a suitable qualified person.

Each product on the market has a Summary of Product Characteristics (SPC) which details the authorised indications, dose regimen and warnings to ensure responsible use of the product with regards to the risk to develop AMR.

The use of antimicrobials in animal feeding stuffs as growth promoters has been banned within the EU since 2006 (Regulation (EC) 1831/2003 on additives for use in animal nutrition).

Off-label use is only permitted in exceptional circumstances and in accordance with a well codified procedure referred to in the relevant legislation as "cascade" procedure**.** These requirements are strengthened in the ongoing review of the legislation on VMPs (RVMPs), by introducing restrictions for off-label use of antimicrobial drugs. Further guidance is provided in the Commission guidelines on the prudent use of antimicrobials in veterinary medicine (GPUA)[2] e.g. in relation to critically important antimicrobials (CIAs) and oral administration.

The RVMPs also provides for a possibility to refuse a MA of a VMP if this antimicrobial is reserved for treatment of certain infections in humans. It also lays down specific provisions on official controls which should contribute to combat the manufacture, distribution and use of illegal/counterfeit products.

[2] http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX%3A52015XC0911(01)

Quality Control of veterinary antimicrobial drugs

Quality control of veterinary medicines in compliance with good manufacturing practice are fully implemented in the EU and regulated by Directives 2001/82/EC and 1003/94/EC.

The conditions for mixing veterinary medicines into feed, its marketing and use across the EU are also regulated in the EU (Directive 90/167/EEC).

Assessment of efficacy

The European Medicines Agency through Scientific Committees, namely the Committee on Veterinary Medicinal Products (EMA/CVMP) has recently revised its guideline for the demonstration of efficacy for veterinary medicinal products containing antimicrobial substances[3].

The requirements for combinations of antimicrobials are outlined in the EMA/CVMP guideline for fixed combination products[4].

Assessment of the potential of veterinary antimicrobial drugs to select for resistant microorganisms

Detailed information on classes or groups of antibiotics ranked according to their relative importance for their use in human medicine, in particular considering whether these antibiotics are essential to treat multidrug-resistant infections, can be found in the EMA/CVMP scientific advice on the impact on public health and animal health of the use of antibiotics in animals. As a result a categorisation of the WHO CIAs was prepared based on their degree of risk to man due to resistance development following use in animals[5]. Factors like the antimicrobial class, the hazard of zoonotic relevance, probability of resistance transfer and use in veterinary medicine were taken into account.

Establishment of ADIs (acceptable daily intake), MRLs (maximum residue limit), and withdrawal periods for veterinary antimicrobial drugs

Fully implemented in line with current EMA/CVMP and VICH guidelines.

Establishment of a SPC for each veterinary antimicrobial drug for food-producing animals

Fully adopted by EMA/CVMP as detailed in its revised guideline on the SPC for antimicrobial products

Surveillance

Pharmacovigilance covers all VMPs in accordance with Directive 2001/82/EC and Volume 9B of Guidelines on Pharmacovigilance for Medicinal Products for Veterinary Use[6]. The system is used to collect the relevant information for the surveillance of veterinary medicines with particular reference to adverse reactions in animals (which also include lack of expected efficacy), in humans and its scientific evaluation.

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3 http://www.ema.europa.eu/ema/doc_index.jsp?curl=pages/includes/document/document_detail.jsp?webContentId=WC500183773&murl=menus/document_library/document_library.jsp&mid=0b01ac058009a3dc

4 http://www.ema.europa.eu/ema/index.jsp?curl=pages/regulation/general/general_content_000380.jsp&mid=WC0b01ac058002ddc4

5 http://www.ema.europa.eu/docs/en_GB/document_library/Other/2014/07/WC500170253.pdf

6 http://ec.europa.eu/health/documents/eudralex/vol-9/index_en.htm

Decision 2013/652/EU on the monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria, EFSA technical specifications on sampling and on analysing/reporting of data, and analytical protocols developed by the EU Reference Laboratory for AMR have provided the basis for harmonised provisions for the surveillance of antimicrobial resistance in the food chain. These are in place as of the 1st of January 2014.

The above-mentioned Decision lays down minimum requirements for the harmonised monitoring of the resistance to the most relevant antimicrobials from a public health perspective. This, equally provides for sampling from certain food-producing animal populations and certain food, analysis of the isolates and interpretations of the results, together with specific requirements for the harmonised monitoring and reporting of ESBL-, AmpC and carbapenemase-producing bacteria in certain animal populations and in certain food types.

In addition, EMA started in 2010 the project "European Surveillance of Veterinary Antimicrobial Consumption" (ESVAC) to collect data on the use of antimicrobials in animals in the EU. EMA publishes a report on annual basis after having carefully assessed the data submitted. The last report has been recently published. These initiatives have been further strengthened in the ongoing RVMPs that provides for compulsory collection of data on sales and use of antimicrobial drugs. The Commission guidelines on the prudent use of antimicrobials in veterinary medicine provide, inter alia, that pharmaceutical industry should cooperate with the competent authorities by providing information on veterinary sales.

The European Centre for Disease Prevention and Control (ECDC) is responsible for the European Antimicrobial Resistance Surveillance Network (EARS-Net) and the Food and Waterborne Diseases Network (FWD-Net). These are the main EU surveillance system for AMR in humans. Data reported from the network serve as important indicators on the occurrence and spread of AMR in European countries.

In 2015, the ECDC, EFSA and EMA have published the first joint report on associations between consumption of antimicrobials in humans and food-producing animals, and antimicrobial resistance in bacteria from humans and food-producing animals, using 2011 and 2012 data currently available from their relevant five EU monitoring networks.[7]

When application for authorisation concerns antimicrobial drugs, the review of the legislation on VMPs foresees a possibility to require MA holders to conduct post-authorisation studies in order to ensure that the benefit-risk balance remains positive in relation to the development of AMR.

Distribution

Requirements on wholesale and retail distribution of VMPs, including antimicrobial drugs, are laid down in Directive 2001/82/EC. The RVMPs introduces more stringent requirements, e.g. by requiring prescription for all antimicrobials and imposing special conditions for their retail by veterinarians.

[7] http://ecdc.europa.eu/en/publications/Publications/antimicrobial-resistance-JIACRA-report.pdf

Advertising

Requirements on advertising of VMPs, including antimicrobial drugs, are laid down in Directive 2001/82/EC. The RVMPs also establishes prohibition of advertising of prescription-only medicines (which includes all antimicrobials for veterinary use) to persons which are not permitted to prescribe/supply veterinary medicines. Provisions on advertising limitations are also included in Commission guidelines.

Training

The Commission guidelines for the prudent use of antimicrobials in veterinary medicine include provisions for training of farmers and veterinarians.

Incentive research

Various research activities are ongoing under the framework of the Commission five-year Action Plan. Industry participates in research activities under Action Plan.

The above-mentioned guidelines provide that pharmaceutical industry should focus on certain development (research) activities.

The RVMPs provides incentives for development of new antimicrobials (through extended protection of technical documentation).

Collection and destruction of unused VMPs

Directive 2001/82/EC and the RVMPs require EUMS to ensure appropriate collection systems for unused or expired veterinary medicines.

Responsibilities of veterinarians

The requirements for prescribing VMPs are provided for by Directive 2001/82/EC, and further strengthened in the RVMPs: e.g. by introducing a restriction for prescribers to retail antimicrobial drugs only to animals under their care and by detailing minimum information to be contained in a veterinary prescription. Further guidance is provided in the Commission guidelines (e.g.: prescriber's responsibilities for inter alia appropriate use including the choice of the most appropriate antimicrobial drug and conditions for prophylactic and metaphylactic use). These equally promote the development of national guidelines and also contain species-specific advice on prudent use. Such guidelines have already been developed and implemented.

Requirements for record keeping by veterinarians are provided in Directive 2001/82/EC, in the ongoing review of the legislation on VMPs (e.g. concerning off-label use and provision of services/treatments in another EUMS) and in Directive 96/23/EC.

Under Directive 2001/82/EC, EUMS may impose specific requirement on veterinarians for reporting adverse reactions and shall take appropriate measures to encourage reporting of adverse events by healthcare professionals (the latter is also provided by the new draft legislation on VMPs). Commission's guidelines provide for reporting (within the existing pharmacovigilance system) of the lack or reduced efficacy of an antimicrobial product to the authorities without delay.

In addition, Directive 96/23/EC stipulates that EUMS shall ensure that veterinarians monitoring farms also monitor the rearing conditions and the treatment records referred to in that Directive .

Guidelines on Risk Analysis of Foodborne Antimicrobial Resistance (CAC/GL 77-2011)

The EUMS consider that the Codex Guidelines are a useful tool to perform risk analysis on AMR.

The EUMS follow the Codex principles on risk analysis when assessing the risk to human health from foodborne AMR microorganisms with a view to establish its appropriate risk management strategies to control risks associated to AMR. To these end several actors in the EUMS are closely cooperating.

Risk Assessment for placing on the market of VMPs authorised for use at European level is carried out by EMA/CVMP, convened for that purpose. The European Food Safety Authority (EFSA) provides independent scientific support and advice to risk managers on the risks to human and animal health related to the possible emergence, and spread of AMR in the food chain and in animal populations and it may provide scientific advice on control options. In so doing, EFSA follows closely Codex principles and guidance on risk assessment. . So far EFSA has carried out risk assessments on antimicrobial resistance in the food and feed chain, relevant work on the public health significance of MRSA in animals and food, and on ESBLs/AmpCs and Carbapenemase–producing microorganisms in the food chain. The safety of animal feed additives, including the risks related to antibiotic resistance where micro-organisms are involved, is also assessed by EFSA.

The EUMS together with the Commission and other EU actors are responsible for choosing the best available AMR management options. Information on the EU legislation and guidelines as well as some examples of measures adopted by the EUMS have been provided in response to other questions.

Foodborne AMR risk communication activities are integrated into all phases of risk analysis.

2. Identify major capacity development gaps and other challenges faced in adopting and applying CAC/RCP 61-2005 and CAC/GL 77-2011

As AMR poses a wide spread risk to the environment, animal and public health spheres, it is a challenge to ensure engagement of all the actors involved. For example, one of the gaps to be addressed is the lack of information regarding the responsibilities of farmers.

The EUMS also note that, collecting data on the actual use of antimicrobials per animal species is still a major challenge. Surveillance of use of antimicrobial agents and AMR is a key issue. Harmonised monitoring systems are essential to improve the quality and comparability of AMR data within countries and animal species, to adequately follow trends and to analyse the impact of the measures taken.

The major challenge associated with the application of CAC/GL 77-2011 lies with significant data gaps and uncertainties around the risk factors. It seems for example rather difficult to find and collect data on dose-response relationship for the hazard characterisation. As there are large data gaps and much uncertainty around many of the risk factors leading to AMR a qualitative approach to the risk assessment could be considered.

The categorisation of the factors on the exposure pathway contained in Appendix 3 "Examples of qualitative AMR risk assessment" appears to be complex, given the current level of knowledge. The qualitative scoring statements, e.g.: negligible, moderate, high,

proposed under the headings Exposure Assessments and Hazard Characterisation, do not seem to be clearly defined and appear somewhat arbitrary.

In order to give a more precise estimation of the overall risk to public health, a quantitative risk assessment approach would be preferred if the requisite data were available. Because of substantial data gaps, this is often not possible and a qualitative approach has to be adopted. In addition, there will be uncertainty and variability associated with each factor/parameter identified. The influence these factors may have on the reliability of the overall MRA should therefore be evaluated.

Due to the complexity of this matter capacity building should be further addressed.

3. Review the existing CAC/RCP 61-2005 and CAC/GL 77-2011 and evaluate the need for their update, taking into consideration the developments in the area over the past 10 years.

In light of the experience gathered so far in the implementation of international standards as well as EU legislation and taking into account latest developments related to AMR the EUMS would like to support the revision of CAC/RCP 61-2005. Some of its provisions could be strengthened and further clarified to take into consideration new evidences related to AMR.

The EUMS would like to offer some preliminary comments:

The EUMS consider essential to stress further the prudent and responsible use of AMR. Member countries should be encouraged to establish arrangements to combat antibiotic resistance and/or have in place coherent action plans. An essential element to be also taken into account is the reinforcement of the restriction on the authorisation and use of growth promoters. Likewise, the preventative use of antibiotics should be reduced and circumstances under which prophylactic or metaphylactic treatments are acceptable should be clearly defined. The possibility to restrict off label use of certain antimicrobials or classes of antimicrobials could be considered.

The EUMS are of the view that the strengthening and harmonization of surveillance and monitoring systems are essential. An adequate surveillance and monitoring of the use of antimicrobials and AMR in the food and feed chain is a crucial component of the strategy to combat AMR, and helps gathering essential data for the development of future actions.

The sections on "Assessment of efficacy" and "Assessment of the potential of veterinary antimicrobial drugs to select for resistant microorganisms" should be updated. Other areas where further clarification and update would be needed concerns the "Establishment of a summary of product characteristics for each veterinary antimicrobial drug for food-producing animals".

Provisions on Training and Research could also be further developed.

The EUMS consider that, by and large, the Codex Guidelines in **CAC/GL 77-2011,** to be adequate to the task at hand, balanced and still actual and relevant. The EUMS have thus not identified an urgent need for its update. However, in consideration of recent developments in science and in risk analysis, the EUMS would favour a wider and clearer scope and some of the sections could be clarified, taking into account the experience gathered in the RA of VMPs and the most recent scientific developments in order to be able to provide adequate risk management options. Some improvements could also be made on Appendix 3, by better defining the scoring statement, and/or identifying which of

the risk factors singled out in appendix 2 should carry most weight.

The EUMS consider that if Codex membership support the revision of the existing standard/s on AMR or a new task is identified it will be appropriate to re-establish the *ad hoc* Intergovernmental Task Force on AMR.

4. Consider the need to request FAO, WHO and OIE to convene expert meetings to review any new scientific evidence related to the AMR in the food chain including risk management options for the containment of AMR in support of any revision of Codex texts.

As AMR has come to the forefront in recent years and as international organisations, national authorities and scientific bodies have acquired a wealth of knowledge on the subject, the EUMS consider appropriate to convene expert meetings to review new available scientific evidence and advise, where necessary, on pertinent risk management options. In light of the complexity of AMR and the multipronged actions that need to be undertaken to combat its advance, the EUMS would welcome the participation of experts in public and animal health and welfare and in food safety and all fields deemed relevant to complete the task at hand.

Annex I

Austria

Activities relating to antimicrobial resistance (AMR) carried out by the Austrian Federal Ministry of Health

Work in the human and veterinary medicine sectors is coordinated by the Federal Ministry of Health's AMR platform. This platform provides a forum for discussion of the annual national AURES reports on antimicrobial resistance and the work of the various sectors involved. Austria's joint national action plan on antibiotic resistance (NAP-AMR) has been in place since 2013. Its stated goal is to promote general awareness and understanding, as well as joint action:

Solutions to diminish the problem of resistance must include measures relating to both outpatient and inpatient l care (general practitioners, hospital facilities), in addition to the veterinary and food sectors.

The primary objective must be a lasting reduction in the emergence and spread of antimicrobial resistance. This requires proper use of anti-infectives and rigorous hygiene.

Strategic objectives include the coordination of activities, the reinforcement of surveillance networks, the implementation of measures to prevent and combat the spread of resistant pathogens by providing the necessary structures, and the promotion of prudent use of anti-infectives.

Ongoing information campaigns must be put in place to raise public awareness of the risks posed by antimicrobial resistance and its consequences for public health.

Authorisation and market surveillance of proprietary medicinal products (for human and animal use) by the Austrian Federal Office for Safety in Health Care and other licensing authorities in Europe:

In the framework of the authorisation procedure for proprietary medicinal products (including proprietary antimicrobial products), the experts at each of the competent licensing authorities examine the effectiveness, safety and quality of the proprietary medicinal product for which the authorisation has been requested and decide based on the available risk-benefit balance whether to grant an authorisation. When assessing proprietary medicinal products for animals, the environmental risk is also taken into account.

Authorisation is followed by proactive monitoring of the proprietary medicinal products (pharmacovigilance).

The Federal Ministry of Health is addressing the challenge of antimicrobial resistance and has already put in place some important measures:

Under the Austrian national initiative on tackling antimicrobial resistance (NI-AMR) the main challenges in the area of human medicine have been addressed by five working groups (Surveillance; Hygiene and Infection Prevention; 'Antimicrobial Stewardship' (= the rational use of antibiotics); Diagnosis of Infectious Diseases; and Reporting and Information). The groups have called on the knowledge and experience of an Austria-wide team of experts from a range of disciplines and professions, comprising both practitioners and academics. The findings of these working groups in the human medicine area are presented in the 'human medicine' section of the 'National Action Plan on Antimicrobial Resistance (NAP-AMR). The section of the action plan entitled 'Measures from the veterinary medicine and environment discipline' presents the strategy on fighting antimicrobial resistance and maintaining the effectiveness of antibiotics for human and animal use in that subject area.

Austria's National Action Plan on Antimicrobial Resistance (NAP-AMR) reflects the European and international objectives on informed use of antibiotics. It comprises human medicine concerns as well as veterinary activities, animal husbandry, the food chain and the environment.

The goal is to secure a lasting reduction in the emergence and spread of antimicrobial resistance, so as to maintain the effectiveness of available antimicrobial substances and enhance the quality of antimicrobial therapies.

Measures already adopted in the human medicine area:

The first edition of the PROHYG (= Organisation and strategy on hospital hygiene) programme was published back in 2002. A new version was subsequently launched by the Federal Ministry of Health (BMG) to take account of developments. 'PROHYG 2.0' was compiled under the auspices of the BMG and finalised in 2011 by an Austria-wide team of experts from a range of disciplines and professions, comprising both practitioners and academics, to support the hygiene teams in hospitals. The work programme implementing the national target-based management contract (B-ZV) on health includes the task of developing a standard based on PROHYG 2.0. The draft standard is currently with the competent authorities under the B-ZV awaiting a decision

In 2003 the BMG established the National Reference Centre for Nosocomial Infections and Antimicrobial Resistance (NRZ). It is based in Vienna and Linz. In addition to offering practical, technical assistance the centre provides a full range of information material. We would particularly highlight the guide for doctors and microbiological laboratories on recognition, control and treatment of multiresistant bacteria ('CPE guide' on carbapenemase-producing enterobacteriaceae).

Since 2003, the Austrian Nosocomial Infections Surveillance System (ANISS) has been monitoring nosocomial infections throughout the country and comparing the findings with the situation across the EU. Since the system's inception the number of supervised operations of patients has significantly increased, as has the range of indicator operations. Website: Universitätsklinik für Krankenhaushygiene und Infektionskontrolle (university hospital specialising in hospital hygiene and infection control).

Austria has been a member of the European Antimicrobial Resistance Surveillance Network (EARS-Net) and the European Surveillance of Antimicrobial Consumption Network (ESAC-Net) for over 10 years:

40 Austrian microbiological laboratories (as on 31.12.2014) have participated voluntarily in the EARS-Net data reporting exercise (39 of them have provided data). In all, data was collected for EARS-Net in 2014 from 142 Austrian acute care hospitals and 14 other Austrian hospitals.

Since 2001, Austria has been providing data to ESAC-Net on antimicrobial consumption. Since 1998, all data on antimicrobial consumption from Austria's general practitioners' sector has been provided by the Main Association of Austrian Social Insurance Institutions.

Since 2005, resistance data from the human and veterinary medicine areas has been published annually in the Austrian AURES reports on antimicrobial resistance. The latest AURES report (which also includes data from the previous year) is published every November on the BMG website.

In October 2010, under the coordination of the National Reference Centre, the Austrian microbiological laboratories which participate in EARS-Net began to switch to the

EUCAST (European Committee on Antimicrobial Susceptibility Testing) European standard. This switch was successfully completed in 2012. EUCAST defines European standards for determining the effectiveness of antibiotics used against bacterial infections in human medicine.

Austria is participating in the WHO hand hygiene campaign, 'Clean Care is Safer Care', has signed the corresponding statement pledging support, and holds national conferences on World Hand Hygiene Day to promote this important issue and facilitate networking among health professionals in this respect.

The great importance for patient safety of monitoring nosocomial infections and antimicrobial resistance has already been taken into account in the Federal Ministry of Health's patient safety strategy and in the 2013 federal agreement on a target-based governance system.

The annual work programmes for 2014 and 2015 under this agreement included projects on nosocomial infections, hospital hygiene and antimicrobial resistance.

Since January 2015, diagnosis and surveillance of carbapenemase-producing gram-negative bacteria in Austria has been carried out with support from the National Reference Centre in Linz.

In 2015, the Federal Ministry of Health commissioned the National Reference Centre in Vienna to conduct a point prevalence survey of nosocomial infections and the use of antibiotics. Participation in this survey was voluntary.

In 2015, the Federal Ministry of Health published 'Nosocomial infections in Austria 2013 – Compilation of national data'. This report is the first national summary report based on the data surveyed by the ANISS (Austrian Nosocomial Infection Surveillance System) and ASDI (Austrian Drug Screening Institute) networks. As well as the Austrian report on antimicrobial resistance, AURES, the Federal Ministry of Health also supports the recording of nosocomial infections for certain fields of human medicine.

The following measures have already been adopted in the area of veterinary medicine:

In May 2006, the Federal Commission for Zoonoses established a working group on antibiotic resistance, which cooperates closely with the working group on antibiotics in human medicine.

Austria's veterinary action plan to tackle antibiotic resistance was drawn up in consideration of the European Commission's action plan, the conclusions of the Council of the European Union, and the recommendations of the OIE.

Since 2014, in accordance with Commission Implementing Decision 2013/652/EU, antibiotic resistance in zoonotic and commensal bacteria has been monitored on the basis of the single national sampling plan drawn up by the Austrian Agency for Health and Food Safety (AGES). A single quantitative testing system is used (minimum inhibitory concentration), which allows international comparison of the results, with the use of epidemiological cut-off values in order to recognise resistance development early without any impact on clinical treatability. In line with the EU's harmonised sampling strategy for poultry (broilers and turkeys), antibiotic resistance monitoring in 2016 will deal with E. coli, Campylobacter jejuni and ESBL-, AmpC-, or carbapenemase-producing E. coli and their antimicrobial susceptibility. In addition, resistance tests are carried out on salmonella obtained from the control programmes for laying hens, broilers and turkeys and in accordance with Regulation (EC) No 2073/2005 in the context of self-checking of slaughterhouses. Furthermore, samples of fresh meat from broilers are collected at retail and tested for ESBL-,

AmpC- and carbapenemase-producing E. coli. Since 2005, the results of resistance monitoring have been published annually in the Austrian antimicrobial resistance report (AURES) together with the data collected in relation to human medicine.

To record the distribution of antibiotics, there is an ongoing European project on the collection of sales data, 'European Surveillance of Veterinary Antimicrobial Consumption (ESVAC)', in which Austria is participating. In veterinary medicine, data on sales of antibiotics have been collected annually in Austria since 2010.

Extension of the mass flow analysis to include universal collection of data on the quantities of antimicrobial agents used in the veterinary sector by including veterinary pharmacies. To this end, the Austrian regulation on the distribution of veterinary antibiotics (Veterinär-Antibiotika-Mengenströme-Verordnung, Federal Law Gazette II No 83/2014) entered into force on 15 April 2014, focusing on veterinary pharmacies. Purchases and dispensed quantities of veterinary antibiotics are recorded, and in a optional part it is also possible to enter the use of antibiotics on individual animals in the database set up by the Austrian Agency for Health and Food Safety (AGES). The reporting obligations of veterinary pharmacists in respect of entry and exit of veterinary antibiotics were also specified, so as to make official checks on pharmacies more efficient.

The Austrian Poultry Health Service's PoultryHealthData (PHD) database contains data on the use of antimicrobial agents in Austria for the entire poultry sector. Discussions on the further development of health monitoring within the Austrian cattle data association (Rinderdaten-Verbund), and the development of private practice management systems which meet requirements similar to those for the PHD, are very promising developments.

Guidelines on prudent use of antibiotics in veterinary medicine were drawn up and published in the summer of 2013. The aim is to enhance the provision of information to veterinarians in order to reduce the use of antibiotics by improving prophylaxis and hygiene, thereby influencing the situation in respect of resistance such that antibiotics remain effective in the future. Farm animal feed has been entirely free from antibiotic growth promoters since 2005, and this plays an important part in preventive consumer health protection. In particular, macrolides, fluoroquinolones, third and fourth- generation cephalosporins and glycopeptides, classified by the WHO as Highest Priority Critically Important Antimicrobials, should be used only in individual cases and under strict indications.

The Austrian Veterinary Health Service has existed for over 10 years. According to the objectives set out in the Veterinary Health Service regulations, a veterinary health service is a permanent institution which aims to help minimise the use of veterinary medicinal products by advising farm animal keepers and caring for animal populations. The Veterinary Health Service lays down rules on the use of medicinal products. Among other things, the reserve antibiotics approach has already been implemented. Some antibiotics which are important in human medicine can be dispensed only in limited quantities and in some cases are subject to appropriate objective diagnostic measures. In the poultry sector, an action plan for good animal health with minimal use of antibiotics has been launched, and could significantly reduce the use of antibiotics. See the Poultry Health Service's Antibiotics Monitoring Report 2015. Detailed external checks by accredited firms, commissioned by the Federal Ministry of Health, ensure compliance with the legal requirements regarding the use of medicinal products.

In Austria, checks on residues of veterinary medicinal products and hormones (lawful use of authorised medicinal products) are carried out on the basis of a national residue monitoring plan (NRKP). Live animals (cattle, pigs, poultry), fresh meat from cattle, pigs,

sheep, goats, poultry, horses, farmed game, wild-caught game and aquaculture products, milk, eggs and honey are tested for residues. Random checks on residues are carried out on slaughter animals and on meat on the basis of an annually updated plan.

Additional projects examining the use of antibiotics in animal populations have been carried out since June 2013 within the framework of a strategic partnership (VET-Austria) between the Republic of Austria, represented by the Federal Ministry of Health, the University of Veterinary Medicine, Vienna and the Austrian Agency for Health and Food Safety (AGES).

Denmark

Denmark has a very good adoption and compliance to the Codex documents CAC/RCP 61-2005 and CAC/GL 77-2011. As for CAC/GL 77-2011 Denmark has a long tradition for making risk assessment in accordance with the detailed Risk Assessment model described in the document. Also monitoring, surveillance, trend analysis and review of efforts are included in the Danish work with AMR. As for CAC/RCP 61-2005 Denmark has at very long tradition for adopting responsible use of antimicrobial drugs in food-producing animals.

Finland

The Finnish AMR strategy has focused on zoonoses and animal disease control, herd health programmes and legislation on the use of medicines in animals. Legal requirements and official guidelines aim also to promote prudent use of antimicrobials in animals.

Making profit on sales of medicines by veterinarians is banned and antimicrobials for systemic treatment subject to veterinary prescription since 1949. Systematic resistance monitoring has been carried out in Salmonella species since 1983 and Finres-Vet programme covering resistance monitoring in major zoonotic and indicator bacteria was initiated in 2002.

Indication-based recommendations for the use of antimicrobials in animals have been in place since 1995. Consumption of antimicrobials has been published annually since 1995. Detailed recommendations, such as on the use of (fluoro)quinolones in 1998 have been published when needed. Veterinarians have a legal obligation to follow the official recommendations and guidelines on the use of antimicrobials. The use of certain human last resort antimicrobials in animals was banned in 1999. Also the use of antimicrobials for salmonellosis was banned in poultry in 2006 and for swine and cattle in 2011.

A joint human and veterinary AMR task force was established in 2012 although the human-veterinary co-operation had already started in 1997.

In 2014, new legislation on the medication of animals with special emphasis on the use of antimicrobials became into force. The legislation emphasises the role of veterinarian i.e. clinical diagnosis and microbiological analyses as a prerequisite for an antimicrobial treatment. Special requirements are laid down for group treatments and recurrent infections. Rules also exist on prioritising the choice of antimicrobial for treatment and restrictions are set for the use of human critically important antimicrobials (HCIA). New legislation also gives more responsibility for herd health programmes to set criteria for responsible use and follow the use of antimicrobials in animal production units. Herd health programmes are run by the private food industry and their goal is to prevent and control contagious animal diseases and improve the health of production animals.

Awareness and education of all parties, including industry, veterinarians and animal owners, has contributed positively in tackling AMR in Finland. Cooperation between all sectors has resulted very low occurrence of animal diseases and zoonotic agents in food animal

production warranting consequently very limited need to treat animals with antimicrobials. The strict policy in using antimicrobials has prevented development of AMR.

Consumption of antimicrobials in food-producing animals has remained on relatively low level (ESVAC reports). In Finland antimicrobials are used for treatment of individual animals rather than groups, and narrow spectrum antimicrobials are in the main role. The overall resistance situation is good, in particular, in zoonotic bacteria (Finres-Vet reports) although increasing resistance is seen in some animal pathogens.

Systematic multidisciplinary actions involving all parties (human and veterinary medicine, animal industry) are necessary to promote prudent use of antimicrobials. Combatting AMR needs endurance and strong motivation of all parties, as well as, multiple actions.

France

En cohérence avec les lignes directrices européennes et internationales (Codex Alimentarius et OIE), la France est très engagée dans la lutte contre l'antibiorésistance, à travers notamment la loi n°2014-1170 du 13 octobre 2014 dénommée « loi d'avenir pour l'agriculture, l'alimentation et la forêt » et son plan d'action national pour la réduction des antibiotiques (plan EcoAntibio 2017). La loi d'avenir pour l'agriculture prévoit un encadrement plus strict de la commercialisation des médicaments, en interdisant notamment les rabais, remises ou ristournes octroyées lors de la cession d'antibiotiques vétérinaires.

Dans le cadre de la lutte contre l'antibiorésistance, la loi promeut l'usage prudent et raisonné des antibiotiques et fixe un objectif chiffré de réduction de l'usage de certains antibiotiques critiques :

Article 49 : « En vue de permettre, au plus tard le 31 décembre 2016, une réduction de 25 % par rapport à l'année 2013 de l'utilisation des substances antibiotiques appartenant à chacune des trois familles des fluoroquinolones et des céphalosporines de troisième et de quatrième générations, tous les acteurs sont sensibilisés aux risques liés à l'antibiorésistance ; les bonnes pratiques d'élevage et les bonnes pratiques de prescription et d'utilisation de ces substances sont privilégiées, ainsi que le développement des alternatives permettant d'en éviter le recours. A l'issue de cette période, une évaluation de la réduction est réalisée et un nouvel objectif est défini. »

Le plan EcoAntibio est un plan national d'action de lutte contre l'antibiorésistance. Lancé fin 2011, il vise à réduire les risques liés aux résistances microbiennes et à préserver l'efficacité des antibiotiques. Il s'agit donc, d'une part, de diminuer la contribution des antibiotiques utilisés en médecine vétérinaire à la résistance bactérienne et, d'autre part, de préserver durablement l'arsenal thérapeutique pour la médecine vétérinaire.

En terme quantitatif, le plan EcoAntibio fixe comme objectif une réduction en 5 ans de 25% de l'usage des antibiotiques vétérinaires (toutes familles confondues, critiques ou pas), en développant notamment les alternatives qui permettent de préserver la santé animale sans avoir à recourir aux antibiotiques. Cet objectif de 25% est par ailleurs repris, concernant les seuls antibiotiques critiques et pour une durée de 3 ans, dans la loi d'avenir pour l'agriculture adoptée en octobre 2014.

Le plan EcoAntibio se décline en 40 mesures, regroupées au sein des 5 axes suivants :

- Axe 1 : « Promouvoir les bonnes pratiques et sensibiliser les acteurs aux risques liés à l'antibiorésistance et à la nécessité de préserver l'efficacité des antibiotiques ». Cet axe est dédié à la formation et à la sensibilisation des éleveurs, des intervenants en élevage, des

vétérinaires et du grand public. Les filières « productions animales » et « animaux de compagnie » sont visées.

- Axe 2 : « Développer les alternatives permettant d'éviter le recours aux antibiotiques ». Ces alternatives concernent autant les domaines zootechniques et sanitaires que la recherche fondamentale.

- Axe 3 : « Renforcer l'encadrement et réduire les pratiques à risque ». Il rassemble des mesures réglementaires et de contrôle.

- Axe 4 : « Conforter le dispositif de suivi de la consommation et de l'antibiorésistance ». Ces deux suivis, déjà bien développés en France, visent à être renforcés et étendus.

- Axe 5 : « Promouvoir les approches européennes et les initiatives internationales ». L'objectif est de partager et enrichir les approches françaises.

La diminution de l'exposition aux antibiotiques observée ces dernières années semble confirmer l'impact positif des différentes actions menées en matière d'usage raisonné des antibiotiques. En 2013, l'exposition globale des animaux aux antibiotiques a diminué de 7,3 % par rapport à 2012. Et en deux ans, la réduction observée est de 12,7 %.Elle est donc pour l'instant en ligne avec l'objectif du plan EcoAntibio.

En application de la loi, un arrêté relatif aux bonnes pratiques d'emploi des médicaments contenant une ou plusieurs substances antibiotiques en médecine vétérinaire a été adopté le 22 juillet 2015. Ces bonnes pratiques d'emploi des antibiotiques s'adressent aux différentes catégories de personnes intervenant préalablement à l'administration de ces médicaments à l'animal : les prescripteurs, les fournisseurs ou ayants droit de la distribution au détail des médicaments y compris des aliments médicamenteux ainsi qu'aux détenteurs des animaux traités.

Mesures envisagées pour l'avenir La France envisage d'encadrer la prescription et la délivrance d'antibiotiques critiques dont la liste a été définie en septembre 2015 par l'ANSES et qui comprend des fluoroquinolones et des céphalosporines de 3ème et 4ème génération. L'objectif est de réduire les utilisations inappropriées et de renforcer le diagnostic. Il est ainsi prévu :

- leur interdiction à des fins préventives

- des conditions de leur prescription à des fins curatives ou métaphylactiques :

- examen clinique obligatoire ;

- prélèvement en vue de l'isolement de la souche bactérienne pathogène ;

- antibiogramme obligatoire selon une méthode normée démontrant que seul un antibiotique critique serait efficace :

- durée maximale du traitement d'1 mois ;

- renouvellement interdit de la délivrance (à partir d'une même ordonnance).

Communication

Chaque année depuis 2012, les ministères en charge de l'agriculture et de la santé organisent un colloque conjoint consacré à la lutte contre l'antibiorésistance dans l'esprit du concept «One Health».

Ce colloque a lieu courant novembre aux environs du 18 novembre, journée européenne de sensibilisation à l'usage des antibiotiques. Y sont invités les acteurs de l'élevage, du domaine vétérinaire et de celui de la médecine humaine ainsi que des scientifiques.

Un colloque est également organisé à la même période par l'agence d'évaluation des risques sanitaires (ANSES) qui présente l'évolution au cours de l'année précédente de l'exposition des animaux aux antibiotiques ainsi que les résultats de projets de recherche dans le domaine vétérinaire de l'antibiorésistance.

Des actions de communication sont régulièrement nécessaires pour mobiliser sur ce sujet. Un plan national est un outil intéressant pour fédérer et mobiliser les initiatives. Dans le cadre de ce plan, la diffusion des bonnes pratiques pour un usage prudent et raisonné des antibiotiques et pour limiter les risques d'émergence d'antibiorésistance est un moyen pour assurer la bonne appropriation de ce défi de santé publique par les différents acteurs.

Germany

The requirements and procedures described in both documents are implemented in Germany. Legal provisions aiming at the prudent use of antimicrobials in animals can be found in the German medicinal products act as well as in in the regulation on veterinary pharmacies. These legal provisions also refer to the guidelines for the prudent use of veterinary antimicrobial drugs. Also the regulations regarding the strategy to minimise the use of antibiotics in animal husbandry, implemented in 2014, are to be found in the German medicinal products act. The strategy aims at improving animal husbandry and reducing the need for antibiotic treatment by improving animal health. The Federal Ministry for Food and Agriculture is currently preparing additional rules for the use of antimicrobials in animals; the key issues for further regulations governing the use of antibiotics in animals have been published for discussion with the stakeholders.

In addition to these legal provisions, sub-legal standards have been issued, e.g. Guidelines for the prudent use of veterinary antimicrobial drugs. In Germany, extensive monitoring on AMR in animal pathogens as well as in zoonotic pathogens and commensals is conducted in order to recognise trends in the development of AMR and the use of antimicrobials in animals. Scientific evaluation is performed within the work for the approval of veterinary medicinal products by the Federal Office of Food and Consumer Protection. The risk assessment of AMR via the food chain is conducted in the Federal Institute for Risk Assessment. A description of the current situation and the planned measures to further combat and contain AMR are summarised in the German Antimicrobial Resistance Strategy DART 2020.

Greece

There is a national action plan for AMR in human medicine.

The national policy for tackling the AMR in veterinary medicine includes key actions which focus on:

1. prudent use of antimicrobial agents, their use in animals be carried out only on veterinary prescription, in a responsible manner, at the correct therapeutic level only when strictly necessary and prescribed over a specific time at the appropriate dosage, as well as reducing the use of antimicrobials in general and especially of critically-important antimicrobials in human (3rd and 4th generation cephalosporins and quinolones),
2. strengthening the promotion of the appropriate use of antimicrobials in animals by conducting training workshops for information, education and training of farmers,

veterinarians and other professionals involved in the field of veterinary medicine / animal husbandry,

3. reinforcement of official control system for the distribution and appropriate use of veterinary medicines and medicated feed, so that the national legislation is fully implemented, which requires the supply and use of veterinary medicinal products be done only on veterinary prescription, all farms keeping the medication record which records in detail all administered treatments and all authorized pharmacies keeping detailed records. of each incoming or outgoing of veterinary medicinal products,

4. strengthening the control of residues of veterinary medicines (antimicrobials) in live animals and animal products, within the scope of the "National Residue Monitoring Plan", with the annual planning and carrying out sufficient number of samples for the detection of multiple antimicrobial agents,

5. improving prevention and control of infections in animals by upgrading current health programs and promotion of good agricultural practices, vaccinations, encouragement of production and use autovaccine etc.,

6. strengthening the existing antimicrobial resistance surveillance systems in zoonotic bacteria and / or commensal microbial indicators and harmonized data on the use of antimicrobial substances in accordance with Directive 2003/99 / EC and Decision 652 / 2013 / EU,

7. developing and strengthening partnerships for the prevention and control of antimicrobial resistance, the Working Group operation in the veterinary field for the treatment of AMR comprised of representatives from the field of Public Health, the Centre for Disease Control (K.EL.P.NO) and the National Organization for Medicines (EOF),

8. research and comparative effectiveness research to evaluate the measures taken at national level concerning the fight against antimicrobial resistance, which will be a key responsibility of the Interministerial Committee to be established by the Ministry of Rural Development and Food and Ministry of Health, to coordinate the actions on control of AMR in humans and animals in order to protect the public health.

The approach of the veterinary practice is within the framework of the "One Health" and there is a Working Group comprising representatives of the veterinary services competent to address of AMR in veterinary medicine, as well as representatives of stakeholders responsible for addressing of AMR in medicine.

Specifically, the purposes of the above Working Group are:

1. The national strategy development proposal in the veterinary field for the consequences of antimicrobial resistance of commensal, zoonotic microorganisms and other animal pathogens, with a view to protecting public health.

2. To define procedures for monitoring, evaluation and training of farmers, veterinarians and other health professionals on issues related to tackling antimicrobial resistance and the prudent use of antimicrobials in animals.

3. The identification of problems arising in the implementation of National Programmes monitoring of antimicrobial resistance in zoonotic and commensal microorganisms, evaluation and presentation of proposals for their efficient management.

4. The collection and evaluation of resistance surveillance data to antimicrobial agents of zoonotic and commensal microorganisms livestock and food of animal origin and their correlation with corresponding data from people.
5. The collection and evaluation of data production / import / consumption of veterinary antimicrobials and promoting partnerships with relevant European surveillance networks.
6. The information and sensitization of all stakeholders through the newsletter publishing and distribution (paper and / or electronic form until January 31, 2016) and the organization of the workshop / don or scientific meetings.
7. The handbook (until May 31, 2016) to promote good farming practices in hygiene and disease prevention in animals and the prudent use of antimicrobials.
8. Cooperation with relevant working groups of the Ministry of Health and other relevant institutions and exchange of information in order to establish the degree of correlation between microbial resistance in animals and humans.

The national policy for the control and prevention of AMR in veterinary aims at:

1. The prudent use of antimicrobials in animals, especially those of critical importance to human health (3rd and 4th generation cephalosporins and quinolones), according to the national legislative frame where the antimicrobial agents in veterinary are strictly administrated only with veterinary prescription.
2. 20% reduction of the consumption of critical importance to human antimicrobials by 2020, through the awareness and the training of farmers, veterinarians and other professionals involved in the field of veterinary/livestock.
3. 10% reduction of the total consumption of antimicrobials to animals by 2020 through policies focused on the improvement of compliance to the infection control measures in livestook, through the promotion of specific health programs and evidence based practices in agriculture, vaccinations, and the use of autovaccine etc. Primary aim remains the health of production animals and the prevention of food-borne infections to humans caused by the inappropriate management of their products.
4. The reinforcement of AMR and antimicrobial agents consumption surveillance in veterinary in coordination with the respective European Surveillance Systems.
5. The development and support of partnerships and collaborations for the combat of AMR with other public health agencies through the effective activation of an Interministerial Task Force, between Ministry of Rural Development and Food and Ministry of Health, authorized to monitor the process of a national AMR Action Plan in humans and animals from the public health perspective.
6. The evaluation of the compliance with the recommendations and the legislative frame at national level as also the effectiveness of the implemented strategy concerning the fight against AMR.

Ireland

Ireland considers the two documents, CAC/RCP 61-2005 and CAC/GL 77-2011, to be highly relevant and important tools in developing strategies to contain antimicrobial resistance and perform risk analysis of foodborne AMR, respectively. Both documents are being applied in developing our on-going national strategy on AMR.

Italy

Italy has adopted and applied both Codex texts to a very large extent.

Activities relating to antimicrobial resistance (AMR) carried out by Ministry of Health

For the purpose to diminish the problem of antimicrobial resistance, the Directorate General for Animal Health and Veterinary Medicine has already taken and/or planned a series of actions aimed to:

a) Promoting a "correct and rational use" of antimicrobial agents;
b) Improving animal health through a proper livestock health management and the implementation of biosecurity measures, on the basis of the principle that " Prevention is better than cure";
c) Strengthening the monitoring of consumption of veterinary medicinal products through the use of informatics tools in the different steps of distribution and use of the veterinary drug in zootechnical field;
d) Identifying and collecting useful indicators for the categorization of farms depending on the level of risk (health, animal welfare and veterinary drug consumption) for a better effectiveness of planning controls;
e) Supervising and monitoring the antimicrobial resistance;
f) Raising awareness and informing people and professionals on the AMR theme and on the importance of the appropriate use of antimicrobial agents.

In 2012, the Manual "***Biosafety and correct and rational use of antibiotics in zootechnics"*** was distributed to all the stakeholders, in different ways, with the purpose of deepening problems arising from an improper use of antibiotics in zootechnics and providing specific information, for certain animal species (pigs, poultry and rabbits) aimed at containing the spread of antimicrobial resistance on livestock.

This Manual describes the principles of good practice in the use of antimicrobial agents such as: use of antimicrobial agents exclusively in demonstrated cases of clinically ill animals; use of microbial agents determined by the results of the **antibiogram** and aimed at molecules not in use in human medicine; preference of molecules with a narrow spectrum and with higher efficacy against the bacterial species identified; prohibition of extended and repeated use, and of empirical combinations; compliance with the instructions given in the package leaflet; etc.

Furthermore, the Manual is completed by general indications about good farming practices, mainly biosecurity and hygiene measures, in order to reduce the incidence of the infective diseases.

In line with the process started, the document "***Guidelines for the correct management of livestock in order to reduce the prescriptions of antibiotics and prevent the risk of antibiotics resistance***" is currently under preparation. The draft of this document will be available by the end of 2015, as result of the strategic objective "Strengthening of the epidemiological surveillance", under the General Directive of the administrative activity of the Ministry of Health (Year 2015).

These guidelines promote a holistic, cross-sectoral, collaborative and multidisciplinary approach, involving different offices responsible for animal health, animal welfare, animal feed and veterinary drugs. Furthermore, they aim to identify and propose specific indicators of biosecurity, animal welfare, conscious and rational use of antimicrobial agents, even through their use in feed and drinking water.

In 2015, the "***Working Group for the monitoring, surveillance and containment of antimicrobial resistance of zoonotic bacteria and commensal***" has been established in the Directorate General for Animal Health and Veterinary Medicine, with the purpose of supporting all the offices involved in the assessment of antimicrobial resistance and the planning of appropriate national and international policies.

Regarding the consumption of veterinary medicinal products, this Directorate has been participating since 2010 in the project "The European Surveillance of Veterinary Antimicrobial Consumption (ESVAC), promoted by European Medicines Agency (EMA) under European Commission mandate and aimed at developing a harmonized system of collection and reporting of sales data of veterinary antimicrobial agents among the Member States.

The fourth ESVAC report puts Italy among the first countries for the sale of antimicrobial agents, especially tetracyclines, penicillins, sulfonamides and macrolides which, taken together, account for about 75% of sales in the veterinary national field with a reduction trend of 20% (13% in 2011). The fifth report draft shows a further reduction of 29%, a sign of the effectiveness of the national policies implemented so far.

However, the ESVAC datum shows only the total quantities of antimicrobial agents sold and gives no details about the sales for production lines and the real use in zootechnical productions most at risk, such as, for example, the poultry and pig ones, for the execution of "group" treatments, through feed or drinking water. Therefore, the Directorate General for Animal Health and Veterinary Medicines is committed to improve the information management and to ensure the traceability of the medicinal products, by starting two projects, on a voluntary basis, which, in addition to the increase of the protection of human health, aim to reduce also the burden on companies.

From 1 October 2015, the Ministry of Health has begun testing the use of the electronic veterinary prescription in Abruzzo e Lombardia and then it will extend it throughout the Country.

This trial aims to computerize the management of veterinary drugs, from their prescription by the veterinarian to the administration to the animals and it is part of a larger project of digitization and traceability of the entire chain of veterinary medicines, already started by the Ministry of Health in 2013, with the **traceability system "TRACCIAVET". This system traces the sales of the veterinary medicinal products from the producer to the final recipient (breeder, veterinary clinic, etc.)** using the database for the traceability of human medicines.

The crossing of information so obtained will guarantee a more effective pharmacovigilance system and an accurate picture of the consumption of the antimicrobial agents. This system

represents therefore, an essential tool for combating the phenomenon of antibiotic resistance and allows as well evaluating the effectiveness of potential interventions adopted for reducing an inappropriate use of it.

The participation in both systems is currently voluntary and experimental but the introduction of computerization in this area has been included in the Agenda for Simplification 2015 – 2017 (paragraph 5.11 " Focused actions in veterinary health and food safety through digitization") which expressly refers also to the electronic prescription and computerized traceability of medicinal products with the purpose of reducing the burdens for businesses and optimizing the official control procedures for the protection of users.

The Directorate General for Animal Health and Veterinary Medicine has financed another important multidisciplinary project since 2013. This project connects the categorization of the risk levels of farms (health and animal welfare) with the use of antimicrobial agents and, consequently, with the risk of developing antimicrobial resistance. The selected companies are monitored, evaluated and entered into a computer database that consists of several data (cattle registry, issues related to farming practices, historical and current health status, use of the drug and its pertinence, animal welfare, biosecurity). Then the companies are associated with the results of the inspections carried out on the carcasses in the slaughterhouses.

This project allows to have immediate and direct information about the biosafety, the consumption of veterinary medicinal products, animal welfare and the health status of the final product (meat). This will enable the Competent Authorities to evaluate the adopted policies for reducing the use of veterinary medicinal products and, as a result, combating the phenomenon of antimicrobial resistance.

MARKET SURVEILLANCE OF AND MONITORING OF ANTIMICROBIAL RESISTANCE

Data collection on Antimicrobial-Resistance incidence in zoonotic agents is fundamental in the whole food chain to evaluate and determine the sources and trends of resistance and to provide data required for risk analysis, in both veterinary and human field, in order to improve the effectiveness of the actions to be undertaken.

The normative reference for monitoring Antimicrobial-Resistance in the European Union, has been up to 2013, the Directive 2003/99 / EC, which establishes the obligation for each Member State to report data about the resistance, only for Salmonella spp. and Campylobacter spp., in avian species (broilers, laying hens and turkeys). With the decision 2013/652 / EU it has started a continuous and harmonized monitoring of zoonotic bacteria and diners, with a more extended and representative comparability of the information obtained at the European level, from the data coming from the main sectors of animal origin: poultry, cattle and pigs.

This plan is one of the concrete steps to implement the action n. 10 "Strengthening surveillance systems on antimicrobial resistance and the consumption of antimicrobials in veterinary medicine" of the five-year Action Plan designed to address the growing risks posed by antibiotic resistance, prepared by the European Commission, and that covers 7 areas and defines 12 actions to be taken to human and / or veterinary use.

Finally, this Directorate is engaged in constant and continuous training activities for professionals, doctors, veterinarians and pharmacists, in view of their important role in communicating correct messages about the use of antibiotics in the various sectors involved. These activities are also addressed to associations of farmers for their mission in transmitting the message that *"good sanitation practices are more effective than the indiscriminate use of antibiotics, in terms of animal health but also in the protection of human health."* In this regard, this Directorate has supported the National Union of the meat and egg agri-food sectors (UNAITALIA) in setting up voluntary schemes for the responsible use of veterinary drugs and to fight antimicrobial-resistance within rabbits and poultry sectors.

It also organizes information campaigns on this theme through the publication of brochures on the web site, such as the *"Proper use of antibiotics in pets. More safety for them, more safety for us. "*

Portugal

On 1 January 2014, it was implemented on national level by the Portuguese competent authority for veterinary medicinal products – Direção Geral de Alimentação e Veterinária (DGAV), the National Plan For Reduction Of Use Of Antibiotics In Animals (Plano De Ação Nacional para a Redução do Uso de Antibióticos nos Animais - PANRUAA) to be executed in 5 years.

An effective and efficient achievement of the goals set under the Plan depends on the involvement and co-responsibility of all partners for effective implementation and monitoring of actions and measures to be developed in addition to the special collaboration of veterinarians who are responsible for ensuring animal health, without whom the success of the actions to be implemented will be compromised.

Mitigation efforts thought to be needed from all stakeholders, including pet owners, livestock producers, doctors, veterinarians, pharmacists, college students, animal health associations, and other public and animal health communities. Thus, PANRUAA involves all these people in order to promote the work in following areas:

1- Research, Innovation and Technology Transfer

2- Training, Awareness and Information

- Training on the prudent use of antibiotics in animals
- Awareness of VMP users
- Information on all categories of antibiotic users in animals

3- Protection of Public Health: Reducing contributions to bacterial resistance through antibiotic use in animals

- Consumer protection
- Animal welfare
- Protection of animal health professionals and nonprofessionals

4- Preservation of antimicrobials the sustainable levels and effectiveness

The main objectives of the Plan are based on the reduction of AB consumption in animals as a consequence of the prudent and responsible use, achieved namely through:

- In general, the strict compliance with the legislation on veterinary medicines; development and implementation of Best practice guides for good distribution/use practices for veterinary medicines and good veterinary practices, complemented by appropriate monitoring; training, awareness and information of animal health professionals, students and general public on the risk of misuse of AM and on the prudent use of this VMPs;

- Promotion of research and innovation and technology transfer to encourage the development of alternative schemes to the use of antibiotics; promotion and dissemination of guidelines on prudent use of AM and accessibility of summaries of product characteristics of veterinary medicinal antibiotics towards its more correct use;

- Adequate supervision, monitoring and surveillance of the use of VMP and of the veterinary practice.

The "one health" vison is applied - different players are involved in working groups (WG) created according to specific professional area/objectives – WG on communication; WP on knowledge; WP laboratories and methods; WP Guidelines and Best Practice Guides; WG on Prescription and sales; WG "One health". Reports are done from each group on the work performed. A yearly report is published.

The 2014 report on PANRUAA , states all actions taken by DGAV and the stakeholders involved in the plan – vet associations, academia, laboratories, official authorities other than DGAV as for example police and economic control authority – published on DGAV's website.

Spain

Both Codex texts have been, where applicable adopted and applied in Spain; in fact , in line with European and international guidelines (Codex Alimentarius and OIE) Spain has adopted a National Strategic Action plan to reduce the risk of selection and dissemination of antibiotic resistance:
(http://www.aemps.gob.es/publicaciones/publica/home.htm#plan_estrategico_Antibioticos)

Sweden

We consider the two documents - CAC/RCP 61-2005 and CAC/GL 77-2011 - to be important, foresighted and still highly relevant. They are often used and referred to in the work to combat antimicrobial resistance in Sweden. Both documents have been adopted and implemented to their greater parts in Sweden.

The Netherlands

Both have been, where applicable, to a very large extent adopted and applied in The Netherlands.