Evaluation of the EC Action Plan against the rising threats from antimicrobial resistance

Final Report - Appendices

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INTRODUCTION

This set of appendices supplements the final report for the 'Evaluation of the EC Action Plan against the rising threats from antimicrobial resistance'.

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<div align="center">**Technical Specifications**</div>

Title: Evaluation of the Commission's Communication to the European Parliament and the Council on the Action Plan against the rising threats from Antimicrobial Resistance (AMR) (COM (2011) 748)

Reference: SANTE/2015/G4/015

1. Context of the assignment

1.1. Description of the Policy Area to be evaluated

The 2001 Community Strategy against AMR (COM (2001) 333 final) provided a policy instrument to address the problem of AMR at a European level in four distinct areas: surveillance, prevention, research and product development and international cooperation. In line with the "One Health" initiative, this commitment was renewed in 2011 with the Action Plan against the rising threats from AMR (COM (2011) 748).[1]

AMR is the resistance of micro-organisms to antimicrobial drugs so that these originally effective standard treatments become ineffective and infections persist which increases the risk of spread. AMR is a serious and increasing worldwide health concern for both humans and animals requiring commitment and action from all governments and society. The direct consequences of infection with resistant micro-organisms can be severe, including longer illnesses, increased mortality, prolonged stays in hospital, loss of protection for patients undergoing operations and other medical procedures, and increased costs.

The emergence and spread of resistant bacteria is a natural biological phenomenon but it is amplified and accelerated by a variety of factors, namely:

- Inappropriate or over use of therapeutic antibiotics in human and veterinary medicine;
- Poor hygiene and infection prevention measures in healthcare settings and at farm level;
- Transmission of resistant bacteria from animals to humans through the food chain or direct contact;
- Environmental spread caused by contaminated food and water systems and international trade and travel;
- Lack of new effective antimicrobials or alternatives.

In Europe, it is estimated that around 25,000 patients die annually as a result of infections caused by resistant bacteria translating into estimated costs of EUR 1.5 billion per annum, due to loss of productivity and an increase in healthcare expenditure costs. Methicillin-resistant Staphylococcus aureus (MRSA) is a well-known example of a bacterium that is resistant to a number of antibiotics and is the main cause of hospital-acquired infections (HAI) all across the EU.

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[1] http://ec.europa.eu/dgs/health_food-safety/docs/communication_amr_2011_748_en.pdf

EU funds are already spent in several interventions aimed at improving knowledge and promoting research on AMR. In 2014-2015, funds were allocated to Member States to implement harmonised surveillance of AMR in animals and food and this financial support will be maintained beyond 2015. Research on AMR has been financially supported by the Commission services under the EU's Seventh Framework Programme for Research and Technological Development (FP7).[2] The new EU framework programme Horizon 2020 continues to give research on infectious diseases, including AMR, a high priority. The European Commission has also joined forces with SMEs and large pharmaceutical industries to spur the development of new antibiotics, which led to new EU funded research projects.

1.2. Specific and operational objectives of the activity/action.

The Commission's Action Plan takes a holistic approach to the issue as AMR is a global public health threat and aims at strengthening the prevention and control of AMR across all sectors and at securing the availability of effective antimicrobial agents. It covers 7 areas including 12 concrete actions both in the human and veterinary field and sets out a wide range of measures to protect human and animal health from AMR.

The specific objectives of the Action Plan are the following (see also annexed intervention logic):

1.2.1 To promote an <u>appropriate use</u> of antibiotics in human and animals

The appropriate use of antibiotics in humans and animals is essential for reducing and helping prevent AMR and this objective is the cornerstone of EU policy against AMR, both in human and veterinary medicine. Current EU rules provide for, inter alia, the prescription-only use of antibiotics in humans and food-producing animals, and for the administration of antimicrobials to animals which should not result in the occurrence of residues of these substances above permissible levels in food of animal origin. The Action Plan directly addresses the issue of the inappropriate use of antimicrobials through the promotion of the appropriate use of antimicrobials in human medicines in all Member States, the improvement of the regulatory framework on veterinary medicines and on medicated feed and by introducing recommendations for prudent use in veterinary medicine.

1.2.2 To <u>prevent infection</u> in healthcare systems and animal husbandry

The burden caused by infections occurring in healthcare settings, commonly known as healthcare associated infections (HAI), is high within the EU and is closely related to the AMR issue. AMR has emerged in virtually all healthcare-associated pathogens and the majority of novel resistance factors first surface in healthcare facilities.

The Action Plan measures to deal with this include the publication of a report on patient safety, the development of guidance on infection prevention and control and strengthened surveillance of HAIs.

In animals, improved health and biosecurity measures, as well as promotion of good farming practices, help to prevent or reduce infections and therefore contribute to the reduction in use of antimicrobials and thus the development of AMR in animal pathogens and zoonotic agents following the "prevention is better than cure" philosophy. The Action Plan measure to deal with this issue is the introduction of the new Animal Health Law which focuses on the prevention of diseases and reducing the use of antibiotics in animals.

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[2] http://ec.europa.eu/research/fp7/index_en.cfm

1.2.3 To stimulate <u>research and innovation</u> to develop <u>new antimicrobials</u> and <u>alternative</u> treatments, increase tools for <u>diagnosis</u> and treatment and to better <u>understand</u> the complex <u>dynamics</u> of AMR

A continuous lack of industrial investment in the development of new drugs means that there are only a few products in the development pipeline that could combat resistant strains. Numerous research projects aiming to support antimicrobial development are funded within the Commission's FP7 including support of clinical trials on off-patient antibiotics. However, a gap still exists between the increasing problems related to multi-resistant bacteria and the urgent need to develop new antimicrobials to meet medical needs. Moreover, the development of antimicrobials for use in animals has been hampered by uncertainties regarding marketing authorisations for use in the veterinary sector.

The Action Plan addresses these issues by increased cooperation with the pharmaceutical industry to stimulate new research and development of new antibiotics and the development of diagnostic tools, the development of vaccines and other preventive measures, legislative incentives for development of new antimicrobials for veterinary use (e.g. prolonged protection of technical documentation), targeted scientific advice on potential impact of authorising new antimicrobials for use in animals on the treatment of resistant bacteria in humans and setting down conditions for the simplified procedures for the marketing authorisation of new antimicrobials.

1.2.4 To improve <u>monitoring and surveillance</u> of AMR and antibiotic consumption/use

Efficient and effective surveillance, gathering comparable and reliable data, is key to understanding the situation on AMR. EU surveillance systems have been developed to monitor AMR (European Antimicrobial Resistance Surveillance Network (EARS-Net)), the consumption of antimicrobials (European Surveillance of Antimicrobial Consumption (ESAC)) and the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC)). These systems provide information and data supporting the prevention and control of AMR and information is published annually in a series of reports. The Action Plan proposes measures to strengthen surveillance systems on antimicrobial consumption and antimicrobial resistance in humans and to strengthen and harmonize the surveillance systems on the consumption of antimicrobials in animal medicine and occurrence of antimicrobial resistance in certain animal population and food.

1.2.5. To stimulate <u>international cooperation</u> to limit the spread of AMR through international trade and travel

AMR is a global public health threat and action and international cooperation is needed in order to address the common problems. The EU is committed to working actively with its global partners and the Action Plan brings this a step forward with measures to increase collaboration with WHO EURO[3] on the implementation of new Regional Strategies against AMR, with the OIE[4] on the development of Health Codes and promoting the implementation of Codex international standards on AMR, active participation in TATFAR[5] activities and especially in the implementation of its recommendations and with bilateral cooperation, such as through the EU-China and EU-US initiatives.

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[3] http://www.euro.who.int/en/home

[4] http://www.oie.int/

[5] http://www.cdc.gov/drugresistance/tatfar/index.html

1.2.6. Improve public <u>awareness</u>, <u>education</u> and <u>training</u> relating to AMR

Public perception of the use of antibiotics plays a huge part in the fight against AMR. More than 50% of EU citizens believe that antibiotics are effective against viruses and so the awareness and understanding of AMR and the importance of appropriate use will be addressed by the Action Plan with measures to assess impacts of national and EU awareness campaigns on AMR together with the development of indicators and the monitoring of public behaviour on AMR and the appropriate use of antimicrobials.

1.3. Legal basis, budget and duration of the activity/action

The Commission's Action Plan was published in 2011 and was supposed to cover a 5-year period, it therefore expires in 2016. EU funds have been spent in several interventions aimed at improving knowledge and promoting research on AMR. In 2014-2015, funds were allocated to Member States to implement harmonised monitoring of AMR in animals and food and this financial support will be maintained beyond 2015. Research on AMR has been financially supported by the Commission services under FP7. The new EU framework programme Horizon 2020 continues to give research on infectious diseases, including AMR, a high priority. The European Commission has also joined forces with SMEs and large pharmaceutical industries to spur the development of new antibiotics, which led to new EU funded research projects.

1.4. Instruments of the activity/action

The Commission's Action Plan relies on several financial instruments as Horizon 2020, the EU's Seventh Framework Programme for Research and Technological Development and the Heath Programme. Regulation (EC) No 882/2004 on official controls is also used as a legal basis to provide financial support from the Union to conduct harmonised monitoring of AMR in food and animals in Member States.

For reference, the following EU legislation in force covers, to varying degrees, certain issues related to AMR:

- Council Directive 90/167/EEC of 26 March 1990 laying down the conditions governing the preparation, placing on the market and use of medicated feedingstuffs (under revision with the co-legislators);
- Directive 2001/82/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to veterinary medicinal products (under revision with the co-legislators);
- Directive 2001/83/EC of the European Parliament and of the Council of 6 November 2001 on the Community code relating to medicinal products for human use;
- Commission Decision No 2002/253/EC of 19 March 2002 laying down case definitions for reporting communicable diseases to the Community network under Decision No 2119/98/EC of the European Parliament and of the Council;
- Directive 2003/99/EC of the European Parliament and of the Council of 17 November 2003 on the monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC;
- Regulation (EC) No 726/2004 of the European Parliament and of the Council of 31 March 2004 laying down Community procedures for the authorisation and supervision of medicinal products;
- Commission Implementing Decision No 2013/652/EU of 12 November 2013 on the monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria;
- Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision No 2119/98/EC.

2. Description of the assignment

2.1. Purpose and objective of the evaluation

The purpose of the present evaluation is to produce an evidence-based report to assess the impact of the implementation of the Commission's Communication to the European Parliament and the Council on the Action Plan against the rising threats from Antimicrobial Resistance (AMR) (COM (2011) 748), published in November 2011 in line with the "One Health" principle. More specifically, the purpose of this evaluation is to analyse whether the 12 key strategic actions contained in the Action Plan were the most appropriate actions to be taken to combat AMR, which elements worked well or not (and why), if the objectives are still relevant to the needs in tackling AMR and if the approach was appropriately holistic. As the Action Plan will expire in 2016, the results of this evaluation will provide the Commission with the basis to make informed decisions on what new or additional policy measures should be taken in the medium and long term strategy to combat AMR in the European Union and globally.

2.2. Evaluation issues to be addressed

Effectiveness: The extent to which the implementation of the actions in the Action Plan caused changes, either positive or negative, in the management of AMR by Member States, the extent to which the objectives of the Action Plan have been achieved, where objectives have not been met, what factors have hindered their achievement and the role, if any, of policy measures outside legislation in achievement of the observed changes. The questions should address the situation at both EU and Member States representative level.

Relevance: The extent to which the original objectives of the Action Plan correspond to the current needs within the EU.

Efficiency: The extent to which factors influenced the efficiency with which the achievements observed were attained.

Internal coherence: The extent to which the Action Plan on AMR has contributed to the coherence of other EU Action Plans in the field of environment, human health, animal health and welfare, food safety, agriculture, research, competiveness and SMEs.

External coherence: The extent to which the Action Plan on AMR works in line with Member States interventions, plans or strategies which have similar objectives.

European Added Value: The added value of the Action Plan on AMR compared to what could be achieved by Member States at national and/or regional levels. The international dimension (WHO, OIE, TATFAR) should also be looked at.

Adaptation: The extent to which there are obstacles preventing the current situation on AMR in the EU from improving in line with EU objectives and the extent to which the EU strategy on AMR needs to be adapted.

2.3. Scope of the evaluation (operational, temporal, geographical...)

The scope covers all the actions contained in the Commission's Communication to the European Parliament and the Council on the Action Plan against the rising threats from Antimicrobial Resistance (AMR) (COM (2011) 748), covering the period 2011 – 2015 plus the role of the Commission, the Member States and all stakeholders involved in the implementation of the action plan.

The evaluation should at least cover all Member States of the EU, plus third countries and international organisations if relevant, and the period to be evaluated is 2011-2015.

2.4. Evaluation questions

The following questions are an indicative list and are subject to adjustment during the kick-off meeting if necessary. The contractor is invited to propose reformulations and additional questions in its offer –wherever considered justified.

Relevance

EQ1: To what extent do the objectives of the action plan still address the problems identified in 2011? How well do these objectives still correspond to the current needs of tackling AMR within the EU?

EQ2: Are the areas for EU action appropriate in view of the distribution of EU and national competences?

Effectiveness

EQ3: To what extent have the actions been effective at improving treatment of infections in humans and animals?

EQ4: To what extent have the actions aimed at containing the risks of spreading AMR been effective?

EQ5: To what extent has the coverage of actions across different services (DGs) within the European Commission been effective in capturing the holistic approach and in delivering results?

Efficiency

EQ6: Has the EU budget been efficiently used to address the objectives of the Action Plan?

Coherence

EQ7: To what extent is the Action Plan coherent with Member States' relevant national (or regional) strategies and action plans and with similar initiatives at the international level?

EQ8: To what extent are the actions contained in the Action Plan coherent with other EU policies on the environment, human health, animal health and welfare, food safety, agriculture, research, competitiveness and SMEs?

EU added value

EQ9: What is the added value resulting from the EU Action Plan compared with what could be achieved by Member States at national and/or regional levels? Did the EU Action Plan identify the actions which should be best dealt with at EU level?

EQ10: To what extent can any observed improvements in the situation on AMR in the EU be associated with the development and implementation of the EU Action Plan?

2.4.1 Methodology

The methodology of this evaluation must be drawn up by the tenderer taking into account the objectives and scopes outlined above as well as an appropriate mix of different tools including (where relevant):

- advanced desk research including review of published materials, assessment of primary data and monitoring reports available from agencies (ECDC, EFSA, EMA) and other relevant bodies;
- surveys;
- interviews;
- case studies – the contractor is expected to provide examples of successful and unsuccessful implementation of the Action Plan – around 10 examples should be identified, investigated and reported;
- 2 workshops with stakeholders to be organised by the contractor with at least one held at the beginning of the evaluation. The European Commission will provide the premises, but it is for the contractor to prepare the background documents, presentations, collect and analyse the contributions and prepare the workshop reports. Travel and subsistence costs incurred by stakeholder participation can be charged as reimbursable to the contract.

Stakeholders' consultation should be preceded by a proper stakeholders mapping exercise – a draft to be presented in the submissions.

An open public consultation of 12 weeks should be held by the Commission via its website "Your voice in

Europe"[6] before the final report is approved. To this aim, the contractor will elaborate the consultation document to be published by the Commission and will analyse the replies received.

Submissions should explain possible limitations due to insufficient data. They should keep in mind the importance of objective data versus opinions. Therefore a first attempt to break down the evaluation questions into judgement criteria, indicators and data sources is expected in the offers.

2.5 Expertise required from the evaluation team

The evaluation team should contain at least one expert in the public health, animal health or food safety field and the team should comply with the following requirements:

- At least 5 years' expertise in the food safety/public health/animal health sector;
- At least 5 years' expertise in evaluation methods including experience in carrying out public policy evaluations.

2.6. Reporting and deliverables

General Reporting Requirements

The present evaluation includes the submission of a series of deliverables, reports and presentations to the Commission. The contractor will deliver the following reports at key stages of the evaluation process: Inception report, interim report, draft final report and final report and should respect the following requirements:

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[6] http://ec.europa.eu/yourvoice/index_en.htm

- All reports shall be written in English and critically assessed as they provide the basis for tracking the quality of the work done by the evaluator. Failing this, a retention fee will be applied;
- The quality of the final report will be assessed by the Interservice Steering Group using the template in Annex 1;
- All reports shall be clear, concise, unambiguous and comprehensive and should be understandable for the non-specialist;
- All reports shall be provided to the Commission in the form of ONE single report in MS-Word and electronic format (PDF) format with the charts in Excel and accompanied by the appropriate annexes where requested;
- All reports shall be delivered in accordance with the deadlines and requirements set out in the Terms of Reference;
- The presentation of texts, tables and graphs should be clear and complete and correspond to commonly recognised standards for evaluations to be published and comply with the Commission's visual identity rules;
- Reports and PowerPoint presentations will be provided in electronic format compatible with the Commission's software;
- Each deliverable (except the final report) will be followed with a PowerPoint presentation of not more than 45 minutes in the Commission's office in Brussels;
- Reports must be approved by the Commission and will be submitted by the Commission to the Inter-Service Steering Group set up to oversee the evaluation, which may ask for complementary information or propose adjustments in order to redirect the work as necessary;
- A structured and precise elaboration of add-ons based on previous deliverables at every stage of the process is requested (for example, this could be done via colour-coding parts of the report developed at the offer, inception, interim and draft final stage);
- Every month, the contractor should submit a short progress note to the Commission reporting on the state of execution of the tasks.

The reports should contain the following sections:

1. Publishable executive summary in English and French:

   Executive summary of the main findings and the overall conclusion based on the findings and evidence collected. This section should be of suitable quality to enable direct publication by the Commission.

   The summary should include a description of the project objectives, the work performed so far, a description of the main results achieved so far; the expected final results and their potential impact and use. This summary will not exceed 15 pages.

2. Project objectives for the period:

   An overview of the project objectives should be provided.

3. Work progress and achievements during the period:

   A concise overview of the progress of the work should be provided. The clearly significant results should be highlighted. If applicable, the reasons for deviations from the proposed work should be explained and corrective actions should be proposed.

Specific Reporting Requirements

Kick-off meeting report: no later than 3 weeks after the signature of the contract

After signature of the contract, the contractor will participate in a kick-off meeting with the Steering Group. The purpose of this meeting is to verify:

- the contractor's understanding of the Terms of Reference;
- the proposed general approach to the work (methodology, planning, structure of deliverables etc.);
- the composition and eligibility of the contractor's team.

Inception report: no later 6 weeks after the signature of the contract (up to 40 pages)

This report will describe the entire process of the study, the action sequence and the methodology required for each question, providing the logic behind the actions to be undertaken, the timeline of events and the experts involved. It should set out in detail how the proposed methodology will be implemented, and in particular lay out clearly in tabular form how the method allows each evaluation question to be answered via establishment of judgement criteria and within these, of evaluation indicators. A further column highlighting choice of relevant evaluation tools should complete the table.

The inception report should include a chart that allows the Steering Group to gain a good understanding of the evaluation tools and related methodological steps proposed. The report may complete and/or suggest additional evaluation questions the contractors consider suitable (see previous paragraph). As such, this document will provide an opportunity to make a final check on the feasibility of the method proposed and the extent to which it corresponds with the task specifications.

The known sources of information, use of tracers (case studies), contact persons in Member States, as well as how the contractor will interact with Member States representatives will be fully clarified at this stage.

The inception report is submitted to the Commission, which will forward it to the Steering Group. On the basis of discussion, including with the contractor, changes and improvements may be requested. Final version of evaluation tasks/questions suggested by the contractor and evaluation indicators to be used will be validated by the Steering Group and the Commission at this stage. The contractor will submit a final version within two weeks after receiving Commission's comments.

Interim report: no later than 4 months after the signature of the contract (up to 100 pages)

This report will provide information on the analysis of data collected. The evaluator should already be in a position to provide:

a) aggregated data for the period under evaluation (it is expected that the field work will be finalised or very close to finalisation at this stage),

b) preliminary findings and conclusions regarding the evaluation tasks/questions,

c) description of the way the data will be triangulated, existing data gaps filled in and further analysis conducted.

This report will provide the Commission with the opportunity to check whether the evaluation is on schedule and whether the evaluation has actually focused on the specified information needs.

The contractor will submit a revised interim report with the necessary updates of the report after Commission discussion with the Steering Group.

Final report: no later than 6 months after the signature of the contract (up to 120 pages)

This document will provide the conclusions of the contractor in respect of the evaluation questions in the task specifications. These will be based on evidence generated through the evaluation - with clear references to information sources. Any judgements provided should be clear and explicit. Importance of objective data versus opinions should be kept in mind throughout the whole evaluation process. The final report should also contain substantiated recommendations made on the basis of the conclusions reached by the contractor. It will also provide a technical overview of the evaluation process highlighting limitations and possible bias therein.

Response rates and reliability of data and analysis will be clearly stated.

The final report should be structured along the lines of common Evaluation Standards[7] and include an executive summary of not more than 6 pages (synthesis of analyses, conclusions and recommendations), the main report (structure to be confirmed by the Commission services but planned to reflect the content of the assignment), technical annexes (inter alia the Task Specifications and a compilation of all requested country-based information) and a draft one page summary of the Key Messages (conclusions and recommendations in bullet form) of the evaluation and 200-word abstract [for publication in EU Bookshop]. The latter should precede the executive summary.

The contractor should also provide a PowerPoint presentation of key aspects and findings of the study, together with speaking notes. At the request of the Commission, the contractor should provide a limited number of presentations to interested stakeholder groups. The copyright of the reports remains with the Commission.

2.7. Organisation and timetable

The contract will be performed within 6 months from the date of the signature of the contract by the last contracting party. The contractor is expected to begin working immediately after the contract has been signed.

The contract involves regular meetings in Brussels between the lead unit (DG SANTE G4) and the contractor in accordance with the programme set up in Table A1. Deadlines in the table refer to the date of delivery by the contractor to the Commission. Oral presentation should take place in Brussels in the Commission's offices after each delivery within one month after the delivery.

Table A1 – Timetable and deliverables

Deliverables	Deadline after signature
Kick-off meeting	2 weeks
Inception report	6 weeks
Interim report	4 months
Final report	6 months

7 See annex II: http://ec.europa.eu/dgs/secretariat_general/evaluation/docs/eval_comm_sec_2007_213_en.pdf

2.8. Budget

The indicative price band is from 160.000 Euros (hundred and sixty thousand) up to a maximum of 200.000 Euros (two hundred thousand).

The following meetings with the Commission in Brussels are foreseen: a kick-off meeting, two interim meetings and a final meeting.

The contractor should foresee travel and subsistence costs for at least 4 half-day meetings with key team members of the Commission in Brussels. The contractor is advised that the working languages for such meetings will be English unless a prior alternative arrangement has been made with the Commission.

Prices must be quoted in Euro using, if necessary, the conversion rates published in the C series of the

Official Journal of the European Union on the day when the contract notice was published (if no notice was published, on the day when the invitation to tender was sent out).

Prices must be fixed amounts in Euro.

Estimated travel and subsistence expenses must be indicated separately.

This estimate should be based on Article I.3.2 of the contract annexed to these specifications and include any travel required to meet representatives of DG Health and Food Safety. In any event, it should represent the maximum amount of travel and subsistence expenses payable for all the services provided.

Prices should be quoted free of all duties, taxes and other charges, including VAT, as the Communities are exempt from such charges under Articles 3 and 4 of the Protocol on the privileges and immunities of the European Communities; the amount of VAT should be shown separately.

Prices are firm and not subject to revision.

3. References

Supporting documents and useful web links:

A lot of relevant documents, information and useful web links can be found in the Commission progress report[8] on the Action Plan published in March 2015 and in the latest version of the Commission roadmap against AMR.[9]

The Commission's Web pages on AMR provide also relevant information:

http://ec.europa.eu/health/antimicrobial_resistance/policy/index_en.htm

Annexes to the specifications:

Annex 1: Quality assessment template

Annex 2: AMR – 12 key actions

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[8] http://ec.europa.eu/health/antimicrobial_resistance/docs/2015_amr_progress_report_en.pdf

[9] http://ec.europa.eu/dgs/health_food-safety/docs/road-map-amr_en.pdf

APPENDIX B: DETAILED RESEARCH METHOD

The overall approach to the evaluation is a multi-method study to identify quantitative and qualitative findings across the actions. This includes the collection of primary quantitative and qualitative information and secondary data. A summary of the method is provided in section 2 of the main report. This appendix provides further details of the methodology for the evaluation.

Primary data collection

Primary data collection included workshops, public consultation, Member State surveys, stakeholder surveys and in-depth interviews. These are detailed in turn.

Workshops

Two workshops were held for the evaluation.

Workshop One

Stakeholder workshops are effective ways of informing consultees about a study and gaining their interest in participation, collecting information about their experiences, and sharing ideas amongst stakeholders, for example, as in this evaluation, at the start of the assignment to support the focus and design of subsequent stages. The objectives of the first stakeholder workshop were threefold:

1. To inform stakeholders about the evaluation and how they could be involved, and generate interest in further participation (i.e. raise awareness of the evaluation).

2. Obtain information on the stakeholders' experiences of AMR issues in the EU.

3. Obtain information on the links between stakeholders' experience of AMR and the Action Plan.

The study team invited 42 organisations, with the aim of ensuring participation by 25 individuals representing the most important stakeholders active at EU level. A total of 29 individuals representing 22 organisations attended the workshop. The list of participant organisations is provided in Appendix J. Stakeholders who did not attend were invited to either submit written input to the questions posed at the workshop or to respond to the public consultation, as they prefer.

The workshop was held in Brussels at the Commission premises. Four members of the research team led the workshop and facilitated working group discussions. The plenary sessions of the workshop was run with simultaneous translation in English and French. The breakout sessions were conducted in English.

The workshop ran for a full day on Monday, 26 October.

Attendees were provided with the following information and invited to familiarise themselves with its content in advance of the workshop:

1. An overview of the evaluation objectives, questions and process, with links to the Action Plan and 2015 Progress Report

2. An overview of the workshop agenda, along with a list of question areas that would be discussed during the workshop.

3. Logistics information (location, etc.)

They were also invited to indicate which areas they were most interested in discussing at the workshop from 14 options that covered the Action Plan objectives according to animal and human health aspects. Feedback was used in forming sets of six working groups and participants with similar interests were grouped together for the afternoon work. In the morning, groups were based on general experience being related to animals, humans or research.

The workshop was structured in five sessions (final agenda provided in Appendix I).

Following the workshop, a report summarising the main messages was prepared by the study team and sent to the participants for additional remarks and comments. The workshop summary report is provided in Appendix K.

Workshop Two

The objective of the second workshop was to discuss and validate the findings, conclusions and recommendations of the evaluation with stakeholders.

The workshop took place at Commission premises in Brussels and was facilitated by study team members. It consisted of two sessions (Appendix F):

- Session 1: Discussion of the main conclusions of the evaluation.
- Sessions 2: Discussion of the main recommendations for the future.

The workshop concluded by summarising key messages that emerged from discussions. After the seminar, the evaluation team drafted a summary report of the main messages. The summary report was sent to the participants for any additional remarks and comments on 22 March 2016.

Invitees were drawn from the same list as for the first workshop and others identified during the evaluation and who approached the study team, expressing an interest in attending. Additional participants were included based on expressed interest from invitees, taking into consideration the capacity of the room allocated to the workshop.

Public consultation

An open consultation involving an online questionnaire and running for 12 weeks was held on the Commission's 'Your voice in Europe' website. It closed on 22 January 2016. The consultation included questions covering all mandatory evaluation criteria (relevance, effectiveness, efficiency, coherence and added value) in accordance with EU guidelines for public consultation.[10] A copy of the consultation questions is provided in Appendix G. The questionnaire relied predominantly on a set of closed questions enabling rapid comparative analysis of collected data, but also incorporated open text fields, offering respondents the opportunity to provide in-depth qualitative answers.

A synopsis report of results from the public consultation is in Appendix L. The consultation gathered views from any member of the public who wished to participate. The primary audience for the consultation was stakeholders who were not involved in other aspects of the consultation; accordingly, the general survey also provided an opportunity for more expert respondents to be re-routed to the targeted surveys for stakeholders and Member State representatives. In conjunction with the questionnaire, the study team prepared accompanying background documentation, including a description and a statement of purpose for the study, and a privacy statement. These are provided in Appendix F.

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[10] http://ec.europa.eu/smart-regulation/guidelines/ug_chap7_en.htm

Response numbers are summarised in Table 1.

Table 1: Public consultation survey response rate

Respondent Group	Total answers
General	34
MS version	3
SH version	27
Total	**64**

Member State survey

Two versions of a survey targeting public sector representatives in the EU-28 Member States were designed to cover issues specific to human and animal health. The groups targeted for the survey included:

- ECDC Coordinating Competent Bodies,
- EARS-Net national participating institutions,
- EMA National Competent Authorities (human and veterinary),
- EFSA Focal Points, and
- Other relevant institutions involved in developing national AMR strategies and as identified through desk research and EC recommendations.

The survey questionnaires were composed mainly of closed-ended questions, in order to support higher response rates, with some open-ended questions to allow participants to contribute more detailed information. The questionnaire was organised in sections by evaluation themes and survey routing in the online version ensured that respondents were asked only questions which they felt they were in a position to answer. This enabled efficient aggregate analysis while reducing respondent fatigue from long questionnaires and irrelevant questions.

The survey was made available for nine weeks. The questionnaire was published in English and was developed and distributed online via RAND Europe's in-house survey tool, Select Survey. A letter of recommendation from DG SANTE confirming RAND Europe's role as evaluator was be included with the invitation to participate. A total of 70 responses were received (of which 3 were rerouted from the public consultation portal). For a breakdown of respondents by country, affiliation and expertise, see Appendix L.

Stakeholder survey

Two versions of a survey targeting stakeholders on AMR issues were designed, mirroring the Member State surveys covering issues specific to human and animal health. The stakeholder groups targeted for the survey included those with experience in areas related to:

- Animal health, farming and food,
- Human health, and
- Research and innovation.

As with the MS questionnaires, the stakeholder surveys were composed mainly of closed-ended questions, with some open-ended questions. The surveys were sent to EU-level stakeholder groups for distribution to their members and consolidation of responses received.

The questionnaire was published in English and was developed and distributed online through Select Survey. A Word version was also made available so that representative associations could collect the views of their members in an aggregated version to

submit directly to the study team or transfer to the online survey tool, as they preferred. A letter of recommendation from DG SANTE confirming RAND Europe's role as evaluator was included with the invitation to participate. The stakeholder survey was launched during the same time period as the MS survey. A total of 81 responses were received (of which 27 were rerouted from the public consultation portal). For a breakdown of respondents by country, affiliation and expertise, see Appendix L.

Interviews

In-depth interviews were conducted to collect qualitative data that complements the survey. Interviews targeted representatives of the EC and relevant DGs; EU Agencies such as the ECDC, EFSA, and EMA; non-governmental and international organisations; and EU-level interest groups. Interviews also targeted at recipients of EU research funds. Topic guides for each group are provided in Appendix H.

Interviews were conducted by telephone in English. Interviews were recorded with the express agreement of the consultee. Subjects gave interviews under pre-defined privacy and data protection conditions and were guaranteed the right to review their contributions if they choose to do so.

Table 2 provides a summary of the target number and distribution of interviews by consultee group. The target number of interviews per group has been achieved across all groups except for international bodies.

Table 2: Interviews

Stakeholder group	Target	Interviews completed
European level policy and public body representatives, third country experts	11	11
International bodies	5	4
Research and innovation stakeholders	5	7
Independent experts on AMR issues	2	2
Additional interviews (for case studies)	2	13
Total	**25**	**37**

Secondary data collection

Desk research

The research team conducted a literature and data review of available information on issues relevant to the EC Action Plan on AMR. This included the relevant academic literature as well as reports, position papers and other secondary sources produced by the Commission, national governments and stakeholders, including representative organisations at international, EU and national levels.

The review of available information determined what data and information were readily available and what information needed to be collected through the public consultation, Member State and stakeholder surveys, interviews, workshops, and case studies. Desk research also informed the design of data collection tools, such as interview protocols, the public consultation document and the Member State and stakeholder survey questionnaires.

Desk research was used throughout the evaluation to answer the evaluation questions as indicated in the evaluation matrix Appendix D.

Relevant literature and other sources included:

- EU legislation and related official documents, including the progress report on the Action Plan against the rising threats from antimicrobial resistance - SWD(2015) 59;
- EMA scientific guidelines and recommendations on antimicrobial resistance;
- EFSA scientific opinions, EU summary reports and scientific reports on antimicrobial resistance;
- ECDC surveillance reports, surveys, risk assessments, guidance documents and other documents on AMR;
- Documentation pertaining to FP7, Horizon 2020 and IMI Joint Undertaking funded AMR-related research projects;
- European Surveillance of Antimicrobial Consumption Network/ESAC-Net data on antimicrobial consumption in the primary care and hospital sectors reported annually to ECDC by all Member States;
- European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) data on antibiotic use in animals;
- European Antimicrobial Resistant Surveillance Network (EARS-NET) data on the occurrence and spread of antimicrobial resistant microorganisms of major public health importance in Member States;
- Eurobarometer and other public opinion surveys on the awareness of issues related to AMR in Member States.
- Stakeholder reports, memos, position papers, presentations and other sources; and
- Academic literature on AMR-related issues.

A non-exhaustive list of the literature consulted is provided in the References section.

Case studies

Two types of case studies (Appendix N) were developed for this evaluation: country case studies in Member States and topic case studies on specific issues related to AMR. The objectives of the case studies were to (i) provide detail on the similarities and differences in countries' approaches to the implementation of the EC Action Plan on AMR, (ii) explore particular issues in more depth across Europe and (iii) expand and confirm findings about the impacts of the EC Action Plan on AMR.

The case studies (Appendix N) were used to collect data primarily to support the analysis of evaluation questions on the effectiveness of the EC Action Plan on AMR. Their specific role in the evaluation is indicated in the evaluation matrix (Appendix D). Case studies involved a combination of secondary data analysis (desk research) and primary data collection and analysis (interviews).

APPENDIX C: INTERVENTION LOGIC

This appendix presents the intervention logic for the Action Plan (Figure 1).

Figure 1: EU AMR Action Plan - intervention logic
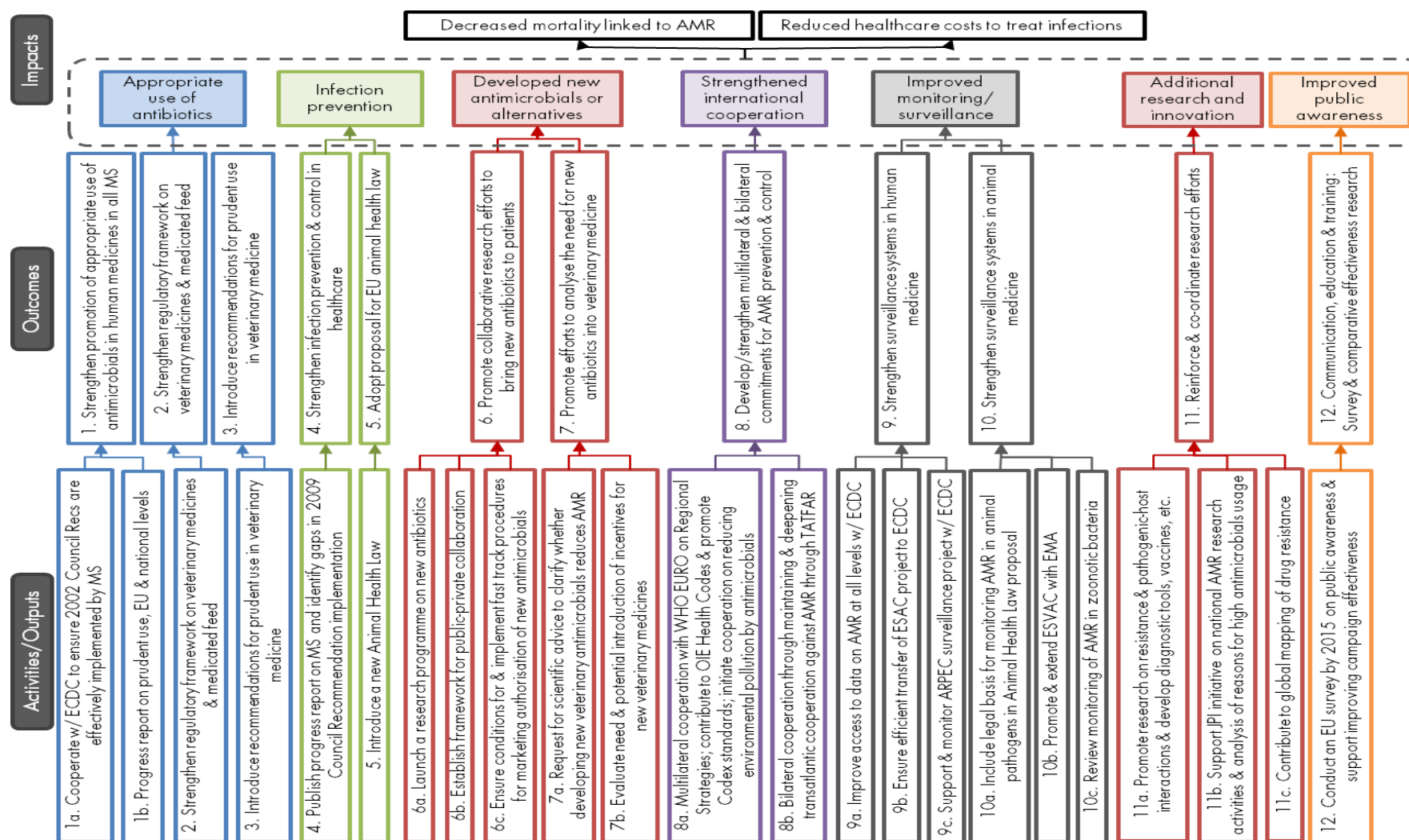
APPENDIX D: EVALUATION MATRIX

EQ = Evaluation Question; JC = Judgement Criteria; MS = Member State; SH = stakeholder; PC = public consultation; AP= Action Plan

Summary of methods	
Groups to approach	**Methods of involvement**
General public	Open public consultation
Private groups active in animal health, human health, farming and food: industry and professional associations, public interest groups	• Participation in two stakeholder workshops • Targeted surveys[11] (to be distributed to members of groups) • (Public consultation option) • Phone interviews if appropriate
Research stakeholders (researchers, scientific societies and academies, IMI representatives, research-active SMEs, Efpia)	Phone interviews
Policymakers from Member States	MS Surveys (tailored to focus on animal or human health)
International bodies (e.g. WHO)	Phone interviews
Independent experts on AMR issues	Phone interviews
Commission and other EU public bodies (e.g. ECDC)	Phone interviews

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[11] These surveys are a means for groups to obtain feedback from their members, to ensure a high level of representation. Some of the questions will be consistent across all or most surveys, but some will be specific to particular groups.

Table 3:Evaluation Matrix

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 1 (Relevance)	*Original: To what extent do the objectives of the action plan ~~still~~ address the problems identified in 2011? How well do these objectives still correspond to the current needs of tackling AMR within the EU?* Revised: **To what extent do the objectives of the action plan address the problems identified in 2011? How well do these objectives still correspond to the current needs of tackling AMR within the EU?**		
All	JC 1.1 Problems identified in 2011 are addressed by the objectives	1. AP objectives addressed the problems identified (before and during 2011)	MS and SH surveys, interviews, workshops • EU documents/reports from 2008-2011 (particularly those referenced in the AP)[12] • Reports and strategies from other bodies (e.g. WHO, US, UK, CDDEP) published in 2008-2011[13] • Academic reviews discussing AMR and policy needs, data from ECDC, etc.	SH-A, H 13, 17 MS-A, H 13, 17 Interviews: R1

[12] E.g. ECDC/EMEA Joint Technical Report. The bacterial challenge: time to react. http://www.ema.europa.eu/docs/en_GB/document_library/Report/2009/11/WC500008770.pdf; Second Report from the Commission to the Council on the Basis of Member States' Reports on the Implementation of the Council Recommendation (2002/77/EC) on the Prudent Use of Antimicrobial Agents in Human Medicine. Technical annex: http://ec.europa.eu/health/antimicrobial_resistance/docs/cswd_technicalannex_en.pdf

[13] e.g. WHO world health day 2011 materials, French national plan 2011

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 1 (Relevance)	*Original: To what extent do the objectives of the action plan ~~still~~ address the problems identified in 2011? How well do these objectives still correspond to the current needs of tackling AMR within the EU?* Revised: **To what extent do the objectives of the action plan address the problems identified in 2011? How well do these objectives still correspond to the current needs of tackling AMR within the EU?**		
All	JC 1.2 Problems identified as relevant currently are addressed by the objectives	1. AP objectives still correspond to current EU needs	MS and SH surveys, interviews, public consultation, workshop • EU documents/reports psot-2011 • Reports and strategies from other bodies (e.g. WHO, US[14], UK[15], CDDEP[16]) from 2011-15. • Other policy reports and strategies published post-2011. • Academic reviews discussing AMR and policy needs, data from ECDC, etc. • Data reviewed under EQ3-EQ4 Synthesis of key messages from all EQ	PC 14, 15, 16, 17 SH-A, H 14, 15, 16, 17 MS-A, H 14, 15, 16, 17 Interviews: R2

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[14] https://www.whitehouse.gov/sites/default/files/docs/national_action_plan_for_combating_antibotic-resistant_bacteria.pdf

[15] https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/385733/UK_AMR_annual_report.pdf

[16] http://cddep.org/publications/state_worlds_antibiotics_2015

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 2 (Relevance)	**Are the areas for EU action appropriate in view of the distribution of EU and national competences?**		
All	JC 2.1 Areas for action are distributed in line with EU and MS competencies.	1. Appropriate allocation of areas of action	MS and SH surveys, interviews Policy documents that outline distribution of responsibilities[17]	SH-A,H 18, 19 MS-A,H 18, 19 Interviews: R1, 3

[17] E.g. Action Plan, Guidance on prudent use of antimicrobial agents in humans and animals

Action	EQ / JC	Indicators	Data sources	Survey / Interview
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
1	JC 3.1 Reduction or no increase in total antimicrobial consumption for use in humans.	1. Decrease or no increase in the volume of antimicrobials sold annually in the EU[18] since 2011[19]	Case study 1 • ESAC-Net: human consumption of antimicrobials, 2005-2013 • Relevant academic studies (supporting information)	N/a
		2. Decrease or no increase in the antimicrobials prescribed to patients since 2011	• APRES[20] data from primary care patient records • Relevant academic studies (supporting information)	N/a
		3. Decrease or no increase in total antimicrobial consumption in humans linked to the Action Plan (reference years 2011-15)	MS and SH surveys, interviews, workshops, case study 1	SH-H 23, 24 MS-H 23, 24 Interviews: E1, E2

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[18] Trends at EU-level over time as compared with international data; sub-group trends may include: community (i.e. non-hospital) and hospital settings, commonly prescribed antibacterials (e.g. penicillin with beta-lactamase inhibitors), age, gender, prescriber type

[19] Analysis of all indicators will include consideration of the time period before the Action Plan was implemented with reference to changes since 2011. The pre-2011 period of analysis will vary by indicator depending on available information, but will include at least the two previous years and up to five years.

[20] Data from individual patient records in primary care across 9 member states (to validate and explore trends identified in ESAC-Net data)

Action	EQ / JC	Indicators	Data sources	Survey / Interview
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
1	JC3.2 Appropriate use of antimicrobials in humans.	1. Reduction or no increase in consumption of antimicrobials in the primary care sector since 2011	ESAC-Net data on consumption of antibacterials for systemic use trends in EU MS (via sales and/or reimbursement information) covering period 2011-2014. (DDD/1000 inhabitants/day)	N/a
		2. Decrease or no increase in sales of antimicrobials without prescription since 2011	Policy reports and academic literature on sales of antimicrobials without prescription	N/a
		3. Decrease in the ratio of broad to narrow spectrum antimicrobials since 2011	• ESAC-Net: human consumption of antimicrobials, 2005-2013 • Relevant academic studies (supporting information)	N/a
		4. Increase in appropriate use is considered to be linked to the AP (reference years 2011-15)	MS and SH surveys, interviews	SH-H 25, 26 MS-H 25, 26 Interviews: E3, E4

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
1&4	JC 3.3 Improvement in approaches to treating infections in humans	1. Increased implementation by MS of the prescription-only requirements for antimicrobial agents (reference years 2011-15)	MS and SH surveys, interviews, workshops • Commission reports on promoting prudent use of antimicrobials[21],[22] • Other documentation or data from MS	SH-H 29 MS-H 29 Interviews: E5
		2. Decrease or no increase in health care associated infections in EU long-term care facilities since 2011	ECDC Surveillance Report of health care associated infections and antimicrobial use in European long-term care facilities[23]	N/a
		3. Decrease or no increase in antimicrobial use in EU long-term care facilities since 2011	ECDC Surveillance Report of health care associated infections and antimicrobial use in European long-term care facilities	N/a

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[21] 2nd report (and detailed analysis) on implementation of 2002 Recommendation (http://ec.europa.eu/health/antimicrobial_resistance/docs/amr_report2_en.pdf); First report was published in 2005, second in 2010; publication of third report anticipated in 2015 (according to Action Plan and Action Plan Progress Report). http://ecdc.europa.eu/en/healthtopics/antimicrobial_resistance/antimicrobial-resistance-healthcare-associated-infections-programme/Pages/ARHAI.aspx

[22] Figures for Europe also summarised in the WHO's Response to AMR report (April 2015). http://apps.who.int/iris/bitstream/10665/163468/1/9789241564946_eng.pdf?ua=1

[23] Reports on long-term care facilities cover 2010 and 2013 http://ecdc.europa.eu/en/publications/surveillance_reports/arhai/Pages/arhai.aspx

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	To what extent have the actions been effective at improving treatment of infections in humans and animals?		
		4. Increased implementation of control measures against AMR in nursing homes and long-term health facilities	MS and SH surveys, interviews, workshops HALT project report on national performance indicators for antimicrobial stewardship and infection control in Europe (2010 data)[24]	SH-H 29 MS-H 29 Interviews: E5
		5. Increased number of new training courses on AMR for healthcare workers (reference years 2011-15)	MS and SH surveys, interviews, workshops, case study 4 ECDC Core competencies for infection control and hospital hygiene professionals in the EU (2013) Figures from Commission's CSWD detailed analysis on country reports (published in 2010) on implementation of 2002 Recommendation	SH-H 29 MS-H 29 Interviews: E5
		6. Updated national strategies and control measures on AMR to account for new information (reference years 2011-15)	MS and SH surveys, interviews, workshops National AMR strategies	SH-H 29 MS-H 29 Interviews: E5

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[24] B. Cookson, D. MacKenzie, et al. (2013), 'Development and assessment of national performance indicators for infection prevention and control and antimicrobial stewardship in European long-term care facilities,' Journal of Hospital Infection, Volume 85, Issue 1, September 2013, Pages 45-53.

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
		7. Improvements considered to be linked to the AP and align with effective implementation by MS of 2002 Council Recommendation (AP Action 1) (reference years 2011-15)	MS and SH surveys, interviews, workshops, case study 4 2002 Council Recommendation on the prudent use of antimicrobial agents in human medicines (supporting document)	SH-H 29, 30 MS-H 29, 30 Interviews: E5, 6

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
2	JC3.4 Reduction or no increase in antimicrobial consumption for use in animals.	1. Decrease or no increase in the volume of antimicrobials sold annually in the EU since 2011	Case study 5 ESVAC: data on veterinary antimicrobial consumption (2010-2012); 5th ESVAC report (publication expected October 2015)	N/a
		2. Observed decrease or no increase in total antimicrobial consumption in animals linked to the Action Plan (reference years 2011-15)	MS and SH surveys, interviews, case study 5	SH-A 23, 24 MS-A 23, 24 Interviews: E10

Action	EQ / JC	Indicators	Data sources	Survey / Interview
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
2&3	JC3.5 Improvements in the prudent use of antimicrobials in veterinary medicine	1. Improvements in prudent use in veterinary medicine since 2011	MS and SH surveys, interviews, workshops, case study 6 Supporting documents: - Reports from EMA and CVMP as listed in progress report[25] - Information on updating of marketing authorisations[26] - Report (with FVO) on ability of national labs to monitor residues[27] - EFFORT data (if available)[28]	SH-A 27, 28 MS-A 27, 28 Interviews: E11, E12, E13

[25] Listed in Annex 1 of progress report: http://ec.europa.eu/health/antimicrobial_resistance/docs/2015_amr_progress_report_en.pdf

[26] Listed in Annex 2 of progress report: http://ec.europa.eu/health/antimicrobial_resistance/docs/2015_amr_progress_report_en.pdf

[27] FVO report 2015-7211, available at http://ec.europa.eu/food/fvo/overview_reports/details.cfm?rep_id=77

[28] Ecology from Farm to Fork Of microbial drug Resistance and Transmission, http://www.effort-against-amr.eu/, in particular, WP5: relationship between farming practices, antimicrobial usage, animal health and resistance; WP6: intervention studies aiming at reducing antimicrobial usage and resistance in pig and poultry production; WP7: quantification of exposure to antimicrobial resistance through different transmission routes from animals to humans

Action	EQ / JC	Indicators	Data sources	Survey / Interview
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
		2. Improvements in the prudent use of antimicrobials are aligned with the principles outlined in the Guidelines for the prudent use of antimicrobials in veterinary medicine (2015) (particularly justified prescription and use, avoidance of routine prophylaxis, avoiding use of medication for a full herd/flock)	Interviews, workshops, case study 6 Commission Notice: Guidelines for the prudent use of antimicrobials in veterinary medicine (Sept 2015)[29]	Interviews: E11, E12, E13
		3. Observed improvements are considered to be linked to the AP (reference years 2011-15)	MS and SH surveys, interviews, workshops, case study 6	SH-A 27, 28 MS-A 27, 28 Interviews: E11, E12, E13

[29] http://ec.europa.eu/health/antimicrobial_resistance/docs/2015_prudent_use_guidelines_en.pdf

Annex: http://ec.europa.eu/health/antimicrobial_resistance/docs/2015_prudent_use_guidelines_annex_en.pdf

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
2	JC3.6 Improvements in the rules, guidance and authorisation requirements for veterinary medicines and medicated feed.	1. Provision made for appropriate warnings and guidance on labels of veterinary antimicrobials in new legislative proposal under discussion	Interviews • Documentation for proposals on veterinary medicinal products and medicated feed (specific aspects related to addressing AMR)[30],[31] • Academic studies and policy reports (where available)	Interviews: E14
		2. Restrictions have been considered on regular or off-label use of certain new or critically important antimicrobials for humans in the veterinary sector since 2011	MS and SH surveys, interviews • Documentation for proposals on veterinary medicinal products and medicated feed (specific aspects related to addressing AMR)[32],[33] • Academic studies and policy reports (where available)	SH-A 25, 26 MS-A 25, 26 Interviews: E14

[30] Adopted by Commission in 2014. Background information: http://ec.europa.eu/health/veterinary-use/rev_frame_index_en.htm

[31] Further info on status of proposals on VMPs and medicated feed may be required from EC representatives

[32] Adopted by Commission in 2014. Background information: http://ec.europa.eu/health/veterinary-use/rev_frame_index_en.htm

[33] Further info on status of proposals on VMPs and medicated feed may be required from EC representatives

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
		3. Consideration given to amending the rules for advertisement of veterinary antimicrobials[34] since 2011	MS and SH surveys, interviews • Documentation for proposals on veterinary medicinal products and medicated feed (specific aspects related to addressing AMR)[35],[36] • Academic studies and policy reports (where available)	SH-A 25, 26 MS-A 25, 26 Interviews: E14
		4. Authorisation requirements revisited to sufficiently address risks and benefits of antimicrobial medicines (reference years 2011-15)	MS and SH surveys, interviews • Documentation for proposals on veterinary medicinal products and medicated feed (specific aspects related to addressing AMR)[37],[38] • Academic studies and policy reports (where available)	SH-A 25, 26 MS-A 25, 26 Interviews: E14

[35] Adopted by Commission in 2014. Background information: http://ec.europa.eu/health/veterinary-use/rev_frame_index_en.htm

[36] Further info on status of proposals on VMPs and medicated feed may be required from EC representatives

[37] Adopted by Commission in 2014. Background information: http://ec.europa.eu/health/veterinary-use/rev_frame_index_en.htm

[38] Further info on status of proposals on VMPs and medicated feed may be required from EC representatives

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	To what extent have the actions been effective at improving treatment of infections in humans and animals?		
		5. Observed or considered improvements in rules, guidance and authorisation requirements are linked to AP (reference years 2011-15)	Interviews • Documentation for proposals on veterinary medicinal products and medicated feed (specific aspects related to addressing AMR)[39],[40] • Academic studies and policy reports (where available)	Interviews: E14, 15

[39] Adopted by Commission in 2014. Background information: http://ec.europa.eu/health/veterinary-use/rev_frame_index_en.htm

[40] Further info on status of proposals on VMPs and medicated feed may be required from EC representatives

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
	JC3.7 Increased support for collaborative research and development efforts to bring new antibiotics to patients	1. Introduction of fast-track procedures for the marketing authorisation of new antimicrobials	Interviews, workshops • EMA Annual Reports and work programmes[41] and medicines database • Secondary publications on the antimicrobial pipeline[42]	Interviews: E22
		2. Introduction of fast-track procedures for marketing new antimicrobials is linked to the AP (reference years 2011-15)	Interviews, workshops	Interviews: E19
6		3. Number of new projects to support R&D that address the needs and challenges of antibiotic development (reference years 2011-15)	Interviews, workshops Relevant documentation pertaining to EU projects, focusing on IMI/IMI2, and FP7 and Horizon 2020 Documentation of New Drugs for Bad Bugs Programme (ND4BB)	Interviews: E22

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[41] http://www.ema.europa.eu/ema/index.jsp?curl=pages/about_us/document_listing/document_listing_000208.jsp&mid=WC0b01ac058002933a [last accessed 3 November 2015]

[42] http://www.ema.europa.eu/ema/index.jsp?curl=pages/includes/medicines/medicines_landing_page.jsp [last accessed 3 November 2015]

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
		4. Budget data indicate resources mobilised to support antibiotic R&D since 2011	Relevant documentation pertaining to EU funding,[43] including IMI,[44] IMI2,[45] FP7[46] and Horizon 2020[47] Documentation of New Drugs for Bad Bugs Programme (ND4BB)[48]	N/a

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[43] For instance, EU communication on new research projects: http://europa.eu/rapid/press-release_MEMO-13-996_en.htm?locale=en [last accessed 3 November 2015]

[44] IMI (N.d.) Budgets and Annual Accounts. Available from http://www.imi.europa.eu/content/documents#budget_accounts [last accessed 3 November 2015]. IMI (N.d.) Annual Activity Reports. Available from http://www.imi.europa.eu/content/documents#activity_reports [last accessed 3 November 2015]

[45] IMI2 (2014) The right prevention and treatment for the right patient at the right time: Strategic Research Agenda for Innovative Medicines Initiative 2. Available from http://www.imi.europa.eu/sites/default/files/uploads/documents/IMI2_SRA_March2014.pdf [last accessed 3 November 2015]. IMI2 (N.d.) Budgetary control. Available from http://www.imi.europa.eu/content/budgetary-control [last accessed 3 November 2015].

[46] For instance FP7 monitoring reports. Available from https://ec.europa.eu/research/evaluations/index_en.cfm?pg=fp7-monitoring [last accessed 3 November 2015]

[47] For example, first Horizon 2020 Work Programme update. Available from http://europa.eu/rapid/press-release_MEMO-14-492_en.htm [last accessed 3 November 2015]. Horizon 2020 2014-2015 Work Programme in the area of Health, demographic change and wellbeing. Available from http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-health_en.pdf#page=99 [last accessed 3 November 2015]

[48] http://www.imi.europa.eu/content/nd4bb

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
		5. Establishment of adequate market and pricing conditions for new antibiotics since 2011	MS and SH surveys, interviews • Available review and summary documentation and commentaries on EU research and development into new antimicrobials[49] • EMA guidelines and other documentation for private sector pertaining to new drug development[50]	SH-H 33, 34, 35, 36 MS-H 33, 34, 35, 36 Interviews: E19

[49] For instance, Rex, JH (2014) ND4BB: addressing the antimicrobial resistance crisis. Nature Reviews Microbiology 12:231–232. Roca, I, Akova, M, Baquero, F et al. (2015) The global threat of antimicrobial resistance: science for intervention. New Microbes and New Infections 6:22-29. Payne, DJ, Miller, LF, Findlay, D et al. (2015) Time for a change: addressing R&D and commercialization challenges for antibacterials. Philosophical Transactions of the Royal Society of London B: Biological Sciences, 370(1670). Eichberg, MJ (2015) Public funding of clinical-stage antibiotic development in the United States and European Union. Health security 13(3):156-165. Geoghegan-Quinn, M (2014) Funding for antimicrobial resistance research in Europe. The Lancet 384(9949):1186.

[50] Examples include Guidelines on the evaluation of medicinal products indicated for treatment of bacterial infections (available from http://www.ema.europa.eu/docs/en_GB/document_library/Scientific_guideline/2009/09/WC500003417.pdf [last accessed 3 November 2015]), an addendum to the guidelines (available from http://www.ema.europa.eu/docs/en_GB/document_library/Scientific_guideline/2013/11/WC500153953.pdf [last accessed 3 November 2015), and materials related to a workshop on regulatory options for approval of new antibacterials for human use (available from http://www.ema.europa.eu/ema/index.jsp?curl=pages/news_and_events/events/2013/09/event_detail_000781.jsp&mid=WC0b01ac058004d5c3 [last accessed 3 November 2015].

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
		6. Improved R&D efficiency is linked to the AP (esp. the launch of programme for research on new antibiotics with EFPIA and within the IMI-Joint Undertaking, and related to efforts to enable joint sharing of knowledge) (reference years 2011-15)	MS and SH surveys, interviews Documentation pertaining to IMI research programmes such as COMBACTE (incl. CARE and MAGNET),[51] TRANSLOCATION,[52] ENABLE[53] and DRIVE-AB,[54] and IMI2 research[55]	SH-H 31, 32 MS-H 31, 32 E18
		7. Improvements in public-private collaboration for antibiotic R&D, linked to the establishment of a framework agreement with the industry, defining objectives, commitments, priorities, principles and modes of action for public-private collaboration in a longer term perspective (AP Action 6) (reference years 2011-15)	Interviews, workshops	Interviews: E21

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[51] http://www.combacte.com/

[52] http://www.nd4bb.eu/index.php/myarticles/2-translocation

[53] http://www.nd4bb-enable.eu/

[54] http://drive-ab.eu/

[55] IMI2 (2014) The right prevention and treatment for the right patient at the right time: Strategic Research Agenda for Innovative Medicines Initiative 2. Available from http://www.imi.europa.eu/sites/default/files/uploads/documents/IMI2_SRA_March2014.pdf [last accessed 3 November 2015]. IMI2 (N.d.) Budgetary control. Available from http://www.imi.europa.eu/content/budgetary-control [last accessed 3 November 2015].

	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	To what extent have the actions been effective at improving treatment of infections in humans and animals?		
7	JC3.8 Improvement in the conditions for the introduction of new veterinary antimicrobials	1. Progress in incentivising innovation in veterinary medicine, and reduction of related barriers since 2011	MS and SH surveys, interviews, workshops	SH-A 30 MS-A 30 Interviews: E23
		2. Inclusion of incentives in new legislation on veterinary medicinal products to support the development of veterinary medicine innovations, and reduction of related barriers since 2011	Documentation for proposals on veterinary medicinal products and medicated feed (specific aspects related to addressing AMR)[56]	N/a
		3. Improved understanding of the need for new antibiotics in veterinary medicine (AP Action 7) and the need to offer incentives/ reduce barriers, linked to the AP since 2011	MS and SH surveys, interviews, workshops • Documentation of EC request to EMA for scientific advice[57] • Information related to AP Action 2	SH-A 29 MS-A 29 Interviews: E24

[56] Adopted by Commission in 2014. Background information: http://ec.europa.eu/health/veterinary-use/rev_frame_index_en.htm

[57] [Electronic Version unavailable as of 23 Sept 2015] EMA. 2014. Request for scientific advice on the impact on public health and animal health of the use of antibiotics in animals - Answer to the second, third and fourth request from the European Commission. http://www.ema.europa.eu/docs/en_GB/document_library/Other/2014/07/WC500170253.pdf.http://www.ema.europa.eu/docs/en_GB/document_library/Other/2014/07/WC500170253.pdf

Request for advice: http://www.ema.europa.eu/docs/en_GB/document_library/Other/2013/04/WC500142070.pdf

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
11	JC3.9 Reinforcement and increased coordination of research efforts	1. Increases in budget allocations to further research aimed at better understanding of antimicrobial resistance and pathogenic-host interactions, and the development of diagnostic tools, vaccines and other preventive measures since 2011	Documentation pertaining to EU funding, including FP7 and Horizon 2020[58]	N/a
		2. Number of programmes launched and outcomes of these programmes (where outcomes available) have increased further research in these areas since 2011	Documentation for FP7 an Horizon2020	N/a
		3. Pipeline data on diagnostics, vaccines, etc. confirm further research on treatments since 2011	Pipeline data on diagnostics, vaccines, etc.	N/a
		4. Budget allocations, programme development, and pipeline developments in these areas are linked to the AP (reference years 2011-15)	MS and SH surveys, interviews	SH-A 31, 32 SH-H 37, 38 MS-A 31, 32 MS-H 37, 38 Interviews: E25

[58] For example, EU communication on new research projects: http://europa.eu/rapid/press-release_MEMO-13-996_en.htm?locale=en [last accessed 3 November 2015]; FP7 monitoring reports. Available from https://ec.europa.eu/research/evaluations/index_en.cfm?pg=fp7-monitoring [last accessed 3 November 2015]; First Horizon 2020 Work Programme update. Available from http://europa.eu/rapid/press-release_MEMO-14-492_en.htm [last accessed 3 November 2015]. Horizon 2020 2014-2015 Work Programme in the area of Health, demographic change and wellbeing. Available from http://ec.europa.eu/research/participants/data/ref/h2020/wp/2014_2015/main/h2020-wp1415-health_en.pdf#page=99 [last accessed 3 November 2015]

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 3 (Effectiveness)	**To what extent have the actions been effective at improving treatment of infections in humans and animals?**		
		5. JPI on coordinating national research activities related to AMR has affected national funding decisions, with increase budget allocations going to this issue (reference years 2011-15)	Interviews	Interviews: E25
		6. Activities under the AP to reinforce and increase coordination on research are considered to have led to positive changes in treatments for infections (reference years 2011-15)	MS and SH surveys, interviews	SH-A 31, 32 SH-H 37, 38 MS-A 31, 32 MS-H 37, 38 Interviews: E25

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
4	JC4.1 Improvements or no changes have occurred in country-level indicators of resistance in	1. Reduction in antimicrobial resistance[59] over time for the EU overall and MS[60] since 2011	Case study 2 • EARS-Net data[61] • Gonococcal antimicrobial susceptibility surveillance data[62] • Relevant academic literature on AMR[63] • EFSA and ECDC data and reports on zoonoses[64]	N/a

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[59] Defined as a resistance percentage, weighted by the population coverage in each country and the size of the country relative to rest of EU

[60] Where sufficient data is available: EARS-Net guidance is not to report if <10 isolates were reported for a specific organism–antimicrobial agent combination in a country

[61] Data is on resistance to eight key bacteria pathogens of public health importance, 2005-2013 (and 2014 if available)

[62] Annual data, e.g. Gonococcal antimicrobial susceptibility surveillance in Europe 2011. ECDC, 2013. http://www.ecdc.europa.eu/en/publications/publications/gonococcal-antimicrobialsusceptibility-surveillance-27-mar-2013.pdf

[63] Livestock-associated methicillin-resistant Staphylococcus aureus in humans, Europe. Emerg Infect Dis 2011;17(3):502-5. http://wwwnc.cdc.gov/eid/article/17/3/pdfs/10-1036.pdf ; New Delhi metallo-beta-lactamase 1-producing Enterobacteriaceae: emergence and response in Europe. 2010. Eurosurveillance 2010;15(46). pii: 19716.

http://www.eurosurveillance.org/images/dynamic/EE/V15N46/art19716.pdf

[64] EFSA and ECDC (2014) The European Union Summary Report on Trends and Sources of Zoonoses, Zoonotic Agents and Food-borne Outbreaks in 2012. EFSA Journal 12(3):3590-3904; EFSA and ECDC (2013) The European Union Summary Report on Trends and Sources of Zoonoses, Zoonotic Agents and Food-borne Outbreaks in 2011. EFSA Journal 11(4):3129-3378; EFSA and ECDC (2012) The European Union Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in 2010. EFSA Journal 10(3):2598-2830; EFSA and ECDC (2011) The European Union Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from humans, animals and food in the European Union in 2009.EFSA Journal 9(7):2154-2474; EFSA and ECDC (2010) The Community Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from animals and food in the European Union in 2008. EFSA Journal 8(7):1658-1918; EFSA and ECDC (2010) The Community Summary Report on antimicrobial resistance in zoonotic and indicator bacteria from animals and food in the European Union in 2004-2007. EFSA Journal 2010; 8(4):1309-1614.

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
	microorganisms of major public health importance, including Hospital Acquired Infections (HAIs).	2. Decrease or no increase in the occurrence of HAIs in the EU overall over time and across MS since 2011	Case study 2 and 3 • Patient safety and HAIs progress report[65] • ECDC Core competencies for infection control and hospital hygiene professionals in the EU (2013). • ECDC surgical site infection reports • ECDC HAIs surveillance report[66] • Academic literature on HAIs[67] and • APRES study[68]	N/a
		3. Observed improvements or no changes in country-level indicators of resistance are linked to the AP (reference years 2011-15)	MS and SH surveys, interviews, workshops, case study 2 and 3	SH-H 27, 28 MS-H 27, 28 Interviews: E7, 8, 9

[65] Patient Safety and HAIs, report from the Commission to the Council, June 2014, http://ec.europa.eu/health/patient_safety/docs/ec_2ndreport_ps_implementation_en.pdf

[66] Report was published most recently in 2013, with point prevalence data of HAIs in a survey of individual acute care hospitals (>1,000 hospitals in 29 European countries)

[67] E.g. ECDC pilot point prevalence survey of healthcare-associated infections and antimicrobial use. Eurosurveillance 2012;17(46). pii: 20316. http://www.eurosurveillance.org/images/dynamic/EE/V17N46/art20316.pdf; Clostridium difficile infection in Europe: a hospital-based survey. Lancet 2011;377(9759):63-73. http://www.ecdc.europa.eu/en/activities/sciadvice/_layouts/forms/Review_DispForm.aspx?ID=633&List=a3216f4c-f040-4f51-9f77-a96046dbfd72 ; Update of Clostridium difficile-associated disease due to PCR ribotype 027 in Europe, 2008. Eurosurveillance 2008;13(31). pii: 18942. http://www.eurosurveillance.org/images/dynamic/EE/V13N31/art18942.pdf ; Update of Clostridium difficile-associated disease due to PCR ribotype 027 in Europe. Eurosurveillance 2007;12(3-6):163-6. http://www.eurosurveillance.org/images/dynamic/EQ/v07n02/v07n02.pdf

[68] Antibiotic resistance patterns in 9 European countries

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
		4. Improvements in the organisation and delivery of health services (human) that are aimed at reducing spread and risks of AMR (AP Action 4) (reference years 2011-15), including: - Development of/updates to guidance on infection prevention in Member States; - Increased surveillance; - Greater numbers of Member States providing and requiring training for healthcare workers in patient safety and HAIs	Interviews, workshops 2009 Council Recommendations on patient safety including prevention and control of HAIs, and 2012 progress reports, and the report Patient Safety and Healthcare-Associated Infections (report from the Commission to the Council, June 2014) (supporting documents) Level of coverage of HAI-Net point prevalence surveys	Interviews: E7

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
12	JC4.2 Awareness of AMR amongst the general public and health practitioners has improved or is not decreasing.	1. Improvements or no decrease in awareness of AMR and appropriate antimicrobial usage among public health practitioners since 2011	Interviews, workshops, case study 4 and 7	Interviews: E5
		2. Increase or no decrease in awareness of AMR and appropriate antimicrobial usage among the general public since 2011	MS and SH surveys, interviews, public consultation, workshops, case study 4 and 7	PC 8, 9, 10, 11, 12, 13 SH-A 36, 37 SH-H 39, 40 MS-A 36, 37 MS-H 39, 40 Interviews: E34

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
		3. Available documentation supports consultation findings that there have been improvements or no decrease in awareness of AMR and appropriate use among public health practitioners and the general public since 2011	Case study 4 and 7 • Documentation of MS campaigns and assessment • Hand hygiene reports[69] • Impact assessment of national and EU awareness campaigns on AMR[70] • Eurobarometer survey reports (2009, 2013)[71] • European AMR Awareness Day report[72] • Documentation of MS campaigns and assessment	N/a

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[69] The role and utilisation of public health evaluations in Europe: A case study of national hand hygiene campaigns. BMC Public Health 2014;14:131.

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3931350/pdf/1471-2458-14-131.pdf

National hand hygiene campaigns in Europe, 2000-2009. Eurosurveillance 2009;14(17). pii: 19190. http://www.eurosurveillance.org/images/dynamic/EE/V14N17/art19190.pdf

Pathways to clean hands: highlights of successful hand hygiene implementation strategies in Europe. *Eurosurveillance* 2010;15(18). pii: 19560.

http://www.eurosurveillance.org/images/dynamic/EE/V15N18/art19560.pdf

[70] If additional data available related to AP Action 12 has been reported (beyond the 2013 Eurobarometer)

[71] On patterns of antibiotic usage, understanding of appropriate use, and AMR awareness.

[72] Earnshaw et al. (2014), *Eurosurveillance*

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	To what extent have the actions aimed at containing the risks of spreading AMR been effective?		
		4. Increase or no decrease in awareness is linked to the AP (reference years 2011-15)	MS and SH surveys, interviews, workshops, case study 4 and 7	SH-A 38 SH-H 41 MS-A 38 MS-H 41 Interviews: E35

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	To what extent have the actions aimed at containing the risks of spreading AMR been effective?		
5	JC4.3 Improvements in the legal basis and guidance for containing the risks of spreading AMR	1. Discussions on the introduction of the new Animal Health Law includes a focus on disease prevention and the inclusion of a legal basis for monitoring AMR in animal pathogens (AP Action 5)	MS and SH surveys, interviews, workshops Supporting documents to the Animal health law[73]	SH-A 33, 34, 35 MS-A 33, 34, 35 Interview: E16, 17, 29
		2. Anticipated improvements in efforts to reduce the spread and risks of AMR are linked to the AP (reference years 2011-15)	MS and SH surveys, interviews, workshops Supporting documents to the Animal health law[74]	SH-A 33, 34, 35 MS-A 33, 34, 35 Interview: E16, 17, 29

[73] http://ec.europa.eu/food/animal/animal-health-proposal-2013_en.htm

[74] http://ec.europa.eu/food/animal/animal-health-proposal-2013_en.htm

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
8	JC4.4 Strengthened multilateral and bilateral commitments for the prevention and control of AMR in all sectors	1. New or strengthened commitment mechanisms for the prevention and control of AMR have been concluded on a bilateral and/or multilateral basis since 2011	MS and SH surveys, interviews, workshops Documentation of initiatives as listed in progress report, e.g. work on Codex Alimentarius products,[75] collaboration with the WHO,[76] OIE,[77] US (TATFAR),[78] and countries in the Joint Programming Initiative on AMR (JPIAMR)	SH-A 39 SH-H 42 MS-A 39 MS-H 42 Interviews: C4
		2. Strengthened and newly developed multi- and bilateral commitments are linked to the AP (AP Action 8) (reference years 2011-15)	MS and SH surveys, interviews, workshops	SH-A 40, 41 SH-H 43, 44 MS-A 40, 41 MS-H 43, 44 Interviews: C5

[75] For instance, guidelines for risk analysis of foodborne antimicrobial resistance

[76] For instance, implementation of the WHO European strategic action plan on antibiotic resistance, the Global Foodborne Infections Network (GFN) and the Advisory Group in surveillance of Antimicrobial resistance (AGISAR).

[77] For instance, the development of the OIE standards on antimicrobial resistance and collaboration in the ad hoc group AMR

[78] See, for instance, TATFAR's progress report: http://www.cdc.gov/drugresistance/tatfar/report.html

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
9		1. Data on usage for humans have become more accessible at local/regional/hospital levels since 2011	MS and SH surveys, interviews, workshops, case study 5 Supporting documentation: • ESAC-Net	SH-H 45, 46, 47, 49 MS-H 45, 46, 47, 49 Interviews: E30
10	JC4.5 Strengthened surveillance systems on AMR and antimicrobial consumption	2. Improvements have been made in the collection of harmonised data on usage per animal species and by production categories, and for indications across MS since 2011 (supported by documentation)	MS and SH surveys, interviews, workshops, case study 5 Supporting documentation: • EFSA Summary report on AMR in zoonotic and indicator bacteria (2013)[79] • Completeness of ESVAC surveillance data	SH-A 42, 43, 44, 46 MS-A 42, 43, 44, 46 Interviews: E26, 27
		3. Improvements have been made in surveillance through the AMR review of monitoring in zoonotic bacteria since 2011	MS and SH surveys, interviews, workshops, case study 5 Supporting documentation: • EFSA Summary report on AMR in zoonotic and indicator bacteria (2013)[80] • Completeness of ESVAC surveillance data	SH-A 42, 43, 44, 46 MS-A 42, 43, 44, 46 Interviews: E26, 27

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[79] http://www.efsa.europa.eu/en/efsajournal/pub/4036

[80] http://www.efsa.europa.eu/en/efsajournal/pub/4036

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 4 (Effectiveness)	**To what extent have the actions aimed at containing the risks of spreading AMR been effective?**		
9&10		4. Evidence that strengthened systems are linked to the AP (reference years 2011-15), including: • Improvements in access to data on AMR at all levels (regional, local, hospitals) • Improved sustainability of the ESAC project through transfer to ECDC • Support and monitoring of ARPEC • Improvement in harmonisation established between human and veterinary surveillance to enable comparative analysis	MS and SH surveys, interviews, workshops, case study 5	SH-A 43, 45, 47 SH-H 46, 48, 50 MS-A 43, 45, 47 MS-H 46, 48, 50 Interviews: E28, 29, 31, 32, 33

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 5 (Effectiveness)	**To what extent has the coverage of actions across different services (DGs) within the European Commission been effective in capturing the holistic approach and in delivering results?**		
All	JC5.1 AMR-related actions are being carried out across the relevant DGs in accordance with the One Health	1. Actions identified in the AP cover the areas required for taking a holistic approach (reference years 2011-15)	MS and SH surveys, interviews, public consultation, workshops, case study 8	PC 18, 19, 20 SH-A, H 20, 21, 22 MS-A, H 20, 21, 22 Interviews: R4
		2. Responsibility for actions in the AP have been allocated to appropriate DGs, with no gaps identified	Interviews, case study 8 Relevant EC policies (supporting documentation)	Interviews: R5

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 5 (Effectiveness)	**To what extent has the coverage of actions across different services (DGs) within the European Commission been effective in capturing the holistic approach and in delivering results?**		
	approach, and are joined-up and coherent, with communication occurring across DGs.	3. Evidence that DGs have successfully carried out the AP actions in their remit.	Interviews, case study 8	Interviews: R6
		4. Evidence indicates that AP actions support the 'One Health' concept.	Interviews, case study 8 • EMA One Health report[81] • Council conclusions on the impact of AMR in the human health sector and in the veterinary sector – a "One Health" perspective (2012) • Other literature on One Health[82]	Interviews: R4

[81] http://animalhealthmedia.com/wp-content/uploads/2015/03/04.-One-Health-The-Regulation....pdf

[82] E.g. FAO-OIE-WHO Tripartite Concept Note (2010); Gibbs, E. P. J. (2014). The evolution of One Health: a decade of progress and challenges for the future. Veterinary Record, 174(4), 85-91.

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 5 (Effectiveness)	**To what extent has the coverage of actions across different services (DGs) within the European Commission been effective in capturing the holistic approach and in delivering results?**		
All	JC5.2 The holistic approach has been effective in helping to achieve the core objectives of the Action Plan.	1. More progress is considered to have been made than could have been achieved in the absence of a holistic approach (reference years 2011-15)	Interviews, workshops, case study 8 Synthesis of information gathered for other EQs	Interviews: A3

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 6 (Efficiency)	**Has the EU budget been efficiently used to address the objectives of the Action Plan?**		
All	JC6.1 EU budget allocated and spent for the Action Plan is consistent with AP objectives	1. Budget resources are aligned with AP objectives (reference years 2011-15)	Budget documents from EC agencies (e.g. ESVAC, Ears-Net) and DGs[83]	N/a
		2. Appropriate allocation of resources according to priority (reference years 2011-15)	MS and SH surveys, interviews, public consultation Budget documents from EC agencies (e.g. ESVAC, Ears-Net) and DGs[84]	PC 21, 22 SH-A 48, 49, 50 SH-H 51, 52, 53 MS-A 48, 49, 50, 58, 59 MS-H 51, 52, 53, 61, 62 Interviews: Ey2, Ey3
		3. Budget allocations are linked to Action Plan objectives (reference years 2011-15)	MS and SH surveys, public consultation	PC 22 SH-A 50 SH-H 53 MS-A 50 MS-H 53

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[83] i.e. related to monitoring and surveillance in human and animal health, research, Eurobarometer and awareness-raising initiatives.

[84] i.e. related to monitoring and surveillance in human and animal health, research, Eurobarometer and awareness-raising initiatives.

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 6 (Efficiency)	**Has the EU budget been efficiently used to address the objectives of the Action Plan?**		
	JC6.2 Expenditure on the Action Plan is justified because it helped towards achieving objectives of the Action Plan and funding would not have been made available otherwise	1. Activities funded would not have occurred in the absence of EU funds, or would have occurred more slowly or to a lesser extent (reference years 2011-15)	MS and SH surveys, interviews, public consultation Documents/data on effectiveness (EQ3-4) Assessments of impact/efficiency[85]	PC 30, 31 SH-A 61, 62 SH-H 64, 65 MS-A 70, 71 MS-H 73, 74 Interviews: Ey4
		2. Activities supported contributed towards achieving AP objectives (reference years 2011-15)	Comparison of funded activities with objectives.	N/a

[85] One example is a report on European AMR Awareness Day (Earnshaw et al. (2014), *Eurosurveillance*)

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ7 (Coherence)	**To what extent is the Action Plan coherent with Member States' relevant national (or regional) strategies and action plans and with similar initiatives at the international level?**		
All	JC7.1 The *actions* set out in the EU Action Plan complement and/or reinforce those in national and international strategies and the *objectives* are consistent with those of other strategies (MS, regional	1. National actions plans and strategies complement and cohere with AP objectives and actions (reference years 2011-15)	National action plans[86]	N/a
		2. International initiatives complement and cohere with AP objectives and actions (reference years 2011-15)	Documentation from international bodies,[87]	N/a
		3. National plans/strategies cohere with AP objectives and actions (reference years 2011-15)	MS and SH surveys, interviews, public consultation, workshops	PC 23, 24 SH-A 51, 52 SH-H 54, 55 MS-A 55, 56, 57, 60, 63 MS-H 58, 59, 60, 63, 66 Interviews: C3, 6, 7

[86] National plans: Austria, France, Germany, Greece, Ireland, Netherlands, Spain, Sweden, United Kingdom (as listed at http://ecdc.europa.eu/en/healthtopics/Healthcare-associated_infections/guidance-infection-prevention-control/Pages/antimicrobial-resistance-strategies-action-plans.aspx)

International bodies/initiatives: WHO Global Action Plan, TATFAR, WHO, OIE, FAO, Codex Alimentarius.

[87] Note: According to lists compiled by the ECDC and WHO, there are no regional strategies/activities that cover Europe except TATFAR recommendations. (WHO list: http://www.who.int/drugresistance/global_action_plan/General_and_national_plans_amr_Dec_2014.pdf)

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ7 (Coherence)	**To what extent is the Action Plan coherent with Member States' relevant national (or regional) strategies and action plans and with similar initiatives at the international level?**		
	and international).	4. International initiatives complement and cohere with AP objectives and actions (reference years 2011-15)	MS and SH surveys, interviews, public consultation, workshops	PC 27, 28, 29 SH-A 55, 56, 57 SH-H 58, 59, 60 MS-A 64, 65, 66 MS-H 67, 68, 69

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ8 (Coherence)	**To what extent are the actions contained in the Action Plan coherent with other EU policies on the environment, human health, animal health and welfare, food safety, agriculture, research, competitiveness and SMEs?**		
All	JC8.1 The actions set out in the EU Action Plan are coherent with those set out in other relevant EU policies, and are aligned with respective competencies.	1. Consistency between AP objectives and those in other policies and no conflicts, gaps or duplication of efforts (reference years 2011-15)	MS and SH surveys, public consultation, interviews, workshops Relevant EU policies[88] Synthesis of findings on effectiveness and relevance	PC 25, 26 SH-A 53, 54 SH-H 56, 57 MS-A 51, 52, 53, 54, 55 , 61, 62, 63 MS-H 54, 55, 56, 57, 58, 64, 65, 66 Interviews: C1, 2

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[88] Identified with support of steering group and/or DG representatives interviewed

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 9 (EU Added Value)	**What is the added value resulting from the EU Action Plan compared with what could be achieved by Member States at national and/or regional levels? Did the EU Action Plan identify the actions which should be best dealt with at EU level?**		
All	JC9.1 The Action Plan has led to results beyond what could be achieved by Member State or regional actions alone.	1. Evidence that discontinuation of actions under the AP may have had negative consequences for the situation on AMR in the EU (reference years 2011-15)	MS and SH surveys, interviews	Added-value survey question synthesis Interviews: A2
		2. Improvements cannot be viewed as a result of MS efforts and initiative alone, i.e. MS took actions as a result of the Action Plan that would otherwise not have taken place, or would have occurred more slowly or to a lesser extent (reference years 2011-15)	MS and SH surveys, interviews	SH-A 60 SH-H 63 MS-A 54, 69 MS-H 57, 72 Interviews: A1
		3. Evidence that there was no detrimental impact on existing MS actions for tackling AMR (i.e. the Action Plan did not disrupt or slow existing activity that was already planned) (reference years 2011-15)	Interviews	Interviews: A1

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 9 (EU Added Value)	**What is the added value resulting from the EU Action Plan compared with what could be achieved by Member States at national and/or regional levels? Did the EU Action Plan identify the actions which should be best dealt with at EU level?**		
All	JC9.2 The Action Plan identifies actions best dealt with at EU level.	1. There is a clear link between the characteristics of the AMR challenge and the need for action at the EU level (reference years 2011-15)	MS and SH surveys, interviews Review and synthesis of information gathered for EQ2 and EQ9 above	SH-A 58, 59 SH-H 61, 62 MS-A 67, 68 MS-H 70, 71 Interviews: R3
		2. Areas for EU action are appropriate in view of EU and national competencies (as assessed in EQ2) (reference years 2011-15)	MS and SH surveys, interviews Review and synthesis of information gathered for EQ2 and EQ9 above	SH-H 61, 62 MS-H 70, 71 SH-A 58, 59 MS-A 67, 68 Interviews: R3

Action	EQ / JC	Indicators	Data sources	Survey / Interview questions
	EQ 10 (EU Added Value)	**Original: To what extent can any observed improvements in the situation on AMR in the EU be associated with the development and implementation of the EU Action Plan?** **Revised: *To what extent can improvements in the situation on AMR (outcomes and other changes identified in the previous EQs) be associated with the development and implementation of the EU Action Plan?***		
All	JC 10.1 There is observable progress or no negative changes in relation to the objectives of the Action Plan.	1. Evidence of effective support being provided for research and innovation related to AMR (reference years 2011-15)	MS and SH surveys, interviews, public consultation, workshops Documents and data gathered in EQ1-8	PC, all MS and SH surveys; questions that identify attribution of improvements with the AP
		2. Evidence of effective support for international collaboration and coordination (reference years 2011-15)	Review and synthesis of data gathered under JC 3.7, 3.8, 3.9	N/a
		3. Evidence of effective improvement in policies and guidance relevant to AMR (prevention of infections and spread of AMR) since 2011	Review and synthesis of data gathered under JC 4.4 and coherence indicators	N/a
		4. Improvements can be associated with the AP / the AP is not linked to any negative outcomes (reference years 2011-15)	Review and synthesis of data gathered under JC 3.2, 3.5, 3.6, 4.3	N/a

APPENDIX E: STAKEHOLDER MAPPING

Note: EU-level interest groups are listed under the stakeholder workshops invitee list (Appendix 5). MS-level interest groups consulted will be those that are members of the EU-level interest groups.

Table 4: EU-level public actors

EU body	Relevant sub-bodies	Area of interest
European Centre for Disease Prevention and Control	Antimicrobial Resistance and Healthcare-Associated Infections (ARHAI) Programme	**Monitoring**
	EARS-Net - European AMR Surveillance Network	
	ESAC-Net	
European Medicines Agency	Committee for Medicinal Products for Human Use	**Human health**
	Infectious Disease Working Party	
	Scientific Advisory Group on Anti-infectives	
	Antimicrobials Working Party	**Animal health**
	Committee for Medicinal Products for Veterinary Use	
European Food Safety Authority	Panel on Biological Hazards (BIOHAZ)	**Food**
	Panel on Additives and Products or Substances used in Animal Feed (FEEDAP)	
	Taskforce on Zoonoses Data Collection	
DG SANTE	Evaluation steering group	**Monitoring**
	Advisory Group on the Food Chain and Animal and Plant Health	**Food Animal health**
	Standing Committee on Plants, Animals, Food and Feed	
	Scientific Committee on Health and Environmental Risks (SCHER)	**Monitoring**
	Scientific Committee on Emerging and Newly Identified Health Risks (SCENIHR)	**Monitoring**
	Food and Veterinary Office	**Food Animal health**
DG AGRI	Directorate B - multilateral relations, quality policy	**Food Farming animal health**
	Directorate E - Economic analysis, perspectives and evaluation; communication	
	Directorate C - economics and analysis of agricultual markets	**Farming**
	Directorate H - General aspects of rural development and research	**Research and innovation**

EU body	Relevant sub-bodies	Area of interest
DG GROW	Directorate D - Consumer, Environmental and Health Technologies	Food
		Human health
DG RTD	Infectious Diseases and Public Health Unit	Research and innovation
Heads of Medicines Agency		Human health
Consumers, Health, Agriculture and Food Executive Agency (Chafea)		Human health

Table 5: Country-level European public bodies

Country	Organisation	Primary interest	AMR activities
Austria	Austrian Agency for Health and Food Safety	Human health	EMA National Competent Authority; EFSA focal point
	Ministry of Health	Human health	EARS-Net national participating institution; ECDC Coordinating Competent Body
Belgium	Federal Agency for Medicines and Health Products	Human health	EMA National Competent Authority
	Federal Public Service for Health, Food Chain Safety and Environment	Food	EFSA focal point; Hosts Belgian Antibiotic Policy Coordination Committee
	Scientific Institute of Public Health	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
Bulgaria	Bulgarian Drug Agency	Human health	EMA National Competent Authority (human)
	National Veterinary Service	Animal health	EMA National Competent Authority (veterinary)

Country	Organisation	Primary interest	AMR activities
	National Center of Infectious and Parasitic Diseases	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
	Bulgarian Food Safety Agency	Food	EFSA focal point
Croatia	Agency for medicinal products and medical devices of Croatia	Human health	EMA National Competent Authority (human)
	Croatian National Institute of Public Health	Human health	ECDC Coordinating Competent Body
	Ministry of Agriculture - Veterinary and food safety directorate	Animal health	EMA National Competent Authority (veterinary)
	Ministry of Health	Human health	EARS-Net national participating institution
	Croatian Food Agency (HAH)	Food	EFSA focal point
Cyprus	Ministry of Health - Pharmaceutical Services	Human health	EMA National Competent Authority (human)
	Veterinary Services, Ministry of Agriculture, Natural Resources and Environment	Animal health	EMA National Competent Authority (veterinary)
	Directorate of Medical and Public Health Services	Human health	ECDC Coordinating Competent Body
	Ministry of Health - The State General Laboratory	Monitoring	EFSA focal point
Czech Republic	State Institute for Drug Control	Monitoring	EMA National Competent Authority (human)
	Institute for State Control of Veterinary Biologicals and Medicines	Drugs regulation	EMA National Competent Authority (veterinary)
	National Institute of Public Health	Research and innovatin	EARS-Net national participating institution; ECDC Coordinating Competent Body

Country	Organisation	Primary interest	AMR activities
	Ministry of Agriculture - Food Safety Department	Food	EFSA focal point
	Veterinary Medicinal Agency	Drugs regulation	
Denmark	Danish Health and Medicines Authority	Drugs regulation	EMA National Competent Authority; ECDC Coordinating Competent Authority
	Ministry of Food, Agriculture and Fisheries	Food	Produced national action plan
	Danish Integrated Antimicrobial Resistance Monitoring and Research Programme (DANMAP)	Monitoring	EARS-Net national participating institution
	National Food Institute	Food	EFSA focal point
	Danish Veterinary and Food Administration	Animal health	
Estonia	State Agency of Medicines	Drugs regulation	EMA National Competent Authority
	Health Board		EARS-Net national participating institution; ECDC Coordinating Competent Body
	Ministry of Agriculture - Food Safety Department	Food	EFSA focal point
Finland	Finnish Medicines Agency	Drugs regulation	EMA National Competent Authority
	National Institute for Health and Welfare	Research and innovation	EARS-Net national participating institution; ECDC Coordinating Competent Body
	Finnish Food Safety Authority (Evira)	Food	EFSA focal point
France	National Agency for the Safety of Medicine and Health Products	Drugs regulation	EMA National Competent Authority (human)
	National Veterinary Medicines Agency	Drugs regulation	EMA National Competent Authority

Country	Organisation	Primary interest	AMR activities
			(veterinary)
	Ministry of Social Affairs, Health and Women's Rights	Human health	Produced national action plan
	National Institute for Public Health Surveillance	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
	French National Observatory for the Epidemiology of Bacterial Resistance to Antimicrobials (ONERBA)	Monitoring	EARS-Net national participating institution
	French Agency for Food, Environmental and Occupational Health Safety (ANSES)	Food	EFSA focal point
	Ministry of Agriculture	Farming	
Germany	Health Ministry	Human health	Produced German Antimicrobial Resistance Strategy (2007, being updated 2015)
	Federal Ministry of Food and Agriculture	Food	Collaborated on German Antimicrobial Resistance Strategy
	Federal Ministry of Education and Research	Research and innovation	Collaborated on German Antimicrobial Resistance Strategy
	Federal Institute for Drugs and Medical Devices	Drugs regulation	EMA National Competent Authority (human)
	Paul Ehrlich Institute	Drugs regulation	EMA National Competent Authority
	Federal Office of Consumer Protection and Food Safety	Food	EMA National Competent Authority (veterinary)
	Robert Koch Institute	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body

Country	Organisation	Primary interest	AMR activities
	Federal Institute for Risk Assessment (BfR)	Food	EFSA focal point
Greece	National Organization for Medicines	Drugs regulation	EMA National Competent Authority
	Hellenic Food Authority (EFET)	Food	EFSA focal point
	Hellenic Centre for Disease Control and Prevention	Monitoring	Produced national action plan; ECDC Coordinating Competent Body
Hungary	National Institute of Pharmacy	Drugs regulation	EMA National Competent Authority (human)
	Directorate of Veterinary Medicinal Products	Drugs regulation	EMA National Competent Authority (veterinary)
	National Centre for Epidemiology	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
	National Food Chain Safety Office Directorate for Food Safety Risk Assessment	Food	EFSA focal point
Ireland	Health Products Regulatory Authority	Drugs regulation	Produces guidelines on use of antibiotics
	Health and Safety Executive	Human health	
	National Interdepartmental Antimicrobial Resistance Consultative Committee	Human health	Joint committee between Department of Health and Department of Agriculture, Food and the Marine
	Health Products Regulatory Authority (HPRA)	Drugs regulation	EMA National Competent Authority (human)
	Department of Agriculture, Food and the Marine	Food	EMA National Competent Authority (veterinary)
	Health Protection Surveillance Centre (HPSC)	Monitoring	EARS-Net national participating institution; ECDC

Country	Organisation	Primary interest	AMR activities
			Coordinating Competent Body
	Food Safety Authority of Ireland (FSAI)	Food	EFSA focal point
Italy	Italian Medicines Agency	Drugs regulation	EMA National Competent Authority
	Ministry of Health	Human health	ECDC Coordinating Competent Body
	National Institute of Health	Research and innovation	EARS-Net national participating institution; EFSA focal point
Latvia	State Agency of Medicines	Drugs regulation	EMA National Competent Authority (human)
	Food and Veterinary Service	Food	EMA National Competent Authority (veterinary)
	State Agency Infectology Centre of Latvia	Monitoring	EARS-Net national participating institution
	Centre for Disease Prevention and Control	Monitoring	ECDC Coordinating Competent Body
	Institute of Food Safety, Animal Health and Environment "BIOR"	Food	EFSA focal point
Lithuania	State Medicines Control Agency	Drugs regulation	EMA National Competent Authority (human)
	Ministry of Health	Monitoring	ECDC Coordinating Competent Body
	State Food and Veterinary Service	Food	EMA National Competent Authority (veterinary); EFSA focal point
	National Food and Veterinary Risk Assessment Institute	Food	EMA National Competent Authority (veterinary)
	National Public Health Surveillance Laboratory	Monitoring	EARS-Net national participating

Country	Organisation	Primary interest	AMR activities
			institution
	Institute of Hygiene	Monitoring	EARS-Net national participating institution
Luxembourg	Ministry of Health	Human health	EMA National Competent Authority; EFSA focal point; ECDC Coordinating Competent Body
	Ministry of Agriculture	Food	EFSA focal point
	National Health Laboratory	Monitoring	EARS-Net national participating institution
Malta	Medicines Authority	Drugs regulation	EMA National Competent Authority
	Malta Competition and Consumer Affairs Authority	Food	EFSA focal point
	Superintendence of Public Health	Monitoring	ECDC Coordinating Competent Body
	Ministry for Energy and Health	Human health	Working on national strategy; produced guidelines on antibiotic use
Netherlands	Medicines Evaluation Board	Drugs regulation	EMA National Competent Authority
	Healthcare Inspectorate	Drugs regulation	EMA National Competent Authority
	National Institute for Public Health and the Environment	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
	Food and Consumer Product Safety Authority (VWA)	Food	EFSA focal point
	Ministry of Health, Welfare and Sport	Human health	Produced national strategy

Country	Organisation	Primary interest	AMR activities
	Ministry of Economic Affairs	Human health	Produced national strategy
	Health Council of the Netherlands	Human health	Produced guidelines on AMR
Norway	Norwegian Medicines Agency	Drugs regulation	EMA National Competent Authority
	Norwegian Institute of Public Health	Monitoring	EARS-Net national participating institution
	Norwegian Surveillance System for Healthcare-associated Infections and Antibiotic Use	Monitoring	
	Norwegian Scientific Committee for Food Safety (VKM)	Food	EFSA focal point
Poland	Office for Registration of Medicinal Products, Medical Devices and Biocidal Products	Drugs regulation	EMA National Competent Authority
	Main Pharmaceutical Inspectorate	Drugs regulation	EMA National Competent Authority
	National Medicines Institute	Monitoring	EARS-Net national participating institution
	National Institute of Public Health - National Institute of Hygiene	Monitoring	ECDC Coordinating Competent Body
	National Reference Centre for Antimicrobial Resistance and Surveillance	Monitoring	EARS-Net national participating institution
	Chief Sanitary Inspectorate	Food	EFSA focal point
Portugal	National Authority of Medicines and Health Products	Drugs regulation	EMA National Competent Authority (human)
	National Authority for Animal Health	Drugs regulation	EMA National Competent Authority (veterinary)
	National Institute of Health	Monitoring	EARS-Net national participating institution

Country	Organisation	Primary interest	AMR activities
	Directorate General of Health	Monitoring	ECDC Coordinating Competent Body
	Ministry of Health	Monitoring	EARS-Net national participating institution
	Portuguese Economy and Food Safety Authority (ASAE)	Food	EFSA focal point
Romania	National Medicines Agency	Drugs regulation	EMA National Competent Authority (human)
	Institute for Control of Biological Products and Veterinary Medicines	Drugs regulation	EMA National Competent Authority (veterinary)
	National Institute of Research and Development for Microbiology and Immunology	Monitoring	EARS-Net national participating institution
	Institute of Public Health	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
	National Sanitary Veterinary and Food Safety Authority	Food	EFSA focal point
Slovakia	State Institute for Drug Control	Drugs regulation	EMA National Competent Authority (human)
	Institute for State Control of Veterinary Biologicals and Medicaments	Drugs regulation	EMA National Competent Authority (veterinary)
	National Reference Centre for Antimicrobial Resistance	Monitoring	EARS-Net national participating institution
	Public Health Authority of Slovakia	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
	Ministry of Agriculture and Rural Development	Food	EFSA focal point
Slovenia	Agency for Medicinal Products and Medical Devices of the	Drugs	EMA National

Country	Organisation	Primary interest	AMR activities
	Republic of Slovenia	regulation	Competent Authority
	National Institute of Public Health	Monitoring	EARS-Net national participating institution; ECDC Coordinating Competent Body
	Ministry of Agriculture Forestry and Food	Food	EFSA focal point
Spain	Spanish Agency for Medicines and Health Products	Drugs regulation	EMA National Competent Authority; collaborated on national action plan
	Ministry of Health, Social Services and Equality	Human health	Collaborated on national action plan, ECDC Coordinating Competent Body
	Ministry of Agriculture, Food and Environment	Food	Collaborated on national action plan
	Health Institute Carlos lll	Monitoring	EARS-Net national participating institution
	National Centre of Microbiology	Monitoring	EARS-Net national participating institution
	The Spanish Agency for Consumer Affairs, Food Safety and Nutrition (AECOSAN)	Food	EFSA focal point
Sweden	Medical Products Agency	Drugs regulation	EMA National Competent Authority
	Ministry of Health and Social Affairs	Human health	Produced national strategy
	National Board of Health and Welfare	Human health	Involved in update of national strategy
	Swedish Board of Agriculture	Farming	Involved in update of national strategy
	Public Health Agency of Sweden	Human health	Involved in update of national strategy; ECDC Coordinating Competent Body

Country	Organisation	Primary interest	AMR activities
	National Veterinary Institute	Animal health	Involved in update of national strategy
	National Food Agency	Food	EFSA focal point; involved in update of national strategy
	Swedish strategic programme against antibiotic resistance (Strama.se)	Human health	Strama.se for a long period served as the "one-stop-shop" for antibiotic resistance (ABR) issues
	Swedish International Development Cooperation Agency (SIDA)	Awareness and education	
	Swedish Institute for Infectious Disease Control	Monitoring	
	Swedish Reference Group for Antibiotics (SRGA)	Drugs regulation	
	Swedish Institute for Communicable Disease Control (Public Health Agency)	Monitoring	EARS-Net national participating institution
UK	Department of Health	Human health	
	Department for Environment, Food and Rural Affairs	Food	Collaborated on UK Five Year Antimicrobial Resistance Strategy 2013 to 2018
	Veterinary Medicines Directorate	Drugs regulation	EMA National Competent Authority (veterinary)
	Public Health England	Human health	EARS-Net national participating institution;
	Interdepartmental High-Level Steering Group on AMR		Implementation of AMR Strategy 2013-2018.
	Medicines and Healthcare Products Regulatory Agency	Drugs regulation	EMA National Competent Authority (human)
	Office for Life Sciences	Research and innovation	Supports work on Accelerated Access to

Country	Organisation	Primary interest	AMR activities
			Medicines
	Advisory Committee on Antimicrobial Resistance and Healthcare Associated Infections (ARHAI)	Monitoring	
	All Party Parliamentary Group on Antibiotics APPG-A	Awareness and education	
	Department for Environment, Food and Rural Affairs	Food	
	UK Food Standards Agency (FSA)	Food	EFSA focal point
Switzerland	Swiss Tropical and Public Health Institute	Human health	
	Federal Office of Public Health	Human health	
	Swiss Conference of the Cantonal Ministers of Public Health	Human health	
	Swiss Federal Veterinary Office (SFO)	Animal health	
	Federal Food Safety and Veterinary Office	Animal health	
	Swissmedic - The Swiss Agency for Therapeutic products	Drugs regulation	Commented on EMA advice re animal AM use

Table 6: Global bodies and other relevant organisations

Organisation	Relevant sub-bodies	Area of interest
WHO	WHO Euro	Human health
	Strategic and Technical Advisory Group on AMR	
World Organisation for Animal Health	Sub-Regional Representative in Brussels	Animal health
	Scientific and Technical Department	
FAO (Food and Agriculture Organization of the UN)	Regional Office for Europe and Central Asia	Food, farming
	Veterinary Public Health	Animal health
Codex Alimentarius	FAO/WHO Coordinating Committee for Europe	Food
Transatlantic Taskforce on Antimicrobial Resistance (TAFTAR)		Human and animal health, Research
REaCT	REaCT Europe	Awareness and education

Private stakeholders at the European level

Table A5-1: Animal health

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
Animals Angels - Animal Welfare Association	Advisory Group on the Food Chain and Animal and Plant Health			
Association of Veterinary Consultants	Advisory Group on the Food Chain and Animal and Plant Health	Professional association	☐	☐
Eurogroup for Animals		NGO	☐	
European Board of Veterinary Specialisation (EBVS)		Umbrella group of professional associations	☐	
European College of Bovine Health Management		Professional association	☐	
European College of Porcine Health Management		Professional association	☐	
European College of Poultry Veterinary Science		Professional association	☐	

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
European College of Small Ruminant health Management		Professional association	☐	
European College of Veterinary Pharmacology and Toxicology		Professional association	☐	
European College of Veterinary Public Health		Professional association	☐	
European Federation for Animal Health and Sanitary Security (FESASS)	Advisory Group on the Food Chain and Animal and Plant Health	Animal health network	☐	☐
European Federation of Animal Health (FEDESA)		Industry association	☐	☐
European Feed Manufacturers' Federation (FEFAC)	Advisory Group on the Food Chain and Animal and Plant Health	Industry association	☐	
European Group for Generic Veterinary Products (EGGVP)		Industry association	☐	☐
European Platform for the Responsible Use of Medicines in Animals (EPRUMA)	Advisory Group on the Food Chain and Animal and Plant Health	Multi-stakeholder platform	☐	
European Surveillance on Veterinary			☐	

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
Antimicrobial Consumption (ESVAC)				
Federation of Veterinarians of Europe (FVE)	Advisory Group on the Food Chain and Animal and Plant Health	Professional association	☐	☐
IFAH-Europe - International Federation for Animal Health Europe		Professional association	☐	☐

Table A5-2: Human health

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
Association of European Cancer Leagues (ECL)	EU Health Forum	NGO		
Council of European Dentists (CED)	EU Health Forum	Professional association	☐	☐
EUCOMED	EU Health Forum	Industry association	☐	
EUROHEALTHNET	EU Health Forum	NGO	☐	
European Association of Hospital Pharmacists		Professional association	☐	☐
European Cancer Patient Coalition (ECPC)	EU Health Forum	Patients organisation		

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
European Confederation of Care Home Organisation (ECHO)	EU Health Forum	Professional association	☐	
European Coordination Committee of the Radiological, Electromedical and healthcare IT Industry (COCIR)	EU Health Forum	Industry association		
European Diagnostic Manufacturers Association (EDMA)	EU Health Forum	Industry association		
European Federation for Complementary and Alternative Medicine (EFCAM)	EU Health Forum	Professional association		
European Federation of Associations of Families of People with mental illness (EUFAMI)	EU Health Forum	Patients organisation		
European Federation of Nurses Associations (EFN)	EU Health Forum	Professional association	☐	☐
European Federation of Psychologists Associations (EFPA)	EU Health Forum	Professional association		
European Federation of Public Services Unions (EPSU)	EU Health Forum	Professional association		

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
European Generic and Biosimilar Medicines Association (EGA)	EU Health Forum	Industry association	☐	☐
European Health Management Association (EHMA)	EU Health Forum	Multi-stakeholder platform	☐	
European Health Telematics Association (EHTEL)	EU Health Forum	Multi-stakeholder platform		
European Hospital and Healthcare Federation (HOPE)	EU Health Forum	NGO	☐	☐
Europe International Diabetes Federation - European Region (IDF)	EU Health Forum	Patients organisation		
European Medical Association		Professional association	AMR ☐	
European Midwives Association (EMA)	EU Health Forum	Professional association		
European Organisation for Rare Diseases (EURORDIS)	EU Health Forum	Patients organisation		

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
European Patients' Forum (EPF)	EU Health Forum	patients organisation	☐	☐
European Pharma Group		Industry group	☐	
European Public Health Alliance (EPHA)	EU Health Forum	NGO	☐	☐
European Public Health Association (EUPHA)	EU Health Forum	Multi-stakeholder platform	☐	
European Regional and Local Health Authorities Network (EUREGHA)	EU Health Forum	Network of public authorities	☐	
ER-WCPT European Region of the World Confederation for Physical Therapy	EU Health Forum	Professional association		
European Social Insurance Partners Association (ESIP)	EU Health Forum	National social insurance network		
European Union of Medical Specialists (UEMS)	EU Health Forum	Professional association		
European Union of Private Hospitals (UEHP)	EU Health Forum	Professional association		
European Wound Management Association (EWMA)		Professional association	☐	☐
Health First Europe (HFE)		Multi-stakeholder platform	☐	

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
International Alliance of Patients' Organizations (IAPO)	EU Health Forum	Patients organisation	☐	
International Association of Mutual Benefits Societies (AIM)	EU Health Forum	health insurance body		
International Federation of Medical Students' Associations (IFMSA)	EU Health Forum	Students association		
Medtech Europe		Industry	☐	☐
MHE-SME Mental Health Europe	EU Health Forum	Multi-stakeholder platform		
Pharmaceutical Group of the European Union (PGEU)	EU Health Forum	Professional association	☐	☐
Standing Committee of European Doctors (CPME)	EU Health Forum	Professional association	☐	☐
The European Society for Quality in Healthcare (ESQH)	EU Health Forum	NGO	☐	

Table A5-3: Food safety and agriculture

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
Association of Poultry Processors and Poultry Trade in the EU countries (AVEC)	Advisory Group on the Food Chain and Animal and Plant Health	Industry association	☐	☐
Compassion in World Farming		NGO	☐	
COPA (Committee of Professional Agricultural Organisations) and COGECA (General Committee for Agricultural Cooperation in the European Union)	Advisory Group on the Food Chain and Animal and Plant Health	Professional association	☐	☐
Eurocommerce - European Representation of Retail, Wholesale and International Trade	Advisory Group on the Food Chain and Animal and Plant Health	Professional association	☐	☐
EUROCOOP - European Community of Consumer Cooperatives	Advisory Group on the Food Chain and Animal and Plant Health	Network of consumer cooperatives	☐	
European Association of Agricultural Economists		Professional association		

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
European Conservation Agriculture Federation		Professional association		
European Consumer Organisation (BEUC)	Advisory Group on the Food Chain and Animal and Plant Health; EU Health Forum	Consumers organisation		☐
European Dairy Association (EDA)	Advisory Group on the Food Chain and Animal and Plant Health	Industry association		
European Feed Manufacturers' Federation (FEFAC)	Advisory Group on the Food Chain and Animal and Plant Health	Industry association	☐	
European Live Poultry and Poultry Hatching Egg Association		Industry association	☐	☐
European Livestock and Meat Trades Union (UECBV)		Industry association	☐	☐
European Modern Restaurant Association (EMRA)		Professional association	☐	
European Pet Food Industry (FEDIAF)	Advisory Group on the Food Chain and Animal and Plant Health	Industry association		
FoodDrinkEurope	Advisory Group on the Food Chain and Animal and Plant Health	Industry association		
IFOAM-EU GROUP – International Federation of Organic Agriculture Movements	Advisory Group on the Food Chain and Animal and Plant Health	Multi-stakeholder platform		

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
— European Union Regional Group				
Primary Food Processors (PFP)	Advisory Group on the Food Chain and Animal and Plant Health	Industry association		
Slow Food Associazione Internazionale	Advisory Group on the Food Chain and Animal and Plant Health	NGO		

Table A5-4: Research and innovation

Organisation	Commission Group Membership	Organisation type	High level of engagement	Registrant for Workshop 1
BEAM alliance		Industry association (European SMEs active in AMR)	☐	
EuropaBio - The European Association for bio-industries	Advisory Group on the Food Chain and Animal and Plant Health; EU Health Forum	Industry association		
European academies Science Advisory Council (EASAC)		Research organisation	☐	☐
European Association of Craft, Small and Medium Enterprises (UEAPME)	Advisory Group on the Food Chain and Animal and Plant Health	Professional association		
European federation of animal science		Multi-stakeholder platform	☐	
European Federation of Pharmaceutical Industries and Associations (EFPIA)	EU Health Forum	Industry association	☐	
European Society of Clinical Microbiology and Infectious Diseases (ESCMID)		Scientists association	☐	
Federation of European Microbiological Societies (FEMS)		Scientists association	☐	☐
Global Allergy and Asthma European	EU Health Forum	Research organisations network		

Network (GA2LEN)			
Innovative Medicines Initiatives (IMI)		Public-private research initiative	☐	
League of European Research Universities		Research organisation		
Science Europe		Research organisation	☐	

Table A5-5: Awareness and Education

Organisation	Membership	Organisation type	High level of engagement
Active Citizenship Network-Cittadinanzattiva (ACN)	EU Health Forum	Civic organisation	
Aids Action Europe (AAE)	EU Health Forum	NGO	
Associations of Schools of Public Health in the EU Region (ASPHER)	EU Health Forum	Professional association	
European Heart Network (EHN)	EU Health Forum	NGO	
European Network for Smoking Prevention (ENSP)	EU Health Forum	NGO	
European Older People's Platform (AGE)	EU Health Forum	Citizens association	
European Youth Forum (YFJ)	EU Health Forum	Citizens association	
International Union for Health Promotion and Education (IUHPE)	EU Health Forum	Professional association	
Smoke Free Partnership (SFP)	EU Health Forum	NGO	
The European Alcohol Policy Alliance (EUROCARE)	EU Health Forum	NGO	

Private stakeholders at the Member State level

Table A5-6 – Animal health

Organisation	Country	Membership	Organisation type
Österreichische Tierärztekammer	Austria	Federation of Veterinarians of Europe	Professional association
Union Professionnelle Vétérinaire (UPV)	Belgium	Federation of Veterinarians of Europe	Professional association
Bulgarian Veterinary Union (BVU)	Bulgaria	Federation of Veterinarians of Europe	Professional association
Animal Friends	Croatia	Eurogroup for Animals	Charity
Croatian Veterinary Chamber/Hrvatska Veterinarska Komora	Croatia	Federation of Veterinarians of Europe	Professional association
Pancyprian Veterinary Association	Cyprus	Federation of Veterinarians of Europe	Professional association
Danish Veterinary Association	Denmartk	Federation of Veterinarians of Europe	Professional association
Ordre des Vétérinaires Conseil Supérieur		Federation of Veterinarians of Europe	Professional association
Protection Mondiale des Animaux de Ferme – WELFARM	France	Eurogroup for Animals	Charity
German Veterinary Federation	Germany	Federation of Veterinarians of Europe	Professional association
Animal Welfare Foundation	Germany	Eurogroup for Animals	Charity

Organisation	Country	Membership	Organisation type
Animal Action	Greece	Eurogroup for Animals	Charity
Hellenic Veterinary Association	Greece	Federation of Veterinarians of Europe	Professional association
Association des Médecins Vétérinaires du Grand-Duché de Luxembourg	Luxembourg	Federation of Veterinarians of Europe	Professional association
LNPA – Ligue nationale pour la protection des animaux	Luxembourg	Eurogroup for Animals	Charity
Animal Guardians Malta	Malta	Eurogroup for Animals	Charity
The Royal Veterinary Association of the Netherlands	The Netherlands	Federation of Veterinarians of Europe	Professional association
Otwarte Klatki	Poland	Eurogroup for Animals	Charity
Ordem dos Médicos Veterinários	Portugal	Federation of Veterinarians of Europe	Professional association
Consejo General de Colegios Veterinarios de España (CGCVE)	Spain	Federation of Veterinarians of Europe	Professional association
Sveriges Veterinärförbund (SVF)	Sweden	Federation of Veterinarians of Europe	Professional association
British Veterinary Association	UK	Federation of Veterinarians of Europe	Professional association
The British Small Animal Veterinary Association (BSAVA)	UK	-	Professional association

Organisation	Country	Membership	Organisation type
RSPCA - Royal Society for the Prevention of Cruelty to Animals	UK	Eurogroup for Animals	Charity

Table A5-7 – Human health

Organisation	Country	Membership	Organisation type
Austrian Health Promotion Foundation (FGOE)	Austria	Eurohealthnet	National association
ÖGPH Gesellschaftssekretariat	Austria	European Public Health Association (EUPHA)	Professional association
Belgian Association of Public Health	Belgium	European Public Health Association (EUPHA)	Scientific organisation
Bulgarian Public Health Association	Bulgaria	European Public Health Association (EUPHA)	Professional association
Croatian Public Health Association	Croatia	European Public Health Association (EUPHA)	Professional association
Czech Society of Public Health and Management of Health Services	Czech Republic	European Public Health Association (EUPHA)	Professional association
Danish Society of Public Health	Denmark	European Public Health Association (EUPHA)	Professional association
Health Promotion Union of Estonia	Estonia	European Public Health Association (EUPHA)	Professional association
Society for Social Medicine in Finland	Finland	European Public Health Association (EUPHA)	Professional association

Organisation	Country	Membership	Organisation type
National Institute for Prevention and Health Education (INPES)	France	Eurohealthnet	National institute
Société Française de Santé Publique	France	European Public Health Association (EUPHA)	Professional association
German Association for Public Health	Germany	European Public Health Association (EUPHA)	Professional association
National Institute for Health Development (NEFI)	Hungary	Eurohealthnet	National institute
Institute of Public Health in Ireland (IPH)	Ireland	Eurohealthnet	National institute
Federsanita ANCI	Italy	Eurohealthnet	National association
National Institute for Public Health and the Environment (RIVM)	The Netherlands	Eurohealthnet	National institute
National Institute of Public Health - National Institute of Hygiene	Poland	Eurohealthnet	National institute
National Institute of Health Doutor Ricardo Jorge	Portugal	Eurohealthnet	National institute
Ministry of Health, Social Services and Equality	Spain	Eurohealthnet	Government department
SAVEZ - Slovak Public Health Association	Slovakia	European Public Health Association (EUPHA)	Professional association
National Institute of Public Health (NIJZ)	Slovenia	Eurohealthnet	National institute

Organisation	Country	Membership	Organisation type
Slovenian Medical Society - Slovenian Preventive Medicine Society	Slovenia	European Public Health Association (EUPHA)	Professional association
Public Health Agency of Sweden	Sweden	Eurohealthnet	National institute
Swedish Association of Social Medicine	Sweden	European Public Health Association (EUPHA)	Professional association
Antibiotic action	UK		NGO
The British Society for Antimicrobial Chemotherapy (BSAC)	UK		Professional and scientists association
Association of the British Pharmaceutical Industry	UK		Industry association

Table A5-8 – Food safety and agriculture

Organisation	Country	Membership	Organisation type
Austrian Chamber of Agriculture	Austria	COPA-COGECA	Professional association
Association Professionnelle des Fabricants d'Aliments Composés pour Animaux	Belgium	European Feed Manufacturers' Federation (FEFAC)	Industry association
AVEVE/Boerenbond - BB (Belgian Farmers' Union)	Belgium	COPA-COGECA	Professional association
Test-Achats	Belgium	European Consumer Organisation (BEUC)	Consumers association

Organisation	Country	Membership	Organisation type
Fédération Wallonne de l'Agriculture (FWA)	Belgium	COPA-COGECA	Professional association
Bulgarian national association active consumers - BNAAC	Bulgaria	COPA-COGECA	Consumers association
Croatian Chamber of Agriculture	Croatia	COPA-COGECA	Professional association
Croatian Feed Industry Association	Croatia	European Feed Manufacturers' Federation (FEFAC)	Industry association
CAFM Cyprus Association of Feed Manufacturers	Cyprus	European Feed Manufacturers' Federation (FEFAC)	Industry association
Panagrotikos Farmers' Union (PANAGROTIKOS)	Cyprus	COPA-COGECA	Professional association
Pancyprian farmers union	Cyprus	COPA-COGECA	Professional association
Agricultural Association of the Czech Republic	Czech Republic	COPA-COGECA	Professional association
DAKOFO	Denmark	European Feed Manufacturers' Federation (FEFAC)	Industry association
Estonian consumers union - Eesti tarbijakaitse LIIT	Estonia	European Consumer Organisation (BEUC)	Consumers association
UFC-Que choisir	France	European Consumer Organisation (BEUC)	Consumers association
The German Farmers' Association	Germany	COPA-COGECA	Professional association

Organisation	Country	Membership	Organisation type
The German Poultry Association	Germany	Association of Poultry Processors and Poultry Trade in the EU countries (AVEC)	Industry association
Consumers' Protection Centre – KEPKA	Greece	European Consumer Organisation (BEUC)	Consumers association
Panhellenic Confederation of Agricultural Co-operative Unions (PASEGES)	Greece	COPA-COGECA	Professional association
Irish Farmer's Association (IFA)	Ireland	COPA-COGECA	Professional association
Irish Grain & Feed Association	Ireland	European Feed Manufacturers' Federation (FEFAC)	Industry association
Altroconsumo	Italy	European Consumer Organisation (BEUC)	Consumers association
Confederazione Generale dell'Agricoltura Italiana (CONFAGRICOLTURA)	Italy	COPA-COGECA	Professional association
Latvian Agricultural Organization Cooperation Council - LAOCC (LOSP)	Latvia	COPA-COGECA	Professional association
Chamber of Agriculture of the Republic of Lithuania	Lithuania	COPA-COGECA	Professional association
Lithuanian Grain Processors Association	Lithuania	European Feed Manufacturers' Federation (FEFAC)	Industry association
Centrale Paysanne Luxembourgeoise - CPL (Luxemburg Farmers' Union)	Luxembourg	COPA-COGECA	Professional association

Organisation	Country	Membership	Organisation type
Union Luxembourgeoise des Consommateurs - ULC	Luxembourg	European Consumer Organisation (BEUC)	Consumers association
Land- en Tuinbouw Organisatie Nederland - LTO - Nederland	The Netherlands	COPA-COGECA	Professional association
Association of Polish Consumers – SKP	Poland	European Consumer Organisation (BEUC)	Consumers association
Federation of Agricultural Producers Union	Poland	COPA-COGECA	Professional association
Associaçao Portuguesa dos Industriais de Alimentos Compostos para Animais	Portugal	European Feed Manufacturers' Federation (FEFAC)	Industry association
Confederaçao dos Agricultores de Portugal (CAP)	Portugal	COPA-COGECA	Professional association
Association for consumers' protection – APC	Romania	European Consumer Organisation (BEUC)	Consumers association
Slovak Agricultural and Food Chamber	Slovakia	COPA-COGECA	Professional association
The Association of Feed Producers, Warehouse-keepers and Trade Companies	Slovakia	European Feed Manufacturers' Federation (FEFAC)	Industry association
Chamber for Agriculture and Forestry of Slovenia	Slovenia	COPA-COGECA	Professional association
Asociacion Agraria - Jovenes Agricultores (ASAJA)	Spain	COPA-COGECA	Professional association

Organisation	Country	Membership	Organisation type
Confederacion Espanola de Fabricantes de Alimentos Compuestos para Animales	Spain	European Feed Manufacturers' Federation (FEFAC)	Industry association
Föreningen Foder och Spanmal	Sweden	European Feed Manufacturers' Federation (FEFAC)	Industry association
Lantbrukarnas Riksförbund (LRF)	Sweden	COPA-COGECA	Professional association
Soil Association	UK		Charity
Red Tractor Quality Assurance scheme	UK		Non-for-profit company
National Farmers' Union of England and Wales (NFU)	UK	COPA-COGECA	Professional association
UK Advisory Committee on the Microbiological Safety of Food	UK		Public authority
British Poultry Council	UK	Association of Poultry Processors and Poultry Trade in the EU countries (AVEC)	Industry association
Responsible use of medicines in agriculture alliance (RUMA)	UK		

Table A5-9 – Research and innovation

Organisation	Country	Membership	Organisation type
FWF - Austrian Science Fund	Austria	Science Europe	National research agency
F.R.S – FNRS – Fund for Scientific Research	Belgium	Science Europe	National research agency
FWO – Fonds Welend	Belgium	Science Europe	National research agency
KU Leuven	Belgium	League of European Research Universities	Higher education institution
The Bulgarian Academy of Sciences	Bulgaria	Science Europe	National research agency
GACR - Czech Science Foundation	Czech Republic	Science Europe	National research agency
DG - Danish National Research Foundation	Denmark	Science Europe	National research agency
ETAG - Estonian Research Council	Estonia	Science Europe	National research agency
AKA - Academy of Finland	Finland	Science Europe	National research agency
University of Helsinki	Finland	League of European Research Universities	Higher education institution
ANR - Agence Nationale de la Recherche/French National Research Agency	France	Science Europe	Public research agency
CNRS - Centre Nationale de la Recherche Scientifique/National Centre	France	Science Europe	Public research agency

Organisation	Country	Membership	Organisation type
for Scientific Research			
Institut Pasteur	France		Research institute
DFG – German Research Foundation	Germany	Science Europe	National research agency
German Society of Medical Sociology	Germany		Professional association
OTKA - Hungarian Scientific Research Fund	Hungary	Science Europe	National research agency
HRB - Health Research Board	Ireland	Science Europe	National research agency
CNR - National Research Council	Italy	Science Europe	National research agency
Italian Society of Hygiene, Preventive Medicine and Public Health	Italy		Scientific organisation
Italian Federation of Public Health Scientific Societies (FISPEOS)	Italy		Professional association
LZP - Latvian Science Council	Latvia	Science Europe	National research agency
LMT - Research Council of Lithuania	Lithuania	Science Europe	National research agency
University of Milan	Italy	League of European Research Universities	Higher education institution

Organisation	Country	Membership	Organisation type
NWO - Netherlands Organisation for Scientific Research	The Netherlands	Science Europe	National research agency
NCN - National Science Centre	Poland	Science Europe	National research agency
APVV - Slovak Research and Development Agency	Slovakia	Science Europe	National research agency
ARRS - Slovenian Research Agency	Slovenia	Science Europe	National research agency
CSIC - Spanish National Research Council	Spain	Science Europe	National research agency
VR - Swedish Research Council	Sweden	Science Europe	National research agency
MRC - Medical Research Council	UK	Science Europe	National research agency

Table A5-9 – Selected individual researchers and AMR experts

Name	Position	Organisation	Organisation type	AMR engagement activities
Hans Peder Graversen	Medical Director, Head of Department	AC-fuldmægtig		Commented on the EMA's 'scientific advice on the impact on public health and animal health of the use of antibiotics in animals'
Kevin Outterson	Professor of Health Law, Bioethics & Human Rights	Boston University	University	- Specialist in global pharmaceutical markets, particularly in antibiotics and other antimicrobials - Leads an interdisciplinary project on the legal ecology of antimicrobial resistance - Faculty affiliate at the Harvard Center for Communicable Disease Dynamics and an appointed member of the Antimicrobial Resistance Working Group at the CDC.
Charles Clift	Senior Consulting Fellow, Centre on Global Health Security	Chatham House, The Royal Institute of International Affairs	Research center	Researcher on antimicrobial resistance.
David Heymann	Head and Senior Fellow Centre on Global Health Security	Chatham House, The Royal Institute of International Affairs	Research center	- Professor of Infectious Disease Epidemiology, London School of Hygiene and Tropical Medicine - Research on antimicrobial resistance
Matthias Bonk	Consultant		Independent	Report on the 'Response to the Antimicrobial ResistanceThreat' published by the Federal Office of Public Health, Switzerland, 2015
Annette Cleveland Nielsen	Chief Veterinary Advisor	Danish Veterinary and Food Administration	Public agency	- Presented at several conferences on antimicrobial resistance; - Involved in the National Antibiotic Council and the Councils strategy and planning group - Participated in the Danish EU presidency on antimicrobial resistance - DANMAP data on antibiotic consumption in production animals

Third Countries and international organisations

Table A5-10 – Third country public authorities and private organisations

Organisation	Country	Membership	Area of interest	Organisation type
Den Norske Veterinærforening (DNV)	Norway	Federation of Veterinarians of Europe	Animal health	Professional association
Norwegian Directorate of Health	Norway	Eurohealthnet	Human health	Public authority
Norwegian institute of Public Health	Norway		Human health	National public agency
Norwegian Medical association	Norway		Human health	Professional association
NORM - Norwegian Surveillance System for Antimicrobial Drug Resistance	Norway		Monitoring	National public agency
RAVN - Resistance Surveillance of Virus in Norway	Norway		Monitoring	National public agency
Animalfree Research	Switzerland		Animal health	Charity
Swiss Society for Microbiology (SSM)	Switzerland		Research and innovation	Professional association
Swiss National Science Foundation (SNF)	Switzerland		Research and innovation	Research organisation
Swiss Centre for Antibiotic resistance	Switzerland		Monitoring	
Swiss Society of Public Health Administration and Hospital Pharmacists	Switzerland		Human health	Professional association
Swiss Society of Pharmacists	Switzerland		Human health	Professional association
Swiss Society for Infectious Diseases	Switzerland		Awareness and education	NGO
Alliance for the prudent use of antibiotics	United States		Human health	NGO
Food Animal Concern Trust	United States		Animal health	NGO
Centre for Drugs evaluation	United States		Human health	National research agency

Organisation	Country	Membership	Area of interest	Organisation type
and research				
National Institute of Food and Agriculture (NIFA)	United States		Food and farming	National public agency
National Institutes of Health (NIH)	United States		Human health	Public research funder
United States Department of Agriculture	United States		Food and farming	Public authority
U.S. Centers for Disease Control and Prevention (CDC)	United States		Monitoring	National public agency
Coalition for animal health	United States		Food and farming, Animal health	Industry and professional association (umbrella group)

Table A5-11 – International bodies and organisations

Organisation	Relevant sub-bodies	Area of interest	Organisation type	High level of engagement
Central Asian and Eastern European Surveillance of Antimicrobial Resistance (CAESAR)		Human health	International organisation	☐
Codex Alimentarius	FAO/WHO Coordinating Committee for Europe	Food safety	International organisation	☐
Food and Agriculture Organization of the United Nations (FAO)	Regional Office for Europe and Central Asia Veterinary Public Health	Food safety and farming Animal health	International organisation	☐
Organisation for Economic Cooperation and Development (OECD)	Directorate for Employment, Labour & Social Affairs (ELS)	Human health Farming and food	International organisation	☐
Transatlantic Taskforce on Antimicrobial Resistance (TAFTAR)		Human health	International organisation	☐
World Health Organisation	WHO Europe Regional Office	Human health	International	☐

Organisation	Relevant sub-bodies	Area of interest	Organisation type	High level of engagement
(WHO)	Strategic and Technical Advisory Group on AMR		organisation	
World Organisation for Animal Health (OIE)	Sub-Regional Representative in Brussels; Scientific and Technical Departement	Animal health	International organisation	☐
Alliance for the prudent use of antibiotics		Human health	NGO	
Compassion in World Farming		Animal health	NGO	☐
Drugs for Neglected Diseases Initiative		Research & innovation	Research organisation	
International Federation of Agricultural Producers (IFAP),		Farming	Professional association	
International Poultry Council (IPC)		Food safety and farming	Industry association	☐
International Union of Microbiological Societies		Research & innovation	Scientific association	☐
'Medecins sans Frontieres' Access Campaign		Awareness and education	NGO	
ReAct	ReAct Europe ReAct North America	Awareness and education	NGO	☐
World Federation of Animal Health Industry (COMISA).		Animal health	Industry association	☐
World's Poultry Science Association		Research & innovation	Professional association	☐
World Veterinary Association (WVA)		Animal health	Professional association	☐
World Veterinary Poultry Association		Animal health	Professional association	☐

APPENDIX F: STAKEHOLDER WORKSHOPS – AGENDA AND QUESTIONS

Workshop 1

Agenda for Stakeholder Workshop 1, part of the Evaluation of the EU's Action Plan against the rising threats from Antimicrobial Resistance

09:00 – 09:15	**Welcome, arrival, coffee, get badges, check group assignments (groups to be posted on the wall)**
	Participants will be invited to vote (with a sticker) on a poster on the wall about
	  1. How has the situation in various aspects of AMR changed over time?
	  2. Has there been a role for the Action Plan in these areas?

09:15 – 9:30	**Session 1 (plenary): Introduction to Action Plan** - Summary of the Action Plan, its objectives and expected outcomes, current status
9:30- 9:40	**Short 'human histogram' activity where people are asked to move around the room depending on their views on two questions:** - Has there been, overall, progress on tackling AMR in the EU? - Has the AP had an impact?
9:40- 9:55	**Introduction to evaluation** - Presentation of the aim and scope of the evaluation and its research questions - Role of stakeholders in the evaluation, and expectations from the workshop - Plan for the day
9:55 – 10:50	**Session 2 (6 working groups consisting of participants organized by area of expertise)** Relevance activity: - Introduction to relevance concept and explanation of group task (10 min) - Group activity (35 min) - Plenary discussion (25 min)
10:50 – 11:00	Break
11:00 – 11:50	**Session 3 (6 groups)** Coherence activity: - Introduction to coherence concept and explanation of group task (10 min) - Group activity (35 min) - Plenary discussion (25 min)
11:50- 12:00	Catch-up time if needed (or early break for lunch)
12:00 – 12:45	Lunch break
12:45 - 13:00	**Case study review (individual activity)**

12:45 – 16:20	**Session 4 (new sets of 6 groups, organized by area of expertise)** Effectiveness activity: - Introduction to effectiveness concept and explanation of group task (10 min) - Group activity plus plenary discussion (2 rounds, with groups covering different topics in each round)
16:20 – 16:40	**Session 6 (plenary): Reflection, next steps and close** - Completion of workshop review form

Workshop questions:

Session 2: Relevance

Q1a. Do the action plan objectives address the problems identified in 2011?

Q1b. Are there any areas that should have been covered by the Action Plan when it was developed in 2011 (i.e. any missing areas)?

Q2a. Do the action plan objectives address the problems identified in 2015?

Q2b. Are there any areas not currently addressed by the Action Plan that should be (i.e. any missing areas)?

Session 3: Coherence

Q1. Are the objectives contained in the Action Plan coherent with other EU policies in the following areas? Explain your answers.

    a. Environment

    b. Human health

    c. Animal health and welfare

    d. Food safety

    e. Agriculture

    f. Research

    g. Competitiveness and SMEs

Q2. Are the 7 objectives contained in the AMR Action Plan (list provided) coherent with policies and programmes on AMR in the EU Member States? Explain your answers.

Session 4: Effectiveness and added value

Part 1: Each group assigned one of the following areas:

- Appropriate use of antimicrobials in animals (or humans)
- Prevention of microbial infections and their spread in animals (or humans)

Part 2: Each group assigned one of the following cross-cutting areas:

- Awareness and education about AMR
- International and EU cooperation

- Development of new effective antimicrobials and alternative treatments
- Research into the causes of antimicrobial resistance; and research on the prudent use of antimicrobials and the impact of imprudent use

- Monitoring and surveillance of AMR and consumption of antimicrobials.

Both parts:

Q1. How has the situation changed since 2011 in this area?

- What are notable achievements and failures?
- What are barriers and enablers of progress?

Q2. Could the observed trends, either positive or negative, be attributed (at least partly) to the Action Plan?

- Why or why not?
- What has been the role of the Action Plan?

Q3. Consider how the situation would be different if there were no EU AMR Action Plan.

- Part 1: What would be a headline from a newspaper in such a world?
- Part 2: What advice would you give to policymakers trying to address this area?

Case study activity sheet (next page), used for the case study activity.

Activity sheet: Case Study Input

The evaluation will include a set of case studies exploring specific AMR issues, initiatives or trends that illustrate how the Action Plan is having an impact (positive or negative), or failing to have an impact. We have prepared a list of possible case study topics. Do you have any comments on the topics below or suggestions for topics?

Topic	Description	Comments?
1. Getting the data – ESVAC Success and further improvements?	The European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project collects information on how antimicrobial medicines are used in animals across the EU. **Case study focus:** How has ESVAC evolved over time, what kind of data is gathered, and how does this compare to practices in Member States? A comparison could be made with Germany, in particular, which recently introduced new reporting requirements. Sources: Byrne J. 2014 German livestock producers must report antibiotic usage under new regulation. Available at: http://www.feednavigator.com/Regulation/German-livestock-producers-must-report-antibiotic-usage-under-new-regulation German drug law Section 58b Notifications about the use of medicinal products . Available at: http://www.gesetze-im-internet.de/englisch_amg/	
2. Incentives to reduce the use of antimicrobials in animals and food production	Tackling incentives for animal producers and veterinarians to prescribe antimicrobials. **Case study focus:** Has the Action Plan affected incentives for producers to use antimicrobials, and for veterinarians to prescribe them? (Could focus on Germany where an alliance has formed to tackle ongoing criticism about animal husbandry. The alliance consists of meat industry, farmers and retailers who want stricter animal welfare standards enforced.) Source: Gyton G. 2014 Alliance formed in Germany on animal welfare. Globalmeatnews.com Available at: http://www.globalmeatnews.com/Industry-Markets/Alliance-formed-in-Germany-on-animal-welfare	
3. Aquaculture and AMR in maritime waters	Antibiotics are used in aquaculture. As aquaculture industry has increased so has the risk of emergence of antimicrobial resistance. **Case study focus:** look at how vaccination instead of usage of antibiotics is used in EU countries and whether this is something that the EU Commission should further look into. Source: None yet identified	.
4. French awareness programme extended to animals	Several awareness campaigns have been launched in France, e.g. 'Les Antibiotiques, c'est pas automatique', which was extended to animals in 2014. **Case study focus:** Lessons learned from the programme and why it was decided that it should be extended to animals. Source: Federal Ministry of Health. 2015. Combating Antimicrobial Resistance. Examples of Best – Practices of the G7 Countries	
Other topic suggestion:	Please suggest a topic for a case study and, if possible, relevant data source(s).	

Topic	Description	Comments?
1. Increases in community antibiotic use over 2008-2012	According to ECDC data, there was a significant increase in the ratio of broad-spectrum to narrow spectrum penicillins/cephalosporins/macrolides consumed in the community over the last 5-year period, 2008–2012, in two thirds of respondent countries. **Case study focus:** Investigate the context in which this increase took place in 1-2 countries with notable trends, exploring potential contributing factors and the role of the Action Plan. Data source: ECDC Surveillance of antimicrobial consumption in Europe 2012 Report: http://ecdc.europa.eu/en/publications/Publications/antimicrobial-consumption-europe-esac-net-2012.pdf	
2. Changes in country-level indicators of HAIs	Data show fluctuations in country –level indicators of HAIs, e.g. MRSA % 2010-2013. **Case study focus:** Investigate the context in which this increase took place in 1-2 countries with notable trends, exploring potential contributing factors and the role of the Action Plan. Data source: ECDC - HAI-Net PPS interactive database. Available at: http://ecdc.europa.eu/en/healthtopics/Healthcare-associated_infections/database/Pages/database.aspx	
3. E-Bug education programme	e-Bug, started in 2006, has produced materials for educating young people in the EU about prudent antibiotic use, microbes, transmission of infection, hygiene and vaccines. **Case study focus:** Has the Action Plan affected uptake of the programme? Data source: e-bug overview http://www.researchgate.net/publication/221899720_Overview_of_e-Bug_An_antibiotic_and_hygiene_educational_resource_for_schools	
4. Trends in MDR-TB in Eastern Europe	Eastern Europe is experiencing a bigger number of drug resistant TB in comparison to Western and Central Europe. **Case study focus:** Investigating the trends in drug-resistant TB in Eastern Europe, with particular focus on MDR-TB. Has this issue been sufficiently addressed by the Action Plan? Source: WHO drug resistance in TB. Available at: http://www.who.int/tb/publications/mdr_surveillance/en/	
5. TARGET Antibiotics Toolkit	Public Health England has collaborated with the Royal College of General Practitioners to develop the TARGET Antibiotics Toolkit. The toolkit aims to help influence prescribers' and patients' personal attitudes, social norms and perceived barriers to optimal antibiotic prescribing. TARGET has been updated following recent evaluation. **Case study focus:** How does this initiative align with the Action Plan and was it influenced by the Action Plan? Source: Federal Ministry of Health. 2015. Combating Antimicrobial Resistance. Examples of Best – Practices of the G7 Countries	
Other topic suggestion:	Please suggest a topic for a case study and, if possible, relevant data source(s).	

Workshop 2

Stakeholder workshop 2 agenda

Time		Description
9:40 – 10:00		Arrival, registration
10:00 – 10:50		Session 1 (plenary presentation): Overview of the Action Plan, agenda for the day Welcome: Summary of the Action Plan (objectives, timescale, current status), the evaluation (rationale, scope, approach, timescale, current status), and the plan for the day Participants introduce themselves
10:50 – 12:00		Session 2 (plenary presentation and plenary discussion): Present evaluation results Presentation: Headline findings Discussion: Questions and comments, also invited in written form
12:00 – 13:30		Lunch break
13:30 – 14:00		Session 3 (plenary presentation): Present recommendations Brief recap on the morning discussions, and afternoon plans Presentation of recommendations
14:00 – 14:50		Session 4 (group discussions): Discuss recommendations Participants discuss the recommendations in groups, focusing on whether they are: Suitable and appropriate for the Action Plan and AMR situation; Feasible; and Acceptable to the actors involved (particularly those represented by the workshop participants).
14:50 – 15:20		Break (refreshments, networking)
15:20 – 16:00		Session 5 (plenary discussion and presentation): Review recommendations discussion, reflection and close Each group presents the headlines from their discussions on the recommendations Discussion of what happens next, how the workshop results will be used in the evaluation, workshop reporting Completion of workshop review form

Workshop 2- Activity sheet for small group discussions (sample)

Group: Human health 1

Part I: Recommendation discussion

Please discuss the recommendation(s) outlined in the table.

5	**Conclusion**	There was considerable variability in the extent to which Member States addressed AMR, particularly in the context of human health. Different countries also faced diverse issues.
	Recommendations	• The Commission should continue providing guidance and support to Member States to encourage good practice in public health services and surveillance. • The Commission should continue to support awareness-raising activities through European Antibiotic Awareness Day, and continue to monitor their impacts. • Targeted attention could be paid to specific areas where a Member State is struggling and understanding the specific challenges blocking progress. A one-size-fits-all approach will be insufficient. Both funding and technical support are likely to be required for lagging countries.

Questions about the recommendations:

1. Is the recommendation a suitable response to the conclusion?

2. Is it feasible to implement in practice?

3. Is it acceptable to you? (Do you have any concerns?)

4. What specific actions could be implemented as part of this recommendation?

5. Would you change the recommendation(s) proposed?

Part II: Recommendation discussion:

Please select the recommendation(s) to discuss from the list below.

Questions about the recommendations:

1. Is the recommendation a suitable response to the conclusion?

2. Is it feasible to implement in practice?

3. Is it acceptable to you? (Do you have any concerns?)

4. What specific actions could be implemented as part of this recommendation?

5. Would you change the recommendation(s) proposed?

Part III: Additional questions to discuss:

1. Overall, do you think the conclusions and recommendations have missed any important issues? What and why?

2. Should the EU maintain its current role in addressing AMR or take a different approach?

3. Do you have any recommendations related to animal health issues?

Conclusions and recommendations: Summary

1	**Conclusion**	The holistic approach adopted by the Action Plan was essential to tackling AMR. The EU played an important role in providing political leadership and encouraging the intersectoral collaboration necessary to pursue a holistic approach to addressing AMR.
	Recommendations	• The holistic and 'One Health' approaches should be reinforced and could be strengthened through cross-sector initiatives. The EU should take further action to enable greater engagement between sectors. • Reach and relevance could be expanded by dedicating resources to an EU-level coordinating mechanism on AMR. This could increase visibility of intra-Commission engagement, encourage more and faster action by Member States, encourage cross-sectoral interactions among stakeholders, raise AMR awareness in the EU.

2	**Conclusion**	A gap was identified in the Action Plan in addressing environmental issues.
	Recommendations	Environmental issues could be better integrated into future EU action on AMR through an approach involving: • Research to better understand the role of AMR transmission from the environment to humans (through animal, human and manufacturing waste); • Supporting the development of monitoring and surveillance systems that capture data on AMR circulation in the environment; • Using this improved understanding to inform how environmental policies could help reduce the spread of AMR; • Identify ways to involve DG Environment in future AMR action; and • Coordinating with ongoing Commission work on a strategic approach to addressing the risks of pharmaceuticals in the environment.

| 3 | Conclusion | International cooperation was effective but more could be done to address AMR as a global issue and support developing countries. |
| | Recommendations | Work with WHO towards a global approach to monitoring and surveillance, building EU leadership in developing approaches that brought together data from many national systems. Continue work with international organisations such as the WHO, TATFAR, World Organization for Animal Health (OIE) and the UN FAO, including support for the Joint Programming Initiative on AMR mapping of AMR research activities, highlighted by the WHO Support countries with limited capacity to address AMR including education and awareness, strengthening health systems and training health professionals. |

| 4 | Conclusion | Monitoring and surveillance activities focusing on human and animal health issues improved under the Action Plan. The EU could build on these successes at multiple levels. |
| | Recommendations | The EU could build a more holistic system for monitoring AMR issues, linking data on resistance, consumption and sales of antimicrobials to prescribing trends and other factors. Environmental data should be included in future monitoring and surveillance efforts. The EU could contribute to building a global monitoring and surveillance system. |

| 5 | Conclusion | There was considerable variability in the extent to which Member States addressed AMR, particularly in the context of human health. Different countries also faced diverse issues. |
| | Recommendations | The Commission should continue providing guidance and support to Member States to encourage good practice in public health services and surveillance. The Commission should continue to support awareness-raising activities through European Antibiotic Awareness Day, and continue to monitor their impacts. Targeted attention could be paid to specific areas where a Member State is struggling and understanding the specific challenges blocking progress. A one-size-fits-all approach will be insufficient. Both funding and technical support are likely to be required for lagging countries. |

| 6 | Conclusion | Critical funding extended to research activities was catalysed by the Action Plan. |
| | Recommendations | The roles of the EU and the Member States should be clarified. The EU should consider how to focus more attention on the development of alternative treatments in addition to new antimicrobials. The EU should consider widening AMR research activities to encompass behavioural and social aspects of AMR, for example, regarding prescribing behaviours in veterinary medicine and reasons patients do not use antibiotics as prescribed (as in the ARNA project). Continue to identify incentives for developing veterinary medicines. |

APPENDIX G: STAKEHOLDER WORKSHOPS – REGISTRATION AND ATTENDANCE

Workshop 1

Summary of organisations' responses to the invitation:

Invited: 42

Registered: 25 (34 individuals)

Attended: 22 (29 individuals)

Table 7: Workshop 1: registrants

	First name	Last name	Organisaton	Attended?
Animal health	Klaus	Hellmann	Association of Veterinary Consultants / KLIFOVET	Yes
	Olivier	Espeisse	European Federation of Animal Health	Yes
	Elsa	Vecino	European group for Generic Veterinary Products	Yes
	Despoina	Iatriduou	Federation of Veterinarians of Europe	Yes
	Nancy	De Briyne	Federation of Veterinarians of Europe	Yes
	Rens	Van Dobbenburgh	Federation of Veterinarians of Europe	Yes
	Liesbet	Dendas	International Federation for Animal Health Europe	Yes
	David	John	International Federation for Animal Health Europe	Yes
	César	González	COPA-COGECA	Yes
	Hans-Peter	Schons	Fédération Européenne pour la santé Animale et la Sécurité Sanitaire	Yes
	Alain	Cantaloube	Fédération Européenne pour la santé Animale et la Sécurité Sanitaire	Yes
Human health	Sara	Roda	Council of European Dentists	Yes
	Richard	Price	European Association of Hospital Pharmacists	No
	Kees	Neef	European Association of Hospital Pharmacists	Yes
	Elke	Grooten	Sandoz (European Generic and Biosimilar)	Yes
	Katarina	Nedog	European Generic and Biosimilar Medicines Association	No (ill)
	Silvia	Bottaro	European Hospital and Healthcare Federation	No (other commitment)
	Cristina	Padeanu	European Patients' Forum	Yes (late)
	Nikolai	Pushkarev	European Public Health Alliance	Yes (AM only)
	Klaus	Boberg Pedersen	European Wound Management Association (EWMA)	Yes
	Rose	Cooper	EWMA; Department of Biomedical Sciences, Cardiff School of Health	Yes

	First name	Last name	Organisaton	Attended?
			Sciences	
	Jamie	Wilkinson	Pharmaceutical Group of the European Union	No
	Rutger	van der Gaag	Standing Committee of European Doctors	Yes
	Abela	Noel	European Federation of Nurses Associations	Yes
	Martina	Gliber	Medtech Europe	Yes
Food safety				
	Cees	Vermeeren	Association of Poultry Processors and Poultry Trade in the EU countries	Yes
	Daniel	Pearson	European Live Poultry and Poultry Hatching Egg Association	Yes
	Pauline	Castres	European Consumer Organisation	Yes
	Claudia	Vinci	European Livestock and Meat Trades Union	Yes
	Elisabeth	Bedert	Eurocommerce	Yes
	Javier Valle	Pello	COPA-COGECA	No
Research and innovation	Alessio	Maugeri	Federation of European Microbiological Societies	Yes
	Bauke	Oudega	Federation of European Microbiological Societies	Yes
	Jos	van der Meer	European academies Science Advisory Council	Yes

Invited organisations that did not respond to the invitation or declined to attend:

Animal health (3 of 10 invited):

1. Eurogroup for Animals

2. European Board of Veterinary Specialisation

3. European Platform for the Responsible Use of Medicines in Animals (EPRUMA)

Human health (8 of 19 invited):

4. Eurohealthnet

5. European Confederation of Care Home Organisations

6. European Health Management Association

7. European Medical Association

8. European Public Health Association

9. European Regional and Local Health Authorities Network

10. International Alliance of Patients' Organisations

11. The European Society for Quality in Healthcare

Food safety (1 of 6 invited):

12. European Community of Consumer Cooperatives

Research and innovation (5 of 7 invited):

13. European federation of animal science

14. European Federation of Pharmaceutical Industries and Associations

15. European Society of Clinical Microbiology and Infectious Diseases

16. Science Europe

17. Innovative Medicines Initiatives

Workshop 2

List of registrants and group discussion participants

Colin Adams	ELPHA (European Live Poultry and Poultry Hatching Egg Association)
Leo Aerden*	European Group for Generic Veterinary Products
James Anderson	GlaxoSmithKline
Brendan Barnes	EFPIA (European Federation of Pharmaceutical Industries and Associations)
Elisabeth (Els) Bedert	Eurocommerce
Marie Blanchard	Novartis
Thomas Lothar Breitkreuz	Eurocam (Complementary and alternative medicine)
Dariel Burdass	Microbiology Society
Pauline Castres	BEUC (The European Consumer Organisation)
Rosemary (Rose) Cooper	EWMA (European Wound Management Association); Professor of Microbiology
Jan Dahl*	UECBV (European Livestock and Meat Trading Union)
Asija Delalić	European Federations of Nurses Associations
Olivier Espeisse	European Federation of Animal Health
César González	COPA-COGECA
Marie Françoise Gros	MedTech Europe
Klaus Hellmann	Association of Veterinary Consultants
Anne Horan	Royal Society of Chemistry
Despoina Iatridou	Federation of Veterinarians of Europe
David John	IFAH-Europe (European Federation of Animal Health)
Robert Johnstone	IAPO (International Alliance of Patients' Organizations)
Olga Kikou	Compassion in World Farming
Elizabeth Kuiper	EFPIA (European Federation of Pharmaceutical Industries and Associations)
Marc Lemonnier	Antabio
Sascha Marschang	European Public Health Alliance
Alessio Gerardo Maugeri	Federation of European Microbiological Societies
Jasna Mesarić	ESQH (European Society For Quality In Healthcare)
Tajda Miharija Gala	EAHP (European Association of Hospital Pharmacists)
Katarina Nedog	EGA (European Generics and Biosimilar Medicines Association)
Jeanette Nenniger	F. Hoffmann-La Roche Ltd
Valérie Oriol Mathieu	Vaccines Europe
Benedikt Pelzer	EMSA (European Medical Students' Association)
Celine Pulcini	ESCMID (European Society of Clinical Microbiology and Infectious Diseases)
Melina Raso**	Health First Europe
Sara Roda	Council of European Dentists
Harald Schliessnig	Association of Poultry Processors and Poultry Trade
Hans Peter Schons	FESASS (European Federation for Animal Health and Sanitary Security)

Katarzyna Świderek	EPSA (European Pharmaceutical Students' Association)
Alike van der Velden	WONCA (The World Organization of Family Doctors)
Otto Arij (Rens) van Dobbenburgh	Federation of Veterinarians of Europe
Rebecca Veale	National Farmers Union

* Registered but did not attend (no reason given)

** Registered but did not attend (due to illness)

Number of registrants	41
Number of attendees	38

Afternoon Discussion Groups

Animal health	Human health 2	Human health 1
1. Klaus Hellman 2. Olivier Espeisse 3. Despoina Iatriduou 4. Rens van Dobbenburgh 5. David John 6. Hans-Peter Schons	1. Sara Roda 2. Tajda Miharija Gala 3. Katarzyna Swiderek 4. Jasna Mesaric 5. Robert Johnstone 6. Benedikt Pelzer	1. Asija Delalic 2. Rosemary Cooper 3. Thomas Breitkreutz 4. Sascha Marschang 5. Marie-Françoise Gros
Food, Farming & Consumers	**Research**	**Innovation**
1. Harald Schliessnig 2. Cesar Gonzalez 3. Rebecca Veale 4. Olga Kikou 5. Pauline Castres 6. Elisabeth Bedert 7. Colin Adams	1. Celine Pulcini 2. Alessio Maugeri 3. Anne Horan 4. Alike van der Velden 5. Dariel Burdass 6. Brendan Barnes 7. James Anderson	1. Marie Blanchard 2. Marc Lemonnier 3. Elizabeth Kuiper 4. Jeanette Nenniger 5. Valerie Oriol 6. [name redacted by request]

APPENDIX H: WORKSHOP REPORTS

1. Stakeholder Workshop 1, 26 October 2015, Brussels

2. Stakeholder Workshop 2, 16 February 2016, Brussels

Report on Stakeholder Workshop 1, held 26 October 2015

Introduction

As part of the 'Evaluation of Commission's Communication to the European Parliament and the Council on the Action Plan against the rising threats from Antimicrobial Resistance (AMR) (COM (2011) 748),' a one-day workshop for EU-level private stakeholder organisations was held on 26 October at European Commission premises in Brussels, Belgium. The evaluation was commissioned by the Directorate General for Health and Food Safety (DG SANTE) and is being delivered by RAND Europe. This report provides an overview of the workshop organisation and summarises main messages from discussions that took place during the workshop.

Workshop objectives:

1. To inform stakeholders about the evaluation and how they can be involved.

2. Obtain information on the stakeholders' experiences of AMR issues in the EU.

3. Obtain information on the links between stakeholders' experience of AMR and the Action Plan.

Participants:

A total of 29 individuals representing 23 organisations attended the workshop (Appendix 2). Of these 23 organisations, seven are active in areas mainly related to animal health and veterinary medicine; nine in human health and medicine; five in food safety, consumer interests or the livestock trade; and two in research and innovation. Four RAND Europe facilitators[89] and three observers from DG SANTE[90] also attended.

Structure:

To facilitate useful discussion, participants were organised into six small groups (one set for the morning sessions, one for the afternoon. Allocations of groups are listed in Appendix 2). The focus of the day was on small group discussions, with plenary discussions kept relatively brief. Information was gathered on posters completed by each group, on individual worksheets and in notes taken by the facilitators, and has been used in production of this summary report. The questions discussed are listed in Appendix 1. An effort was made to group participants with similar interests, on the basis of responses to a small survey of areas of interest circulated ahead of the workshop.

In addition to the main sessions, facilitators asked participants to respond to an informal poll, to provide feedback on case study ideas, and to give feedback about the workshop organisation (listed in Appendix 3).

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[89] C. Lichten, E. Smith, J. Sussex, J. Taylor

[90] E. MacDonald, R. Horgan, P. Novackova

Agenda overview (for detailed agenda, see Appendix 1):

Morning	Session 1: Introduction (plenary) Session 2: Discussion of relevance (mainly in small groups) Session 3: Discussion of coherence (mainly in small groups)
Afternoon	Session 4: Discussion of effectiveness (mainly in small groups) Session 5: Closing (plenary)

The report presents key points that arose in discussions in sessions 2, 3 and 4 (on relevance, coherence and effectiveness). Sessions 1 and 5 did not involve discussions with participants. The conclusion section presents a set of overall key points from the day.

Key points from session discussions

Session 2: Relevance

The six groups were asked to discuss whether the Action Plan's seven objectives address AMR issues identified in 2011 and whether there were any areas that should have been covered by the Action Plan when it was developed in 2011. All objectives were seen to be relevant, though there was some disagreement about whether they had been adequately addressed by the Action Plan.

There were three objectives which all of the groups agreed addressed issues relevant in 2011:

- Joining forces with international partners to contain the risks of spreading AMR
- Monitoring and surveillance
- Communication, education and training

There were four objectives for which groups questioned whether the issues of 2011 had been adequately addressed:

- Appropriate use of antimicrobials
- Prevent microbial infections and their spread
- Develop new effective antimicrobials or alternatives for treatment
- Additional research and innovation

Underlying the comments on individual objectives, there was a suggestion that not all objectives are equally important and some form of prioritisation would have been desirable.

With respect to appropriate use of antimicrobials, some participants felt that actions were not harmonised. They suggested there should also be more emphasis on tackling inappropriate use in Member States, not just reducing use. Participants also discussed the need for antimicrobial stewardship.

The objective on prevention of microbial infections and their spread was seen by one group as a priority action that still needs time to be measured and supported with additional tools. Concerns were raised over a lack of cross-border actions on prevention, as well as a lack of progress in ensuring Member States' accountability. In regard to the development of new effective antimicrobials or alternatives for treatment, four groups expressed concerns about the lack of focus and development in the animal sector in particular.

When asked about areas that should have been covered by the Action Plan when it was developed in 2011, the following areas were mentioned:

- Improving understanding of prevention
- Improved understanding of the varied reasons why farmers use antibiotics
- Greater consideration of AMR issues in fish farming
- A clearer focus on the 'One Health' concept, covering transmission between humans and animals as well as addressing human and animal issues separately
- Looking at other causes of AMR besides antibiotic use (e.g. silver resistance, antiseptics).
- Greater consideration of the cultural differences across Europe, including situations where health professionals' incomes are tied to selling antibiotics
- More emphasis on knowledge of the general properties of antibiotics e.g. dosage, duration of treatment type
- Incentivising industry to develop antibiotics (and the tension that exists in the veterinary sector about the use of antibiotics)

- Defining metrics by which the success of the Action Plan could be evaluated over subsequent years.

The groups were also asked if the Action Plan objectives corresponded with the current needs in 2015 of tackling AMR within the EU. There was generally a view that the objectives are still relevant but are now more urgent, and that additional trends and issues may also need to be addressed. Participants suggested the need for:

- More focus on appropriate use of antimicrobials in primary care and improving public health guidelines (with more consistency across countries)
- More emphasis on training
- More support for research and development (e.g. horizontal gene transfer, resistance transmitted in foodstuffs, diagnostics for on-site point-of-care testing, understanding decision-making in the animal health context)
- More focus on collaboration with developing countries
- A more holistic approach.

Session 3: Coherence

Coherence with EU policies

The six groups were asked to discuss whether the objectives contained in the AMR Action Plan were coherent with other EU policies in the following areas: environment, human health, animal health and welfare, food safety, agriculture, research, competitiveness and SMEs.

For human health, one group said that existing policies do not tackle AMR sufficiently, and another felt there was separation between AMR and other public health areas. For animal health, there were concerns that the welfare dimension was not adequately addressed. For food safety and agriculture, groups felt there is a need for a better understanding of the relation between AMR and food. They also expressed concern that farmers could be forced to bear costs brought about by the Action Plan.

For research policy, a problem raised was that although funding seems to be available SMEs in particular find it hard to access. One group stated that more funding for diagnostics is needed, while another questioned whether research funded is producing useful outcomes. It was noted that it was not necessary or desirable for research to be taking place everywhere – as long as it is taking place somewhere. Few comments were made about coherence with the areas of competitiveness and SMEs, though some participants expressed concerns that the costs associated with tackling AMR may render some businesses less competitive in global markets.

Coherence with Member State and international policies

A second question the groups were asked to answer in respect to coherence was whether the objectives contained in the AMR Action Plan are coherent with national policies of Member States as well as at international level. With respect to individual Member States and their policies and actions, participants generally agreed there was coherence, but with substantial variation in the speed with which Member States have engaged in combating AMR. One notable exception to the general perception of coherence vis-à-vis Member States was the area of developing new antimicrobials or alternatives to treatment, which was seen as a highly problematic area.

In these discussions, the groups did not generally find the Action Plan coherent with international policies, though this view pertained predominantly to differences between the EU and developing countries. However, cooperation with India and China was seen as good progress, and it was noted that the process of dealing with AMR at a global level has only begun.

Session 4: Effectiveness

The focus of this session was on understanding reasons why participants judged that progress had or had not been made in specific aspects of AMR, and what they had observed to be the role of the Action Plan. Below are key points for the various topic areas covered during the effectiveness session. (Each group was asked to focus on just two or three of the topics).

Appropriate use of antimicrobials in animals (or humans)

The Action Plan may have encouraged Member States to set targets to reduce consumption in the animal sector (PM-A1)[91].

Important achievements related to the Action Plan include development of a legal framework for animal health and use of antimicrobials (the Animal Health Law and proposals on veterinary medicinal products) (PM-H2).

Persistent challenges and obstacles include insufficient monitoring of global travellers, enforcement of prescribing rules, staff turnover in nursing homes and health care institutions, and limited understanding of obstacles to prudent use. In addition, more biosecurity measures should be incorporated in people's daily routines (e.g. in nursing homes and schools) (PM-H2).

Prevention of microbial infections and their spread in animals (or humans)

The Action Plan played a positive role in improvements observed in recent years. However, implementation in some Member States is lacking and greater progress is hampered by insufficient funding due to lacking political commitment (PM-H1).

The contribution of the Action Plan may have been the greatest by providing a solid framework for action (PM-H2).

Development of new effective antimicrobials and alternative treatments

The Action Plan had good intentions regarding the development of new drugs, but has had little impact in terms of market authorisations and earlier development (PM-M2, PM-A2).

There have been improvements in scientific methods (e.g. genomics), although no improvements to the actual antimicrobials pipeline. However, EU action did stimulate interaction between SME and public authorities and inspire local authorities to offer similar stimuli. Efforts in this area may be hampered by lack of transparency and existing regulatory burdens (PM-M1).

There remains a need for a new business model that would facilitate the development of new antimicrobials (PM-M2).

Research into the causes of antimicrobial resistance; and research on the prudent use of antimicrobials and the impact of imprudent use

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[91] References refer to group numbers, as listed in Appendix 2.

Research into classic antimicrobials has received much more attention than alternatives. It may be worthwhile investing more into researching new types of drugs and treatments (PM-M1).

The Action Plan has helped to attract attention to AMR and generate interest among researchers across Europe, which is a positive outcome although research remains fragmented (PM-M2).

Awareness and education about AMR

There is a need for a sustained effort, with long-term engagement, so the Commission should continue to promote implementation of the Action Plan and raising awareness of professionals in human health and other areas. In addition to long-term objectives, a step-by-step approach is needed (PM-H1).

It is also important to reinforce training so that it is not forgotten. On the veterinary side, there is a big gap in awareness and education between Western Europe and. poorer parts of Europe. In addition, there are historical and cultural reasons for the differences between individual Member States (PM-A1).

The level of action differs across Member States, in part due to variance in political willingness and maturity of MS for implementation (PM-A2).

International and EU cooperation

There is a need to focus more on the One Health approach, to join initiatives and efforts holistically and with increased consistency. This involves addressing gaps across Member States and requires education. Greater collaboration with third countries, such as China and India, may also help bring about positive change (PM-M2).

Cooperation is important in overcoming a number of international obstacles. For instance, effective monitoring and stewardship face the challenge of cross-border provision of care, Internet trade and importation from third countries (PM-H2).

Monitoring and surveillance of AMR and consumption of antimicrobials

The Action Plan has had a role in the gathering of consumption data (ES-VAC), though Member States have progressed at varying rates (PM-A1, PM-A2).

The Action Plan has encouraged monitoring of resistance in animal sector, but not facilitated it (PM-A1).

Despite recent progress, monitoring of consumption in humans needs to be strengthened. Barriers to progress in the area include conflicting interests among relevant stakeholders and the existence of different health care systems within the same country (PM-H2).

Informal poll

Another activity, which participants did in the morning (upon arrival or during a break), supplemented the discussion on effectiveness.[92] Participants were asked to 'vote' with stickers on a large poster about whether they thought progress had been

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[92] This activity was intended to encourage thinking and discussion, not to provide a definitive picture of stakeholders' positions. Nonetheless, it is instructive to review the responses in light of the messages from discussions.

made in various AMR-related areas (corresponding to the objectives of the Action Plan) since 2011, and whether the Action Plan had played a role in that progress. The results, which were consistent with points raised in discussions, are quantified in research into the causes of AMR and prudent use of antimicrobials was seen more positively.

Table 8.

Overall, participants indicated that more progress had been made in AMR issues related to animal health (such as appropriate use of antimicrobials, prevention of infections and their spread, development of alternative treatments, monitoring and surveillance, and education and training of animal health professionals) than in the corresponding human health issues. An exception to this is cooperation at an EU-level and international level, where progress was perceived in both human and animal health.

In terms of the role of the Action Plan, it was generally seen to have had an impact in cooperation, particularly at international level. Views on the Action Plan's impact were more mixed for monitoring and surveillance, as well as other areas. A notable contrast is that the Action Plan was seen to have impacted appropriate use of antimicrobials and infection prevention in animals, but not humans. There was unanimity that there had been no progress in research into new antimicrobial medicines either for people or for animals. In addition, views on the impact of the Action Plan varied across different aspects of research and development. As discussed above, little progress was seen to have been made in development of new antimicrobials, whereas research into the causes of AMR and prudent use of antimicrobials was seen more positively.

Table 8: Summary of results from informal poll on progress in aspects of AMR related to animal and human health, and the impact of the Action Plan in those areas.

	Human Health					Animal Health				
	Change from 2011 to 2015?			EU AP impact?		Change from 2011 to 2015?			EU AP impact?	
	Progress occurred	Situation is worse	No change	Yes	No	Progress occurred	Situation is worse	No change	Yes	No
Appropriate use of antimicrobials	3	1	12	1	14	15	0	0	14	0
Prevention of infections and their spread	5	5	6	2	11	12	0	1	1	9
Development of new effective antimicrobials	0	15	0	0	12	0	6	5	4	9
Development of alternatives for treatment of infections	2	0	12	0	11	10	0	2	0	11
Cooperation at int'l level	12	1	0	10	0	13	0	2	11	0
Cooperation at EU level	11	1	1	10	3	12	0	0	7	2
Monitoring and surveillance-AMR	8	0	8	2	10	14	0	0	5	4
Monitoring and surveillance-antimicrobial use	5	0	7	4	5	11	0	0	4	7
Research into causes of AMR	7	0	6	5	1	5	0	8	0	13
Research on prudent use of antimicrobials	0	0	16	0	13	6	2	5	2	8
Communication, education and training for health professionals	8	0	7	1	8	11	0	2	3	5
Communication, education and training- public	12	0	3	9	3	7	1	5	4	9

> **Key**: Colours are used to help visualise the results. Green indicates broad agreement that progress was made (from 2011 to 2015) and/or that the Action Plan had an impact. Red indicates broad agreement that the situation became worse (from 2011 to 2015) and/or that the Action Plan had no impact. Orange indicates disagreement about whether change or occurred and/or whether the Action Plan had an impact, or agreement that no change occurred.

Overall contribution/Added Value of the Action Plan

Participants were asked to consider, based on their discussion of the Action Plan's coherence, relevance and effectiveness, what its overall contribution had been. There was general agreement on the following points:

The Action Plan has helped promote coordination. Had there been no Action Plan, organisations such as the OIE and WHO would still have taken action, and stakeholder organisations would have done the same. The Action Plan helped coordinate their activities.[93]

The Action Plan was not a starting point, but gave a boost to what was taking place already (e.g. in some Member States- Germany, Netherlands, Denmark)[94]

The Action Plan helped create a framework for Member States to take their own actions. However, while it raised awareness among Member States, there is still a problem that not all Member States have taken action to the same extent.[95]

Headlines and advice to policymakers

Participants were asked to suggest fictional newspaper headlines that might appear in a world that had no Action Plan, as an alternative way to summarise discussions they had about the added value of the Action Plan. They suggested:

- Member States take the lead in fighting AMR (PM-A1)
- Member States call on the EC to take action on AMR (PM-H1)
- Microbes strike back (PM-H2)
- Without an effective EC Action
- Plan more people die than expected because of AMR (PM-M1)

Asked what advice they would like to give policymakers drafting another Action Plan, participants suggested:

- Ensure further development and implementation at the Member State level (PM-H1)
- Coordinate with other policy areas (PM-H1)
- Stop focusing on classic antimicrobials; invest in innovative drugs/treatments (PM-M2)
- Increase open communication/transparency about the Action Plan and its progress (PM-M1)
- Keep the same actions, but with a clear One Health approach (PM-A2)
- Consider a One Health AMR ERIC (European Research Infrastructure Consortium) (PM-M2)
- Focus on education and public outreach, including education of the media so that coverage is better (PM-M2)
- Listen well and consult before drafting (it's a complex area with many stakeholders involved) (PM-H2)
- There is a need for accessible funding (to support some Member States that are lagging behind) (PM-A1)

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[93] PM-A2,

[94] PM-A1, PM-H2

[95] PM-H1, PM-H2

Case study feedback

Feedback on case study topic suggestions (listed in Appendix 1) was obtained from 16 participants. All of the topics that were suggested received a varied mix of feedback and comments, and none of the case study topics were eliminated on the basis of this feedback. Additional topics suggested include the following:

- Influence of different administration routes (feed, top dressing, water, injection) on AMR,

- Reasons for enormous changes in antimicrobial use in animals in different Member States,

- Prophylactic use of antibiotics in dentistry,[96]

- European Antibiotic Awareness Day, for which the animal health sector has been invited as well. How can EAAD be made a truly 'One Health' event that includes joint initiatives and engagement of both sectors?

- Effects of implementation of antibiotics stewardship,

- How the Action Plan influenced reaching out to the most sensitive populations, e.g. the very young, old,

- One possible explanation for the rapid rise of resistance in Eastern Europe after the fall of the Berlin Wall is promotional activity by the pharmaceutical industry: is this still going on or is there now a more responsible attitude?

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[96] Dayer MJ, Jones S, Prendergast B, et al. Incidence of infective endocarditis in England, 2000-13: a secular trend, interrupted time-series analysis. The Lancet, published online 18 November 2014

Conclusion

In summary, several key points emerged from the workshop, which are listed below. These points are based on discussions that took place at the workshop and reflect the experiences and views of the participants present. Some issues may have received more emphasis than others, in part due to the mix of participants in attendance and their interests.

- The Action Plan has not been successful in promoting the 'One Health' approach to tackling AMR. This was thought to be the case with respect to both the original formulation of the Action Plan's objectives and the Plan's implementation.

- There is substantial variability among individual Member States across several dimensions related to the Action Plan, namely the extent to which Member States are engaged in the Plan's implementation, the extent to which Member States have developed policies that are coherent with the Action Plan, and the degree to which the Plan's objectives are being attained in individual Member States.

- The main contribution of the Action Plan is perceived in having a coordination role at a global level and in the EU, whereby individual Member States are provided with a basic organising framework to continue already ongoing efforts to tackle AMR and launch new initiatives. By having this coordinating role, the Action Plan may have been able to result in synergies stemming from more joined-up activities.

- The domain of animal health appears to have seen more progress and improvement over the past five years and the Action Plan is seen as having played a positive role in some of these trends. By contrast, the assessment with respect to human health is less positive and the Action Plan is regarded as notably less influential.

- One area that stands out for its unambiguous assessment by workshop participants is the failure to develop new antimicrobials. Not only is the Action Plan not considered to have made a positive contribution in this area, the actual overall situation is considered to have worsened over the past five years.

It is also notable that participants emphasized that the workshop was one of the first opportunities they were aware of for animal health and human health stakeholders to come together for a discussion, and that they felt more meetings of this type would be very worthwhile. Consistent with this, many participants asked for a list of contact details of the other participants (which has been provided by email and can be found in Appendix 2).

Workshop Report Appendix 1: Workshop agenda and questions

09:00 – 09:15	**Welcome, arrival, coffee, get badges, check group assignments (groups to be posted on the wall)**
	Participants will be invited to vote (with a sticker) on a poster on the wall about
	    3. How has the situation in various aspects of AMR changed over time?
	    4. Has there been a role for the Action Plan in these areas?

09:15 – 9:30	**Session 1 (plenary): Introduction to Action Plan** - Summary of the Action Plan, its objectives and expected outcomes, current status
9:30-9:40	**Short 'human histogram' activity where people are asked to move around the room depending on their views on two questions:** - Has there been, overall, progress on tackling AMR in the EU? - Has the AP had an impact?
9:40-9:55	**Introduction to evaluation** - Presentation of the aim and scope of the evaluation and its research questions - Role of stakeholders in the evaluation, and expectations from the workshop - Plan for the day
9:55 – 10:50	**Session 2 (6 working groups consisting of participants organized by area of expertise)** Relevance activity: - Introduction to relevance concept and explanation of group task (10 min) - Group activity (35 min) - Plenary discussion (25 min)
10:50 – 11:00	Break
11:00 – 11:50	**Session 3 (6 groups)** Coherence activity: - Introduction to coherence concept and explanation of group task (10 min) - Group activity (35 min) - Plenary discussion (25 min)
11:50-12:00	Catch-up time if needed (or early break for lunch)
12:00 – 12:45	Lunch break
12:45 - 13:00	**Case study review (individual activity)**
12:45 – 16:20	**Session 4 (new sets of 6 groups, organized by area of expertise)** Effectiveness activity: - Introduction to effectiveness concept and explanation of group task (10 min) - Group activity plus plenary discussion (2 rounds, with groups covering different topics in each round)
16:20 – 16:40	**Session 5 (plenary): Reflection, next steps and close** - Completion of workshop review form

Workshop questions:

Session 2: Relevance

Q1a. Do the action plan objectives address the problems identified in 2011?

Q1b. Are there any areas that should have been covered by the Action Plan when it was developed in 2011 (i.e. any missing areas)?

Q2a. Do the action plan objectives address the problems identified in 2015?

Q2b. Are there any areas not currently addressed by the Action Plan that should be (i.e. any missing areas)?

Session 3: Coherence

Q1. Are the objectives contained in the Action Plan coherent with other EU policies in the following areas? Explain your answers.

a. Environment

b. Human health

c. Animal health and welfare

d. Food safety

e. Agriculture

f. Research

g. Competitiveness and SMEs

Q2. Are the 7 objectives contained in the AMR Action Plan (list provided) coherent with policies and programmes on AMR in the EU Member States? Explain your answers.

Session 4: Effectiveness and added value

Part 1: Each group assigned one of the following areas:	Part 2: Each group assigned one of the following cross-cutting areas:
a. Appropriate use of antimicrobials in animals (or humans) b. Prevention of microbial infections and their spread in animals (or humans) c. Development of new effective antimicrobials and alternative treatments d. Research into the causes of antimicrobial resistance; and research on the prudent use of antimicrobials and the impact of imprudent use	a. Awareness and education about AMR b. International and EU cooperation c. Monitoring and surveillance of AMR and consumption of antimicrobials.

Both parts:

Q1. How has the situation changed since 2011 in this area?

- What are notable achievements and failures?

- What are barriers and enablers of progress?

Q2. Could the observed trends, either positive or negative, be attributed (at least partly) to the Action Plan?

- Why or why not?

- What has been the role of the Action Plan?

Q3. Consider how the situation would be different if there were no EU AMR Action Plan.

- Part 1: What would be a headline from a newspaper in such a world?

- Part 2: What advice would you give to policymakers trying to address this area?

Case study activity sheet (next page), used for the case study activity.

Activity sheet: Case Study Input

The evaluation will include a set of case studies exploring specific AMR issues, initiatives or trends that illustrate how the Action Plan is having an impact (positive or negative), or failing to have an impact. We have prepared a list of possible case study topics. Do you have any comments on the topics below or suggestions for topics?

Topic	Description	Comments?
1. Getting the data – ESVAC Success and further improvements?	The European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project collects information on how antimicrobial medicines are used in animals across the EU. **Case study focus:** How has ESVAC evolved over time, what kind of data is gathered, and how does this compare to practices in Member States? A comparison could be made with Germany, in particular, which recently introduced new reporting requirements. Sources: Byrne J. 2014 German livestock producers must report antibiotic usage under new regulation. Available at: http://www.feednavigator.com/Regulation/German-livestock-producers-must-report-antibiotic-usage-under-new-regulation German drug law Section 58b Notifications about the use of medicinal products . Available at: http://www.gesetze-im-internet.de/englisch_amg/	
2. Incentives to reduce the use of antimicrobials in animals and food production	Tackling incentives for animal producers and veterinarians to prescribe antimicrobials. **Case study focus:** Has the Action Plan affected incentives for producers to use antimicrobials, and for veterinarians to prescribe them? (Could focus on Germany where an alliance has formed to tackle ongoing criticism about animal husbandry. The alliance consists of meat industry, farmers and retailers who want stricter animal welfare standards enforced.) Source: Gyton G. 2014 Alliance formed in Germany on animal welfare. Globalmeatnews.com Available at: http://www.globalmeatnews.com/Industry-Markets/Alliance-formed-in-Germany-on-animal-welfare	
3. Aquaculture and AMR in maritime waters	Antibiotics are used in aquaculture. As aquaculture industry has increased so has the risk of emergence of antimicrobial resistance. **Case study focus:** look at how vaccination instead of usage of antibiotics is used in EU countries and whether this is something that the EU Commission should further look into. Source: None yet identified	.
4. French awareness programme extended to animals	Several awareness campaigns have been launched in France, e.g. 'Les Antibiotiques, c'est pas automatique', which was extended to animals in 2014. **Case study focus:** Lessons learned from the programme and why it was decided that it should be extended to animals. Source: Federal Ministry of Health. 2015. Combating Antimicrobial Resistance. Examples of Best – Practices of the G7 Countries	
Other topic suggestion:	Please suggest a topic for a case study and, if possible, relevant data source(s).	

Topic	Description	Comments?
1. Increases in community antibiotic use over 2008-2012	According to ECDC data, there was a significant increase in the ratio of broad-spectrum to narrow spectrum penicillins/cephalosporins/macrolides consumed in the community over the last 5-year period, 2008–2012, in two thirds of respondent countries. **Case study focus:** Investigate the context in which this increase took place in 1-2 countries with notable trends, exploring potential contributing factors and the role of the Action Plan. Data source: ECDC Surveillance of antimicrobial consumption in Europe 2012 Report: http://ecdc.europa.eu/en/publications/Publications/antimicrobial-consumption-europe-esac-net-2012.pdf	
2. Changes in country-level indicators of HAIs	Data show fluctuations in country –level indicators of HAIs, e.g. MRSA % 2010-2013. **Case study focus:** Investigate the context in which this increase took place in 1-2 countries with notable trends, exploring potential contributing factors and the role of the Action Plan. Data source: ECDC - HAI-Net PPS interactive database. Available at: http://ecdc.europa.eu/en/healthtopics/Healthcare-associated_infections/database/Pages/database.aspx	
3. E-Bug education programme	e-Bug, started in 2006, has produced materials for educating young people in the EU about prudent antibiotic use, microbes, transmission of infection, hygiene and vaccines. **Case study focus:** Has the Action Plan affected uptake of the programme? Data source: e-bug overview http://www.researchgate.net/publication/221899720_Overview_of_e-Bug_An_antibiotic_and_hygiene_educational_resource_for_schools	
4. Trends in MDR-TB in Eastern Europe	Eastern Europe is experiencing a bigger number of drug resistant TB in comparison to Western and Central Europe. **Case study focus:** Investigating the trends in drug-resistant TB in Eastern Europe, with particular focus on MDR-TB. Has this issue been sufficiently addressed by the Action Plan? Source: WHO drug resistance in TB. Available at: http://www.who.int/tb/publications/mdr_surveillance/en/	
5. TARGET Antibiotics Toolkit	Public Health England has collaborated with the Royal College of General Practitioners to develop the TARGET Antibiotics Toolkit. The toolkit aims to help influence prescribers' and patients' personal attitudes, social norms and perceived barriers to optimal antibiotic prescribing. TARGET has been updated following recent evaluation. **Case study focus:** How does this initiative align with the Action Plan and was it influenced by the Action Plan? Source: Federal Ministry of Health. 2015. Combating Antimicrobial Resistance. Examples of Best – Practices of the G7 Countries	
Other topic suggestion:	Please suggest a topic for a case study and, if possible, relevant data source(s).	

Workshop Report Appendix 2: Workshop registrants

First name	Last name	Organisaton	Email
Cees	Vermeeren	Association of Poultry Processors and Poultry Trade in the EU countries	cv@avec-poultry.eu
Klaus	Hellmann	Association of Veterinary Consultants / KLIFOVET	Klaus.Hellmann@klifovet.de
César	González	COPA-COGECA	cesar.gonzalez@copa-cogeca.eu
Javier Valle	Pello*	COPA-COGECA	javier.valle@copa-cogeca.eu
Sara	Roda	Council of European Dentists	sara.roda@eudental.eu
Elisabeth	Bedert	Eurocommerce	bedert@eurocommerce.eu
Jos	van der Meer	European academies Science Advisory Council	jos.vandermeer@radboudumc.nl
Richard	Price*	European Association of Hospital Pharmacists	Richard.Price@eahp.eu
Kees	Neef	European Association of Hospital Pharmacists	c.neef@mumc.nl
Pauline	Castres	European Consumer Organisation	pca@beuc.eu
Olivier	Espeisse	European Federation of Animal Health	espeisse_olivier@elanco.com
Abela	Noel	European Federation of Nurses Associations	efn@efn.be
Katarina	Nedog*	European Generic and Biosimilar Medicines Association	knedog@egagenerics.com
Elke	Grooten	European Generic and Biosimilar Medicines Association/Sandoz	elke.grooten@sandoz.com
Elsa	Vecino	European group for Generic Veterinary Products	elsa.eggvp@gmail.com
Silvia	Bottaro*	European Hospital and Healthcare Federation	eu@hope.be
Daniel	Pearson	European Live Poultry and Poultry Hatching Egg	dpearson@aviagen.com

First name	Last name	Organisaton	Email
		Association	
Claudia	Vinci	European Livestock and Meat Trades Union	cvinci@uecbv.eu
Cristina	Padeanu	European Patients' Forum	cristina.padeanu@eu-patient.eu
Nikolai	Pushkarev	European Public Health Alliance	nikolai@epha.org
Klaus	Boberg Pedersen	European Wound Management Association	kbp@ewma.org
Rose	Cooper	European Wound Management Association/ Cardiff School of Health Sciences	RCooper@cardiffmet.ac.uk
Hans-Peter	Schons	Fédération Européenne pour la santé Animale et la Sécurité Sanitaire	hp.schons@adt.de
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Despoina	Iatriduou	Federation of Veterinarians of Europe	despoina@fve.org
Nancy	De Briyne	Federation of Veterinarians of Europe	Nancy@fve.org
Rens	Van Dobbenburgh	Federation of Veterinarians of Europe	Rens.vanDobbenburgh@henryschein.com
Liesbet	Dendas	International Federation for Animal Health Europe	ldendas@ifahsec.org
David	John	International Federation for Animal Health Europe	djohn@ifahsec.org
Martina	Gliber	Medtech Europe	martina.gliber@institut-merieux.com
Jamie	Wilkinson*	Pharmaceutical Group of the	j.wilkinson@pgeu.eu

First name	Last name	Organisaton	Email
		European Union	
Rutger	van der Gaag	Standing Committee of European Doctors	r.vandergaag@fed.knmg.nl

* Registered but did not attend.

Group allocations[97]

Morning groups

AM-H1
1. Sara Roda
2. Elke Grooten
3. Cristina Padeanu
4. Jamie Wilkinson
5. Rosemary Cooper
6. Abela Noel

AM-H2
1. Richard Price
2. Katarina Nedog
3. Klaus Boberg Pedersen
4. Rutger van der Gaag
5. Kees Neef
6. Silvia Bottaro

AM-A3
1. Despoina Iatriduou
2. Nancy De Briyne
3. Rens Van Dobbenburgh
4. David John
5. Pauline Castres
6. Javier Valle Pello

AM-A1
1. Olivier Espeisse
2. Elisabeth Bedert
3. Nikolai Pushkarev
4. César González
5. Claudia Vinci

AM-A2
1. Elsa Vecino
2. Daniel Pearson
3. Liesbet Dendas
4. Alain C. Cantaloube
5. Cornelius Vermeeren

AM-M1
1. Martina Gliber
2. Hans-Peter Shons
3. Klaus Hellmann
4. Alessio Gerardo Maugeri
5. Bauke Oudega
6. Jos van der Meer

Afternoon Groups

PM-H1
1. Cristina Padeanu
2. Hans-Peter Shons
3. Sara Roda
4. Abela Noel
5. Elke Grooten
6. Katarina Nedog

PM-H2
1. Nancy De Briyne
2. Richard Price
3. Rutger Jan van der Gaag
4. Rosemary Cooper
5. César González
6. Daniel Pearson

PM-M1
1. Klaus Boberg Pedersen
2. Bauke Oudega
3. Kees Neef
4. Elisabeth Bedert
5. Jamie Wilkinson
6. Silvia Bottaroq

PM-A1
1. Elsa Vecino
2. David John
3. Claudia Vinci
4. Martina Gliber
5. Klaus Hellmann

PM-M2
1. Despoina Iatriduou
2. Cornelius Vermeeren
3. Alessio Gerardo Maugeri
4. Olivier Espeisse
5. Jos van der Meer

PM-A2
1. Liesbet Dendas
2. Alain C. Cantaloube
3. Javier Valle Pello
4. Pauline Castres
5. Rens Van Dobbenburgh
6. Nikolai Pushkarev

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[97] Some changes that occurred on the day of the workshop may not be reflected.

Workshop Report Appendix 3: Feedback about the workshop

On the whole, feedback from participants was positive (Figure 2). Attendees reported that the dynamic and interactive format of the workshop (with a lot of opportunity for discussion in small groups and sharing of ideas) was good and that the workshop was a good networking opportunity.

Challenges highlighted by attendees included a need for more human health attendees, a need for representation from a wider range of Member States, the idea that more interaction between human and animal health stakeholders may have been beneficial, and the fact that the workshop was covering a wide range of content with participants of varying backgrounds.

Figure 2: Scores from workshop feedback question: 'How would you rate the event? (1-10, with 10= excellent)'

Workshop attendees' review scores out of 10
(N=21)
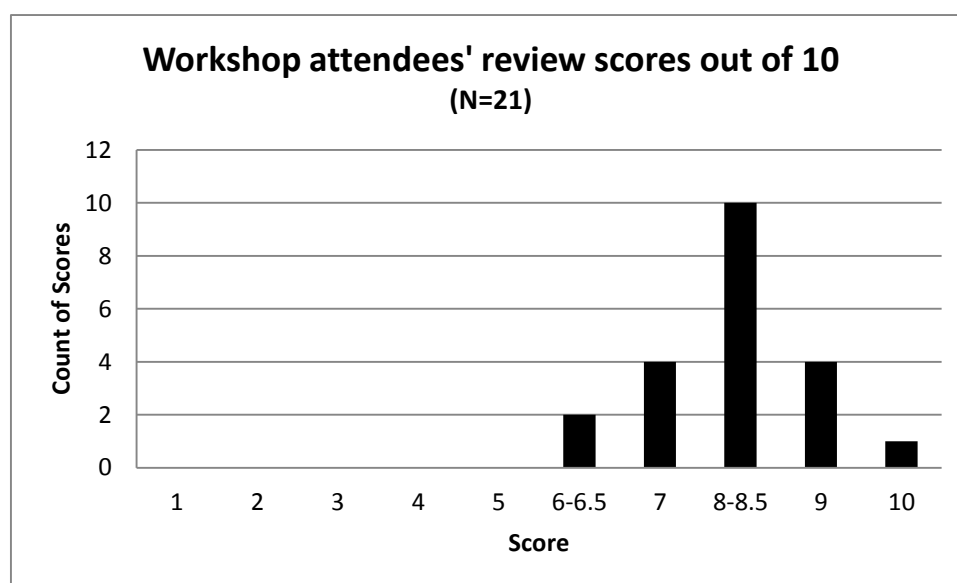
Report on Stakeholder Workshop 2, held 16 February 2016

Introduction

As part of the 'Evaluation of the Commission's Communication to the European Parliament and the Council on the Action Plan against the rising threats from Antimicrobial Resistance (AMR) (COM (2011) 748),' a one-day workshop for EU-level stakeholder organisations was held on 16 February at European Commission premises in Brussels, Belgium. The evaluation was commissioned by the Directorate General for Health and Food Safety (DG SANTE) and is being delivered by RAND Europe. This report provides an overview and summary of the main messages from discussions that took place during the workshop.

Workshop objectives:

1. Inform stakeholders about the evaluation results and conclusions.

2. Obtain feedback from stakeholders about the findings and recommendations, in order to further test the validity of the findings and refine the recommendations.

Participants:

A total of 38 individuals representing 36 organisations and companies attended the workshop (Appendix G). Of these 38 individuals, six were active in areas mainly related to animal health and veterinary medicine; 11 in human health and medicine; seven in food safety, consumer interests or the livestock trade; and 13 in research and innovation. Three RAND Europe facilitators[98] and three observers from DG SANTE[99] also attended.

Structure:

The morning session focused on the findings and conclusions from the evaluation, while the afternoon focused on the preliminary recommendations. In the morning, the facilitators presented the findings and then had an open plenary discussion, which enabled participants to comment on or ask about the findings. In the afternoon, the facilitators presented their draft recommendations and then facilitated two discussion sessions. First, participants were assigned to one of six small groups based on interest area (group allocations are listed in Appendix G) and asked to discuss specific recommendations and questions (a sample group activity sheet is in Appendix F). Next, in a plenary session, participants reported the outcomes of their group discussions and discussed the recommendations. For a detailed agenda, see Appendix F.

This report presents the main points that arose during the plenary discussions and in additional written feedback submitted by some participants to the facilitators. It does not present all comments made throughout the day, but rather aims to capture the main ideas that were discussed.

Feedback received from the participants about the workshop itself – including what they found useful and areas for improvement – is summarised in Appendix 1.

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[98] C. Lichten, E. Smith, E. Dujso.

[99] R. Horgan, K. Kielar, E. MacDonald.

The main points discussed during group and plenary sessions

Morning session: Findings

This section is organised according to the headline findings presented, with comments grouped according to each set of findings.

> Headline findings:
>
> - The EC Action Plan was important as a symbol of political commitment to tackling AMR.
> - The holistic and 'One Health' approaches were necessary to address AMR.

Comments:

- The holistic approach was achieved, but there should be more focus on research and development (R&D) to ensure the supply of antimicrobials is maintained.

> Headline finding: The issues covered by the Action Plan were relevant, but there were some gaps on environmental issues and international cooperation.

Comments:

- Conservation of existing antibiotics is also important, and should be linked to innovation and stewardship.
- One source of antibiotics in the environment is their use in plant products.
- Efforts to address environmental issues related to AMR could be linked to existing EU and Member State (MS) initiatives, such as existing studies on wastewater treatment, the Innovative Medicines Initiative (IMI) CHEM21 project on sustainable manufacturing of medicines,[100] and LeSPAR[101] cross-sector work on open innovation.
- Given the migration occurring in the EU now (a population prone to disease/infection), there is a need to look at epidemiological impacts in collaboration with the World Health Organisation (WHO) and ensure care is available to these vulnerable populations.

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[100] http://www.imi.europa.eu/content/chem21

[101] Learned Society Partnership on Antimicrobial Resistance

> Headline finding: Monitoring and surveillance activities were generally a success, but more could have been done.

Comments:

- The European Association of Hospital Pharmacists (EAHP) has performed surveys on practices in hospital pharmacies;[102] they found that little improvement had taken place in AMR surveillance and see a need for challenges to communication and implementation to be addressed, particularly in Eastern Europe.

> Headline finding: There were challenges with addressing the public health dimension given diversity of Member State approaches.

Comments:

- Conservation issues relate to availability: there are shortages of antibiotics and some are not being marketed in all countries.
- When comparing data on antimicrobial usage across countries, it is important to consider the reasons why some countries may use more antimicrobials than others. Reasons could include differences in context such as climate conditions or bacterial strains present in a given country.
- Given that the EU has limited power in human health, other ways to encourage MS to act include benchmarking studies and making some funding contingent on action being taken or progress being made.
- It is important that MS develop Action Plans and also implement them.
- Education is very important, especially in primary care.
- There is a need to engage with hard-to-reach groups, and these groups require a different approach than the general public.
- There is a need to distinguish interventions that change behaviour from those that merely provide information, particularly for patients.
- It may be helpful to make it clearer to patients (through labelling) which medications are antibiotics.

> Headline finding: Research and innovation funding was sufficient and wide-ranging but several issues still need to be addressed.

Comments:

- 'Alternatives' (including diagnostics, vaccines, and other alternative and complementary approaches) are important and may be inadequately addressed in the Action Plan.
  - In addition to R&D, there is a need for existing vaccines and vaccination programmes to be used.

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[102] Full data for surveys done in 2005 and 2010 available at: http://www.eahp.eu/publications/surveys

- There is a need to develop treatment alternatives for mild urinary tract infections (UTIs), sore throats, etc. (for patients who are not severely ill).
- It is important to consider the sociological issue that a patient expects something when they visit the doctor. Good communication with patients is essential. When the best alternative is doing nothing, there is a challenge in convincing the patient.
- There is a need to develop evidence-based recommendations on the use of different forms of complementary medicine; there is evidence that integrative medicine settings have lower rates of antibiotic prescriptions but overall current studies in this area are weak.
- However, a recent Lancet infections disease article suggested there is still a need for new traditional antibiotics.[103]

- Progress has been made including increased funding and development of regulatory guidance by the U.S. Food and Drug Administration (FDA) and European Medicines Agency (EMA). However, while money has gone into R&D over the last five years, it is still early in the cycle so this improvement is fragile.
- A vision is needed for antimicrobials development for treating animals. Stakeholders such as the European Federation for Animal Health and Sanitary Security (FESASS) expect new ingredients will be used in humans first and do not think incentives for development of veterinary antimicrobials have improved in the EU.
- For human health, the IMI collaboration has been constructive for those involved, and was linked to the Joint Programming Initiative's (JPI's) activities. The IMI could also consider providing data access for people outside its consortia.
- Given that it takes 10-12 years for new drugs to be developed, there is a need for a longer-term plan to sustain support for the pipeline of innovation.
- Small- and Medium-sized Enterprises (SMEs) are under-funded relative to U.S. competitors; innovative funding (from the EU) is needed to lure back private investors.
- An ERIC or IRIC (European or International Research Infrastructure Consortium) could be used to support information technology (IT), biobanking, etc. required for bringing together AMR researchers across the EU.
- It is important to have a diverse range of solutions. While public money should not be wasted, there needs to be some allowance for failure to encourage risky ideas to be explored.

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[103] 'Alternatives to antibiotics: a pipeline portfolio review' by L. Czaplewski et al. Lancet Infectious Diseases, 12 January 2016.

http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(15)00466-1/abstract

Headline findings:

Policies to address the use of antimicrobials in human medicine improved, but volumes of antimicrobials consumed did not change

Animal health legislation and guidance represent major Action Plan achievements and overall sales of veterinary antimicrobials decreased

Comments:

- Comments on the need to reduce use of antimicrobials were mixed.
  - The final goal is to reduce AMR, not just focus on reducing antimicrobial use, so there is a need to improve prudent use (as well as communication and education), and see what factors drive increased usage in different countries.
  - If there is too much emphasis on reducing use, veterinarians could become reluctant to take necessary steps when infections do arise.
  - The EMA's strategy on use indicated that there is a need for decreasing use and increasing prevention infection through biosecurity, vaccines, etc.[104]
  - Usage must be reduced, and this requires farmers to be able to implement biosecurity measures.
- If intensive farming systems exacerbate the problem, a different farming model is needed, but it is unclear how much evidence on the link between AMR and farming practices is available.

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[104] http://www.ema.europa.eu/docs/en_GB/document_library/Scientific_guideline/2015/11/WC500196645.pdf

Afternoon session: Recommendations

In this section, the recommendations that were presented to the participants are listed, followed by a summary of the comments made for each set of recommendations.

1	**Conclusion**	The holistic approach adopted by the Action Plan was essential to tackling AMR. The EU played an important role in providing political leadership and encouraging the intersectoral collaboration necessary to pursue a holistic approach to addressing AMR.
	Recommendations	• The holistic and 'One Health' approaches should be reinforced and could be strengthened through cross-sector initiatives. The EU should take further action to enable greater engagement between sectors. • Reach and relevance could be expanded by dedicating resources to an EU-level coordinating mechanism on AMR. This could increase visibility of intra-Commission engagement, encourage more and faster action by Member States, encourage cross-sectoral interactions among stakeholders, raise AMR awareness in the EU.

There were no comments made about this set of recommendations during the afternoon discussion session.

2	**Conclusion**	A gap was identified in the Action Plan in addressing environmental issues.
	Recommendations	Environmental issues could be better integrated into future EU action on AMR through an approach involving: • Research to better understand the role of AMR transmission from the environment to humans (through animal, human and manufacturing waste); • Supporting the development of monitoring and surveillance systems that capture data on AMR circulation in the environment; • Using this improved understanding to inform how environmental policies could help reduce the spread of AMR; • Identify ways to involve DG Environment in future AMR action; and • Coordinating with ongoing Commission work on a strategic approach to addressing the risks of pharmaceuticals in the environment.

Comments from the Farming, Food and Consumers group:

- There could be a benefit to research by understanding AMR's role in the environment, but a problem needs to be identified first, and then work backwards to identify its source.
- There are many issues to be researched, so it would be important to weigh the relative importance of research in this area against them.
- It may be premature to implement environmental surveillance before doing more research. Monitoring and surveillance is costly, and it could be more relevant to improve existing systems first. Monitoring and surveillance should only be done if the data would be used to make a difference.

Comments from others:

- There is a need for a proper risk assessment framework before taking these actions. There are multiple potential reservoirs for AMR in the environment, but we do not yet have a quantitative understanding of the importance of each or how they interact. One must first work out what to monitor before doing costly monitoring.

3	**Conclusion**	International cooperation was effective but more could be done to address AMR as a global issue and support developing countries.
	Recommendations	• Work with WHO towards a global approach to monitoring and surveillance, building EU leadership in developing approaches that brought together data from many national systems. • Continue work with international organisations such as the WHO, TATFAR, World Organization for Animal Health (OIE) and the UN FAO, including support for the Joint Programming Initiative on AMR mapping of AMR research activities, highlighted by the

WHO
- Support countries with limited capacity to address AMR including education and awareness, strengthening health systems and training health professionals.

There were no comments made about this set of recommendations during the afternoon discussion session.

| 4 | Conclusion | Monitoring and surveillance activities focusing on human and animal health issues improved under the Action Plan. The EU could build on these successes at multiple levels. |
| | Recommendations | • The EU could build a more holistic system for monitoring AMR issues, linking data on resistance, consumption and sales of antimicrobials to prescribing trends and other factors.
 • Environmental data should be included in future monitoring and surveillance efforts.
 • The EU could contribute to building a global monitoring and surveillance system. |

Comments from the Human Health 2 group:

- It is currently unclear what the role of healthcare professionals is in monitoring and surveillance. Surveillance should not be used to question diagnoses.
- The group members disagreed about whether global monitoring is a priority and/or feasible.
- Coordinate with others on waste management, e.g. the Meds Disposal Campaign.
- The EU *should* (not could) build on current successes.

Comments from the Animal Health group:

- The recommendations seem suitable, but any intervention needs to be applicable, practical, and proportionate.
- Veterinary monitoring currently includes EFSA data on foodborne pathogens but nothing on veterinary pathogens themselves so this is an area where more could be done.[105]
- In terms of global monitoring, the EU can do a lot in terms of advising, but the OIE and FAO are mainly responsible for this work.
- While there is emphasis on reducing antimicrobial usage, there is a need for some context in monitoring to understand why some countries may show higher levels of antimicrobial sales. For instance, if a country faced a disease outbreak one year, they would need to use more antimicrobials; higher usage should not be interpreted as poor practice before contextual factors were considered.

Comments from others

- Some countries supply hospital use data, but not all; there could be improvement in data coverage for hospitals.
- In general, there is a benefit in having a holistic system that could put data more into context.
- Global monitoring is unrealistic. The EU role should focus more on supporting countries with difficulties collecting data and encouraging sharing of best practices across MS.
- If EU legislation required countries to provide data to the ECDC, ECDC maps would have accurate information, which would help the global health situation across Europe.

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[105] For instance, there is currently a project led by Peter Borriello (Veterinary Medicines Directorate, UK) on this issue.

		There was considerable variability in the extent to which Member States addressed AMR, particularly in the context of human health. Different countries also faced diverse issues.
5	**Conclusion**	
	Recommendations	• The Commission should continue providing guidance and support to Member States to encourage good practice in public health services and surveillance. • The Commission should continue to support awareness-raising activities through European Antibiotic Awareness Day, and continue to monitor their impacts. • Targeted attention could be paid to specific areas where a Member State is struggling and understanding the specific challenges blocking progress. A one-size-fits-all approach will be insufficient. Both funding and technical support are likely to be required for lagging countries.

Comments from the Human Health 1 group:

- Generally the recommendations are suitable, but may not be feasible. There is a need for tailored guidelines, but MS contexts vary a lot. Without knowing how to ensure good clinical practice is achieved, it will be difficult to reduce variability across MS.
- It could be helpful to identify best practice in some countries and how it is implemented, then encourage other countries to adopt those approaches.
- Recommendations and guidance are weak; in some cases (such as the need for MS to implement rules about antibiotics being given only on prescription) there may be a need for stronger legislation.[106]
- There may also need to be action taken to reduce the online availability of antibiotics.[107]
- There is a need for research on integrated remedies to ensure medical practice is evidenced-based.
- The recommendations should place more emphasis on good diagnostic practice; there is a need for guidance based on best practices that can be easily implemented.
- Awareness is not enough. There is also a need to support education for patients and healthcare professionals, and to monitor results of those interventions.
- There is more knowledge about infection prevention and control within hospitals than outside them, so infection prevention and control outside hospitals (e.g. in schools and migrant centres) should be improved.

Other comments:

- Important issues include disparities in access to antibiotics across Europe.
- In addition to EU-level coordination, it may help to have initiatives that encourage coordination at a regional level (involving a few countries), so that countries facing similar challenges can work together.
- An EU mechanism should be introduced to ensure that all antibiotics that should be available in countries are available.

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[106] The Research group also made this comment

[107] The Research group also made this comment.

6	**Conclusion**	Critical funding extended to research activities was catalysed by the Action Plan.
	Recommendations	• The roles of the EU and the Member States should be clarified. • The EU should consider how to focus more attention on the development of alternative treatments in addition to new antimicrobials. • The EU should consider widening AMR research activities to encompass behavioural and social aspects of AMR, for example, regarding prescribing behaviours in veterinary medicine and reasons patients do not use antibiotics as prescribed (as in the ARNA project). • Continue to identify incentives for developing veterinary medicines.

Comments from the Research group

- There is a need to improve coordination in research and development, but not to clarify roles.
- The JPI is an existing mechanism that effectively promotes coordination. An inventory of projects could further improve coordination.
- Specific suggestions for recommendations:
  - Develop research infrastructure (perhaps using an ERIC or IRIC mechanism), e.g. a clinical trials network for recruiting patients with persistent infections, or a primary care network (also linked to social science to look at behavioural aspects).
  - Benchmark research expenditure on AMR. It can be useful to show policymakers how little funding actually goes into AMR research compared to other areas.
  - It may be helpful to look at old products, re-evaluate them in modern clinical practice, and make them available again, or to explore alternatives that have been developed in countries where antibiotics are not readily available.
  - There is more to do in encouraging open collaboration, though this has started within the IMI.
  - R&D collaboration should go beyond Europe to the U.S., Russia, China, etc.
  - More young researchers should be encouraged to work in microbiology and on AMR topics.
- Alternative treatments would relate to 1) different technologies and 2) alternatives to treatment that avoid use of antibiotics (e.g. topical dressings like honey).
  - There are many potential alternatives, and it is unclear how to encourage research investment in this area. The focus of research/investment should not be dictated from the EU level.
  - There may be gaps regarding how alternative treatments would be assessed for regulation, and the route to market may be unclear.

- There is a need for incentives for all antimicrobials (not just veterinary antimicrobials), as featured by the G7 statement,[108] and this issue is missing from the Action Plan and recommendations.

Comments from the Innovation group

- Coordination is key, but not just for funding, also for the research agenda.
- 'Alternatives' should also encompass diagnostics and prevention.
- Before widening AMR research to look at social factors, wait for the outcome of the current Action Plan. That is, review existing data before doing more research.
- Regarding incentives for development of veterinary antimicrobials, there is a need for public-private partnerships and consideration of alternatives to veterinary antimicrobials. The issue is broader than research, encompassing business models, reimbursement, intellectual property, and tax rebates (see O'Neill review for further discussion).

Comments from others

- There is a need for support for vaccine development, innovation in technologies and treatment alternatives, and measures to prevent infection (in humans and animals).
- In veterinary medicine, the lack of incentives for innovation is still an issue. There is support in the new regulation on Veterinary Medicinal Products, but the option to reserve a new antibiotic for human use is a new barrier.
- There is a need for alternative treatments when antibiotics are not appropriate, so research should focus on relief of upper respiratory infections and UTIs.
- There is also a need for research to answer questions in everyday practice, e.g. doctors often cannot say they won't treat a patient; they must offer alternatives.
- There is a need for evidence about the complementary medicines that are in use in Europe.

Additional suggestions about the conclusions and recommendations, and general comments about the Action Plan and its role

Vaccines and infection prevention:

- The Action Plan should cover vaccines, not only in terms of R&D, but also in terms of their use, helping with access to vaccines and implementation of vaccine programmes. There are existing, effective vaccines that are underused. The EU could help monitor vaccine coverage and encourage countries to implement vaccination programmes.

Innovation:

- Overall, the EU approach for R&I should take a long-term view. The Action Plan lasts five years, but drug discovery takes much longer, so support needs to be sustained.
- The European Commission needs to take an innovation systems approach, going from basic research to how antibiotics, vaccines and diagnostics could be used. The JPI is making progress but challenges remain in ensuring the market encourages innovation.

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[108]http://www.bmg.bund.de/fileadmin/dateien/Downloads/G/G7-Ges.Minister_2015/G7_Health_Ministers_Declaration_AMR_and_EBOLA.pdf

- Universities, SMEs (e.g. around 30 companies in the BEAM alliance are developing about 100 products related to AMR) and research performing organisations are important players, and they are also working with big pharmaceutical companies.
- There is a need for more on-site diagnostic tools (and biosecurity) in farming.

The role of the Action Plan and the EU's approach to AMR:

- The Commission should be more visible. It is doing a lot, but not talking about its work very much.
- The Action Plan should be compared to other work, such as the O'Neill review, G7 statement, and the national action plans posted on the ECDC website, so Commission work doesn't happen in isolation.

Education and training for patients and healthcare professionals, and the role of antimicrobial stewardship:

- Patient groups[109] haven't been targeted enough in the Action Plan. They are a good way to share information, inform attitudes, and build pressure from consumers.
- Education and training are very important, including education of the community, healthcare workers and future healthcare workers to not over-prescribe antibiotics.
  There needs to be more emphasis on antimicrobial stewardship in the Action Plan.

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[109] Such as the International Alliance of Patient Organizations (IAPO) and European Patients Forum

Conclusion

The main points that emerged from the workshop are summarised below. These points reflect the experiences and views of the participants present. Some issues may have received more emphasis than others, in part due to the mix of participants in attendance and their interests.

1. There is a need for greater focus on **collaboration and communication between doctors and patients, and veterinarians and farmers.**

   a. Primary care doctors have a particularly important role in discussing AMR and appropriate usage of antibiotics with their patients, as do veterinarians with farmers.

2. **Reducing the use of antimicrobials should happen through both reductions in inappropriate use and implementation of measures to prevent infections**, which would reduce the need for antimicrobials.

   a. It is important that pressure to reduce antimicrobial usage does not interfere with appropriate treatment of infections.

   b. Data on usage should be considered in light of contextual information that could help explain why certain usage patterns occurred.

   c. A more holistic approach to monitoring could help put data into context.

3. **Research and innovation are clear priorities, but require a longer timescale to achieve progress** than other interventions, such as infection prevention and improvements in the appropriateness of usage**.**

   a. Consultees may have prioritised research and innovation less than the areas of AMR that appear more able to bring immediate impacts.

   b. EU efforts to address AMR must factor in this longer timescale, ensuring support is sustained and covers the entire research and innovation system (including training the research workforce and the full pipeline from basic research to the final stages of product development and marketing).

4. **Research should not focus only on traditional antimicrobials;** there is a need for support to develop diagnostics (particularly point-of-care diagnostics) and vaccines, to improve the evidence base for alternative and complementary medicine approaches that are already in use in Europe, and to improve our understanding of social factors that affect the use of antimicrobials.

   a. There is still no clear future seen for the role of innovation in veterinary antimicrobials.

5. **There is potential to further improve coordination of AMR research and innovation**, but it is important to support a diverse range of ideas and research actors.

   a. Coordination and collaboration in AMR research has improved, in part driven by the JPI and IMI.

   b. An inventory of AMR research projects could help map the AMR research landscape.

c. European research infrastructures could help support AMR research by supporting research networks and biobanking, and helping to enable clinical trials.

d. The sharing of IMI data outside of the consortia could help that research investment go further.

e. The EU should consider developing research collaborations in AMR with a range of third countries, including China and Russia as well as the U.S.

6. In addition to developing new treatments, **it is important to use the drugs we have effectively.**

a. There is a need to ensure access to existing antimicrobials and vaccines across MS.

b. Stewardship is important for the appropriate use of antimicrobials and should be further emphasised in the Action Plan.

7. **More needs to be done to ensure progress across MS**, particularly in public health and on issues such as the availability of antibiotics without prescription.

a. Approaches that could be taken at EU level to address the disparities that persist could include:

   i. Benchmarking studies across MS,

   ii. Funding that is contingent on AMR action,

   iii. Encouragement of collaboration and sharing of best practice at regional level (as opposed to EU-level),

   iv. Facilitation of exchange of best practice among MS.

8. **Efforts to address AMR in the environment and waste management should build on existing initiatives, and on research** about what type of environmental monitoring or other intervention would be appropriate.

a. Monitoring systems should not be introduced until it is clear what data would be useful and how such data would be used.

9. **The EU should focus on improving monitoring and surveillance data within the EU.** Global monitoring efforts are a lower priority.

a. Monitoring of non-foodborne veterinary pathogens could be introduced.

b. There is a need to improve coverage of human health data across the EU.

Appendix 1: Feedback about the workshop

Attendees were asked to fill in a feedback form at the end of the workshop. They were asked to rate the workshop overall on a scale from one to ten, state which aspect they liked most and which could be improved, and to write one message about AMR in the EU or the Action Plan they felt was important for the evaluation. (Most of the responses to this last question came up during the workshop itself, and they have been incorporated to the main workshop report). The workshop facilitators received 35 feedback forms.

On the whole, feedback from participants was positive (Figure A1). Attendees reported that the opportunity to have discussions in small groups and with a range of stakeholders were positive aspects of the workshop. Several participants highlighted the small group discussions as being useful while others referred to the plenary discussions. The opportunity to obtain information on the preliminary results and recommendations was also seen as a positive aspect. Some participants said the workshop had been well organised with good time management, and some said it was a good networking opportunity.

Among areas for improvement, the two main issues identified were i) that the slides were not visible in the morning session due to an IT problem and ii) that it would have been helpful to receive the conclusions and recommendations in advance of the workshop to enable more reflection on them. Several participants said the morning session should have been more structured and focused, and several commented that it would have been helpful to hear from the European Commission about the wider context of the Action Plan and future plans. Among practical considerations, participants suggested it would have been helpful to have participants' organisations printed on their badges and to have name-cards on the tables at each person's seat.

Figure 3: Scores from workshop feedback question: 'How would you rate the event? (1-10, with 10= excellent)'. Mean score= 7.5

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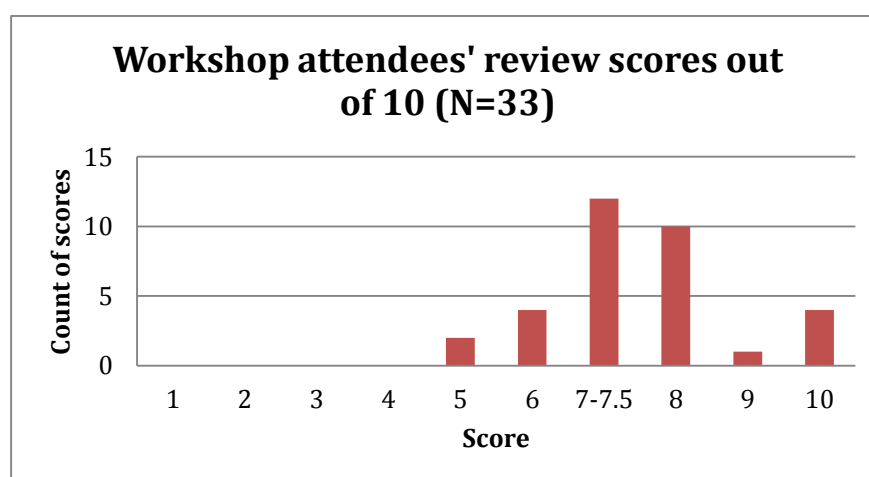
Appendix 2: Documents, events and initiatives mentioned during the workshop

Documents:

- Czaplewski et al. 'Alternatives to antibiotics: a pipeline portfolio review'. *Lancet Infectious Diseases*, 12 January 2016. http://www.thelancet.com/journals/laninf/article/PIIS1473-3099(15)00466-1/abstract
- EAHP surveys on hospital pharmacies (2005 and 2010; 2015 data to come http://www.eahp.eu/publications/surveys)
- EMA: CVMP strategy on antimicrobials 2016-2020 (DRAFT), 6 November 2015
- http://www.ema.europa.eu/docs/en_GB/document_library/Scientific_guideline/2015/11/WC500196645.pdf
- EMA and FDA regulatory guidance: EMA: http://www.ema.europa.eu/ema/pages/includes/document/open_document.jsp?webContentId=WC500194333
- EUROCAM. 'The role of CAM in reducing the problem of AMR'. Brussels, November 2015.
- G7 declaration on AMR http://www.bmg.bund.de/fileadmin/dateien/Downloads/G/G7-Ges.Minister_2015/G7_Health_Ministers_Declaration_AMR_and_EBOLA.pdf
- O'Neill AMR Review (ongoing; multiple reports, www.amr-review.org)

Organisations and initiatives

- BEAM alliance of SMEs (http://beam-alliance.eu/)
- IMI Chem21 project on drug manufacturing waste http://www.imi.europa.eu/content/chem21
- Learned Society Partnership on Antimicrobial Resistance (LeSPAR, http://www.microbiologysociety.org/policy/campaigns.cfm/learned-society-partnership-on-antimicrobial-resistance)
- Meds Disposal Campaign
- One Health Commission (www. OneHealthCommission.org)
- Patient groups, e.g. the International Alliance of Patients' Organizations and European Patients Forum
- Small World Initiative (citizen science project for antibiotics discovery, www.smallworldinitiative.org)
- A project led by Peter Borriello (Veterinary Medicines Directorate, UK) on monitoring veterinary pathogens

APPENDIX I: PUBLIC CONSULTATION AND SURVEYS: INTRODUCTORY INFORMATION AND PRIVACY STATEMENT

Title	Public consultation for the Evaluation of the Commission's Communication to the European Parliament and the Council on the Action Plan against the Rising Threats from Antimicrobial Resistance (AMR) (COM (2011) 748)
Policy field(s)	Agriculture, Food Safety, Public Health, Research and Innovation
Target group(s)	All citizens and organisations are welcome to contribute to this consultation. Contributions are particularly sought from stakeholders in the fields of human and animal health, food safety, and research and development.
Period of consultation	The consultation is open from 30.10.2015 to 22.01.2016.
Objective of the consultation	This consultation seeks views on the EU's Action Plan against risks arising from antimicrobial resistance (AMR). The consultation is part of an evaluation of the Action Plan, which is being carried out by the independent contractor RAND Europe on behalf of the Directorate-General for Health and Food Safety in the European Commission (DG SANTE). This consultation is one part of the evaluation, which covers the period 2011-2015 in all 28 EU Member States and relevant third countries. The evaluation runs from August 2015 to March 2016. It aims to assess: • Whether the key strategic actions contained in the Action Plan were the most appropriate actions to be taken to combat AMR; • Which elements worked well or not (and why); • Whether the objectives are still relevant to the needs of tackling AMR; and • Whether the approach was appropriately holistic. The evaluation also involves surveys, interviews and workshops to collect views from multiple perspectives, including policy makers at the EU and national levels, researchers, public health experts, and representatives of professional associations and other interested parties who are in a position to comment on the Action Plan and its implementation. The Action Plan sets out 12 specific actions for achieving progress on six objectives: the appropriate use of antimicrobials, infection prevention, research and innovation on new antimicrobials and treatment alternatives, international collaboration, monitoring and surveillance, and awareness. The views expressed in this public consultation may not be interpreted as stating an official position of the European Commission.
How to submit your contribution	Please, submit your response to these public consultations by 22.01.2016 at the latest. To respond,

	access the questionnaire below. When submitting your response to the mailbox, please identify yourself with your name, contact details and specify if you respond as an individual or as a representative of an organisation. If you represent an organisation, please indicate the name and type of the organisation (Company/Business; Public Authority (types here) as well as the registration number of the Transparency Register (if relevant). During the analysis of replies to a consultation, contributions from respondents who choose not to register will be treated as individual contributions. Before submitting your contribution, please review all the consultation information presented on this page. We also invite you to review the background documentation linked below. Received contributions, together with the identity of the contributor, will be published on the Internet, unless the contributor objects to publication of his/her personal data on the grounds that such publication would harm his or her legitimate interests. In this case, the contribution may be published in an anonymous form. Otherwise, the contribution will not be published nor will, in principle, its content be taken into account.
View the questionnaire*	Link to the questionnaire.
Reference documents and other, related consultations ***	The Action Plan (PDF) Progress report on the Action Plan (2015) The Roadmap for the evaluation (2015)
Contact details of responsible service	Directorate General for Health and Food Safety, Unit G4 – Food, Alert systems and Training. Email address where contributions should be sent (Note that this link goes to an external contractor who will collect and process the contributions): AMR_ActionPlanEval@rand.org Postal address: Catherine Lichten, AMR Action Plan Evaluation project manager RAND Europe Westbrook Centre, Milton Road Cambridge CB4 1YG United Kingdom
View the contributions**	In the interests of transparency, organisations have been invited to provide the public with relevant information about themselves by registering in Transparency Register and subscribing to its Code of Conduct. If the organisation is not registered, the submission is published separately from the registered organisations.
Results of consultation and	Results of the consultation will be made available in a synopsis report on this website.

next steps**	
Protection of personal data	European Commission rules on personal data protection are available here.
Specific privacy statement	Available here

SPECIFIC PRIVACY STATEMENT

PUBLIC CONSULTATION IN THE FRAMEWORK OF THE EVALUATION *OF THE*

COMMISSION'S COMMUNICATION TO THE EUROPEAN PARLIAMENT AND THE

COUNCIL ON THE ACTION PLAN AGAINST THE RISING THREATS FROM

ANTIMICROBIAL RESISTANCE (AMR) (COM (2011) 748)

1. OBJECTIVE

The objective of this consultation, conducted in the framework of the evaluation/study "Evaluation of the Commission's Communication to the European Parliament and the Council on the Action Plan against the rising threats from Antimicrobial Resistance (AMR) (COM (2011) 748)", is to receive the views of stakeholders and potentially to publish the received contributions on the Internet, under the responsibility of the Head of Unit "G4", Directorate-General for Health and Food Safety, European Commission.

As this activity involves the processing of personal data, it is subject to data protection rules as established by Regulation (EC) 45/20011.[110]

2. WHAT PERSONAL INFORMATION DO WE COLLECT AND THROUGH WHICH TECHNICAL MEANS?

2.1. Identification Data

Personal data collected and further processed are only those data which are necessary for the management of contributions (such as name, surname, profession, postal and e-mail addresses, phone number/fax number, etc.), as well as the views of contributors on the topics concerned.

The processing operations on personal data linked to the management of this consultation are necessary for the functioning of the Commission as mandated by the Treaties, and more specifically by Articles 5 and 13 TEU and Articles 244 -250 TFEU.

2.2. Technical information

SelectSurvey, an online survey application, will be used to collect personal data for this study. SelectSurvey is hosted on a secure RAND server in Santa Monica, USA. Access to the data is limited to those who require it and data is secured following industry best practices.

3. WHO HAS ACCESS TO YOUR INFORMATION AND TO WHOM IS IT DISCLOSED?

Received contributions, together with the identity of the contributor, will be published on the Internet, unless the contributor objects to publication of his/her personal data on the grounds that such publication would harm his or her legitimate interests. In this case, the contribution may be published in an anonymous form. Otherwise, in the absence of a legitimate interest to oppose publication of personal data the contribution will not be published but its content will still be considered when analysing the results of the

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[110] Regulation (EC) 45/2001 of the European Parliament and of the Council of 18 December 2000 on the protection of individuals with regard to the processing of personal data by the Community institutions and bodies and on the free movement of such data.

consultation. Any objections concerning publication of personal data should be sent to the service responsible for the consultation (see Contact information below).

4. HOW DO WE PROTECT AND SAFEGUARD YOUR INFORMATION?

The collected personal data and all information related to the above mentioned consultation is stored on a computer of the external Contractor, which has to guarantee the security and confidentiality of the collected information. Received contributions will also be recorded in a secured and protected database hosted by the Data Centre of the European Commission, the operations of which abide by the Commission's security decisions and provisions established by the Directorate of Security for this kind of servers and services. The database is not accessible from outside the Commission. Inside the Commission, the database can be accessed using a UserID/Password

5. HOW CAN YOU VERIFY, MODIFY OR DELETE YOUR INFORMATION?

In case you want to verify which personal data is stored, have it modified, corrected or deleted, please contact us using the Contact Information below and explicitly specifying your request.

6. HOW LONG DO WE KEEP YOUR DATA?

Your personal data will remain in the Commission database until the results of the consultation have been completely analysed and usefully exploited. Personal data will be deleted, at the latest, 1 year after the last action in relation to the evaluation/study in the framework of which the consultation activity was conducted.

The collected personal data and all information related to the evaluation/study will be erased by the Contractor at the latest six months after the end of the contract.

7. CONTACT INFORMATION

In case you wish to verify which personal data is stored, have it modified, corrected, or deleted, or if you have questions regarding the information processed in the context of the consultation, or on your rights, feel free to contact the support team of the Controller at:

RAND Europe AMR Action Plan Evaluation project team
Office: +44 1223 353 329
Fax: +44 1223 358 845
Email: AMR_ActionPlanEval@rand.org

8. RECOURSE

Complaints, in case of conflict, can be addressed to the [European Data Protection Supervisor](#).

APPENDIX J: CONSOLIDATED SET OF QUESTIONNAIRES FOR PUBLIC CONSULTATION AND SURVEYS

To make it clear what the similarities and differences are across the survey instruments – for the general public consultation as well as the private stakeholder survey (animal and public health versions) and member state representative survey (animal and public health versions), the questions are presented together in the following table, Table 9: Consultation and survey questions - consolidated table.

Table 9: Consultation and survey questions - consolidated table

Question	PC	SH - A	SH - H	MS - A	MS – H
Section 1: Demographic questions					

Are you responding:
  a. As a citizen / private individual
  b. As a health professional [re-route to the public health stakeholder survey]
  c. As an animal health professional or farmer [re-route to the animal health targeted survey]
  d. On behalf of a public authority [re-route to the Member State survey]
  e. On behalf of a company or an organisation (other than a public authority) [re-route to the targeted survey, animal/public health]
	1				

At this point in the public consultation, the respondent's answer will result in either (a) continuing to the general questions (column 'PC') or (b) routing to the surveys for experts/people likely to be knowledgeable about the Action Plan and AMR issues, as indicated here:	If 1a	If 1c,e	If 1b,e	If 1d	If 1d
Your full name:	2	2	2	2	2
Your email address for correspondence:	3	3	3	3	3

Your age:
  a. 15-24
  b. 25-39
  c. 40-54
  d. 55 or older
  e. I prefer not to answer
	4				

Your gender:
  a. Female
  b. Male
  c. I prefer not to answer
	5				

The country where you live (if your responses will focus on the EU as a whole, choose 'EU'):
  a. [28 MS options]
  b. EU level
  c. Other, please specify
		4	4		

Question	PC	SH - A	SH - H	MS - A	MS – H

The country where you live
   a. [28 MS options]
   b. Other, please specify
	6			4	4

We would like to ask whether you permit the EC to publish your reply. Do you consent to the publication of your reply?[111]
   a. I consent to the publication of my reply, under the name supplied
   b. I consent to the publication of my reply, anonymously (no personal data included)
   c. I do not consent to the publication of my reply and I ask for the confidential treatment of my contribution (the contribution will not be published and its contents may not be taken into account. In any case, the contribution will be subject to the rules on access to documents, Regulation EC No 1049/2001)
	7				

Please provide the name of your organisation [open text]		5	5	5	5

How would you describe your main business activities or the activities of the organisation you represent?
   a. Academic or research centre
   b. Health care, hospital, health institution
   c. Private company
   d. NGO (non-governmental organisation)
   e. Industrial or trade association
   f. Consultancy
   g. Other, please specify
		6	6		

Please specify:
   a. International
   b. National
   c. Regional
   d. Local
		7
		[if 6b,c,d,e
			7
			[if 6b,c,d,e		

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[111] This question is included in the MS and SH versions of the Public Consultation, but it will not be included in the email invitation-only SH and MS surveys.

Question	PC	SH - A	SH - H	MS - A	MS – H
e. Other, please specify					
Please specify: a. Research performing organisation (public, non-academic) b. Research performing organisation (private) c. University (including teaching) d. Other, please specify		8 [if 6a]	8 [if 6a]		
Please specify: a. Public b. Private c. University (including teaching) d. Other, please specify		9 [if 6b]	9 [if 6b]		
Please specify size: a. Micro enterprise (<10 employees) b. Small enterprise (11-50 employees) c. Medium sized enterprise (51-250 employees) d. Large enterprise (>250 employees)		10 [if 6c,f]	10 [if 6c,f]		
How would you best describe your organisation? a. Government ministry b. Public health authority c. Food safety authority d. Veterinary authority e. Research organisation f. Other, please specify				6	6
Please specify: a. Government authority (national, regional, local level) b. EU Agency c. International institution d. Other, please specify				7	7
Please specify: a. National b. Regional c. Local				8 [if 7a]	8 [if 7a]

Question	PC	SH - A	SH - H	MS - A	MS – H
d. Other, please specify					
This section aims to assess the extent to which you are familiar with antimicrobial resistance, EU activities aimed at raising awareness about antimicrobial resistance and the EU Action Plan against antimicrobial resistance.	✓				

Do you think the following statement is true or false: antibiotics kill viruses
   a. True
   b. False
   c. Unsure / do not know
	8				

Do you think the following statement is true or false: you should always finish the course of antibiotics prescribed
   a. True
   b. False
   c. Unsure / Do not know
	9				

Have you heard about European Antibiotic Awareness Day?
   a. Yes
   b. No
   c. Unsure / do not know
	10				

Where did you hear about European Antibiotic Awareness Day?
   a. A doctor told me
   b. A pharmacist told me
   c. Another health professional (e.g. nurse, physical therapist) told me
   d. A family member, friend or colleague told me
   e. I saw it on a TV advertisement
   f. I saw it on a leaflet or poster
   g. I saw it on the Internet
   h. I read it in a newspaper or I saw it on the TV news
   i. I heard about it on the radio
   j. Other, please specify
   k. Unsure / do not know
	11
	[if 10a]				

Are you aware of the EU's Action Plan against risks arising from antimicrobial resistance? a. Yes	12				

Question	PC	SH - A	SH - H	MS - A	MS – H
b. No					

In what context have you become aware of the EU's Action Plan against risks arising from antimicrobial resistance?
    a. Media for the general public
    b. Scientific publications
    c. As part of my profession
    d. School, university, other education
    e. Do not remember / do not know
    f. I am not aware of the EU's Action Plan against risks arising from antimicrobial resistance
	13				

How familiar are you with the EU's Action Plan against risks arising from antimicrobial resistance?
    a. Very familiar
    b. Somewhat familiar
    c. Not at all familiar
    d. Unsure / Do not know
		11	11	9	9

Have you participated in actions under the EU Action Plan?
    a. Yes
    b. No
    c. Not applicable
    d. Unsure / Do not know
				10 [if 9a,b]	10 [if 9a,b]

Which actions have you participated in? (select all that apply)
    a. Action 1: Strengthen the promotion of the appropriate use of antimicrobials in all EU Member States (please explain your participation)
    b. Action 2: Strengthen the regulatory framework on veterinary medicines and on medicated feed (please explain your participation)
    c. Action 3: Introduce recommendations for prudent use in veterinary medicine, including follow-up reports, using the same approach as 2002 Council Recommendation on prudent use of antimicrobial agents in human medicine (please explain your participation)
    d. Action 4: Strengthen infection prevention and control in healthcare settings (please explain your participation)
    e. Action 5: Introduction of the new Animal Health Law, which will focus on
				11 [if10a]	11 [if10a]

Question	PC	SH - A	SH - H	MS - A	MS – H
prevention of diseases, reducing the use of antibiotics and replacing current Animal Health provisions based on disease control (please explain your participation) f. Action 6: To promote, in a staged approach, unprecedented collaborative research and development efforts to bring new antibiotics to patients (please explain your participation) g. Action 7: Promote efforts to analyse the need for new antibiotics into veterinary medicine (please explain your participation) h. Action 8: Develop and/or strengthen multilateral and bilateral commitments for the prevention and control of antimicrobial resistance in all sectors (please explain your participation) i. Action 9: Strengthen surveillance systems on antimicrobial resistance and antimicrobial consumption in human medicine (please explain your participation) j. Action 10: Strengthen surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine (please explain your participation) k. Action 11: Reinforce and co-ordinate research efforts (please explain your participation) l. Action 12: Survey (Eurobarometer) and comparative effectiveness research (please explain your participation) m. Unsure / Do not know					
Are you in a position to comment on the areas covered by the EU Action Plan with respect to the human or animal contexts? Your response to this question will determine whether you are offered questions on human health, animal health or both. Please choose the most appropriate answer based on your knowledge and experience.		12	12	12	12
Section 2: Relevance					
This section aims to assess the extent to which the original objectives of the EU Action Plan correspond to the current needs within the EU. It also addresses the extent to which the original objectives corresponded with EU needs when the Action Plan was developed in 2011.		✓	✓	✓	✓

Question	PC	SH - A	SH - H	MS - A	MS – H
This section aims to assess the extent to which the objectives of the EU Action Plan against antimicrobial resistance correspond to EU needs for tackling antimicrobial resistance and preventing its spread.	✓				

Please rate how relevant the following objectives are for tackling antimicrobial resistance. [very relevant, somewhat relevant, not relevant, unsure/do not know]
  a. Appropriate use of antimicrobials in humans
  b. Appropriate use of antimicrobials in animals
  c. Prevention of microbial infections and their spread in humans
  d. Prevention of microbial infections and their spread in animals
  e. Development of new effective antimicrobials
  f. Development of alternatives for treatment of microbial infections
  g. Cooperation at international level to contain the risk of antimicrobial resistance
  h. Cooperation at EU level to contain the risk of antimicrobial resistance
  i. Monitoring and surveillance of antimicrobial resistance
  j. Monitoring and surveillance of antimicrobial use in humans
  k. Monitoring and surveillance of antimicrobial use in animals
  l. Research into the causes of antimicrobial resistance
  m. Research on the prudent use of antimicrobials and the impact of imprudent use
  n. Communication, education and training for human health professionals
  o. Communication, education and training for people caring for animals
  p. Communication, education and training for the general public
	14				

The EU Action Plan against the rising threats from antimicrobial resistance[112] was published in 2011. Its objectives correspond to the areas listed below.		13	13		

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[112] Communication from the Commission to the European Parliament and the Council Action plan against the rising threats from antimicrobial resistance. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2011:0748:FIN

Question	PC	SH - A	SH - H	MS - A	MS – H
Please rate how relevant each objective was for the EU situation on antimicrobial resistance **when the Action Plan was established in 2011.** [Very relevant, Somewhat relevant, Not relevant, Unsure / Do not know] a. Appropriate use of antimicrobials in animals b. Prevention of microbial infections and their spread in animals c. Development of new effective antimicrobials for use in animals d. Development of alternatives for treatment of microbial infections for use in animals e. Cooperation at international level to contain the risk of antimicrobial resistance f. Cooperation at EU level to contain the risk of antimicrobial resistance g. Monitoring and surveillance of antimicrobial resistance in animals h. Monitoring and surveillance of antimicrobial use in animals i. Research into the causes of antimicrobial resistance j. Research on the prudent use of antimicrobials in animals and the impact of imprudent use k. Communication, education and training for people caring for animals l. Communication, education and training for the general public					
The EU Action Plan against the rising threats from antimicrobial resistance[113] was published in 2011. Its objectives correspond to the areas listed below. Please rate how relevant each objective was for the EU situation on antimicrobial resistance **when the Action Plan was established in 2011.** [Very relevant, Somewhat relevant, Not relevant, Unsure / Do not know] a. Appropriate use of antimicrobials in humans b. Prevention of microbial infections and their spread in humans			13		13

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[113] Communication from the Commission to the European Parliament and the Council Action plan against the rising threats from antimicrobial resistance. http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2011:0748:FIN

Question	PC	SH - A	SH - H	MS - A	MS – H

c. Development of new effective antimicrobials for use in humans
   d. Development of alternatives for treatment of microbial infections for use in humans
   e. Cooperation at international level to contain the risk of antimicrobial resistance
   f. Cooperation at EU level to contain the risk of antimicrobial resistance
   g. Monitoring and surveillance of antimicrobial resistance in humans
   h. Monitoring and surveillance of antimicrobial use in humans
   i. Research into the causes of antimicrobial resistance
   j. Research on the prudent use of antimicrobials in humans and the impact of imprudent use
   k. Communication, education and training for human health professionals
   l. Communication, education and training for the general public					

Please rate how relevant each EU Action Plan objective is for the **current (2015) situation on antimicrobial resistance**. [Very relevant, Somewhat relevant, Not relevant, Unsure / Do not know]
   a. Appropriate use of antimicrobials in animals
   b. Prevention of microbial infections and their spread in animals
   c. Development of new effective antimicrobials for use in animals
   d. Development of alternatives for treatment of microbial infections for use in animals
   e. Cooperation at international level to contain the risk of antimicrobial resistance
   f. Cooperation at EU level to contain the risk of antimicrobial resistance
   g. Monitoring and surveillance of antimicrobial resistance in animals
   h. Monitoring and surveillance of antimicrobial use in animals
   i. Research into the causes of antimicrobial resistance
   j. Research on the prudent use of antimicrobials in animals and the impact of imprudent use
   k. Communication, education and training for people caring for animals
   l. Communication, education and training for the general public
		14		14	

Please rate how relevant each EU Action Plan objective is for the **current (2015) situation on antimicrobial resistance**. [Very relevant, Somewhat relevant, Not relevant, Unsure / Do not know]			14		14

Question	PC	SH - A	SH - H	MS - A	MS – H
a. Appropriate use of antimicrobials in humans b. Prevention of microbial infections and their spread in humans c. Development of new effective antimicrobials for use in humans d. Development of alternatives for treatment of microbial infections for use in humans e. Cooperation at international level to contain the risk of antimicrobial resistance f. Cooperation at EU level to contain the risk of antimicrobial resistance g. Monitoring and surveillance of antimicrobial resistance in humans h. Monitoring and surveillance of antimicrobial use in humans i. Research into the causes of antimicrobial resistance j. Research on the prudent use of antimicrobials in humans and the impact of imprudent use k. Communication, education and training for human health professionals l. Communication, education and training for the general public					
Are there any other important issues for addressing antimicrobial resistance that are not covered by the objectives listed above? a. No, all of the important issues are covered b. Yes, please specify c. Unsure / Do not know	15	15	15	15	15
Do you expect some of these issues to become more important in the next 5-10 years than they are now? a. Yes, all of these issues will become more important in 5-10 years b. Yes, some of them. Please specify. c. No, I expect these issues to remain at the same level of importance as they are now d. No, I expect these issues to decrease in importance in the next 5-10 years e. Unsure / Do not know	16	16	16	16	16
If you would like to provide reasons for your answers to the question above, please do so here. [open text]	17	17	17	17	17
Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? In an appropriate distribution, actions and responsibilities are in line with the competencies of the EU and Member States, with		18		18	

Question	PC	SH - A	SH - H	MS - A	MS – H

no areas being neglected and with no unnecessary duplication of effort. [Yes/No]
   a. Appropriate use of antimicrobials in animals
   b. Prevention of microbial infections and their spread in animals
   c. Development of new effective antimicrobials for use in animals
   d. Development of alternatives for treatment of microbial infections for use in animals
   e. Cooperation at international level to contain the risk of antimicrobial resistance
   f. Cooperation at EU level to contain the risk of antimicrobial resistance
   g. Monitoring and surveillance of antimicrobial resistance in animals
   h. Monitoring and surveillance of antimicrobial use in animals
   i. Research into the causes of antimicrobial resistance
   j. Research on the prudent use of antimicrobials in animals and the impact of imprudent use
   k. Communication, education and training for people caring for animals
   l. Communication, education and training for the general public					

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? In an appropriate distribution, actions and responsibilities are in line with the competencies of the EU and Member States, with no areas being neglected and with no unnecessary duplication of effort. [Yes/No]
   a. Appropriate use of antimicrobials in humans
   b. Prevention of microbial infections and their spread in humans
   c. Development of new effective antimicrobials for use in humans
   d. Development of alternatives for treatment of microbial infections for use in humans
   e. Cooperation at international level to contain the risk of antimicrobial resistance
   f. Cooperation at EU level to contain the risk of antimicrobial resistance
   g. Monitoring and surveillance of antimicrobial resistance in humans
   h. Monitoring and surveillance of antimicrobial use in humans
   i. Research into the causes of antimicrobial resistance
   j. Research on the prudent use of antimicrobials in humans and the impact of imprudent use
   k. Communication, education and training for human health professionals
			18		18

Question	PC	SH - A	SH - H	MS - A	MS – H
I. Communication, education and training for the general public					
If you have answered 'no' to any of the areas above, please give reasons for your answer.		19	19	19	19
Section 4: Effectiveness					
This section aims to assess the extent to which the implementation of the actions in the EU Action Plan caused changes, either positive or negative, in the antimicrobial resistance situation. It also asks for your assessment of the extent to which the objectives of the EU Action Plan have been achieved, and where objectives have not been met, and what factors may have hindered their achievement. This section also aims to assess the extent to which factors influenced the efficiency with which the achievements observed were attained.		✓	✓	✓	✓
This section aims to assess the need for a holistic approach for addressing antimicrobial resistance and the extent to which the EU Action Plan against Antimicrobial Resistance has been effective in capturing a holistic approach.	✓				

The EU Action Plan states that, because antimicrobial resistance can spread between humans and animals and cross borders, tackling antimicrobial resistance requires a holistic approach involving many different sectors (e.g. medicine, veterinary medicine, animal husbandry, agriculture, environment and trade). Do you agree with the need for a holistic approach?
  a. Yes, please specify
  b. No, please specify
  c. Unsure / Do not know
	18	20	20	20	20

Does the EU Action Plan capture this holistic approach?
  a. Yes
  b. No
  c. Unsure / Do not know
	19 [if 18a]	21 [if 20a]	21 [if 20a]	21 [if 20a]	21

How could the EU Action Plan have been more holistic? [open text]	20 [if 19b]	22 [if 21b]	22 [if 21b]	22 [if 21b]	22 [if 21b]
The following questions refer to the effectiveness of the EU Action Plan with regard to specific actions related to human health.			✓		✓

Question	PC	SH - A	SH - H	MS - A	MS – H

In the past four years (since 2011), what has been the trend in the total consumption of antimicrobials for use in humans in the country where you live (or EU)?
   a. Increase in use of antimicrobials in humans.
   b. Decrease in use of antimicrobials in humans
   c. No change in the use of antimicrobials in humans
   d. Unsure / Do not know
			23		23

Can the trend in the total consumption of antimicrobials for use in humans be attributed, wholly or in part, to the EU Action Plan?
   a. Yes, please explain [open text]
   b. No, please explain [open text]
   c. Unsure / Do not know
			24
			[if 23 a,b,c]
					24
					[if 23 a,b,c]

In the past four years (since 2011), what do you think the trend has been in the appropriate use of antimicrobials in humans in the country where you live? ('Appropriate use' refers to using antimicrobials only when necessary and in accordance with best practice. 'Inappropriate use' would be taking antimicrobials for the wrong reasons or incorrectly).
   a. Increase in appropriate use of antimicrobials
   b. Decrease in appropriate use of antimicrobials
   c. No change in appropriate use of antimicrobials
   d. Unsure / Do not know
			25		25

(S) Do you think the trend in the appropriate use of antimicrobials in humans can be attributed, wholly or in part, to the EU Action Plan?
   a. Yes, please explain [open text]
   b. No, please explain [open text]
   c. Unsure / Do not know
			26
			[If 25a,b,c]
					26
					[If 25a,b,c]

In the past four years (since 2011), what has been the trend in country-level indicators of resistance in microorganisms of major public health importance (e.g. multidrug-resistant tuberculosis or multidrug-resistant *Salmonella*), including Hospital Acquired Infections (HAIs)?
   a. General improvement
   b. Generally becoming worse
   c. No change
			27		27

Question	PC	SH - A	SH - H	MS - A	MS – H
d. Unsure / Do not know					

(S) Can the trend in country-level indicators of resistance in microorganisms of major public health importance be attributed, wholly or in part, to the EU Action Plan?
    a. Yes, please explain [open text]
    b. No, please explain [open text]
    c. Unsure / Do not know
			28
			[if 27a,
			b,c]
					28
					[if 27a,
					b,c]

The EU Action Plan includes an action to ensure Member States effectively implement the 2002 Council Recommendations on the prudent use of antimicrobial agents in human medicines.
 	
Please indicate whether in your assessment the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or the EU).
 	
[Yes this has been achieved; This has partly been achieved; There has been no progress in this area since 2011; Not applicable; Unsure / Do not know]
    a. Implementation of prescription-only requirements for antimicrobial agents.
    b. Implementation of control measures against antimicrobial resistance in nursing homes and long-term care facilities.
    c. Development of education and training for healthcare workers on all aspects of antimicrobial resistance.
    d. Improvement in monitoring and assessment at national level of the implementation and efficiency of national strategies and control measures
			29		29

Can these developments be attributed (wholly or in part) to the EU Action Plan?
    a. Yes, please explain [open text]
    b. No, please explain [open text]
    c. Unsure / Do not know
			30		30

The EU Action Plan includes an action to promote collaborative research and development efforts to bring new antibiotics to patients. The following questions refer to different aspects of this action. Please indicate whether in your assessment the following aspects of the action have been achieved in the past four years (since 2011) in the country in which you live (or EU).			✓		✓

Question	PC	SH - A	SH - H	MS - A	MS – H

Improvement in efficiency of research and development through open sharing of knowledge (e.g. through the launch of a programme for research on new antibiotics with the European Federation of Pharmaceutical Industries and Associations within the Innovative Medicines Initiative Joint Undertaking).
   a. Yes, this has been achieved
   b. This has partly been achieved
   c. There has been no progress in this area since 2011
   d. Unsure / Do not know
			31		31

Can this development in open sharing of knowledge be attributed (wholly or in part), to the EU Action Plan?
   a. Yes, please explain [open text]
   b. No, please explain [open text]
   c. Unsure / Do not know
			32
			[if 31a,b]
					32
					[if 33a,b]

Establishment of adequate market and pricing conditions for new antibiotics.
   a. Yes, this has been achieved
   b. This has partly been achieved
   c. There has been no progress in this area since 2011
   d. Unsure / Do not know
			33		33

Can this development in the establishment of adequate market and pricing conditions for new antibiotics be attributed (wholly or in part), to the EU Action Plan?
   a. Yes, please explain [open text]
   b. No, please explain [open text]
   c. Unsure / Do not know
			34
			[if 33a,b]
					34
					[if 33a,b]

Implementing fast track procedures for the marketing authorisation of new antimicrobials.
   a. Yes, this has been achieved
   b. This has partly been achieved
   c. There has been no progress in this area since 2011
   d. Unsure / Do not know
			35		35

[S] Can this development in implementing fast track procedures for the marketing authorisation of new antimicrobials be attributed (wholly or in part), to the EU Action Plan?			36 [if 35 a,b]		36 [if 35 a,b]

Question	PC	SH - A	SH - H	MS - A	MS – H
a. Yes, please explain [open text] b. No, please explain [open text] c. Unsure / Do not know					
The following questions refer to the effectiveness of the EU Action Plan with regard to specific actions related to animal health.		✓		✓	
In the past four years (since 2011), what has been the trend in the total consumption of antimicrobials for use in animals in the country in which you live (or EU, if you are responding on behalf of an EU-level institution or organisation)? a. Increase in use of antimicrobials in animals b. Decrease in use of antimicrobials in animals c. No change d. Unsure/ Do not know		23		23	
Can the trend in the total consumption of antimicrobials for use in animals be attributed, wholly or in part, to the EU Action Plan? a. Yes. Please explain why [open text] b. No. Please explain why [open text] c. Unsure/ Do not know		24 [If 23a,b,c]		24 [If 23a,b,c]	
The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): [Yes, Partly, No, Unsure / Do not know]. a. Appropriate warnings and guidance are provided on labels of veterinary antimicrobials. b. Restrictions have been considered on regular or off-label use of certain new or critically important antimicrobials for humans in the veterinary sector c. Improvements to rules for advertisement of veterinary antimicrobials d. Authorisation requirements sufficiently address risks and benefits of antimicrobial medicines		25		25	
Can these developments be attributed wholly or in part to the EU Action Plan? a. Yes, please explain [open text] b. No, please explain [open text] c. Unsure / Do not know		26		26	

Question	PC	SH - A	SH - H	MS - A	MS – H
The EU Action Plan includes an action to introduce recommendations for prudent use of antimicrobials in veterinary medicine. These recommendations were published in September 2015 (available on the European Commission's website).		✓		✓	
Are you familiar with the recommendations for prudent use of antimicrobials in veterinary medicine? 　　a.　Yes 　　b.　 No 　　c.　Unsure / Do not know		27		27	
In your assessment, will the recommendations for prudent use of antimicrobials in veterinary medicine be effective in improving the prudent use of antimicrobials in veterinary medicine? 　　a.　Yes, please explain [open text] 　　b.　No, please explain [open text] 　　c.　Unsure / Do not know		28 [If 27a]		28 [if 27a]	
The EU Action Plan includes an action to promote efforts to analyse the need for new antibiotics in veterinary medicine. This includes a request for scientific advice to clarify whether the development of new veterinary antimicrobials would reduce antimicrobial resistance and the evaluation of the need for incentives that trigger development in veterinary medicines. Please consider whether these actions have been effective for tackling antimicrobial resistance in the EU.		✓		✓	
First, has the request for scientific advice to clarify whether the development of new veterinary antimicrobials would reduce antimicrobial resistance been an effective step for tackling antimicrobial resistance in the EU? 　　a.　Yes, it was an effective step (please explain) 　　b.　It was partly effective (please explain) 　　c.　No, it was not effective (please explain) 　　d.　Unsure / Do not know		29		29	
Second, how does the current EU regulatory and market environment for veterinary medicines impact innovation in antimicrobials and related products? 　　a.　 Incentives exist that are effective in promoting innovation 　　b.　 There are insufficient incentives to promote innovation 　　c.　 Barriers discourage innovation in this area		30		30	

Question	PC	SH - A	SH - H	MS - A	MS – H
d. Other (please explain) e. Unsure / Do not know					

The EU Action Plan includes an action on the reinforcement and coordination of research efforts.
 	
Please state whether the following aspects of this action have been effective for helping to tackle antimicrobial resistance in the EU. [Yes, this has been effective; This has been partly effective; It is too early to say whether any findings from the research funded will be effective for tackling antimicrobial resistance; No, this has not been effective; Unsure / Do not know]
  a. Promotion of further research aimed at better understanding antimicrobial resistance and pathogenic-host interactions.
  b. Promotion of further research on the development of diagnostic tools.
  c. Promotion of further research on the development of vaccines and other preventative strategies.
  d. Support of launch of a Joint Programming Initiative aimed at coordinating national research activities related to antimicrobial resistance.
  e. Support of launch of the Global Research Collaboration for Infectious Disease Preparedness (GLOPID-R)
		31	37	31	37

If you would like to provide reasons for your answers to the question above, please do so here. [open text]		32	38	32	38
The EU Action Plan includes an action on the introduction of the new Animal Health Law, which will focus on prevention of diseases, potentially reducing the use of antibiotics and replacing current animal health provisions for transmissible animal disease control.		✓		✓	

Are you aware of the new EU Animal Health Law (agreed by the EP and Council on 1 June 2015, and currently undergoing the procedure for adoption and publication)?
  a. Yes
  b. No
  c. Unsure / Do not know
		33		33	

In your assessment, please indicate the potential effectiveness of the new EU Animal Health Law for tackling antimicrobial resistance:		34 [if 33a]		34	

Question	PC	SH - A	SH - H	MS - A	MS – H
a. High potential to be effective (please explain) b. Some potential to be effective (please explain) c. Little to no potential to be effective (please explain) d. Unsure / Do not know					
In your assessment, please indicate the potential effectiveness of the inclusion of a legal basis for monitoring antimicrobial resistance in animal pathogens in the Commission's proposal for a new EU Animal Health Law. a. High potential to be effective (please explain) b. Some potential to be effective (please explain) c. Little to no potential to be effective (please explain) d. Unsure / Do not know		35		35	
The following set of questions refers to efforts to improve awareness and education about antimicrobial resistance among the general public.		✓	✓	✓	✓
Has the country in which you live (or EU) implemented campaigns to improve awareness and/or education about antimicrobial resistance among the general public? a. Yes, please describe [open text] b. No c. Unsure / Do not know		36	39	36	39
To what extent have these activities been effective? a. Very effective b. Somewhat effective c. Not effective d. Unsure / Do not know		37 [If 31a]	40 [If 39a]	37 [If 36a]	40 [If 39a]
Did either the EU Action Plan or other forms of EU support play a role in the decision to implement these activities? a. Yes, both the EU Action Plan and other forms of support (please specify the other forms of support) b. Yes, other forms of support, but not the EU Action Plan (please specify the other forms of support) c. No, neither the EU Action Plan nor other forms of EU support d. Unsure / Do not know		38 [If 36a]	41 [if 39a]	38 [If 36a]	41 [if 39a]

Question	PC	SH - A	SH - H	MS - A	MS – H

Are you aware of bilateral or multilateral mechanisms for preventing or controlling the spread of antimicrobial resistance between the country in which you live and other countries or regions?
    a. Yes, please describe [open text]
    b. No
    c. Unsure / Do not know
		39	42	39	42

Can the existence of these bilateral or multilateral mechanisms for preventing or controlling the spread of antimicrobial resistance between the country in which you live and other countries or regions be attributed (wholly or in part) to the EU Action Plan?
    a. Yes, please explain [open text]
    b. No, please explain [open text]
    c. Not applicable
    d. Unsure / Do not know
		40 [If 39a]	43 [If 42a]	40 [If 36a]	43 [If 42a]

Please explain whether the bilateral or multilateral mechanisms for preventing or controlling the spread of antimicrobial resistance that you refer to have been deepened or further developed as a result of the EU Action Plan. [open text]		41 [If 39a]	44 [If 42a]	41 [If 36a]	44 [If 42a]
The next set of questions focus on monitoring and surveillance of antimicrobial resistance and the consumption of antimicrobials for public health.		✓		✓	

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine.
 	
In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live (or EU). [Yes, this has been effective; This has been partly effective; No, this has not been effective; Unsure / Do not know]
    a. Reviews of antimicrobial resistance monitoring in zoonotic bacteria and indicator bacteria from humans, animals and food.
    b. With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.
		42		42	

The next set of questions focus on monitoring and surveillance of antimicrobial			✓		✓

Question	PC	SH - A	SH - H	MS - A	MS – H
resistance and the consumption of antimicrobials for use in animals.					

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health.
 	
In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live (or EU). [Yes, this has been effective; This has been partly effective; No, this has not been effective; Unsure / Do not know]
    a. Reviews of the monitoring of antimicrobial resistance in zoonotic bacteria and indicator bacteria from humans, animals and food.
    b. With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.
			45		45

If you would like to provide reasons for your answers to the question above, please do so here. [open text]		43	46	43	46

Thinking about surveillance and monitoring of **antimicrobial use in animals** in the EU in the past four years (2011 onwards), what changes have occurred? [Improved, Not changed; Became worse, Unsure/ Do not know]
    a. Data coverage across EU Member States
    b. Harmonisation of data gathered across EU Member States
    c. Sustainability of surveillance
		44		44	

Thinking about surveillance and monitoring of **antimicrobial use in humans** in the EU in the past four years (2011 onwards), what changes have occurred? [Improved, Not changed; Became worse, Unsure/ Do not know]
    a. Data coverage across EU Member States
    b. Harmonisation of data gathered across EU Member States
    c. Sustainability of surveillance
			47		47

Can these developments be attributed wholly or in part to the EU Action Plan?
    a. Yes, please explain [open text]
    b. No, please explain [open text]
		45	48	45	48

Question	PC	SH - A	SH - H	MS - A	MS – H
c. Unsure / Do not know					
Thinking about surveillance and monitoring of **antimicrobial resistance in animals** in the EU in the past four years (2011 onwards), what changes have occurred? [Improved, Not changed; Became worse, Unsure/ Do not know] a. Data coverage across EU Member States b. Harmonisation of data gathered across EU Member States c. Sustainability of surveillance		46		46	
Thinking about surveillance and monitoring of **antimicrobial resistance in humans** in the EU in the past four years (2011 onwards), what changes have occurred? [Improved, Not changed; Became worse, Unsure/ Do not know] a. Data coverage across EU Member States b. Harmonisation of data gathered across EU Member States c. Sustainability of surveillance			49		49
Can these developments be attributed wholly or in part to the EU Action Plan? a. Yes, please explain [open text] b. No, please explain [open text] c. Unsure / Do not know		47	50	47	50
Section 5: Efficiency					
To help assess whether EU funding for addressing antimicrobial resistance has been used efficiently, this section addresses which aspects of tackling antimicrobial resistance should be priorities for receiving EU funding.	✓	✓	✓	✓	✓
EU funds have been spent on interventions related to antimicrobial resistance. Which areas should have highest priority to receive financial support from the EU? [high priority/medium priority/low priority] a. Appropriate use of antimicrobials in humans b. Appropriate use of antimicrobials in animals c. Prevention of microbial infections and their spread in humans d. Prevention of microbial infections and their spread in animals e. Development of new effective antimicrobials f. Development of alternatives for treatment of microbial infections g. Cooperation at international level to contain the risks of antimicrobial	21				

Question	PC	SH - A	SH - H	MS - A	MS – H
resistance h. Cooperation at EU level to contain the risk of antimicrobial resistance i. Monitoring and surveillance of antimicrobial resistance j. Monitoring and surveillance of antimicrobial use in humans k. Monitoring and surveillance of antimicrobial use in animals l. Research into the causes of antimicrobial resistance m. Research on the prudent use of antimicrobials and the impact of imprudent use n. Communication, education and training for human health professionals o. Communication, education and training for people caring for animals p. Communication, education and training for the general public					
EU funds have been spent on interventions related to antimicrobial resistance, including interventions aimed at improving knowledge of antimicrobial resistance, promoting research on antimicrobial resistance, and implementing harmonised surveillance of antimicrobial resistance in animals and food. Which areas do you think should have highest priority to receive financial support from the EU? [High priority, Medium priority, Low priority, Unsure / Do not know] a. Appropriate use of antimicrobials in animals b. Prevention of microbial infections and their spread in animals c. Development of new effective antimicrobials for use in animals d. Development of alternatives for treatment of microbial infections for use in animals e. Cooperation at international level to contain the risk of antimicrobial resistance f. Cooperation at EU level to contain the risk of antimicrobial resistance g. Monitoring and surveillance of antimicrobial resistance in animals h. Monitoring and surveillance of antimicrobial use in animals i. Research into the causes of antimicrobial resistance j. Research on the prudent use of antimicrobials in animals and the impact of imprudent use k. Communication, education and training for people caring for animals l. Communication, education and training for the general public		48		48	
EU funds have been spent on interventions related to antimicrobial resistance,			51		51

Question	PC	SH - A	SH - H	MS - A	MS – H

including interventions aimed at improving knowledge of antimicrobial resistance, promoting research on antimicrobial resistance, and implementing harmonised surveillance of antimicrobial resistance in animals and food.
 	
Which areas should have highest priority to receive financial support from the EU? [High priority, Medium priority, Low priority, Unsure / Do not know]
  a. Appropriate use of antimicrobials in humans
  b. Prevention of microbial infections and their spread in humans
  c. Development of new effective antimicrobials for use in humans
  d. Development of alternatives for treatment of microbial infections for use in humans
  e. Cooperation at international level to contain the risk of antimicrobial resistance
  f. Cooperation at EU level to contain the risk of antimicrobial resistance
  g. Monitoring and surveillance of antimicrobial resistance in humans
  h. Monitoring and surveillance of antimicrobial use in humans
  i. Research into the causes of antimicrobial resistance
  j. Research on the prudent use of antimicrobials in humans and the impact of imprudent use
  k. Communication, education and training for human health professionals
  l. Communication, education and training for the general public					

If you would like to provide reasons for your answers to the question above, please do so here. [open text]	22				

Are you aware of any ways in which the allocation of EU spending on AMR has been inappropriate or inefficient? Inappropriate and inefficient spending would include spending on unnecessary activities, spending on areas that may be of a lower priority than others that did not receive funding, and spending on activities that are unlikely to help EU efforts to tackle AMR.
  a. Yes (please explain)
  b. No
		49	52	49	52

Do you have any further comments on EU funding? [open text]		50	53	50	53
Section 6: Coherence with national and regional, international and other EU policies on antimicrobial resistance					

Question	PC	SH - A	SH - H	MS - A	MS – H
This section aims to assess the extent to which the EU Action Plan against Antimicrobial Resistance works in line with policies and strategies introduced by Member States and other countries, and with international interventions.	✓	✓	✓	✓	✓

Does the country in which you live have a strategic policy dedicated to combating antimicrobial resistance? Please select all that apply.
   a. A strategy
   b. An action plan
   c. Other, please specify
   d. No, my country does not have a policy in this area
   e. Unsure / Do not know
				51	54

What is your level of familiarity with the national antimicrobial resistance policy in the country in which you live? [Very familiar, Quite familiar, Not very familiar, Not at all familiar]				52 [If 51a,b,c]	55 [If 54a,b,c]

At which level is the strategic policy developed/implemented?
   a. National
   b. Regional
   c. Both national and regional levels
   d. Unsure / Do not know
				53
				[If 51a,b,c]
					56
					[If 54a,b,c]

Did the EU Action Plan have any influence on the formulation of the national policy in the country in which you live?
   a. The national policy was influenced by the EU Action Plan
   b. The national policy was formulated independently of the EU Action Plan
   c. The existing national policy precedes the EU Action Plan
   d. Other, please specify
   e. Unsure / Do not know
				54
				[If 51a,b,c]
					57
					[If 54a,b,c]

How do the national policy and the EU Action Plan compare in terms of scope?
   a. The national policy and the EU Action Plan have similar scope
   b. The national policy is broader in scope (i.e. some areas of the national policy are not addressed by the EU Action Plan)
   c. The EU Action Plan is broader in scope (i.e. some areas of the EU Action Plan are not addressed by the national policy)
   d. Unsure / Do not know
				55
				[If 51a,b,c]
					58
					[If 54a,b,c]

Question	PC	SH - A	SH - H	MS - A	MS – H

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? [Completely complement, Partly complement, Do not complement, Not applicable, Unsure / Do not know]
   a. Appropriate use of antimicrobials in animals
   b. Prevention of microbial infections and their spread in animals
   c. Development of new effective antimicrobials for use in animals
   d. Development of alternatives for treatment of microbial infections for use in animals
   e. Cooperation at international level to contain the risk of antimicrobial resistance
   f. Cooperation at EU level to contain the risk of antimicrobial resistance
   g. Monitoring and surveillance of antimicrobial resistance in animals
   h. Monitoring and surveillance of antimicrobial use in animals
   i. Research into the causes of antimicrobial resistance
   j. Research on the prudent use of antimicrobials in animals and the impact of imprudent use
   k. Communication, education and training for people caring for animals
   l. Communication, education and training for the general public
				56
				[If 51a,b,c]	

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? [Completely complement, Partly complement, Do not complement, Not applicable, Unsure / Do not know]
   a. Appropriate use of antimicrobials in humans
   b. Prevention of microbial infections and their spread in humans
   c. Development of new effective antimicrobials for use in humans
   d. Development of alternatives for treatment of microbial infections for use in humans
   e. Cooperation at international level to contain the risk of antimicrobial resistance
   f. Cooperation at EU level to contain the risk of antimicrobial resistance
   g. Monitoring and surveillance of antimicrobial resistance in humans
   h. Monitoring and surveillance of antimicrobial use in humans
   i. Research into the causes of antimicrobial resistance
					59
					[If 54a,b,c]

Question	PC	SH - A	SH - H	MS - A	MS – H
j. Research on the prudent use of antimicrobials in humans and the impact of imprudent use k. Communication, education and training for human health professionals l. Communication, education and training for the general public					
If you would like to give reasons for your answer, please do so here. [open text]				57	60
Which of the following EU Action Plan areas receive funding in the country in which you live? [Major funding priority, Receives some funding, Little to no funding, Not applicable, Unsure / Do not know] a. Appropriate use of antimicrobials in animals b. Prevention of microbial infections and their spread in animals c. Development of new effective antimicrobials for use in animals d. Development of alternatives for treatment of microbial infections for use in animals e. Cooperation at international level to contain the risk of antimicrobial resistance f. Cooperation at EU level to contain the risk of antimicrobial resistance g. Monitoring and surveillance of antimicrobial resistance in animals h. Monitoring and surveillance of antimicrobial use in animals i. Research into the causes of antimicrobial resistance j. Research on the prudent use of antimicrobials in animals and the impact of imprudent use k. Communication, education and training for people caring for animals l. Communication, education and training for the general public				58	
Which of the following EU Action Plan areas receive funding in the country in which you live? [Major funding priority, Receives some funding, Little to no funding, Not applicable, Unsure / Do not know] a. Appropriate use of antimicrobials in humans b. Prevention of microbial infections and their spread in humans c. Development of new effective antimicrobials for use in humans d. Development of alternatives for treatment of microbial infections for use in humans e. Cooperation at international level to contain the risk of antimicrobial resistance					61

Question	PC	SH - A	SH - H	MS - A	MS – H
f. Cooperation at EU level to contain the risk of antimicrobial resistance g. Monitoring and surveillance of antimicrobial resistance in humans h. Monitoring and surveillance of antimicrobial use in humans i. Research into the causes of antimicrobial resistance j. Research on the prudent use of antimicrobials in humans and the impact of imprudent use k. Communication, education and training for human health professionals l. Communication, education and training for the general public					
If there are other relevant areas that receive financial support in the country in which you live, could you describe these? [open text]				59	62
Is the national antimicrobial resistance policy coordinated with other relevant policies in the country in which you live? a. The national antimicrobial resistance policy is coordinated with other relevant national policies in my country (please specify the relevant national policies) b. There are other relevant national policies in my country which are relevant to antimicrobial resistance, but these are developed independently of the national antimicrobial resistance policy c. There are no other relevant national policies in my country d. Unsure / Do not know				60 [If 51a,b,c]	63 [If 54a,b,c]
Are you aware of actions in your country for tackling antimicrobial resistance? a. Yes, please specify b. No	23				
Are these actions coordinated well with Member States in the EU? a. Yes, please specify b. No, please specify c. Unsure / do not know	24				
Are you aware of any ways that the EU and Member State governments are coordinating their activities for tackling antimicrobial resistance? a. Yes, please specify b. No		51	54		
How effective are these coordination efforts? [Very effective, somewhat effective, not		52	55		

Question	PC	SH - A	SH - H	MS - A	MS – H
very effective, not effective, unsure / do not know]		[if 51a]	[if 54a]		
If you would like to provide reasons for your answers to the question above, please do so here		✓	✓		

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas.
 	
[Strongly agree, Agree, Disagree, Strongly disagree, Unsure/Do not know]
    a. Environment
    b. Human health
    c. Animal health and welfare
    d. Food safety
    e. Agriculture
    f. Research
    g. Competiveness
    h. SMEs
	25	53	56	61	64

If you would like to provide reasons for your answers to the question above, please do so here.	26	54	57	62	65

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance?
    a. Documents published by other EU MS (please specify)
    b. Documents published by non-EU international organisations (please specify)
    c. Documents published by non-EU countries (please specify)
    d. No, there are no other policies in other countries that are relevant for my antimicrobial resistance work
    e. Unsure / Do not know
				63	66

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the organisations listed below? [Yes / Unsure / Do not know]
    a. Non-EU OECD countries (e.g. Switzerland, Norway, USA, Canada)
    b. Transatlantic Task Force on antimicrobial resistance (TATFAR)
    c. World Health Organization (WHO)
    d. World Organisation for Animal Health (OIE)
    e. Food and Agriculture Organization of the United Nations (UN FAO)
	27	55	58	64	67

Question	PC	SH - A	SH - H	MS - A	MS – H
f. Other, please specify					
Please identify any other international organisations active in the fight against antimicrobial resistance.	28	56	59	65	68

Do you think these actions are coordinated well with Member States in the EU?
    a. Yes, please specify
    b. No, please specify
    c. Unsure / Do not know
	29
	[if 27 Yes]
		57
		[if 55 Yes]
			60
			[if 58 Yes]
				66
				[if 64 Yes]
					69
					[if 67 Yes]

Section 7: Added value					
This section aims to assess the added value of the EU Action Plan on antimicrobial resistance compared to what could be achieved by EU Member States alone, acting at national and/or regional levels.	✓	✓	✓	✓	✓
(S) Do you agree with the following statement? The EU Action Plan identifies actions best dealt with at EU level: [Strongly agree, Agree, Disagree, Strongly disagree, Unsure / Do not know]		58	61	67	70
If you would like to give reasons for your answer, please do so here. [open text]		59	62	68	71
(S) Do you agree with the following statement? Overall, the EU Action Plan has helped bring about improvements in the situation on antimicrobial resistance in the EU that would not have happened otherwise. [Strongly agree, Agree, Disagree, Strongly disagree, Unsure / Do not know]		60	63	69	72

Are you aware of activities related to tackling AMR in the country in which you live that were enabled by EU funds and would not have occurred without EU funding (or would have occurred more slowly or to a lesser extent)?
    a. Yes (please specify)
    b. No
    c. Not applicable
    d. Unsure / Do not know
	30	61	64	70	73

If you would like to provide reasons for your answers to the question above, please do so here. [open text]	31	62	65	71	74

Question	PC	SH - A	SH - H	MS - A	MS – H
Section 8: Closing question					
Are there any further comments you would like to make? [open text]	32	63	66	72	75

APPENDIX K: INTERVIEW GUIDES FOR INTERVIEWS WITH KEY STAKEHOLDERS

> *Introduction[114]*

RAND Europe is undertaking an evaluation of the EU's [Action Plan](#) against antimicrobial resistance (AMR) on behalf of the Directorate-General for Health and Food Safety in the European Commission (DG SANTE).

The Action Plan sets out 12 specific actions for achieving progress on six objectives: the appropriate use of antimicrobials, infection prevention, research and innovation on new antimicrobials and treatment alternatives, international collaboration, monitoring and surveillance, and awareness.

The evaluation runs from September 2015 to March 2016. It aims to assess:

- Whether the key strategic actions contained in the Action Plan were the most appropriate actions to be taken to combat AMR;

- Which elements worked well or not (and why);

- Whether the objectives are still relevant to the needs of tackling AMR; and

- Whether the approach was appropriately holistic.

The evaluation covers the period 2011-2015 in all 28 EU Member States and relevant third countries. The project aims to collect views from multiple perspectives, including policy makers at the EU and national levels, researchers, public health experts, and representatives of professional associations and other interested parties, who are in a position to comment on the Action Plan and its implementation.

We would like to thank you for taking the time to speak with us.

Responses will be kept confidential and only the independent evaluation team at RAND Europe will know the identity of participants. When reporting our results, individual responses will be presented with a generic descriptor and no responses or quotes will be attributed to individuals, unless expressly permitted. Interviews will be recorded, with your permission, and the recordings destroyed within six months of the completion of the evaluation.

You can find a letter of representation from the European Commission, which summarises the objectives of the study and explains the role of RAND Europe as the evaluator, here: http://www.redocuments.org/amr/Letter_of_recommendation_2Oct2015.pdf. Should you have any additional questions about the research project, please contact the Project Manager Catherine Lichten at clichten@rand.org.

About RAND Europe

RAND Europe is an independent not-for-profit research institute whose mission is to help improve policy and decision-making through research and analysis. We realise our mission by undertaking objective, balanced and relevant research and analysis; communicating our findings to a wide audience, often through publications, many of

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[114] This information will be sent to respondents when they are invited to be interviewed, and the key points (including about recording and use of quotes) will be reviewed at the start of the interview.

which are available on this web site; working in partnership with our clients; and working collaboratively with others. Visit us online at www.rand.org/randeurope.html

Demographics (if not already established prior to interview) and familiarity with the Action Plan

Before we start, do you have any questions about the evaluation or the interview?

Which country are you based in?

How would you best describe your organisation? *[Prompt: government, non-government…]*

What is your current position within your organisation?

Which of the following areas of policy best describe the focus of your role? You may say more than one.

   a. Making sure antimicrobials are used appropriately
   b. Preventing microbial infections and their spread
   c. Developing new effective antimicrobials or alternatives for treatment
   d. Cooperating with international partners to contain the risks of AMR
   e. Improving monitoring and surveillance
   f. Promoting research and innovation into the prudent use of antimicrobials and the impact of imprudent use
   g. Improving communication, education and training

Are you in a position to comment on the areas above with respect to the human or animal contexts?

   a. Human
   b. Animal
   c. Both

Please indicate whether your [knowledge/ level of policy responsibility] is specific to a particular geographic area.

[Prompt: national/EU/international/local]

This section aims to assess the extent to which you are familiar with the EU AMR Action Plan.

What is your level of familiarity with the EU Action Plan against the risks arising from AMR?

How did you become aware of the Action Plan?

What role does AMR play in your day-to-day work?

[Prompt: What role does the Action Plan play? Have you received any guidance on actions to be taken by you/your organisation under the Action Plan?]

Topic guide: All interviews

[Questions to be selected based on interviewees' expertise and familiarity with the Action Plan, and to ensure interview should take ~45 minutes. No interviewees would be asked all questions.]

Relevance, and effectiveness of the holistic approach

This section aims to assess the extent to which the original objectives of the Action Plan correspond to needs within the EU, and whether actions were allocated appropriately to the EU/MS.

R1. Based on your experience, would you say that the Action Plan's objectives address AMR needs identified in 2011? Why/why not?

R2. Do the Action Plan's objectives address current AMR needs? Why/why not?

[Prompts: Remind interviewee of objectives with most relevance for their area of work (see table below). Have the EU needs of tackling AMR evolved? Are there any important current issues that are not covered by the Action Plan? If so, what are they?]

	Ensure appropriate use of antimicrobials in animals and humans
Action 1	Strengthen the promotion of the appropriate use of antimicrobials in human medicines in all Member States
2	Strengthen the regulatory framework on veterinary medicines and on medicated feed.
3	Introduce recommendations for prudent use in veterinary medicine, including follow-up reports.
	Prevent microbial infections and their spread
4	Strengthen infection prevention and control in healthcare settings.
5	Adoption of a proposal for an EU Animal Health Law.
	Develop new effective antimicrobials or alternatives for treatment
6	To promote, in a staged approach, unprecedented collaborative research and development efforts to bring new antibiotics to patients.
7	Promote efforts to analyse the need for new antibiotics into veterinary medicine.
	Cooperating with international partners to contain the risks of AMR
8	Develop and/or strengthen multilateral and bilateral commitments for the prevention and control of AMR in all sectors
	Improve monitoring and surveillance in animal and human medicine
9	Strengthen surveillance systems on AMR and antimicrobial consumption in human medicine.
10	Strengthen surveillance systems on AMR and antimicrobial consumption in animal medicine.
	Reinforce research and innovation
11	Reinforce and co-ordinate research efforts. Innovation.
	Improve communication, education and training
12	Communication, education and training: Survey and comparative effectiveness research

R3. Focusing on areas of the Action Plan where you have experience, would you say the areas of action under the Action Plan are appropriate given the competences of the EU and Member States?

[Can you give any examples of where the distribution of actions has worked well, or poorly? Are there any areas that have been neglected- where action is needed but it's not clear who should act? What about duplication of efforts?]

This section aims to assess the extent to which the Action Plan has captured a holistic approach.

R4. The Action Plan aims to capture a holistic or 'One Health' approach to antimicrobial resistance. From your experience, would you say that the actions in the Plan achieve this 'One Health' approach?

[Why or why not? What is missing?]

R5. Within the European Commission, has responsibility for the different actions in the Action Plan been allocated to different DGs and agencies appropriately?

[Why or why not? Are there any gaps where a DG hasn't been involved that should be?]

R6. Would you say the actions allocated to DGs and agencies at EU level been successfully carried out?

[Are you aware of reasons for failures (or notable successes)?]

Effectiveness

This section looks at what progress has occurred in specific aspects of AMR and how it may be linked to the Action Plan (or not).

[Interviewees to only be asked questions relevant to their area of expertise.]

Human health:

E1. What trends have you observed in the <u>overall consumption of antimicrobials for use in humans</u>? What about in non-prescription use?

[How have trends varied across Member States? Has there been a change in the performance gap across Member States?]

E2. Would you say that the Action Plan has had a role in these changes or failed to bring about changes it could have? Please explain.

E3. What trends have you observed in the <u>appropriate use of antimicrobials in humans?</u> (Non-prescription use, appropriate prescribing and usage of prescribed antibiotics)

[How have trends varied across Member States? Has there been a change in the performance gap across Member States?]

E4. Would you say that the Action Plan has had a role in these changes or failed to bring about changes it could have? Please explain.

E5. What changes have you observed in the <u>treatment of infection in humans?</u>

Specifically:

- Implementation by MS of prescription-only requirements for antimicrobials,

- Improved measure against AMR in nursing and care homes,

- Education and training on AMR for healthcare workers,

- Quality of assessment and monitoring of national strategies and control measures,

- Alignment of approaches to treatment/monitoring with 2002 Council Recommendation on the prudent use of antimicrobial agents in human medicines,

[How have patterns varied across Member States? Has there been a change in the performance gap across Member States?]

E6. Would you say that the Action Plan has had a role in these changes or failed to bring about changes it could have in these areas? Please explain.

E7. Regarding efforts to reduce the spread of AMR among humans, what progress has occurred in how health services are organised and delivered for reducing the spread of AMR? (i.e. related to implementation of the 2009 Council Recommendations on patient safety including prevention and control of HAIs, and in particular developing guidance for infection control.)[115]

E8. What trends have you observed in occurrence and resistance of microorganisms of major public health importance, including hospital acquired infections (HAIs)?

[How have trends varied across Member States? Has there been a change in the performance gap across Member States?]

E9. Would you say that the Action Plan has had a role in these changes or failed to bring about changes it could have? Please explain.

[Have the 2012/13 progress reports on the implementation of the 2009 Council Recommendation helped bring about change? (relates to AP Action 4)]

Animal health:

E10. What trends have you observed in the overall consumption of antimicrobials for use in animals?

[How have trends varied across Member States? Has there been a change in the performance gap across Member States?]

E11. Would you say that the Action Plan has had a role in these changes or failed to bring about changes it could have? Please explain.

E12. What trends have you observed in the prudent use of antimicrobials in animals?

[How have trends varied across Member States? Has there been a change in the performance gap across Member States?]

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[115] Training of healthcare workers and surveillance of HAIs is related to this, but covered in other questions.

E13. What impacts could be brought about by the Guidelines for the prudent use of antimicrobials in veterinary medicine (2015)?

E14. Regarding changes in the rules, guidance and authorisation requirements for veterinary medicines and medicated feed, what changes are you aware of in the following areas:

- Appropriate warnings and guidance on labels of veterinary antimicrobials

- Restrictions on regular or off-label use of certain new or critically important antimicrobials for humans in the vet sector?

- Rules for advertisement of veterinary antimicrobials.

- The extent to which authorisation requirements address risks and benefits of antimicrobials.

- Rules, guidance and authorisation requirements linked to a strengthened regulatory framework on veterinary medicines and medicated feed (proposals in ordinary legislative procedure in EP and Council).

[How have changes varied across Member States?]

E15. Would you say that the Action Plan has had a role in these changes or failed to bring about changes it could have? Please explain.

E16. Regarding reducing the spread of AMR in animals, one development is the new Animal Health Law (final regulation pending). What do you see as the potential contribution of this law for reducing the spread of AMR?

E17. Could you describe any other changes you are aware of from since 2011 that affect (positively or negatively) the spread of AMR in animals in the EU? Do these relate to the Action Plan?

Research and innovation:

E18. One aspect of the Action Plan is about launching an antibiotics R&D programme (with EFPIA and within the IMI-Joint Undertaking) that would improve the efficiency of R&D through open sharing of knowledge. Would you say this open sharing has been achieved? What impacts would you say the programme has had (or is having)?

E19. The Action Plan also sets out to create conditions to support establishment of adequate marketing and pricing conditions for new antibiotics, and implementation of fast track procedures for market authorisation for new antibiotics. To what extent has progress been made in these areas?

[Are you aware of whether there has been any increase in the numbers of authorisations granted or products brought to market? Data sources?]

E20. From your experience, would you say that the Action Plan has had a role in any changes that have occurred in support for bringing new antibiotics to market and establishing adequate market conditions? Please explain.

E21. Another aspect of the Action Plan focuses on establishing a framework agreement with industry on a long-term perspective on public-private partnerships (priorities, commitments, principles, etc.). Has this been achieved effectively? Why or why not?

E22. From your observation, have there been adequate resources made available within IMI/IMI2 and FP7/Horizon 2020 to support the needs of antibiotic development? Why or why not?

E23. The Action Plan also addresses innovation in veterinary medicine, focusing on incentives and barriers to innovation, and understanding the need for new antibiotics in veterinary medicine. Have you observed progress in incentivising innovation in veterinary medicine and reduction of barriers, such as the uncertainty about whether new antimicrobials can be authorised?

E24. To understand the need for new veterinary antibiotics, there was a request for advice from the EMA. The advice was provided- has it had an impact?

E25. One action under the Action Plan focuses on reinforcing and coordinating research efforts through various means. Could you discuss your observations and any relevant evidence on progress in the following areas in the EU:

- Support for research into understanding AMR and host-pathogen interactions.

- Development of diagnostic tools, vaccines and other preventive measures.

- The Joint Programming Initiative on AMR

- Understanding reasons for high usage of antimicrobials in some countries with high occurrence of AMR in humans (related to ARNA project and any other relevant work).

- Supporting a global mapping of AMR (in cooperation with WHO).

Monitoring and Surveillance (animals):

What developments have occurred in the monitoring and surveillance systems for AMR and antimicrobial consumption in animal medicine? In particular, in:

E26. European Surveillance of Veterinary Antimicrobial Consumption (ESVAC)?

[How does data quality and coverage vary across Member States? Has this situation across the EU generally improved or not?]

E27. Monitoring of AMR in zoonotic bacteria and related indicators?

E28. Harmonising human and veterinary surveillance so data can be compared?

E29. What role has the Action Plan played in these developments?

[What is the anticipated impact of including a legal basis for monitoring AMR in animal pathogens in the Animal Health Law (in progress)?]

Monitoring and Surveillance (humans):

What developments have occurred in the monitoring and surveillance systems for AMR and antimicrobial consumption in human medicine? In particular, in:

E30. Making data more accessible at all levels (regional, local, hospital)?

[How does data quality and accessibility vary across Member States? Has this situation across the EU generally improved or not?]

E31. Transferring the ESAC project to the ECDC to ensure sustainability?

E32. The ARPEC project (Antibiotic Resistance and Prescribing in European Children).

E33. What role has the Action Plan played in these developments?

<u>Public Awareness:</u>

E34. What changes have you observed in <u>awareness and knowledge of AMR and appropriate usage of antibiotics among the general public</u>? What about among target groups with higher usage (e.g.)?

[How have trends varied across Member States? Has there been a change in the performance gap across Member States?]

E35. Would you say that the Action Plan has had a role in these changes, (particularly in terms of evaluating the impact of national and EU awareness campaigns (and developing indicators), and exchanging best practices to target key groups)?

> **Coherence (within EU and externally), and effectiveness of international collaboration**

This section aims to assess the extent to which the Action Plan on AMR is coherent with other EU policies in a range of fields (environment, human health, animal health and welfare, food safety, agriculture, research, competiveness and SMEs).

C1. We would like to look at the extent to which the actions in the Action Plan are coherent with other EU policies on the environment, human health, animal health and welfare, food safety, agriculture, research, and competitiveness and SMEs. In your area of work, are you familiar with policies or initiatives that relate to AMR issues? What are they?

C2. Are they consistent with the objectives and actions under the AMR Action Plan, or are there areas of conflict, or gaps where some sort of policy or initiative is needed?

[Are there overlapping or even competing policies or initiatives that work against the aims of the Action Plan?]

This section aims to assess the extent to which the Action Plan on AMR works in line with Member State and international interventions, plans or strategies on AMR.

C3. In your experience, is the Action Plan coherent with Member States' relevant national (or regional) strategies (meaning consistent objectives, no conflicts or unnecessary duplication of effort)?

C4. Are you aware of any new or strengthened bilateral or multilateral commitments or agreements made since introduction of the Action Plan? Which?

C5. Were these developments on bilateral/multilateral commitments/agreements made as a result of the Action Plan?

C6. And how does the Action Plan compare with international-level initiatives and strategies, such as from the WHO, Codex Alimentarius, Tatfar?

C7. [research/innovation]: Is the Action Plan coherent with research and innovation initiatives in Member States and internationally?

[Looking at more basic research through to more applied areas like drug innovation and studies of behaviour and attitudes to antibiotics]

Efficiency

This sections aims to assess the efficiency with which the EU budget has been used for addressing the objectives of the Action Plan.

Ey1. Have EU funds been used for activities related to the Action Plan in your DG/agency/centre? How have then been used?

Ey2. To your knowledge, does this spending relate to actions or objectives of the Action Plan? Which?

[Do you know, at least relatively, how large the budget was for these activities? Perhaps as a proportion of overall spending, or has there been an increase or decrease in AMR-related spending?]

Ey3. From your observations, would you say the level of spending is appropriate for the needs? Are there areas that should receive funding that do not or areas that are being funded while more critical areas are not?

Ey4. In your assessment, has EU spending related to AMR enabled activities that would have not occurred otherwise, or would have taken longer?

[Did these activities help achieve objectives of the Action Plan?]

Added value

This section aims to assess the added value of the Action Plan on AMR compared to what could be achieved by Member States at national and/or regional levels (acting without the Plan), and how the holistic approach has contributed.

A1. Overall, based on your experience, what progress has been enabled by the EU Action Plan compared with what could be achieved by Member States at national and/or regional levels?

[Are there some observed improvements cannot be reasonably viewed as a result of MS efforts and initiative alone? Did MS take any actions as a result of the AP that they would not have taken otherwise? Has the AP resulted in any detrimental impacts for tackling AMR?

Depending on interviewees' area, relevant aspects may be: research/innovation, international collaboration/coordination, improving policies and guidance related to AMR]

A2. If the Action Plan and any of its actions had been discontinued, what do you think the effects would be?

A3. Thinking about the concept of the 'One Health' approach, based on your experience, has the effort to have a holistic approach enabled more progress be achieved than if there had not been an attempt to have a holistic approach? *[Please explain]*

Closing question

Is there anything else you would like to comment on?

APPENDIX L: SURVEY RESULTS

The following tables contain survey data used to inform the report. They represent all data collected through the Member State and stakeholder targeted surveys as of 11 January 2016 and through the general public consultation as of 22 January 2016. For the MS and SH surveys, the appendix is structured according to the five evaluation criteria followed in the report. For each question, its actual wording is presented in the heading of each relevant table.

1.1. Demographics

Country of origin (MS/SH breakdown)

	MS	SH	Total
Austria	4	3	7
Belgium	3	3	6
Bulgaria	1	0	1
Croatia	3	0	3
Cyprus	2	1	3
Czech Republic	1	0	1
Denmark	3	3	6
Estonia	4	0	4
EU	0	30	30
Finland	2	2	4
France	3	4	7
Germany	4	3	7
Greece	1	0	1
Hungary	2	1	3
Iceland	1	0	1
Ireland	4	2	6
Italy	2	3	5
Latvia	2	0	2
Lithuania	1	2	3
Luxembourg	1	1	2
Malta	3	0	3
Netherlands	3	5	8
Norway	1	3	4
Portugal	1	1	2
Romania	3	1	4
Serbia	1	0	1
Slovenia	3	1	4
Spain	3	2	5
Sweden	4	1	5
Switzerland	1	0	1

	MS	SH	Total
United Kingdom	2	8	10
Not specified	1	1	2
N	70	81	151

Country of origin (Animal/human breakdown)

	Animal	Human	Both	Unsure / Do not know	Total
Austria	4	3	0	0	7
Belgium	2	2	2	0	6
Bulgaria	1	0	0	0	1
Croatia	2	1	0	0	3
Cyprus	1	2	0	0	3
Czech Republic	0	1	0	0	1
Denmark	1	2	3	0	6
Estonia	4	0	0	0	4
EU	10	10	10	0	30
Finland	2	1	1	0	4
France	2	1	4	0	7
Germany	5	1	1	0	7
Greece	0	1	0	0	1
Hungary	2	1	0	0	3
Iceland	0	1	0	0	1
Ireland	3	2	0	1	6
Italy	1	4	0	0	5
Latvia	1	1	0	0	2
Lithuania	1	2	0	0	3
Luxembourg	0	2	0	0	2
Malta	2	1	0	0	3
Netherlands	4	1	3	0	8
Norway	2	2	0	0	4
Portugal	1	1	0	0	2
Romania	3	1	0	0	4
Serbia	0	1	0	0	1
Slovenia	1	3	0	0	4
Spain	2	2	1	0	5
Sweden	2	2	1	0	5
Switzerland	1	0	0	0	1
United Kingdom	5	3	2	0	10
Not specified	1	1	0	0	2
N	66	56	28	1	151

Familiarity with the Action Plan (MS/SH breakdown)

	MS	SH	Total
Very familiar	62.9%	38.3%	49.7%
Somewhat familiar	32.9%	56.8%	45.7%
Not at all familiar	0.0%	3.7%	2.0%
Unsure / Do not know	4.3%	1.2%	2.7%
N	70	81	151

Familiarity with the Action Plan (Animal/human breakdown)

	Animal	Human	Both	Unsure / Do not know	Total
Very familiar	53.0%	44.6%	53.6%	0%	49.7%
Somewhat familiar	40.9%	51.8%	46.4%	0%	45.7%
Not at all familiar	1.5%	1.8%	0%	100%	2.0%
Unsure / Do not know	4.6%	1.8%	0.0%	0%	2.7%
N	66	56	28	1	151

Numbers of respondents: MS/SH crosstabulation

	Animal	Human	Both	Unsure / Do not know	Total
MS	39	23	8	0	70
SH	27	33	20	1	81
Total	66	56	28	1	151

MS respondents by organisation type

	Animal	Human	Both	Total
Government	16	4	5	25
	41.0%	17.4%	62.5%	35.7%
Public health authority	5	17	3	25
	12.8%	73.9%	37.5%	35.7%
Food safety authority	19	0	2	22
	48.7%	0.0%	37.5%	31.4%
Veterinary authority	23	0	2	25
	59.0%	0.0%	25.0%	35.7%
Research organisation	2	3	2	7
	5.1%	13.0%	25.0%	10.0%
ECDC coordinating body	0	7	0	7
	0.0%	30.4%	0.0%	10.0%
EARS Net national participating institution	0	11	1	12
	0.0%	47.8%	12.5%	17.1%
EMA National Competent authority (veterinary)	9	0	0	9
	23.1%	0.0%	0.0%	12.9%
EFSA focal point	2	0	0	2
	5.1%	0.0%	0.0%	2.9%

Have you participated in actions under the EU Action Plan? (MS respondents only)

	Animal	Human	Both	Total
Yes	83.8%	87.0%	75.0%	83.8%
No	8.1%	0.0%	0.0%	4.4%
Not applicable	2.7%	8.7%	12.5%	5.9%
Unsure / Do not know	5.4%	4.3%	12.5%	5.9%
N	37	23	8	68

Which actions have you participated in? (MS respondents only)

	Animal	Human	Both	Total
Action 1	17	14	5	37
	46.2%	60.9%	62.5%	52.9%
Action 2	20	2	6	28
	51.3%	8.7%	75.0%	40.0%
Action 3	19	2	5	27
	51.3%	8.7%	62.5%	38.6%
Action 4	4	16	5	25
	10.3%	69.9%	62.5%	35.7%

	Animal	Human	Both	Total
Action 5	11	1	4	16
	28.2%	4.3%	50.0%	22.9%
Action 6	1	1	4	6
	2.6%	4.3%	50.0%	8.6%
Action 7	7	1	3	11
	17.9%	4.3%	37.5%	15.7%
Action 8	12	12	6	31
	33.3%	52.2%	75.0%	44.3%
Action 9	1	18	5	25
	5.1%	78.8%	62.5%	35.7%
Action 10	29	2	6	37
	74.4%	8.7%	75.0%	52.9%
Action 11	9	1	4	14
	23.1%	4.3%	50%	20.0%
Action 12	3	1	2	6
	7.7%	4.3%	25.0%	8.6%
Don't Know	0	1	0	1
	0.0%	4.3%	0.0%	1.4%

SH respondents by organisation type

	Animal	Human	Both	Unsure / Do not know	Total
Academic or research centre	3	2	3	0	8
Consultancy	1	0	1	0	2
Health care, hospital, health institution	5	5	0	0	10
Industrial or trade association	9	4	4	0	17
NGO (non-governmental organisation)	2	11	6	0	19
Private company	1	4	1	0	6
Other	6	7	5	1	19
Total	26	33	20	1	81

1.2 Relevance

Relevance – 2011

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	1	1
	%	0.00%	3.60%	1.20%
Somewhat relevant	N	3	3	6
	%	5.40%	10.70%	7.10%
Unsure / Do not know	N	0	1	1
	%	0.00%	3.60%	1.20%
Very relevant	N	53	23	76
	%	94.60%	82.10%	90.50%
Total	N	56	28	84
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.00%	1.90%	1.20%
Somewhat relevant	N	0	6	6
	%	0.00%	11.30%	7.10%
Unsure / Do not know	N	0	1	1
	%	0.00%	1.90%	1.20%
Very relevant	N	31	45	76
	%	100.00%	84.90%	90.50%
Total	N	31	53	84
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	1	0	1
	%	1.60%	0.00%	1.10%
Somewhat relevant	N	6	5	11
	%	9.50%	17.90%	12.10%
Unsure / do not know	N	2	1	3
	%	3.20%	3.60%	3.30%
Very relevant	N	54	22	76
	%	85.70%	78.60%	83.50%
Total	N	63	28	91
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.00%	2.10%	1.10%
Somewhat relevant	N	3	8	11
	%	6.80%	17.00%	12.10%
Unsure / do not know	N	1	2	3
	%	2.30%	4.30%	3.30%
Very relevant	N	40	36	76
	%	90.90%	76.60%	83.50%
Total	N	44	47	91
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
Not relevant	N	1	0	1
	%	1.80%	0.00%	1.20%
Somewhat relevant	N	8	6	14
	%	14.30%	21.40%	16.70%
Unsure / do not know	N	0	1	1
	%	0.00%	3.60%	1.20%
Very relevant	N	47	21	68
	%	83.90%	75.00%	81.00%
Total	N	56	28	84
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.00%	1.90%	1.20%
Somewhat relevant	N	2	12	14
	%	6.50%	22.60%	16.70%
Unsure / do not know	N	0	1	1
	%	0.00%	1.90%	1.20%
Very relevant	N	29	39	68
	%	93.50%	73.60%	81.00%
Total	N	31	53	84
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	4	0	4
	%	6.30%	0.00%	4.40%
Somewhat relevant	N	12	7	19
	%	19.00%	25.00%	20.90%
Unsure / do not know	N	1	1	2
	%	1.60%	3.60%	2.20%
Very relevant	N	46	20	66
	%	73.00%	71.40%	72.50%
Total	N	63	28	91
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	2	2	4
	%	4.50%	4.30%	4.40%
Somewhat relevant	N	4	15	19
	%	9.10%	31.90%	20.90%
Unsure / do not know	N	1	1	2
	%	2.30%	2.10%	2.20%
Very relevant	N	37	29	66
	%	84.10%	61.70%	72.50%
Total	N	44	47	91
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	3	1	3	7
	%	4.80%	1.80%	10.70%	4.80%
Somewhat relevant	N	29	18	7	54
	%	46.80%	32.10%	25.00%	37.00%
Unsure / do not know	N	3	1	2	6
	%	4.80%	1.80%	7.10%	4.10%
Very relevant	N	27	36	16	79
	%	43.50%	64.30%	57.10%	54.10%
Total	N	62	56	28	146
	%	100.00%	100.00%	100.00%	100.00%

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Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
Not relevant	N	0	7	7
	%	0.00%	8.90%	4.80%
Somewhat relevant	N	24	30	54
	%	35.80%	38.00%	37.00%
Unsure / do not know	N	3	3	6
	%	4.50%	3.80%	4.10%
Very relevant	N	40	39	79
	%	59.70%	49.40%	54.10%
Total	N	67	79	146
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	2	3	6
	%	1.60%	3.60%	11.10%	4.10%
Somewhat relevant	N	13	19	3	35
	%	20.60%	33.90%	11.10%	24.00%
Unsure / do not know	N	2	1	1	4
	%	3.20%	1.80%	3.70%	2.70%
Very relevant	N	47	34	20	101
	%	74.60%	60.70%	74.10%	69.20%
Total	N	63	56	27	146
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
Not relevant	N	1	5	6
	%	1.50%	6.30%	4.10%
Somewhat relevant	N	18	17	35
	%	26.90%	21.50%	24.00%
Unsure / do not know	N	2	2	4
	%	3.00%	2.50%	2.70%
Very relevant	N	46	55	101
	%	68.70%	69.60%	69.20%
Total	N	67	79	146
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Somewhat relevant	N	15	11	4	30
	%	24.20%	19.60%	14.80%	20.70%
Unsure / do not know	N	2	0	1	3
	%	3.20%	0.00%	3.70%	2.10%
Very relevant	N	45	45	22	112
	%	72.60%	80.40%	81.50%	77.20%
Total	N	62	56	27	145
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	10	20	30
	%	15.20%	25.30%	20.70%
Unsure / do not know	N	2	1	3
	%	3.00%	1.30%	2.10%
Very relevant	N	54	58	112
	%	81.80%	73.40%	77.20%
Total	N	66	79	145
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Somewhat relevant	N	11	8	3	22
	%	17.50%	14.30%	11.10%	15.10%
Unsure / do not know	N	2	0	1	3
	%	3.20%	0.00%	3.70%	2.10%
Very relevant	N	50	48	23	121
	%	79.40%	85.70%	85.20%	82.90%
Total	N	63	56	27	146
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	6	16	22
	%	9.00%	20.30%	15.10%
Unsure / do not know	N	2	1	3
	%	3.00%	1.30%	2.10%
Very relevant	N	59	62	121
	%	88.10%	78.50%	82.90%
Total	N	67	79	146
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	1	0	2
	%	1.60%	1.80%	0.00%	1.40%
Somewhat relevant	N	13	6	4	23
	%	20.30%	10.70%	14.80%	15.60%
Unsure / do not know	N	1	0	1	2
	%	1.60%	0.00%	3.70%	1.40%
Very relevant	N	49	49	22	120
	%	76.60%	87.50%	81.50%	81.60%
Total	N	64	56	27	147
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	2	2
	%	0.00%	2.50%	1.40%
Somewhat relevant	N	5	18	23
	%	7.40%	22.80%	15.60%
Unsure / do not know	N	1	1	2
	%	1.50%	1.30%	1.40%
Very relevant	N	62	58	120
	%	91.20%	73.40%	81.60%
Total	N	68	79	147
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
Not relevant	N	1	0	1
	%	1.80%	0.00%	1.20%
Somewhat relevant	N	7	5	12
	%	12.70%	18.50%	14.60%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.20%
Very relevant	N	47	21	68
	%	85.50%	77.80%	82.90%
Total	N	55	27	82
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in human)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.00%	1.90%	1.20%
Somewhat relevant	N	1	11	12
	%	3.30%	21.20%	14.60%
Unsure / do not know	N	0	1	1
	%	0.00%	1.90%	1.20%
Very relevant	N	29	39	68
	%	96.70%	75.00%	82.90%
Total	N	30	52	82
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
Somewhat relevant	N	7	7	14
	%	10.90%	25.90%	15.40%
Unsure / do not know	N	2	1	3
	%	3.10%	3.70%	3.30%
Very relevant	N	55	19	74
	%	85.90%	70.40%	81.30%
Total	N	64	27	91
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	3	11	14
	%	6.70%	23.90%	15.40%
Unsure / do not know	N	2	1	3
	%	4.40%	2.20%	3.30%
Very relevant	N	40	34	74
	%	88.90%	73.90%	81.30%
Total	N	45	46	91
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	1	2	4
	%	1.60%	1.80%	7.40%	2.70%
Somewhat relevant	N	18	14	8	40
	%	28.60%	25.00%	29.60%	27.40%
Unsure / do not know	N	2	0	2	4
	%	3.20%	0.00%	7.40%	2.70%
Very relevant	N	42	41	15	98
	%	66.70%	73.20%	55.60%	67.10%
Total	N	63	56	27	146
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	4	4
	%	0.00%	5.10%	2.70%
Somewhat relevant	N	13	27	40
	%	19.40%	34.20%	27.40%
Unsure / do not know	N	2	2	4
	%	3.00%	2.50%	2.70%
Very relevant	N	52	46	98
	%	77.60%	58.20%	67.10%
Total	N	67	79	146
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	1	0	2
	%	1.60%	1.80%	0.00%	1.40%
Somewhat relevant	N	14	9	4	27
	%	22.20%	16.10%	14.80%	18.50%
Unsure / do not know	N	2	0	3	5
	%	3.20%	0.00%	11.10%	3.40%
Very relevant	N	46	46	20	112
	%	73.00%	82.10%	74.10%	76.70%
Total	N	63	56	27	146
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
Not relevant	N	0	2	2
	%	0.00%	2.50%	1.40%
Somewhat relevant	N	8	19	27
	%	11.90%	24.10%	18.50%
Unsure / do not know	N	2	3	5
	%	3.00%	3.80%	3.40%
Very relevant	N	57	55	112
	%	85.10%	69.60%	76.70%
Total	N	67	79	146
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	2	2
	%	0.00%	7.40%	2.40%
Somewhat relevant	N	9	2	11
	%	16.10%	7.40%	13.30%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.20%
Very relevant	N	47	22	69
	%	83.90%	81.50%	83.10%
Total	N	56	27	83
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	2	2
	%	0.00%	3.80%	2.40%
Somewhat relevant	N	1	10	11
	%	3.20%	19.20%	13.30%
Unsure / do not know	N	0	1	1
	%	0.00%	1.90%	1.20%
Very relevant	N	30	39	69
	%	96.80%	75.00%	83.10%
Total	N	31	52	83
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	0	1	1
	%	0.00%	3.80%	1.10%
Somewhat relevant	N	15	4	19
	%	23.40%	15.40%	21.10%
Unsure / do not know	N	1	2	3
	%	1.60%	7.70%	3.30%
Very relevant	N	48	19	67
	%	75.00%	73.10%	74.40%
Total	N	64	26	90
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.00%	2.20%	1.10%
Somewhat relevant	N	8	11	19
	%	18.20%	23.90%	21.10%
Unsure / do not know	N	1	2	3
	%	2.30%	4.30%	3.30%
Very relevant	N	35	32	67
	%	79.50%	69.60%	74.40%
Total	N	44	46	90
	%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	2	1	1	4
	%	3.10%	1.80%	3.70%	2.70%
Somewhat relevant	N	21	15	6	42
	%	32.80%	26.80%	22.20%	28.60%
Unsure / do not know	N	1	0	2	3
	%	1.60%	0.00%	7.40%	2.00%
Very relevant	N	40	40	18	98
	%	62.50%	71.40%	66.70%	66.70%
Total	N	64	56	27	147
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for the general public)		MS v SH		
		MS	SH	Total
Not relevant	N	1	3	4
	%	1.50%	3.80%	2.70%
Somewhat relevant	N	16	26	42
	%	23.50%	32.90%	28.60%
Unsure / do not know	N	1	2	3
	%	1.50%	2.50%	2.00%
Very relevant	N	50	48	98
	%	73.50%	60.80%	66.70%
Total	N	68	79	147
	%	100.00%	100.00%	100.00%

Relevance − 2015

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
Somewhat relevant	N	4	2	6
	%	7.4%	7.4%	7.4%
Unsure / do not know	N	0	1	1
	%	0.0%	3.7%	1.2%
Very relevant	N	50	24	74
	%	92.6%	88.9%	91.4%
Total	N	54	27	81
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	1	5	6
	%	3.20%	10.00%	7.40%
Unsure / do not know	N	0	1	1
	%	0.00%	2.00%	1.20%
Very relevant	N	30	44	74
	%	96.80%	88.00%	91.40%
Total	N	31	50	81
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	1	0	1
	%	1.50%	0.00%	1.10%
Somewhat relevant	N	3	4	7
	%	4.60%	14.80%	7.60%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.10%
Very relevant	N	61	22	83
	%	93.80%	81.50%	90.20%
Total	N	65	27	92
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.00%	2.20%	1.10%
Somewhat relevant	N	3	4	7
	%	6.50%	8.70%	7.60%
Unsure / do not know	N	0	1	1
	%	0.00%	2.20%	1.10%
Very relevant	N	43	40	83
	%	93.50%	87.00%	90.20%
Total	N	46	46	92
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	1	1
	%	0.00%	3.70%	1.20%
Somewhat relevant	N	7	6	13
	%	13.00%	22.20%	16.00%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.20%
Very relevant	N	47	19	66
	%	87.00%	70.40%	81.50%
Total	N	54	27	81
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	1	0	1
	%	3.20%	0.00%	1.20%
Somewhat relevant	N	3	10	13
	%	9.70%	20.00%	16.00%
Unsure / do not know	N	0	1	1
	%	0.00%	2.00%	1.20%
Very relevant	N	27	39	66
	%	87.10%	78.00%	81.50%
Total	N	31	50	81
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
Somewhat relevant	N	9	8	17
	%	14.1%	29.6%	18.7%
Unsure / do not know	N	0	1	1
	%	0.0%	3.7%	1.1%
Very relevant	N	55	18	73
	%	85.9%	66.7%	80.2%
Total	N	64	27	91
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	7	10	17
	%	15.6%	21.7%	18.7%
Unsure / do not know	N	0	1	1
	%	0.0%	2.2%	1.1%
Very relevant	N	38	35	73
	%	84.4%	76.1%	80.2%
Total	N	45	46	91
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	3	2	1	6
	%	4.70%	3.70%	3.70%	4.10%
Somewhat relevant	N	28	13	10	51
	%	43.80%	24.10%	37.00%	35.20%
Unsure / do not know	N	3	0	2	5
	%	4.70%	0.00%	7.40%	3.40%
Very relevant	N	30	39	14	83
	%	46.90%	72.20%	51.90%	57.20%
Total	N	64	54	27	145
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
Not relevant	N	0	6	6
	%	0.00%	7.80%	4.10%
Somewhat relevant	N	26	25	51
	%	38.20%	32.50%	35.20%
Unsure / do not know	N	3	2	5
	%	4.40%	2.60%	3.40%
Very relevant	N	39	44	83
	%	57.40%	57.10%	57.20%
Total	N	68	77	145
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	0	3	1	4
	%	0.00%	5.60%	3.70%	2.80%
Somewhat relevant	N	13	13	5	31
	%	20.30%	24.10%	18.50%	21.40%
Unsure / do not know	N	3	1	2	6
	%	4.70%	1.90%	7.40%	4.10%
Very relevant	N	48	37	19	104
	%	75.00%	68.50%	70.40%	71.70%
Total	N	64	54	27	145
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
Not relevant	N	0	4	4
	%	0.00%	5.20%	2.80%
Somewhat relevant	N	16	15	31
	%	23.50%	19.50%	21.40%
Unsure / do not know	N	3	3	6
	%	4.40%	3.90%	4.10%
Very relevant	N	49	55	104
	%	72.10%	71.40%	71.70%
Total	N	68	77	145
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	0	2	0	2
	%	0.00%	3.70%	0.00%	1.40%
Somewhat relevant	N	12	6	6	24
	%	19.00%	11.10%	22.20%	16.70%
Unsure / do not know	N	0	0	1	1
	%	0.00%	0.00%	3.70%	0.70%
Very relevant	N	51	46	20	117
	%	81.00%	85.20%	74.10%	81.30%
Total	N	63	54	27	144
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	2	2
	%	0.00%	2.63%	1.39%
Somewhat relevant	N	10	14	24
	%	14.71%	18.42%	16.67%
Unsure / do not know	N	0	1	1
	%	0.00%	1.32%	0.69%
Very relevant	N	58	59	117
	%	85.29%	77.63%	81.25%
Total	N	68	76	144
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Somewhat relevant	N	10	6	1	17
	%	15.60%	11.30%	3.80%	11.90%
Unsure / do not know	N	0	0	1	1
	%	0.00%	0.00%	3.80%	0.70%
Very relevant	N	54	47	24	125
	%	84.40%	88.70%	92.30%	87.40%
Total	N	64	53	26	143
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	7	10	17
	%	10.40%	13.20%	11.90%
Unsure / do not know	N	0	1	1
	%	0.00%	1.30%	0.70%
Very relevant	N	60	65	125
	%	89.60%	85.50%	87.40%
Total	N	67	76	143
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	1	2
	%	1.50%	0.00%	3.70%	1.40%
Somewhat relevant	N	6	11	3	20
	%	9.20%	20.40%	11.10%	13.70%
Unsure / do not know	N	1	0	1	2
	%	1.50%	0.00%	3.70%	1.40%
Very relevant	N	57	43	22	122
	%	87.70%	79.60%	81.50%	83.60%
Total	N	65	54	27	146
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	1	1	2
	%	1.40%	1.30%	1.40%
Somewhat relevant	N	6	14	20
	%	8.70%	18.20%	13.70%
Unsure / do not know	N	1	1	2
	%	1.40%	1.30%	1.40%
Very relevant	N	61	61	122
	%	88.40%	79.20%	83.60%
Total	N	69	77	146
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	1	1
	%	0.00%	3.70%	1.30%
Somewhat relevant	N	8	3	11
	%	15.10%	11.10%	13.80%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.30%
Very relevant	N	45	22	67
	%	84.90%	81.50%	83.80%
Total	N	53	27	80
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	1	0	1
	%	3.20%	0.00%	1.30%
Somewhat relevant	N	3	8	11
	%	9.70%	16.30%	13.80%
Unsure / do not know	N	0	1	1
	%	0.00%	2.00%	1.30%
Very relevant	N	27	40	67
	%	87.10%	81.60%	83.80%
Total	N	31	49	80
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	1	1	2
	%	1.50%	3.70%	2.20%
Somewhat relevant	N	5	6	11
	%	7.70%	22.20%	12.00%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.10%
Very relevant	N	59	19	78
	%	90.80%	70.40%	84.80%
Total	N	65	27	92
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	1	1	2
	%	2.20%	2.20%	2.20%
Somewhat relevant	N	4	7	11
	%	8.70%	15.20%	12.00%
Unsure / do not know	N	0	1	1
	%	0.00%	2.20%	1.10%
Very relevant	N	41	37	78
	%	89.10%	80.40%	84.80%
Total	N	46	46	92
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	3	1	5
	%	1.60%	5.60%	3.70%	3.40%
Somewhat relevant	N	19	11	10	40
	%	29.70%	20.40%	37.00%	27.60%
Unsure / do not know	N	1	0	2	3
	%	1.60%	0.00%	7.40%	2.10%
Very relevant	N	43	40	14	97
	%	67.20%	74.10%	51.90%	66.90%
Total	N	64	54	27	145
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	1	4	5
	%	1.50%	5.20%	3.40%
Somewhat relevant	N	15	25	40
	%	22.10%	32.50%	27.60%
Unsure / do not know	N	1	2	3
	%	1.50%	2.60%	2.10%
Very relevant	N	51	46	97
	%	75.00%	59.70%	66.90%
Total	N	68	77	145
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	2	0	3
	%	1.60%	3.70%	0.00%	2.10%
Somewhat relevant	N	13	8	4	25
	%	20.60%	14.80%	14.80%	17.40%
Unsure / do not know	N	2	0	2	4
	%	3.20%	0.00%	7.40%	2.80%
Very relevant	N	47	44	21	112
	%	74.60%	81.50%	77.80%	77.80%
Total	N	63	54	27	144
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
Not relevant	N	0	3	3
	%	0.00%	3.90%	2.10%
Somewhat relevant	N	9	16	25
	%	13.20%	21.10%	17.40%
Unsure / do not know	N	2	2	4
	%	2.90%	2.60%	2.80%
Very relevant	N	57	55	112
	%	83.80%	72.40%	77.80%
Total	N	68	76	144
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	1	1
	%	0.00%	3.70%	1.20%
Somewhat relevant	N	5	4	9
	%	9.30%	14.80%	11.10%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.20%
Very relevant	N	49	21	70
	%	90.70%	77.80%	86.40%
Total	N	54	27	81
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
Not relevant	N	1	0	1
	%	3.20%	0.00%	1.20%
Somewhat relevant	N	0	9	9
	%	0.00%	18.00%	11.10%
Unsure / do not know	N	0	1	1
	%	0.00%	2.00%	1.20%
Very relevant	N	30	40	70
	%	96.80%	80.00%	86.40%
Total	N	31	50	81
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	0	1	1
	%	0.00%	3.70%	1.10%
Somewhat relevant	N	14	6	20
	%	22.20%	22.20%	22.20%
Unsure / do not know	N	0	2	2
	%	0.00%	7.40%	2.20%
Very relevant	N	49	18	67
	%	77.80%	66.70%	74.40%
Total	N	63	27	90
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
Not relevant	N	1	0	1
	%	2.30%	0.00%	1.10%
Somewhat relevant	N	8	12	20
	%	18.20%	26.10%	22.20%
Unsure / do not know	N	0	2	2
	%	0.00%	4.30%	2.20%
Very relevant	N	35	32	67
	%	79.50%	69.60%	74.40%
Total	N	44	46	90
	%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	0	1
	%	1.60%	0.00%	0.00%	0.70%
Somewhat relevant	N	14	8	8	30
	%	21.90%	14.80%	29.60%	20.70%
Unsure / do not know	N	0	0	2	2
	%	0.00%	0.00%	7.40%	1.40%
Very relevant	N	49	46	17	112
	%	76.60%	85.20%	63.00%	77.20%
Total	N	64	54	27	145
	%	100.00%	100.00%	100.00%	100.00%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for the general public)		MS v SH		
		MS	SH	Total
Not relevant	N	1	0	1
	%	1.50%	0.00%	0.70%
Somewhat relevant	N	11	19	30
	%	16.20%	24.70%	20.70%
Unsure / do not know	N	0	2	2
	%	0.00%	2.60%	1.40%
Very relevant	N	56	56	112
	%	82.40%	72.70%	77.20%
Total	N	68	77	145
	%	100.00%	100.00%	100.00%

Are there any other important issues for addressing antimicrobial resistance not covered by the objectives listed above?		Animal v Human			
		Animal	Human	Both	Total
No, all of the important issues are covered	N	33	28	4	65
	%	51.60%	53.80%	16.00%	46.10%
Unsure / Do not know	N	9	4	4	17
	%	14.10%	7.70%	16.00%	12.10%
Yes	N	22	20	17	59
	%	34.40%	38.50%	68.00%	41.80%
Total	N	64	52	25	141
	%	100.00%	100.00%	100.00%	100.00%

Are there any other important issues for addressing antimicrobial resistance not covered by the objectives listed above?		MS v SH		
		MS	SH	Total
No, all of the important issues are covered	N	34	31	65
	%	50.00%	42.50%	46.10%
Unsure / Do not know	N	10	7	17
	%	14.70%	9.60%	12.10%
Yes	N	24	35	59
	%	35.30%	47.90%	41.80%
Total	N	68	73	141
	%	100.00%	100.00%	100.00%

Do you expect some of these issues to become more important in the next 5-10 years than they are now?		Animal v Human			
		Animal	Human	Both	Total
No, I expect these issues to decrease in importance in the next 5-10 years	N	2	0	0	2
	%	3.10%	0.00%	0.00%	1.40%
No, I expect these issues to remain at the same level of importance as they are now	N	10	10	3	23
	%	15.60%	19.20%	11.50%	16.20%
Unsure / Do not know	N	6	0	0	6
	%	9.40%	0.00%	0.00%	4.20%
Yes, all of these issues will become more important in 5-10 years	N	21	26	13	60
	%	32.80%	50.00%	50.00%	42.30%
Yes, some of them will become more important in 5-10 years	N	25	16	10	51
	%	39.10%	30.80%	38.50%	35.90%
Total	N	64	52	26	142
	%	100.00%	100.00%	100.00%	100.00%

Do you expect some of these issues to become more important in the next 5-10 years than they are now?		MS v SH		
		MS	SH	Total
No, I expect these issues to decrease in importance in the next 5-10 years	N	2	0	2
	%	3.00%	0.00%	1.40%
No, I expect these issues to remain at the same level of importance as they are now	N	18	5	23
	%	26.90%	6.70%	16.20%
Unsure / Do not know	N	4	2	6
	%	6.00%	2.70%	4.20%
Yes, all of these issues will become more important in 5-10 years	N	28	32	60
	%	41.80%	42.70%	42.30%
Yes, some of them will become more important in 5-10 years	N	15	36	51
	%	22.40%	48.00%	35.90%
Total	N	67	75	142
	%	100.00%	100.00%	100.00%

Distribution of actions

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
No	N	7	8	15
	%	13.5%	30.8%	19.2%
Unsure / do not know	N	11	5	16
	%	21.2%	19.2%	20.5%
Yes	N	34	13	47
	%	65.4%	50.0%	60.3%
Total	N	52	26	78
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
No	N	5	10	15
	%	17.2%	20.4%	19.2%
Unsure / Do not know	N	5	11	16
	%	17.2%	22.4%	20.5%
Yes	N	19	28	47
	%	65.5%	57.1%	60.3%
Total	N	29	49	78
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
No	N	13	8	21
	%	20.3%	30.8%	23.3%
Unsure / do not know	N	18	4	22
	%	28.1%	15.4%	24.4%
Yes	N	33	14	47
	%	51.6%	53.8%	52.2%
Total	N	64	26	90
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
No	N	8	13	21
	%	18.2%	28.3%	23.3%
Unsure / Do not know	N	10	12	22
	%	22.7%	26.1%	24.4%
Yes	N	26	21	47
	%	59.1%	45.7%	52.2%
Total	N	44	46	90
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
No	N	7	6	13
	%	13.7%	23.1%	16.9%
Unsure / do not know	N	11	6	17
	%	21.6%	23.1%	22.1%
Yes	N	33	14	47
	%	64.7%	53.8%	61.0%
Total	N	51	26	77
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
No	N	2	11	13
	%	7.1%	22.4%	16.9%
Unsure / Do not know	N	5	12	17
	%	17.9%	24.5%	22.1%
Yes	N	21	26	47
	%	75.0%	53.1%	61.0%
Total	N	28	49	77
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
No	N	7	4	11
	%	10.9%	16.0%	12.4%
Unsure / do not know	N	21	5	26
	%	32.8%	20.0%	29.2%
Yes	N	36	16	52
	%	56.3%	64.0%	58.4%
Total	N	64	25	89
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
No	N	3	8	11
	%	6.8%	17.8%	12.4%
Unsure / Do not know	N	12	14	26
	%	27.3%	31.1%	29.2%
Yes	N	29	23	52
	%	65.9%	51.1%	58.4%
Total	N	44	45	89
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
No	N	6	10	7	23
	%	9.40%	19.20%	26.90%	16.20%
Unsure / do not know	N	34	19	8	61
	%	53.10%	36.50%	30.80%	43.00%
Yes	N	24	23	11	58
	%	37.50%	44.20%	42.30%	40.80%
Total	N	64	52	26	142
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
No	N	10	13	23
	%	15.2%	17.1%	16.2%
Unsure / Do not know	N	27	34	61
	%	40.9%	44.7%	43.0%
Yes	N	29	29	58
	%	43.9%	38.2%	40.8%
Total	N	66	76	142
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
No	N	12	12	10	34
	%	18.80%	23.10%	38.50%	23.90%
Unsure / do not know	N	32	17	6	55
	%	50.00%	32.70%	23.10%	38.70%
Yes	N	20	23	10	53
	%	31.30%	44.20%	38.50%	37.30%
Total	N	64	52	26	142
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
No	N	11	23	34
	%	16.7%	30.3%	23.9%
Unsure / Do not know	N	29	26	55
	%	43.9%	34.2%	38.7%
Yes	N	26	27	53
	%	39.4%	35.5%	37.3%
Total	N	66	76	142
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	12	9	7	28
	%	18.80%	17.30%	26.90%	19.70%
Unsure / do not know	N	16	14	4	34
	%	25.00%	26.90%	15.40%	23.90%
Yes	N	36	29	15	80
	%	56.30%	55.80%	57.70%	56.30%
Total	N	64	52	26	142
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	8	20	28
	%	12.1%	26.3%	19.7%
Unsure / Do not know	N	15	19	34
	%	22.7%	25.0%	23.9%
Yes	N	43	37	80
	%	65.2%	48.7%	56.3%
Total	N	66	76	142
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	15	7	7	29
	%	23.80%	13.50%	26.90%	20.60%
Unsure / do not know	N	16	13	5	34
	%	25.40%	25.00%	19.20%	24.10%
Yes	N	32	32	14	78
	%	50.80%	61.50%	53.80%	55.30%
Total	N	63	52	26	141
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	9	20	29
	%	13.8%	26.3%	20.6%
Unsure / Do not know	N	15	19	34
	%	23.1%	25.0%	24.1%
Yes	N	41	37	78
	%	63.1%	48.7%	55.3%
Total	N	65	76	141
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	9	5	4	18
	%	14.10%	9.60%	15.40%	12.70%
Unsure / do not know	N	14	14	6	34
	%	21.90%	26.90%	23.10%	23.90%
Yes	N	41	33	16	90
	%	64.10%	63.50%	61.50%	63.40%
Total	N	64	52	26	142
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	4	14	18
	%	6.1%	18.4%	12.7%
Unsure / Do not know	N	12	22	34
	%	18.2%	28.9%	23.9%
Yes	N	50	40	90
	%	75.8%	52.6%	63.4%
Total	N	66	76	142
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
No	N	4	2	6
	%	7.7%	7.7%	7.7%
Unsure / do not know	N	14	7	21
	%	26.9%	26.9%	26.9%
Yes	N	34	17	51
	%	65.4%	65.4%	65.4%
Total	N	52	26	78
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in human)		MS v SH		
		MS	SH	Total
No	N	0	6	6
	%	0.0%	12.2%	7.7%
Unsure / Do not know	N	5	16	21
	%	17.2%	32.7%	26.9%
Yes	N	24	27	51
	%	82.8%	55.1%	65.4%
Total	N	29	49	78
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
No	N	12	4	16
	%	18.8%	15.4%	17.8%
Unsure / do not know	N	13	6	19
	%	20.3%	23.1%	21.1%
Yes	N	39	16	55
	%	60.9%	61.5%	61.1%
Total	N	64	26	90
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
No	N	6	10	16
	%	13.6%	21.7%	17.8%
Unsure / Do not know	N	7	12	19
	%	15.9%	26.1%	21.1%
Yes	N	31	24	55
	%	70.5%	52.2%	61.1%
Total	N	44	46	90
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	7	8	5	20
	%	10.90%	15.40%	19.20%	14.10%
Unsure / do not know	N	26	21	7	54
	%	40.60%	40.40%	26.90%	38.00%
Yes	N	31	23	14	68
	%	48.40%	44.20%	53.80%	47.90%
Total	N	64	52	26	142
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	8	12	20
	%	12.1%	15.8%	14.1%
Unsure / Do not know	N	25	29	54
	%	37.9%	38.2%	38.0%
Yes	N	33	35	68
	%	50.0%	46.1%	47.9%
Total	N	66	76	142
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
No	N	8	11	4	23
	%	12.50%	21.20%	15.40%	16.20%
Unsure / do not know	N	24	18	9	51
	%	37.50%	34.60%	34.60%	35.90%
Yes	N	32	23	13	68
	%	50.00%	44.20%	50.00%	47.90%
Total	N	64	52	26	142
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
No	N	10	13	23
	%	15.2%	17.1%	16.2%
Unsure / Do not know	N	23	28	51
	%	34.8%	36.8%	35.9%
Yes	N	33	35	68
	%	50.0%	46.1%	47.9%
Total	N	66	76	142
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
No	N	8	5	13
	%	15.7%	19.2%	16.9%
Unsure / do not know	N	13	9	22
	%	25.5%	34.6%	28.6%
Yes	N	30	12	42
	%	58.8%	46.2%	54.5%
Total	N	51	26	77
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
No	N	2	11	13
	%	6.9%	22.9%	16.9%
Unsure / Do not know	N	6	16	22
	%	20.7%	33.3%	28.6%
Yes	N	21	21	42
	%	72.4%	43.8%	54.5%
Total	N	29	48	77
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
No	N	6	7	13
	%	9.4%	26.9%	14.4%
Unsure / do not know	N	19	8	27
	%	29.7%	30.8%	30.0%
Yes	N	39	11	50
	%	60.9%	42.3%	55.6%
Total	N	64	26	90
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
No	N	4	9	13
	%	8.9%	20.0%	14.4%
Unsure / Do not know	N	12	15	27
	%	26.7%	33.3%	30.0%
Yes	N	29	21	50
	%	64.4%	46.7%	55.6%
Total	N	45	45	90
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
No	N	8	5	7	20
	%	12.30%	9.80%	29.20%	14.30%
Unsure / do not know	N	25	15	8	48
	%	38.50%	29.40%	33.30%	34.30%
Yes	N	32	31	9	72
	%	49.20%	60.80%	37.50%	51.40%
Total	N	65	51	24	140
	%	100.00%	100.00%	100.00%	100.00%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for the general public)		MS v SH		
		MS	SH	Total
No	N	5	15	20
	%	7.6%	20.3%	14.3%
Unsure / Do not know	N	21	27	48
	%	31.8%	36.5%	34.3%
Yes	N	40	32	72
	%	60.6%	43.2%	51.4%
Total	N	66	74	140
	%	100.0%	100.0%	100.0%

1.3   Effectiveness

Holistic approach

The EU Action Plan states that, because antimicrobial resistance can spread between humans and animals and cross borders, tackling antimicrobial resistance requires a holistic approach involving many different sectors (e.g. medicine, veterinary medicine, animal husbandry, agriculture, environment and trade). Do you agree with the need for a holistic approach?		Animal v Human			
		Animal	Human	Both	Total
No	N	1	1	0	2
	%	1.5%	1.9%	0.0%	1.4%
Unsure / Do not know	N	0	1	0	1
	%	0.0%	1.9%	0.0%	0.7%
Yes	N	64	51	28	143
	%	98.5%	96.2%	100.0%	97.9%
Total	N	65	53	28	146
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan states that, because antimicrobial resistance can spread between humans and animals and cross borders, tackling antimicrobial resistance requires a holistic approach involving many different sectors (e.g. medicine, veterinary medicine, animal husbandry, agriculture, environment and trade). Do you agree with the need for a holistic approach?		MS v SH		
		MS	SH	Total
No	N	7	21	28
	%	10.30%	28.00%	19.60%
Unsure / Do not know	N	0	1	1
	%	0.0%	1.3%	.7%
Yes	N	68	75	143
	%	98.6%	97.4%	97.9%
Total	N	69	77	146
	%	100.0%	100.0%	100.0%

Does the EU Action Plan capture this holistic approach?		Animal v Human			
		Animal	Human	Both	Total
No	N	10	7	11	28
	%	15.6%	13.7%	39.3%	19.6%
Unsure / Do not know	N	10	8	7	25
	%	15.6%	15.7%	25.0%	17.5%
Yes	N	44	36	10	90
	%	68.8%	70.6%	35.7%	62.9%
Total	N	64	51	28	143
	%	100.0%	100.0%	100.0%	100.0%

Does the EU Action Plan capture this holistic approach?		MS v SH		
		MS	SH	Total
No	N	7	21	28
	%	10.3%	28.0%	19.6%
Unsure / Do not know	N	8	17	25
	%	11.8%	22.7%	17.5%
Yes	N	53	37	90
	%	77.9%	49.3%	62.9%
Total	N	68	75	143
	%	100.0%	100.0%	100.0%

Trends

In the past four years (since 2011), what has been the trend in the total consumption of antimicrobials for use in humans in the country in which you live?		Animal v Human		
		Human	Both	Total
Decrease in the use of antimicrobials	N	16	5	21
	%	30.80%	18.50%	26.60%
Increase in the use of antimicrobials	N	16	10	26
	%	30.80%	37.00%	32.90%
No change in the use of antimicrobials	N	10	6	16
	%	19.20%	22.20%	20.30%
Unsure / Do not know	N	10	6	16
	%	19.20%	22.20%	20.30%
Total	N	52	27	79
	%	100.00%	100.00%	100.00%

In the past four years (since 2011), what has been the trend in the total consumption of antimicrobials for use in humans in the country in which you live?		MS v SH		
		MS	SH	Total
Decrease in the use of antimicrobials	N	12	9	21
	%	38.7%	18.8%	26.6%
Increase in the use of antimicrobials	N	8	18	26
	%	25.8%	37.5%	32.9%
No change in the use of antimicrobials	N	8	8	16
	%	25.8%	16.7%	20.3%
Unsure / Do not know	N	3	13	16
	%	9.7%	27.1%	20.3%
Total	N	31	48	79
	%	100.0%	100.0%	100.0%

Can the trend in the total consumption of antimicrobials for use in humans be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	18	8	26
	%	41.90%	38.10%	40.60%
Unsure / Do not know	N	18	11	29
	%	41.90%	52.40%	45.30%
Yes	N	7	2	9
	%	16.30%	9.50%	14.10%
Total	N	43	21	64
	%	100.00%	100.00%	100.00%

Can the trend in the total consumption of antimicrobials for use in humans be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	14	12	26
	%	50.0%	33.3%	40.6%
Unsure / Do not know	N	11	18	29
	%	39.3%	50.0%	45.3%
Yes	N	3	6	9
	%	10.7%	16.7%	14.1%
Total	N	28	36	64
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what has been the trend in the appropriate use of antimicrobials in humans in the country in which you live?		Animal v Human		
		Human	Both	Total
Decrease in appropriate use of antimicrobials	N	5	2	7
	%	9.43%	7.41%	8.75%
Increase in appropriate use of antimicrobials	N	21	8	29
	%	39.60%	29.60%	36.30%
No change in appropriate use of antimicrobials	N	15	10	25
	%	28.30%	37.04%	31.25%
Unsure / Do not know	N	12	7	19
	%	22.64%	25.93%	23.75%
Total	N	53	27	80
	%	100.00%	100.00%	100.00%

In the past four years (since 2011), what has been the trend in the appropriate use of antimicrobials in humans in the country in which you live?		MS v SH		
		MS	SH	Total
Decrease in appropriate use of antimicrobials	N	3	4	7
	%	9.70%	8.20%	8.80%
Increase in appropriate use of antimicrobials	N	11	18	29
	%	35.50%	36.70%	35.00%
No change in appropriate use of antimicrobials	N	8	17	25
	%	25.80%	34.70%	31.30%
Unsure / Do not know	N	9	10	19
	%	29.00%	20.40%	23.80%
Total	N	31	49	80
	%	100.00%	100.00%	100.00%

Can the trend in the appropriate use of antimicrobials in humans be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	14	6	20
	%	34.15%	28.57%	32.26%
Unsure / Do not know	N	14	7	21
	%	34.15%	33.33%	33.87%
Yes	N	13	8	21
	%	31.71%	38.10%	33.87%
Total	N	41	21	62
	%	100.00%	100.00%	100.00%

Can the trend in the appropriate use of antimicrobials in humans be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	11	9	20
	%	47.80%	23.10%	32.30%
Unsure / Do not know	N	8	13	21
	%	34.80%	33.30%	33.90%
Yes	N	4	17	21
	%	17.40%	43.60%	33.90%
Total	N	23	39	62
	%	100.00%	100.00%	100.00%

In the past four years (since 2011), what has been the trend in country-level indicators of resistance in microorganisms of major public health importance (e.g. multidrug-resistant tuberculosis or multidrug-resistant Salmonella), including Hospital Acquired Infections (HAIs) in the country in which you live?		Animal v Human		
		Human	Both	Total
General improvement	N	13	2	15
	%	24.50%	7.40%	18.80%
Generally becoming worse	N	22	13	35
	%	41.50%	48.10%	43.80%
No change	N	9	6	15
	%	17.00%	22.20%	18.80%
Unsure / Do not know	N	9	6	15
	%	17.00%	22.20%	18.80%
Total	N	53	27	80
	%	100.00%	100.00%	100.00%

In the past four years (since 2011), what has been the trend in country-level indicators of resistance in microorganisms of major public health importance (e.g. multidrug-resistant tuberculosis or multidrug-resistant Salmonella), including Hospital Acquired Infections (HAIs) in the country in which you live?		MS v SH		
		MS	SH	Total
General improvement	N	7	8	15
	%	22.60%	16.30%	18.80%
Generally becoming worse	N	14	21	35
	%	45.20%	42.90%	43.80%
No change	N	7	8	15
	%	22.60%	16.30%	18.80%
Unsure / Do not know	N	3	12	15
	%	9.70%	24.50%	18.80%
Total	N	31	49	80
	%	100.00%	100.00%	100.00%

Can the trend in country-level indicators of resistance in microorganisms of major public health importance be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	20	6	26
	%	45.50%	28.60%	40.00%
Unsure / Do not know	N	13	11	24
	%	29.50%	52.40%	36.90%
Yes	N	11	4	15
	%	25.00%	19.00%	23.10%
Total	N	44	21	65
	%	100.00%	100.00%	100.00%

Can the trend in country-level indicators of resistance in microorganisms of major public health importance be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	14	12	26
	%	50.00%	32.40%	40.00%
Unsure / Do not know	N	8	16	24
	%	28.60%	43.20%	36.90%
Yes	N	6	9	15
	%	21.40%	24.30%	23.10%
Total	N	28	37	65
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of prescription-only requirements for antimicrobial agents.)		Animal v Human		
		Human	Both	Total
Achieved	N	18	12	30
	%	36.00%	44.40%	39.00%
No progress	N	5	2	7
	%	10.00%	7.40%	9.10%
Not applicable	N	7	1	8
	%	14.00%	3.70%	10.40%
Partly achieved	N	13	3	16
	%	26.00%	11.10%	20.80%
Unsure / Do not know		7	9	16
		14.00%	33.30%	20.80%
Total	N	50	27	77
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of prescription-only requirements for antimicrobial agents.)		MS v SH		
		MS	SH	Total
Achieved	N	19	11	30
	%	61.30%	23.90%	39.00%
No progress	N	0	7	7
	%	0.00%	15.20%	9.10%
Not applicable	N	7	1	8
	%	22.60%	2.20%	10.40%
Partly achieved	N	3	13	16
	%	9.70%	28.30%	20.80%
Unsure / Do not know	N	2	14	16
	%	6.50%	30.40%	20.80%
Total	N	31	46	77
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of control measures against antimicrobial resistance in nursing homes and long-term care facilities.)		Animal v Human		
		Human	Both	Total
Achieved	N	3	3	6
	%	6.00%	11.10%	7.80%
No progress	N	10	3	13
	%	20.00%	11.10%	16.90%
Not applicable	N	1	0	1
	%	2.00%	0.00%	1.30%
Partly achieved	N	25	11	36
	%	50.00%	40.70%	46.80%
Unsure / Do not know		11	10	21
		22.00%	37.00%	27.30%
Total	N	50	27	77
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of control measures against antimicrobial resistance in nursing homes and long-term care facilities.)		MS v SH		
		MS	SH	Total
Achieved	N	4	2	6
	%	12.90%	4.30%	7.80%
No progress	N	5	8	13
	%	16.10%	17.40%	16.90%
Not applicable	N	1	0	1
	%	3.20%	0.00%	1.30%
Partly achieved	N	14	22	36
	%	45.20%	47.80%	46.80%
Unsure / Do not know	N	7	14	21
	%	22.60%	30.40%	27.30%
Total	N	31	46	77
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Development of education and training for healthcare workers on all aspects of antimicrobial resistance.)		Animal v Human		
		Human	Both	Total
Achieved	N	6	5	11
	%	12.00%	18.50%	14.30%
No progress	N	5	2	7
	%	10.00%	7.40%	9.10%
Partly achieved	N	32	13	45
	%	64.00%	48.10%	58.40%
Unsure / Do not know		7	7	14
		14.00%	25.90%	18.20%
Total	N	50	27	77
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Development of education and training for healthcare workers on all aspects of antimicrobial resistance.)		MS v SH		
		MS	SH	Total
Achieved	N	10	1	11
	%	32.30%	2.20%	14.30%
No progress	N	2	5	7
	%	6.50%	10.90%	9.10%
Partly achieved	N	16	29	45
	%	51.60%	63.00%	58.40%
Unsure / Do not know	N	3	11	14
	%	9.70%	23.90%	18.20%
Total	N	31	46	77
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Improvement in monitoring and assessment at national level of the implementation and efficiency of national strategies and control measures)		Animal v Human		
		Human	Both	Total
Achieved	N	7	5	12
	%	14.00%	19.20%	15.80%
No progress	N	7	0	7
	%	14.00%	0.00%	9.20%
Not applicable	N	2	0	2
	%	4.00%	0.00%	2.60%
Partly achieved	N	29	14	43
	%	58.00%	53.80%	56.60%
Unsure / Do not know		5	7	12
		10.00%	26.90%	15.80%
Total	N	50	26	76
	%	100.00%	100.00%	100.00%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Improvement in monitoring and assessment at national level of the implementation and efficiency of national strategies and control measures)		MS v SH		
		MS	SH	Total
Achieved	N	10	2	12
	%	32.30%	4.40%	15.80%
No progress	N	4	3	7
	%	12.90%	6.70%	9.20%
Not applicable	N	0	2	2
	%	0.00%	4.40%	2.60%
Partly achieved	N	16	27	43
	%	51.60%	60.00%	56.60%
Unsure / Do not know	N	1	11	12
	%	3.20%	24.40%	15.80%
Total	N	31	45	76
	%	100.00%	100.00%	100.00%

Can these developments be attributed (wholly or in part) to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	5	4	9
	%	10.00%	14.80%	11.70%
Unsure / Do not know	N	25	15	40
	%	50.00%	55.60%	51.90%
Yes	N	20	8	28
	%	40.00%	29.60%	36.40%
Total	N	50	27	77
	%	100.00%	100.00%	100.00%

Can these developments be attributed (wholly or in part) to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	7	2	9
	%	22.60%	4.30%	11.70%
Unsure / Do not know	N	15	25	40
	%	48.40%	54.30%	51.90%
Yes	N	9	19	28
	%	29.00%	41.30%	36.40%
Total	N	31	46	77
	%	100.00%	100.00%	100.00%

In the past four years (since 2011), what do you think has been the trend in the total consumption of antimicrobials for use in animals in the country in which you live?		MS v SH		
		MS	SH	Total
Decrease in use of antimicrobials in animals	N	24	29	53
	%	53.30%	64.40%	58.90%
Increase in use of antimicrobials in animals	N	8	6	14
	%	17.80%	13.30%	15.60%
No change	N	11	3	14
	%	24.40%	6.70%	15.60%
Unsure / Do not know	N	2	7	9
	%	4.4%	15.5%	10.0%
Total	N	45	45	90
	%	100.00%	100.00%	100.00%

In the past four years (since 2011), what do you think has been the trend in the total consumption of antimicrobials for use in animals in the country in which you live?		Animal v Human		
		Animal	Both	Total
Decrease in use of antimicrobials in animals	N	36	17	53
	%	57.10%	63.00%	58.90%
Increase in use of antimicrobials in animals	N	10	4	14
	%	15.90%	14.80%	15.60%
No change	N	12	2	14
	%	19.00%	7.40%	15.60%
Unsure / Do not know	N	5	4	9
	%	7.9%	14.8%	10.0%
Total	N	63	27	90
	%	100.00%	100.00%	100.00%

Can the trend in the total consumption of antimicrobials for use in animals be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	15	7	22
	%	34.90%	17.90%	26.80%
Unsure / Do not know	N	16	13	29
	%	37.20%	33.30%	35.30%
Yes	N	12	19	31
	%	27.90%	48.70%	37.80%
Total	N	43	39	82
	%	100.0%	100.0%	100.0%

Can the trend in the total consumption of antimicrobials for use in animals be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Animal	Both	Total
No	N	17	5	22
	%	28.80%	21.70%	26.80%
Unsure / Do not know	N	18	11	29
	%	30.50%	47.80%	35.30%
Yes	N	24	7	31
	%	40.70%	30.40%	37.80%
Total	N	59	23	82
	%	100.0%	100.0%	100.0%

Developing new AMs

Improvement in efficiency of research and development through open sharing of knowledge (e.g. through the launch of a programme for research on new antibiotics with the European Federation of Pharmaceutical Industries and Associations within the Innovative Medicines Initiative Joint Undertaking) in the country in which you live.		Animal v Human			
		Animal	Human	Both	Total
There has been no progress in this area since 2011	N	1	19	4	24
	%	6.70%	37.30%	14.80%	25.80%
This has partly been achieved	N	1	10	12	23
	%	6.70%	19.60%	44.40%	24.70%
Unsure / Do not know	N	13	19	9	41
	%	86.70%	37.30%	33.30%	44.10%
Yes, this has been achieved	N	0	3	2	5
	%	0.00%	5.90%	7.40%	5.40%
Total	N	15	51	27	93
	%	100.00%	100.00%	100.00%	100.00%

Improvement in efficiency of research and development through open sharing of knowledge (e.g. through the launch of a programme for research on new antibiotics with the European Federation of Pharmaceutical Industries and Associations within the Innovative Medicines Initiative Joint Undertaking) in the country in which you live.		MS v SH		
		MS	SH	
There has been no progress in this area since 2011	N	11	13	24
	%	34.40%	21.30%	25.80%
This has partly been achieved	N	7	16	23
	%	21.90%	26.20%	24.70%
Unsure / Do not know	N	13	28	41
	%	40.60%	45.90%	44.10%
Yes, this has been achieved	N	1	4	5
	%	3.10%	6.60%	5.40%
Total	N	32	61	93
	%	100.00%	100.00%	100.00%

Can this development in open sharing of knowledge be attributed (wholly or in part), to the EU Action Plan?		Animal v Human			
		Animal	Human	Both	Total
No	N	1	9	1	11
	%	16.70%	33.30%	5.90%	22.00%
Unsure / Do not know	N	5	12	4	21
	%	83.30%	44.40%	23.50%	42.00%
Yes	N	0	6	12	18
	%	0.00%	22.20%	70.60%	36.00%
Total	N	6	27	17	50
	%	100.00%	100.00%	100.00%	100.00%

Can this development in open sharing of knowledge be attributed (wholly or in part), to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	2	9	11
	%	14.30%	25.00%	22.00%
Unsure / Do not know	N	8	13	21
	%	57.10%	36.10%	42.00%
Yes	N	4	14	18
	%	28.60%	38.90%	36.00%
Total	N	14	36	50
	%	100.00%	100.00%	100.00%

Establishment of adequate market and pricing conditions for new antibiotics in the country in which you live.		Animal v Human			
		Animal	Human	Both	Total
There has been no progress in this area since 2011	N	2	21	10	33
	%	13.30%	42.00%	37.00%	35.90%
This has partly been achieved	N	0	8	2	10
	%	0.00%	16.00%	7.40%	10.90%
Unsure / Do not know	N	13	20	15	48
	%	86.70%	40.00%	55.60%	52.20%
Yes, this has been achieved	N	0	1	0	1
	%	0.00%	2.00%	0.00%	1.10%
Total	N	15	50	27	92
	%	100.00%	100.00%	100.00%	100.00%

Establishment of adequate market and pricing conditions for new antibiotics in the country in which you live.		MS v SH		
		MS	SH	
There has been no progress in this area since 2011	N	11	22	33
	%	34.40%	36.70%	35.90%
This has partly been achieved	N	4	6	10
	%	12.50%	10.00%	10.90%
Unsure / Do not know	N	16	32	48
	%	50.00%	53.30%	52.20%
Yes, this has been achieved	N	1	0	1
	%	3.10%	0.00%	1.10%
Total	N	32	60	92
	%	100.00%	100.00%	100.00%

Can this development in the establishment of adequate market and pricing conditions for new antibiotics be attributed (wholly or in part), to the EU Action Plan?		Animal v Human			
		Animal	Human	Both	Total
No	N	1	13	2	16
	%	16.70%	48.10%	22.20%	38.10%
Unsure / Do not know	N	5	9	6	20
	%	83.30%	33.30%	66.70%	47.60%
Yes	N	0	5	1	6
	%	0.00%	18.50%	11.10%	14.30%
Total	N	6	27	9	42
	%	100.00%	100.00%	100.00%	100.00%

Can this development in the establishment of adequate market and pricing conditions for new antibiotics be attributed (wholly or in part), to the EU Action Plan?		MS v SH		
		MS	SH	
No	N	5	11	16
	%	45.50%	35.50%	38.10%
Unsure / Do not know	N	6	14	20
	%	54.50%	45.20%	47.60%
Yes	N	0	6	6
	%	0.00%	19.40%	14.30%
Total	N	11	31	42
	%	100.00%	100.00%	100.00%

Implementing fast track procedures for the marketing authorisation of new antimicrobials in the country in which you live.		Animal v Human			
		Animal	Human	Both	Total
There has been no progress in this area since 2011	N	1	11	4	16
	%	6.70%	22.00%	14.80%	17.40%
This has partly been achieved	N	1	9	2	12
	%	6.70%	18.00%	7.40%	13.00%
Unsure / Do not know	N	13	29	21	63
	%	86.70%	58.00%	77.80%	68.50%
Yes, this has been achieved	N	0	1	0	1
	%	0.00%	2.00%	0.00%	1.10%
Total	N	15	50	27	92
	%	100.00%	100.00%	100.00%	100.00%

Implementing fast track procedures for the marketing authorisation of new antimicrobials in the country in which you live.		MS v SH		
		MS	SH	
There has been no progress in this area since 2011	N	6	10	16
	%	18.80%	16.70%	17.40%
This has partly been achieved	N	4	8	12
	%	12.50%	13.30%	13.00%
Unsure / Do not know	N	22	41	63
	%	68.80%	68.30%	68.50%
Yes, this has been achieved	N	0	1	1
	%	0.00%	1.70%	1.10%
Total	N	32	60	92
	%	100.00%	100.00%	100.00%

Can this development in implementing fast track procedures for the marketing authorisation of new antimicrobials be attributed (wholly or in part), to the EU Action Plan?		Animal v Human			
		Animal	Human	Both	Total
No	N	1	6	2	9
	%	16.70%	31.60%	40.00%	30.00%
Unsure / Do not know	N	5	10	1	16
	%	83.30%	52.60%	20.00%	53.33%
Yes	N	0	3	2	5
	%	0.00%	15.80%	40.00%	16.67%
Total	N	6	19	5	30
	%	100.00%	100.00%	100.00%	100.00%

Can this development in implementing fast track procedures for the marketing authorisation of new antimicrobials be attributed (wholly or in part), to the EU Action Plan?		MS v SH		
		MS	SH	
No	N	2	7	9
	%	18.20%	36.80%	30.00%
Unsure / Do not know	N	7	9	16
	%	63.60%	47.40%	53.30%
Yes	N	2	3	5
	%	18.20%	15.80%	16.70%
Total	N	11	19	30
	%	100.00%	100.00%	100.00%

Surveillance

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (Reviews of the monitoring of antimicrobial resistance in zoonotic bacteria and indicator bacteria from humans, animals and food.)		Animal v Human		
		Human	Both	
Effective	N	14	11	25
	%	30.43%	40.74%	34.25%
Not effective	N	1	0	1
	%	2.17%	0.00%	1.37%
Partly effective	N	15	12	27
	%	32.61%	44.44%	36.99%
Unsure / Do not know	N	16	4	20
	%	34.78%	14.81%	27.40%
Total	N	46	27	73
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (Reviews of the monitoring of antimicrobial resistance in zoonotic bacteria and indicator bacteria from humans, animals and food.)		MS v SH		
		MS	SH	Total
Effective	N	14	11	25
	%	50.00%	24.40%	34.20%
Not effective	N	0	1	1
	%	0.00%	2.20%	1.40%
Partly effective	N	11	16	27
	%	39.30%	35.60%	37.00%
Unsure / Do not know	N	3	17	20
	%	10.70%	37.80%	27.40%
Total	N	28	45	73
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.)		Animal v Human		
		Human	Both	
Effective	N	13	10	23
	%	28.26%	37.04%	31.51%
Not effective	N	5	0	5
	%	10.87%	0.00%	6.85%
Partly effective	N	12	13	25
	%	26.09%	48.15%	34.25%
Unsure / Do not know	N	16	4	20
	%	34.78%	14.81%	27.40%
Total	N	46	27	73
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.)		MS v SH		
		MS	SH	Total
Effective	N	11	12	23
	%	39.30%	26.70%	31.50%
Not effective	N	2	3	5
	%	7.10%	6.70%	6.80%
Partly effective	N	10	15	25
	%	35.70%	33.30%	34.20%
Unsure / Do not know	N	5	15	20
	%	17.90%	33.30%	27.40%
Total	N	28	45	73
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	36	16	52
	%	78.30%	59.30%	71.20%
Not changed	N	6	3	9
	%	13.00%	11.10%	12.30%
Unsure / Do not know	N	4	8	12
	%	8.70%	29.60%	16.40%
Total	N	46	27	73
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	23	29	52
	%	82.10%	64.40%	71.20%
Not changed	N	3	6	9
	%	10.70%	13.30%	12.30%
Unsure / Do not know	N	2	10	12
	%	7.10%	22.20%	16.40%
Total	N	28	45	73
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	29	16	45
	%	63.00%	59.30%	61.60%
Not changed	N	9	3	12
	%	19.60%	11.10%	16.40%
Unsure / Do not know	N	8	8	16
	%	17.40%	29.60%	21.90%
Total	N	46	27	73
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	19	26	45
	%	67.90%	57.80%	61.60%
Not changed	N	5	7	12
	%	17.90%	15.60%	16.40%
Unsure / Do not know	N	4	12	16
	%	14.30%	26.70%	21.90%
Total	N	28	45	73
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Human	Both	Total
Became worse	N	0	1	1
	%	0.00%	3.70%	1.40%
Improved	N	29	11	40
	%	63.00%	40.70%	54.80%
Not changed	N	8	5	13
	%	17.40%	18.50%	17.80%
Unsure / Do not know	N	9	10	19
	%	19.60%	37.00%	26.00%
Total	N	46	27	73
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		
		MS	SH	Total
Became worse	N	0	1	1
	%	0.00%	2.20%	1.40%
Improved	N	21	19	40
	%	75.00%	42.20%	54.80%
Not changed	N	4	9	13
	%	14.30%	20.00%	17.80%
Unsure / Do not know	N	3	16	19
	%	10.70%	35.60%	26.00%
Total	N	28	45	73
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	1	1	2
	%	2.20%	3.80%	2.80%
Unsure / Do not know	N	18	14	32
	%	40.00%	53.80%	45.10%
Yes	N	26	11	37
	%	57.80%	42.30%	52.10%
Total	N	45	26	71
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	2	0	2
	%	7.10%	0.00%	2.80%
Unsure / Do not know	N	11	21	32
	%	39.30%	48.80%	45.10%
Yes	N	15	22	37
	%	53.60%	51.20%	52.10%
Total	N	28	43	71
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	36	15	51
	%	80.00%	55.60%	70.80%
Not changed	N	5	3	8
	%	11.10%	11.10%	11.10%
Unsure / Do not know	N	4	9	13
	%	8.90%	33.30%	18.10%
Total	N	45	27	72
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	22	29	51
	%	81.50%	64.40%	70.80%
Not changed	N	3	5	8
	%	11.10%	11.10%	11.10%
Unsure / Do not know	N	2	11	13
	%	7.40%	24.40%	18.10%
Total	N	27	45	72
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	34	14	48
	%	75.60%	51.90%	66.70%
Not changed	N	7	4	11
	%	15.60%	14.80%	15.30%
Unsure / Do not know	N	4	9	13
	%	8.90%	33.30%	18.10%
Total	N	45	27	72
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	21	27	48
	%	77.80%	60.00%	66.70%
Not changed	N	4	7	11
	%	14.80%	15.60%	15.30%
Unsure / Do not know	N	2	11	13
	%	7.40%	24.40%	18.10%
Total	N	27	45	72
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Human	Both	Total
Became worse	N	0	1	1
	%	0.00%	3.70%	1.40%
Improved	N	27	11	38
	%	61.40%	40.70%	53.50%
Not changed	N	9	6	15
	%	20.50%	22.20%	21.10%
Unsure / Do not know	N	8	9	17
	%	18.20%	33.30%	23.90%
Total	N	44	27	71
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		
		MS	SH	Total
Became worse	N	0	1	1
	%	0.00%	2.20%	1.40%
Improved	N	18	20	38
	%	69.20%	44.40%	53.50%
Not changed	N	6	9	15
	%	23.10%	20.00%	21.10%
Unsure / Do not know	N	2	15	17
	%	7.70%	33.30%	23.90%
Total	N	26	45	71
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	2	1	3
	%	4.50%	3.70%	4.20%
Unsure / Do not know	N	16	16	32
	%	36.40%	59.30%	45.10%
Yes	N	26	10	36
	%	59.10%	37.00%	50.70%
Total	N	44	27	71
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	2	1	3
	%	7.40%	2.30%	4.20%
Unsure / Do not know	N	9	23	32
	%	33.30%	52.30%	45.10%
Yes	N	16	20	36
	%	59.30%	45.50%	50.70%
Total	N	27	44	71
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live (or EU). (Reviews of antimicrobial resistance monitoring in zoonotic bacteria and indicator bacteria from humans, animals and food.)		Animal v Human		
		Animal	Both	Total
Effective	N	28	6	34
	%	68.30%	66.70%	68.00%
Partly effective	N	9	2	11
	%	22.00%	22.20%	22.00%
Unsure / Do not know	N	4	1	5
	%	9.80%	11.10%	10.00%
Total	N	41	9	50
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live (or EU). (Reviews of antimicrobial resistance monitoring in zoonotic bacteria and indicator bacteria from humans, animals and food.)		MS v SH		
		MS	SH	Total
Effective	N	32	2	34
	%	71.1%	40.0%	68.0%
Partly effective	N	9	2	11
	%	20.0%	40.0%	22.0%
Unsure / Do not know	N	4	1	5
	%	8.9%	20.0%	10.0%
Total	N	45	5	50
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live (or EU). (With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.)		Animal v Human		
		Animal	Both	Total
Effective	N	22	4	26
	%	55.00%	44.40%	53.10%
Not effective	N	4	0	4
	%	10.00%	0.00%	8.20%
Partly effective	N	10	4	14
	%	25.00%	44.40%	28.60%
Unsure / Do not know	N	4	1	5
	%	10.00%	11.10%	10.20%
Total	N	40	9	49
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live (or EU). (With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.)		MS v SH		
		MS	SH	Total
Effective	N	23	3	26
	%	52.3%	60.0%	53.1%
Not effective	N	3	1	4
	%	6.8%	20.0%	8.2%
Partly effective	N	14	0	14
	%	31.8%	0.0%	28.6%
Unsure / Do not know	N	4	1	5
	%	9.1%	20.0%	10.2%
Total	N	44	5	49
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Animal	Both	Total
Became worse	N	1	0	1
	%	1.60%	0.00%	1.10%
Improved	N	49	20	69
	%	79.00%	74.10%	77.50%
Not changed	N	0	1	1
	%	0.00%	3.70%	1.10%
Unsure / Do not know	N	12	6	18
	%	19.40%	22.20%	20.20%
Total	N	62	27	89
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		
		MS	SH	Total
Became worse	N	0	1	1
	%	0.00%	2.30%	1.10%
Improved	N	37	32	69
	%	82.20%	72.70%	77.50%
Not changed	N	0	1	1
	%	0.00%	2.30%	1.10%
Unsure / Do not know	N	8	10	18
	%	17.80%	22.70%	20.20%
Total	N	45	44	89
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		
		Animal	Both	Total
Became worse	N	1	0	1
	%	1.60%	0.00%	1.10%
Improved	N	43	20	63
	%	70.50%	74.10%	71.60%
Not changed	N	3	1	4
	%	4.90%	3.70%	4.50%
Unsure / Do not know	N	14	6	20
	%	23.00%	22.20%	22.70%
Total	N	61	27	88
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Became worse	N	0	1	1
	%	0.00%	2.30%	1.10%
Improved	N	34	29	63
	%	77.30%	65.90%	71.60%
Not changed	N	1	3	4
	%	2.30%	6.80%	4.50%
Unsure / Do not know	N	9	11	20
	%	20.50%	25.00%	22.70%
Total	N	44	44	88
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Animal	Both	Total
Became worse	N	2	1	3
	%	3.20%	3.70%	3.40%
Improved	N	40	18	58
	%	64.50%	66.70%	65.20%
Not changed	N	4	1	5
	%	6.50%	3.70%	5.60%
Unsure / Do not know	N	16	7	23
	%	25.80%	25.90%	25.80%
Total	N	62	27	89
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		
		MS	SH	Total
Became worse	N	1	2	3
	%	2.20%	4.50%	3.40%
Improved	N	34	24	58
	%	75.60%	54.50%	65.20%
Not changed	N	2	3	5
	%	4.40%	6.80%	5.60%
Unsure / Do not know	N	8	15	23
	%	17.80%	34.10%	25.80%
Total	N	45	44	89
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Animal	Both	Total
No	N	2	0	2
	%	3.30%	0.00%	2.30%
Unsure / Do not know	N	20	12	32
	%	33.30%	46.20%	37.20%
Yes	N	38	14	52
	%	63.30%	53.80%	60.50%
Total	N	60	26	86
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	1	1	2
	%	2.30%	2.40%	2.30%
Unsure / Do not know	N	14	18	32
	%	31.80%	42.90%	37.20%
Yes	N	29	23	52
	%	65.90%	54.80%	60.50%
Total	N	44	42	86
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Animal	Both	Total
Became worse	N	1	0	1
	%	1.60%	0.00%	1.10%
Improved	N	47	17	64
	%	77.00%	63.00%	72.70%
Not changed	N	3	3	6
	%	4.90%	11.10%	6.80%
Unsure / Do not know	N	10	7	17
	%	16.40%	25.90%	19.30%
Total	N	61	27	88
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		
		MS	SH	Total
Became worse	N	0	1	1
	%	0.00%	2.30%	1.10%
Improved	N	36	28	64
	%	80.00%	65.10%	72.70%
Not changed	N	2	4	6
	%	4.40%	9.30%	6.80%
Unsure / Do not know	N	7	10	17
	%	15.60%	23.30%	19.30%
Total	N	45	43	88
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		
		Animal	Both	Total
Became worse	N	1	0	1
	%	1.60%	0.00%	1.10%
Improved	N	42	18	60
	%	67.70%	66.70%	67.40%
Not changed	N	7	2	9
	%	11.30%	7.40%	10.10%
Unsure / Do not know	N	12	7	19
	%	19.40%	25.90%	21.30%
Total	N	62	27	89
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Became worse	N	0	1	1
	%	0.00%	2.30%	1.10%
Improved	N	39	21	60
	%	86.70%	47.70%	67.40%
Not changed	N	0	9	9
	%	0.00%	20.50%	10.10%
Unsure / Do not know	N	6	13	19
	%	13.30%	29.50%	21.30%
Total	N	45	44	89
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Animal	Both	Total
Became worse	N	2	0	2
	%	3.20%	0.00%	2.30%
Improved	N	40	15	55
	%	64.50%	60.00%	63.20%
Not changed	N	6	4	10
	%	9.70%	16.00%	11.50%
Unsure / Do not know	N	14	6	20
	%	22.60%	24.00%	23.00%
Total	N	62	25	87
	%	100.00%	100.00%	100.00%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		
		MS	SH	Total
Became worse	N	1	1	2
	%	2.20%	2.40%	2.30%
Improved	N	39	16	55
	%	86.70%	38.10%	63.20%
Not changed	N	0	10	10
	%	0.00%	23.80%	11.50%
Unsure / Do not know	N	5	15	20
	%	11.10%	35.70%	23.00%
Total	N	45	42	87
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Animal	Both	Total
No	N	1	1	2
	%	1.60%	3.70%	2.30%
Unsure / Do not know	N	22	14	36
	%	36.10%	51.90%	40.90%
Yes	N	38	12	50
	%	62.30%	44.40%	56.80%
Total	N	61	27	88
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	1	1	2
	%	2.20%	2.30%	2.30%
Unsure / Do not know	N	13	23	36
	%	28.90%	53.50%	40.90%
Yes	N	31	19	50
	%	68.90%	44.20%	56.80%
Total	N	45	43	88
	%	100.00%	100.00%	100.00%

Animal regulatory framework

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Appropriate warnings and guidance are provided on labels of veterinary antimicrobials.)		Animal v Human		
		Animal	Both	Total
Achieved	N	28	8	36
	%	44.40%	30.80%	40.40%
Not achieved	N	8	2	10
	%	12.70%	7.70%	11.20%
Partly achieved	N	19	9	28
	%	30.2%	34.6%	30.1%
Unsure / Do not know	N	8	7	15
	%	12.70%	26.90%	16.90%
Total	N	63	26	89
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Appropriate warnings and guidance are provided on labels of veterinary antimicrobials.)		MS v SH		
		MS	SH	Total
Achieved	N	21	15	36
	%	47.70%	33.30%	40.40%
Not achieved	N	5	5	10
	%	11.40%	11.10%	11.20%
Partly achieved	N	12	16	28
	%	27.3%	35.6%	31.5%
Unsure / Do not know	N	6	9	15
	%	13.60%	20.00%	16.90%
Total	N	44	45	89
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Restrictions have been considered on regular or off-label use of certain new or critically important antimicrobials for humans in the veterinary sector)		Animal v Human		
		Animal	Both	Total
Achieved	N	18	11	29
	%	28.60%	42.30%	32.53%
Not achieved	N	11	4	15
	%	17.50%	15.40%	16.90%
Partly achieved	N	22	6	28
	%	34.9%	23.1%	31.4%
Unsure / Do not know	N	12	5	17
	%	19.00%	19.20%	19.10%
Total	N	63	26	89
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Restrictions have been considered on regular or off-label use of certain new or critically important antimicrobials for humans in the veterinary sector)		MS v SH		
		MS	SH	Total
Achieved	N	17	12	29
	%	38.60%	26.70%	32.53%
Not achieved	N	11	4	15
	%	18.64%	16.67%	18.07%
Partly achieved	N	12	16	28
	%	27.3%	35.6%	31.4%
Unsure / Do not know	N	7	10	17
	%	15.91%	22.22%	19.10%
Total	N	44	45	89
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Improvements to rules for advertisement of veterinary antimicrobials)		Animal v Human		
		Animal	Both	Total
Achieved	N	19	6	25
	%	30.60%	23.10%	28.40%
Not achieved	N	15	2	17
	%	24.20%	7.70%	19.30%
Partly achieved	N	9	9	18
	%	14.5%	34.6%	20.4%
Unsure / Do not know	N	19	9	28
	%	30.60%	34.60%	31.80%
Total	N	62	26	88
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Improvements to rules for advertisement of veterinary antimicrobials)		MS v SH		
		MS	SH	Total
Achieved	N	14	11	25
	%	32.56%	24.44%	28.41%
Not achieved	N	9	8	17
	%	20.93%	17.78%	19.32%
Partly achieved	N	9	9	18
	%	20.9%	20.0%	20.4%
Unsure / Do not know	N	11	17	28
	%	25.60%	37.80%	31.80%
Total	N	43	45	88
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Authorisation requirements sufficiently address risks and benefits of antimicrobial medicines)		Animal v Human		
		Animal	Both	Total
Achieved	N	31	7	38
	%	50.00%	26.90%	43.20%
Not achieved	N	5	3	8
	%	8.10%	11.50%	9.10%
Partly achieved	N	13	9	22
	%	21.0%	34.6%	25.0%
Unsure / Do not know	N	13	7	20
	%	21.00%	26.90%	22.70%
Total	N	62	26	88
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Authorisation requirements sufficiently address risks and benefits of antimicrobial medicines)		MS v SH		
		MS	SH	Total
Achieved	N	24	14	38
	%	55.80%	31.10%	43.20%
Not achieved	N	3	5	8
	%	7.00%	11.10%	9.10%
Partly achieved	N	9	13	22
	%	20.9%	28.9%	23.9%
Unsure / Do not know	N	7	13	20
	%	16.30%	28.90%	22.70%
Total	N	43	45	88
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Animal	Both	Total
No	N	8	2	10
	%	12.90%	7.70%	11.40%
Unsure / Do not know	N	20	13	33
	%	32.30%	50.00%	37.50%
Yes	N	34	11	45
	%	54.80%	42.30%	51.10%
Total	N	62	26	88
	%	100.00%	100.00%	100.00%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	5	5	10
	%	11.40%	11.40%	11.40%
Unsure / Do not know	N	15	18	33
	%	34.10%	40.90%	37.50%
Yes	N	24	21	45
	%	54.50%	47.70%	51.10%
Total	N	44	44	88
	%	100.00%	100.00%	100.00%

Are you familiar with the recommendations for prudent use of antimicrobials in veterinary medicine?		Animal v Human		
		Animal	Both	Total
No	N	6	4	10
	%	9.50%	14.80%	11.10%
Unsure / Do not know	N	1	4	5
	%	1.60%	14.80%	5.60%
Yes	N	56	19	75
	%	88.90%	70.40%	83.30%
Total	N	63	27	90
	%	100.00%	100.00%	100.00%

Are you familiar with the recommendations for prudent use of antimicrobials in veterinary medicine?		MS v SH		
		MS	SH	Total
No	N	1	9	10
	%	2.20%	20.00%	11.10%
Unsure / Do not know	N	1	4	5
	%	2.20%	8.90%	5.60%
Yes	N	43	32	75
	%	95.60%	71.10%	83.30%
Total	N	45	45	90
	%	100.00%	100.00%	100.00%

In your assessment, will the recommendations for prudent use of antimicrobials in veterinary medicine be effective in improving the prudent use of antimicrobials in veterinary medicine?		Animal v Human		
		Animal	Both	Total
No	N	8	2	10
	%	12.90%	8.00%	11.50%
Unsure / Do not know	N	11	12	23
	%	17.70%	48.00%	26.40%
Yes	N	43	11	54
	%	69.40%	44.00%	62.10%
Total	N	62	25	87
	%	100.00%	100.00%	100.00%

In your assessment, will the recommendations for prudent use of antimicrobials in veterinary medicine be effective in improving the prudent use of antimicrobials in veterinary medicine?		MS v SH		
		MS	SH	Total
No	N	4	6	10
	%	9.50%	13.30%	11.50%
Unsure / Do not know	N	7	16	23
	%	16.70%	35.60%	26.40%
Yes	N	31	23	54
	%	73.80%	51.10%	62.10%
Total	N	42	45	87
	%	100.00%	100.00%	100.00%

First, has the request for scientific advice to clarify whether the development of new veterinary antimicrobials would reduce antimicrobial resistance been an effective step for tackling antimicrobial resistance in the EU?		Animal v Human		
		Animal	Both	Total
It was partly effective	N	11	4	15
	%	17.70%	14.80%	16.90%
No, it was not effective	N	14	7	21
	%	22.60%	25.90%	23.60%
Unsure / Do not know	N	24	14	38
	%	38.70%	51.90%	42.70%
Yes, it was an effective step	N	13	2	15
	%	21.00%	7.40%	16.90%
Total	N	62	27	89
	%	100.00%	100.00%	100.00%

First, has the request for scientific advice to clarify whether the development of new veterinary antimicrobials would reduce antimicrobial resistance been an effective step for tackling antimicrobial resistance in the EU?		MS v SH		
		MS	SH	Total
It was partly effective	N	7	8	15
	%	15.60%	18.20%	16.90%
No, it was not effective	N	12	9	21
	%	26.70%	20.50%	23.60%
Unsure / Do not know	N	16	22	38
	%	35.60%	50.00%	42.70%
Yes, it was an effective step	N	10	5	15
	%	22.20%	11.40%	16.90%
Total	N	45	44	89
	%	100.00%	100.00%	100.00%

Second, how does the current EU regulatory and market environment for veterinary medicines impact innovation in antimicrobials and related products?		Animal v Human		
		Animal	Both	Total
Barriers discourage innovation in this area	N	17	5	22
	%	27.40%	18.50%	24.70%
Incentives exist that are effective in promoting innovation	N	2	0	2
	%	3.20%	0.00%	2.20%
Other	N	5	1	6
	%	8.10%	3.70%	6.70%
There are insufficient incentives to promote innovation	N	16	8	24
	%	25.80%	29.60%	27.00%
Unsure / Do not know	N	22	13	35
	%	35.50%	48.10%	39.30%
Total	N	62	27	89
	%	100.00%	100.00%	100.00%

Second, how does the current EU regulatory and market environment for veterinary medicines impact innovation in antimicrobials and related products?		MS v SH		
		MS	SH	Total
Barriers discourage innovation in this area	N	8	14	22
	%	17.80%	31.80%	24.70%
Incentives exist that are effective in promoting innovation	N	1	1	2
	%	2.20%	2.30%	2.20%
Other	N	2	4	6
	%	4.40%	9.10%	6.70%
There are insufficient incentives to promote innovation	N	16	8	24
	%	35.60%	18.20%	27.00%
Unsure / Do not know	N	18	17	35
	%	40.00%	38.60%	39.30%
Total	N	45	44	89
	%	100.00%	100.00%	100.00%

Bilateral and multilateral mechanisms

Are you aware of bilateral or multilateral mechanisms for preventing or controlling the spread of antimicrobial resistance between the country in which you live and other countries or regions? (examples include WHO EURO regional strategies, OIE health codes, Codex Alimentarius international standards, cooperation on reducing pollution by antimicrobial medicines in the environment, and the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR))		Animal v Human			
		Animal	Human	Both	Total
No	N	9	4	3	16
	%	17.00%	9.10%	11.10%	12.90%
Unsure / Do not know	N	9	12	4	25
	%	17.00%	27.30%	14.80%	20.20%
Yes	N	35	28	20	83
	%	66.00%	63.60%	74.10%	66.90%
Total	N	53	44	27	124
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of bilateral or multilateral mechanisms for preventing or controlling the spread of antimicrobial resistance between the country in which you live and other countries or regions? (examples include WHO EURO regional strategies, OIE health codes, Codex Alimentarius international standards, cooperation on reducing pollution by antimicrobial medicines in the environment, and the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR))		MS v SH		
		MS	SH	Total
No	N	7	9	16
	%	13.00%	12.90%	12.90%
Unsure / Do not know	N	5	20	25
	%	9.30%	28.60%	20.20%
Yes	N	42	41	83
	%	77.80%	58.60%	66.90%
Total	N	54	70	124
	%	100.00%	100.00%	100.00%

Can the existence of these bilateral or multilateral mechanisms between the country in which you live and other countries or regions be attributed (wholly or in part) to the EU Action Plan?		Animal v Human			
		Animal	Human	Both	Total
No	N	6	1	2	9
	%	17.60%	3.40%	10.00%	10.80%
Not applicable	N	2	0	1	3
	%	5.90%	0.00%	5.00%	3.60%
Unsure / Do not know	N	8	11	8	27
	%	23.50%	37.90%	40.00%	32.50%
Yes	N	18	17	9	44
	%	52.90%	58.60%	45.00%	53.00%
Total	N	34	29	20	83
	%	100.00%	100.00%	100.00%	100.00%

Can the existence of these bilateral or multilateral mechanisms between the country in which you live and other countries or regions be attributed (wholly or in part) to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	4	5	9
	%	9.80%	11.90%	10.80%
Not applicable	N	3	0	3
	%	7.30%	0.00%	3.60%
Unsure / Do not know	N	13	14	27
	%	31.70%	33.30%	32.50%
Yes	N	21	23	44
	%	51.20%	54.80%	53.00%
Total	N	41	42	83
	%	100.00%	100.00%	100.00%

Animal Health Law

Are you aware of the new EU Animal Health Law (agreed by the EP and Council on 1 June 2015, and currently undergoing the procedure for adoption and publication)?		Animal v Human		
		Animal	Both	Total
No	N	10	4	14
	%	15.90%	14.80%	15.60%
Unsure / Do not know	N	6	4	10
	%	9.50%	14.80%	11.10%
Yes	N	47	19	66
	%	74.60%	70.40%	73.30%
Total	N	63	27	90
	%	100.00%	100.00%	100.00%

Are you aware of the new EU Animal Health Law (agreed by the EP and Council on 1 June 2015, and currently undergoing the procedure for adoption and publication)?		MS v SH		
		MS	SH	Total
No	N	7	7	14
	%	15.20%	15.90%	15.60%
Unsure / Do not know	N	5	5	10
	%	10.90%	11.40%	11.10%
Yes	N	34	32	66
	%	73.90%	72.70%	73.30%
Total	N	46	44	90
	%	100.00%	100.00%	100.00%

In your assessment, please indicate the potential effectiveness of the new Animal Health Law for tackling antimicrobial resistance:		Animal v Human		
		Animal	Both	Total
High potential to be effective	N	14	4	18
	%	22.60%	14.80%	20.20%
Little to no potential to be effective	N	3	0	3
	%	4.80%	0.00%	3.40%
Some potential to be effective	N	31	16	47
	%	50.00%	59.30%	52.80%
Unsure / Do not know	N	14	7	21
	%	22.60%	25.90%	23.60%
Total	N	62	27	89
	%	100.00%	100.00%	100.00%

In your assessment, please indicate the potential effectiveness of the new Animal Health Law for tackling antimicrobial resistance:		MS v SH		
		MS	SH	Total
High potential to be effective	N	15	3	18
	%	33.30%	6.80%	20.20%
Little to no potential to be effective	N	0	3	3
	%	0.00%	6.80%	3.40%
Some potential to be effective	N	21	26	47
	%	46.70%	59.10%	52.80%
Unsure / Do not know	N	9	12	21
	%	20.00%	27.30%	23.60%
Total	N	45	44	89
	%	100.00%	100.00%	100.00%

In your assessment, please indicate the potential effectiveness of the inclusion of a legal basis for monitoring antimicrobial resistance in animal pathogens in the Commission's proposal for a new EU Animal Health Law.		Animal v Human		
		Animal	Both	Total
High potential to be effective	N	36	6	42
	%	57.10%	22.20%	46.70%
Little to no potential to be effective	N	1	2	3
	%	1.60%	7.40%	3.30%
Some potential to be effective	N	17	10	27
	%	27.00%	37.00%	30.00%
Unsure / Do not know	N	9	9	18
	%	14.30%	33.30%	20.00%
Total	N	63	27	90
	%	100.00%	100.00%	100.00%

In your assessment, please indicate the potential effectiveness of the inclusion of a legal basis for monitoring antimicrobial resistance in animal pathogens in the Commission's proposal for a new EU Animal Health Law.		MS v SH		
		MS	SH	Total
High potential to be effective	N	30	12	42
	%	65.20%	27.30%	46.70%
Little to no potential to be effective	N	1	2	3
	%	2.20%	4.50%	3.30%
Some potential to be effective	N	9	18	27
	%	19.60%	40.90%	30.00%
Unsure / Do not know	N	6	12	18
	%	13.00%	27.30%	20.00%
Total	N	46	44	90
	%	100.00%	100.00%	100.00%

Research

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research aimed at better understanding antimicrobial resistance and pathogenic-host interactions.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	10	5	2	17
	%	16.10%	10.90%	7.40%	12.60%
Not effective	N	1	4	0	5
	%	1.60%	8.70%	0.00%	3.70%
Partly effective	N	12	16	10	38
	%	19.40%	34.80%	37.00%	28.10%
Too early to say	N	23	13	10	46
	%	37.10%	28.30%	37.00%	34.10%
Unsure / do not know	N	16	8	5	29
	%	25.8%	17.3%	18.5%	21.5%
Total	N	62	46	27	135
	%	100.00%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research aimed at better understanding antimicrobial resistance and pathogenic-host interactions.)		MS v SH		
		MS	SH	Total
Effective	N	11	6	17
	%	16.90%	8.60%	12.60%
Not effective	N	1	4	5
	%	1.50%	5.70%	3.70%
Partly effective	N	14	24	38
	%	21.50%	34.30%	28.10%
Too early to say	N	25	21	46
	%	38.50%	30.00%	34.10%
Unsure / do not know	N	14	15	29
	%	21.5%	21.4%	21.5%
Total	N	65	70	135
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of diagnostic tools.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	8	5	1	14
	%	12.90%	10.90%	3.70%	10.40%
Not effective	N	5	2	1	8
	%	8.10%	4.30%	3.70%	5.90%
Partly effective	N	9	15	9	33
	%	14.50%	32.60%	33.30%	24.40%
Too early to say	N	22	14	9	45
	%	35.50%	30.40%	33.30%	33.30%
Unsure / do not know	N	18	10	7	35
	%	29.1%	21.7%	25.9%	25.9%
Total	N	62	46	27	135
	%	100.00%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of diagnostic tools.)		MS v SH		
		MS	SH	Total
Effective	N	9	5	14
	%	13.80%	7.10%	10.40%
Not effective	N	1	7	8
	%	1.50%	10.00%	5.90%
Partly effective	N	12	21	33
	%	18.50%	30.00%	24.40%
Too early to say	N	28	17	45
	%	43.10%	24.30%	33.30%
Unsure / do not know	N	15	20	35
	%	23.1%	28.6%	14.8%
Total	N	65	70	135
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of vaccines and other preventative strategies.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	10	4	1	15
	%	16.40%	8.70%	3.70%	11.20%
Not effective	N	5	3	3	11
	%	8.20%	6.50%	11.10%	8.20%
Partly effective	N	11	13	8	32
	%	18.00%	28.30%	29.60%	23.90%
Too early to say	N	23	14	8	45
	%	37.70%	30.40%	29.60%	33.60%
Unsure / do not know	N	12	12	7	31
	%	19.7%	26.0%	25.9%	23.1%
Total	N	61	46	27	134
	%	100.00%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of vaccines and other preventative strategies.)		MS v SH		
		MS	SH	Total
Effective	N	11	4	15
	%	17.20%	5.70%	11.20%
Not effective	N	2	9	11
	%	3.10%	12.90%	8.20%
Partly effective	N	14	18	32
	%	21.90%	25.70%	23.90%
Too early to say	N	26	19	45
	%	40.60%	27.10%	33.60%
Unsure / do not know	N	11	20	31
	%	17.2%	28.6%	14.9%
Total	N	64	70	134
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of a Joint Programming Initiative aimed at coordinating national research activities related to antimicrobial resistance.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	12	8	5	25
	%	19.40%	17.40%	19.20%	18.70%
Not effective	N	2	3	0	5
	%	3.20%	6.50%	0.00%	3.70%
Partly effective	N	5	7	4	16
	%	8.10%	15.20%	15.40%	11.90%
Too early to say	N	24	10	8	42
	%	38.70%	21.70%	30.80%	31.30%
Unsure / do not know	N	19	18	9	46
	%	30.6%	39.1%	34.6%	34.3%
Total	N	62	46	26	134
	%	100.00%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of a Joint Programming Initiative aimed at coordinating national research activities related to antimicrobial resistance.)		MS v SH		
		MS	SH	Total
Effective	N	16	9	25
	%	24.60%	13.00%	18.70%
Not effective	N	1	4	5
	%	1.50%	5.80%	3.70%
Partly effective	N	7	9	16
	%	10.80%	13.00%	11.90%
Too early to say	N	24	18	42
	%	36.90%	26.10%	31.30%
Unsure / do not know	N	17	29	46
	%	26.2%	42.0%	34.3%
Total	N	65	69	134
	%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of the Global Research Collaboration for Infectious Disease Preparedness (GLOPID-R))		Animal v Human			
		Animal	Human	Both	Total
Effective	N	9	5	1	15
	%	15.00%	10.90%	3.80%	11.40%
Not effective	N	0	2	0	2
	%	0.00%	4.30%	0.00%	1.50%
Partly effective	N	3	4	5	12
	%	5.00%	8.70%	19.20%	9.10%
Too early to say	N	18	9	10	37
	%	30.00%	19.60%	38.50%	28.00%
Unsure / do not know	N	30	26	10	66
	%	50.0%	56.6%	38.4%	50.0%
Total	N	60	46	26	132
	%	100.00%	100.00%	100.00%	100.00%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of the Global Research Collaboration for Infectious Disease Preparedness (GLOPID-R))		MS v SH		
		MS	SH	Total
Effective	N	12	3	15
	%	18.80%	4.40%	11.40%
Not effective	N	0	2	2
	%	0.00%	2.90%	1.50%
Partly effective	N	2	10	12
	%	3.10%	14.70%	9.10%
Too early to say	N	16	21	37
	%	25.00%	30.90%	28.00%
Unsure / do not know	N	34	32	66
	%	53.1%	47.1%	50.0%
Total	N	64	68	132
	%	100.00%	100.00%	100.00%

Awareness

Has the country in which you live implemented campaigns to improve awareness and/or education about antimicrobial resistance among the general public?		Animal v Human			
		Animal	Human	Both	Total
No	N	8	5	5	18
	%	12.90%	10.90%	18.50%	13.30%
Unsure / Do not know	N	13	3	2	18
	%	21.00%	6.50%	7.40%	13.30%
Yes	N	41	38	20	99
	%	66.10%	82.60%	74.10%	73.30%
Total	N	62	46	27	135
	%	100.00%	100.00%	100.00%	100.00%

Has the country in which you live implemented campaigns to improve awareness and/or education about antimicrobial resistance among the general public?		MS v SH		
		MS	SH	Total
No	N	7	11	18
	%	10.80%	15.70%	13.30%
Unsure / Do not know	N	5	13	18
	%	7.70%	18.60%	13.30%
Yes	N	53	46	99
	%	81.50%	65.70%	73.30%
Total	N	65	70	135
	%	100.00%	100.00%	100.00%

To what extent have these activities been effective?		Animal v Human			
		Animal	Human	Both	Total
Not effective	N	0	6	0	6
	%	0.00%	15.80%	0.00%	5.80%
Somewhat effective	N	28	25	19	72
	%	62.20%	65.80%	95.00%	69.90%
Unsure / Do not know	N	14	6	1	21
	%	31.10%	15.80%	5.00%	20.40%
Very effective	N	3	1	0	4
	%	6.70%	2.60%	0.00%	3.90%
Total	N	45	38	20	103
	%	100.00%	100.00%	100.00%	100.00%

To what extent have these activities been effective?		MS v SH		
		MS	SH	Total
Not effective	N	0	6	6
	%	0.00%	12.20%	5.80%
Somewhat effective	N	38	34	72
	%	70.40%	69.40%	69.90%
Unsure / Do not know	N	13	8	21
	%	24.10%	16.30%	20.40%
Very effective	N	3	1	4
	%	5.60%	2.00%	3.90%
Total	N	54	49	103
	%	100.00%	100.00%	100.00%

Did either the EU Action Plan or other forms of EU support play a role in the decision to implement these activities?		Animal v Human			
		Animal	Human	Both	Total
No, neither the EU Action Plan nor other forms of EU support	N	4	2	2	8
	%	9.10%	5.30%	10.00%	7.80%
Unsure / Do not know	N	7	6	9	22
	%	15.90%	15.80%	45.00%	21.60%
Yes, both the EU Action Plan and other forms of support	N	30	24	8	62
	%	68.20%	63.20%	40.00%	60.80%
Yes, other forms of support, but not the EU Action Plan	N	3	6	1	10
	%	6.80%	15.80%	5.00%	9.80%
Total	N	44	38	20	102
	%	100.00%	100.00%	100.00%	100.00%

Did either the EU Action Plan or other forms of EU support play a role in the decision to implement these activities?		MS v SH		
		MS	SH	Total
No, neither the EU Action Plan nor other forms of EU support	N	6	2	8
	%	11.10%	4.20%	7.80%
Unsure / Do not know	N	7	15	22
	%	13.00%	31.30%	21.60%
Yes, both the EU Action Plan and other forms of support	N	36	26	62
	%	66.70%	54.20%	60.80%
Yes, other forms of support, but not the EU Action Plan	N	5	5	10
	%	9.30%	10.40%	9.80%
Total	N	54	48	102
	%	100.00%	100.00%	100.00%

1.4 Efficiency

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
High priority	N	42	20	62
	%	89.40%	74.10%	83.80%
Low priority	N	0	2	2
	%	0.00%	7.40%	2.70%
Medium priority	N	3	4	7
	%	6.40%	14.80%	9.50%
Unsure / do not know	N	2	1	3
	%	4.30%	3.70%	4.10%
Total	N	47	27	74
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
High priority	N	30	32	62
	%	100.00%	72.70%	83.80%
Low priority	N	0	2	2
	%	0.00%	4.50%	2.70%
Medium priority	N	0	7	7
	%	0.00%	15.90%	9.50%
Unsure / do not know	N	0	3	3
	%	0.00%	6.80%	4.10%
Total	N	30	44	74
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
High priority	N	39	17	56
	%	68.40%	65.40%	67.50%
Low priority	N	3	2	5
	%	5.30%	7.70%	6.00%
Medium priority	N	15	5	20
	%	26.30%	19.20%	24.10%
Unsure / do not know	N	0	2	2
	%	0.00%	7.70%	2.40%
Total	N	57	26	83
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
High priority	N	30	26	56
	%	73.20%	61.90%	67.50%
Low priority	N	3	2	5
	%	7.30%	4.80%	6.00%
Medium priority	N	8	12	20
	%	19.50%	28.60%	24.10%
Unsure / do not know	N	0	2	2
	%	0.00%	4.80%	2.40%
Total	N	41	42	83
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
High priority	N	30	22	52
	%	69.80%	81.50%	74.30%
Medium priority	N	11	4	15
	%	25.60%	14.80%	21.40%
Unsure / do not know	N	2	1	3
	%	4.70%	3.70%	4.30%
Total	N	43	27	70
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
High priority	N	23	29	52
	%	88.50%	65.90%	74.30%
Medium priority	N	3	12	15
	%	11.50%	27.30%	21.40%
Unsure / do not know	N	0	3	3
	%	0.00%	6.80%	4.30%
Total	N	26	44	70
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
High priority	N	48	21	69
	%	82.80%	77.80%	81.20%
Low priority	N	2	1	3
	%	3.40%	3.70%	3.50%
Medium priority	N	8	4	12
	%	13.80%	14.80%	14.10%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.20%
Total	N	58	27	85
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
High priority	N	37	32	69
	%	86.00%	76.20%	81.20%
Low priority	N	2	1	3
	%	4.70%	2.40%	3.50%
Medium priority	N	4	8	12
	%	9.30%	19.00%	14.10%
Unsure / do not know	N	0	1	1
	%	0.00%	2.40%	1.20%
Total	N	43	42	85
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	23	25	13	61
	%	39.00%	58.10%	48.10%	47.30%
Low priority	N	15	6	4	25
	%	25.40%	14.00%	14.80%	19.40%
Medium priority	N	21	10	8	39
	%	35.60%	23.30%	29.60%	30.20%
Unsure / do not know	N	0	2	2	4
	%	0.00%	4.70%	7.40%	3.10%
Total	N	59	43	27	129
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
High priority	N	32	29	61
	%	51.60%	43.30%	47.30%
Low priority	N	9	16	25
	%	14.50%	23.90%	19.40%
Medium priority	N	21	18	39
	%	33.90%	26.90%	30.20%
Unsure / do not know	N	0	4	4
	%	0.00%	6.00%	3.10%
Total	N	62	67	129
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	43	30	20	93
	%	72.90%	69.80%	74.10%	72.10%
Low priority	N	0	0	1	1
	%	0.00%	0.00%	3.70%	0.80%
Medium priority	N	16	11	5	32
	%	27.10%	25.60%	18.50%	24.80%
Unsure / do not know	N	0	2	1	3
	%	0.00%	4.70%	3.70%	2.30%
Total	N	59	43	27	129
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
High priority	N	44	49	93
	%	71.00%	73.10%	72.10%
Low priority	N	0	1	1
	%	0.00%	1.50%	0.80%
Medium priority	N	18	14	32
	%	29.00%	20.90%	24.80%
Unsure / do not know	N	0	3	3
	%	0.00%	4.50%	2.30%
Total	N	62	67	129
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	33	19	20	72
	%	56.90%	40.40%	74.10%	54.50%
Low priority	N	4	0	2	6
	%	6.90%	0.00%	7.40%	4.50%
Medium priority	N	21	26	4	51
	%	36.20%	55.30%	14.80%	38.60%
Unsure / do not know	N	0	2	1	3
	%	0.00%	4.30%	3.70%	2.30%
Total	N	58	47	27	132
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	37	35	72
	%	56.10%	53.00%	54.50%
Low priority	N	1	5	6
	%	1.50%	7.60%	4.50%
Medium priority	N	28	23	51
	%	42.40%	34.80%	38.60%
Unsure / do not know	N	0	3	3
	%	0.00%	4.50%	2.30%
Total	N	66	66	132
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	33	18	19	70
	%	55.90%	38.30%	70.40%	52.60%
Low priority	N	3	0	2	5
	%	5.10%	0.00%	7.40%	3.80%
Medium priority	N	23	27	5	55
	%	39.00%	57.40%	18.50%	41.40%
Unsure / do not know	N	0	2	1	3
	%	0.00%	4.30%	3.70%	2.30%
Total	N	59	47	27	133
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	35	35	70
	%	53.00%	52.20%	52.60%
Low priority	N	0	5	5
	%	0.00%	7.50%	3.80%
Medium priority	N	31	24	55
	%	47.00%	35.80%	41.40%
Unsure / do not know	N	0	3	3
	%	0.00%	4.50%	2.30%
Total	N	66	67	133
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	47	26	16	89
	%	78.30%	60.50%	59.30%	68.50%
Low priority	N	2	1	0	3
	%	3.30%	2.30%	0.00%	2.30%
Medium priority	N	11	14	10	35
	%	18.30%	32.60%	37.00%	26.90%
Unsure / do not know	N	0	2	1	3
	%	0.00%	4.70%	3.70%	2.30%
Total	N	60	43	27	130
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	55	34	89
	%	87.30%	50.70%	68.50%
Low priority	N	1	2	3
	%	1.60%	3.00%	2.30%
Medium priority	N	7	28	35
	%	11.10%	41.80%	26.90%
Unsure / do not know	N	0	3	3
	%	0.00%	4.50%	2.30%
Total	N	63	67	130
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
High priority	N	32	15	47
	%	74.40%	55.60%	67.10%
Low priority	N	2	0	2
	%	4.70%	0.00%	2.90%
Medium priority	N	7	11	18
	%	16.30%	40.70%	25.70%
Unsure / do not know	N	2	1	3
	%	4.70%	3.70%	4.30%
Total	N	43	27	70
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in human)		MS v SH		
		MS	SH	Total
High priority	N	22	25	47
	%	84.60%	56.80%	67.10%
Low priority	N	0	2	2
	%	0.00%	4.50%	2.90%
Medium priority	N	4	14	18
	%	15.40%	31.80%	25.70%
Unsure / do not know	N	0	3	3
	%	0.00%	6.80%	4.30%
Total	N	26	44	70
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
High priority	N	46	16	62
	%	78.00%	59.30%	72.10%
Low priority	N	2	0	2
	%	3.40%	0.00%	2.30%
Medium priority	N	11	10	21
	%	18.60%	37.00%	24.40%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.20%
Total	N	59	27	86
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
High priority	N	38	24	62
	%	86.40%	57.10%	72.10%
Low priority	N	1	1	2
	%	2.30%	2.40%	2.30%
Medium priority	N	5	16	21
	%	11.40%	38.10%	24.40%
Unsure / do not know	N	0	1	1
	%	0.00%	2.40%	1.20%
Total	N	44	42	86
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	38	23	14	75
	%	64.40%	53.50%	51.90%	58.10%
Low priority	N	5	4	2	11
	%	8.50%	9.30%	7.40%	8.50%
Medium priority	N	16	14	9	39
	%	27.10%	32.60%	33.30%	30.20%
Unsure / do not know	N	0	2	2	4
	%	0.00%	4.70%	7.40%	3.10%
Total	N	59	43	27	129
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	45	30	75
	%	72.60%	44.80%	58.10%
Low priority	N	2	9	11
	%	3.20%	13.40%	8.50%
Medium priority	N	15	24	39
	%	24.20%	35.80%	30.20%
Unsure / do not know	N	0	4	4
	%	0.00%	6.00%	3.10%
Total	N	62	67	129
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	35	32	17	84
	%	59.30%	74.40%	63.00%	65.10%
Low priority	N	4	2	4	10
	%	6.80%	4.70%	14.80%	7.80%
Medium priority	N	20	7	5	32
	%	33.90%	16.30%	18.50%	24.80%
Unsure / do not know	N	0	2	1	3
	%	0.00%	4.70%	3.70%	2.30%
Total	N	59	43	27	129
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
High priority	N	48	36	84
	%	77.40%	53.70%	65.10%
Low priority	N	0	10	10
	%	0.00%	14.90%	7.80%
Medium priority	N	14	18	32
	%	22.60%	26.90%	24.80%
Unsure / do not know	N	0	3	3
	%	0.00%	4.50%	2.30%
Total	N	62	67	129
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
High priority	N	35	20	55
	%	81.40%	74.10%	78.60%
Low priority	N	1	0	1
	%	2.30%	0.00%	1.40%
Medium priority	N	6	6	12
	%	14.00%	22.20%	17.10%
Unsure / do not know	N	1	1	2
	%	2.30%	3.70%	2.90%
Total	N	43	27	70
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
High priority	N	22	33	55
	%	84.60%	75.00%	78.60%
Low priority	N	0	1	1
	%	0.00%	2.30%	1.40%
Medium priority	N	4	8	12
	%	15.40%	18.20%	17.10%
Unsure / do not know	N	0	2	2
	%	0.00%	4.50%	2.90%
Total	N	26	44	70
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
High priority	N	39	21	60
	%	66.10%	77.80%	69.80%
Low priority	N	4	0	4
	%	6.80%	0.00%	4.70%
Medium priority	N	16	5	21
	%	27.10%	18.50%	24.40%
Unsure / do not know	N	0	1	1
	%	0.00%	3.70%	1.20%
Total	N	59	27	86
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
High priority	N	32	28	60
	%	72.70%	66.70%	69.80%
Low priority	N	3	1	4
	%	6.80%	2.40%	4.70%
Medium priority	N	9	12	21
	%	20.50%	28.60%	24.40%
Unsure / do not know	N	0	1	1
	%	0.00%	2.40%	1.20%
Total	N	44	42	86
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	32	28	16	76
	%	53.30%	65.10%	61.50%	58.90%
Low priority	N	7	2	0	9
	%	11.70%	4.70%	0.00%	7.00%
Medium priority	N	21	12	8	41
	%	35.00%	27.90%	30.80%	31.80%
Unsure / do not know	N	0	1	2	3
	%	0.00%	2.30%	7.70%	2.30%
Total	N	60	43	26	129
	%	100.00%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for the general public)		MS v SH		
		MS	SH	Total
High priority	N	36	40	76
	%	57.10%	60.60%	58.90%
Low priority	N	5	4	9
	%	7.90%	6.10%	7.00%
Medium priority	N	22	19	41
	%	34.90%	28.80%	31.80%
Unsure / do not know	N	0	3	3
	%	0.00%	4.50%	2.30%
Total	N	63	66	129
	%	100.00%	100.00%	100.00%

Are you aware of any ways in which the allocation of EU spending on AMR has been inappropriate or inefficient? Inappropriate and inefficient spending would include spending on unnecessary activities, spending on areas that may be of a lower priority than others that did not receive funding, and spending on activities that are unlikely to help EU efforts to tackle AMR.		MS v SH		
		MS	SH	Total
No	N	54	49	103
	%	84.40%	70.00%	76.90%
Yes	N	10	21	31
	%	15.60%	30.00%	23.10%
Total	N	64	70	134
	%	100.00%	100.00%	100.00%

1.5   Coherence

Coherence with MS policies

Does the country in which you live have a strategic policy dedicated to combating antimicrobial resistance?		Animal v Human			
		Animal	Human	Both	Total
A strategy	N	15	12	7	34
	%	38.50%	52.20%	87.50%	48.60%
An action plan	N	21	10	8	39
	%	53.80%	43.50%	100.00%	55.70%
Other	N	7	6	2	15
	%	17.90%	26.10%	25.00%	21.40%
No, my country does not have a policy in this area	N	1	2	0	3
	%	2.60%	8.70%	0.00%	4.30%
Unsure / Do not know	N	4	0	0	4
	%	10.30%	0.00%	0.00%	5.70%
Total responses	N	41	24	15	N/A
	%	N/A	N/A	N/A	N/A

Does the country in which you live have a strategic policy dedicated to combating antimicrobial resistance?		MS v SH	
		MS	Total
A strategy	N	29	29
	%	50.9%	50.9%
An action plan	N	39	39
	%	55.70%	55.70%
Other	N	15	15
	%	21.40%	21.40%
No, my country does not have a policy in this area	N	3	3
	%	4.30%	4.30%
Unsure / Do not know	N	4	4
	%	5.70%	5.70%
Total responses	N	57	N/A
	%	N/A	N/A

What is your level of familiarity with the national antimicrobial resistance policy in the country in which you live?		Animal v Human			
		Animal	Human	Both	Total
Not very familiar	N	4	1	0	5
	%	13.80%	7.10%	0.00%	9.80%
Quite familiar	N	8	1	0	9
	%	27.60%	7.10%	0.00%	17.60%
Very familiar	N	17	12	8	37
	%	58.60%	85.70%	100.00%	72.50%
Total	N	29	14	8	51
	%	100.00%	100.00%	100.00%	100.00%

What is your level of familiarity with the national antimicrobial resistance policy in the country in which you live?		MS v SH	
		MS	Total
Not very familiar	N	5	5
	%	9.80%	9.80%
Quite familiar	N	9	9
	%	17.60%	17.60%
Very familiar	N	37	37
	%	72.50%	72.50%
Total	N	51	51
	%	100.00%	100.00%

At which level is the strategic policy developed/implemented?		Animal v Human			
		Animal	Human	Both	Total
Both national and regional levels	N	5	5	3	13
	%	17.20%	35.70%	37.50%	25.50%
National	N	22	9	5	36
	%	75.90%	64.30%	62.50%	70.60%
Unsure / Do not know	N	2	0	0	2
	%	6.90%	0.00%	0.00%	3.90%
Total	N	29	14	8	51
	%	100.00%	100.00%	100.00%	100.00%

At which level is the strategic policy developed/implemented?		MS v SH	
		MS	Total
Both national and regional levels	N	13	13
	%	25.50%	25.50%
National	N	36	36
	%	70.60%	70.60%
Unsure / Do not know	N	2	2
	%	3.90%	3.90%
Total	N	51	51
	%	100.00%	100.00%

Did the EU Action Plan have any influence on the formulation of the national policy in the country in which you live?		Animal v Human			
		Animal	Human	Both	Total
Other	N	2	0	0	2
	%	7.10%	0.00%	0.00%	4.00%
The existing national policy precedes the EU Action Plan	N	2	4	1	7
	%	7.10%	28.60%	12.50%	14.00%
The national policy was formulated independently of the EU Action Plan	N	5	0	2	7
	%	17.90%	0.00%	25.00%	14.00%
The national policy was influenced by the EU Action Plan	N	17	9	2	28
	%	60.70%	64.30%	25.00%	56.00%
Unsure / Do not know	N	2	1	3	6
	%	7.10%	7.10%	37.50%	12.00%
Total	N	28	14	8	50
	%	100.00%	100.00%	100.00%	100.00%

Did the EU Action Plan have any influence on the formulation of the national policy in the country in which you live?		MS v SH	
		MS	Total
Other	N	2	2
	%	4.00%	4.00%
The existing national policy precedes the EU Action Plan	N	7	7
	%	14.00%	14.00%
The national policy was formulated independently of the EU Action Plan	N	7	7
	%	14.00%	14.00%
The national policy was influenced by the EU Action Plan	N	28	28
	%	56.00%	56.00%
Unsure / Do not know	N	6	6
	%	12.00%	12.00%
Total	N	50	50
	%	100.00%	100.00%

How do the national policy and the EU Action Plan compare in terms of scope?		Animal v Human			
		Animal	Human	Both	Total
The EU Action Plan is broader in scope (i.e. some areas of the EU Action Plan are not addressed by the national policy)	N	8	3	2	13
	%	27.60%	21.40%	25.00%	25.50%
The national policy and the EU Action Plan have similar scope	N	17	11	3	31
	%	58.60%	78.60%	37.50%	60.80%
The national policy is broader in scope (i.e. some areas of the national policy are not addressed by the EU Action Plan)	N	1	0	3	4
	%	3.40%	0.00%	37.50%	7.80%
Unsure / Do not know	N	3	0	0	3
	%	10.30%	0.00%	0.00%	5.90%
Total	N	29	14	8	51
	%	100.00%	100.00%	100.00%	100.00%

How do the national policy and the EU Action Plan compare in terms of scope?		MS v SH	
		MS	Total
The EU Action Plan is broader in scope (i.e. some areas of the EU Action Plan are not addressed by the national policy)	N	13	13
	%	25.50%	25.50%
The national policy and the EU Action Plan have similar scope	N	31	31
	%	60.80%	60.80%
The national policy is broader in scope (i.e. some areas of the national policy are not addressed by the EU Action Plan)	N	4	4
	%	7.80%	7.80%
Unsure / Do not know	N	3	3
	%	5.90%	5.90%
Total	N	51	51
	%	100.00%	100.00%

Are you aware of any ways that the EU and Member State governments are coordinating their activities for tackling antimicrobial resistance?		Animal v Human			
		Animal	Human	Both	Total
No	N	12	10	11	33
	%	50.00%	37.00%	55.00%	46.50%
Yes	N	12	17	9	38
	%	50.00%	63.00%	45.00%	53.50%
Total	N	24	27	20	71
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of any ways that the EU and Member State governments are coordinating their activities for tackling antimicrobial resistance?		MS v SH	
		SH	
No	N	33	33
	%	46.48%	46.48%
Yes	N	38	38
	%	53.52%	53.52%
Total	N	71	71
	%	100.00%	100.00%

How effective are these coordination efforts?		Animal v Human			
		Animal	Human	Both	Total
Not very effective	N	2	6	1	9
	%	14.30%	35.30%	11.10%	22.50%
Somewhat effective	N	9	5	7	21
	%	64.30%	29.40%	77.80%	52.50%
Unsure / do not know	N	3	4	1	8
	%	21.40%	23.50%	11.10%	20.00%
Very effective	N	0	2	0	2
	%	0.00%	11.80%	0.00%	5.00%
Total	N	14	17	9	40
	%	100.00%	100.00%	100.00%	100.00%

How effective are these coordination efforts?		MS v SH	
		SH	
Not very effective	N	9	9
	%	22.50%	22.50%
Somewhat effective	N	21	21
	%	52.50%	52.50%
Unsure / do not know	N	8	8
	%	17.50%	17.50%
Very effective		2	2
		5.00%	5.00%
Total	N	40	40
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
Completely complement	N	13	6	19
	%	72.20%	75.00%	73.10%
Do not complement	N	0	1	1
	%	0.00%	12.50%	3.80%
Partly complement	N	4	0	4
	%	22.20%	0.00%	15.40%
Unsure / Do not know	N	1	1	2
	%	5.60%	12.50%	7.70%
Total	N	18	8	26
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in humans)		MS v SH	
		MS	Total
Completely complement	N	19	19
	%	73.10%	73.10%
Do not complement	N	1	1
	%	3.80%	3.80%
Partly complement	N	4	4
	%	15.40%	15.40%
Unsure / Do not know	N	2	2
	%	7.70%	7.70%
Total	N	26	26
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
Completely complement	N	19	6	25
	%	57.60%	75.00%	61.00%
Do not complement	N	1	0	1
	%	3.00%	0.00%	2.40%
Partly complement	N	9	1	10
	%	27.30%	12.50%	24.40%
Unsure / Do not know	N	4	1	5
	%	12.10%	12.50%	12.20%
Total	N	33	8	41
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in animals)		MS v SH	
		MS	Total
Completely complement	N	25	25
	%	61.00%	61.00%
Do not complement	N	1	1
	%	2.40%	2.40%
Partly complement	N	10	10
	%	24.40%	24.40%
Unsure / Do not know	N	5	5
	%	12.20%	12.20%
Total	N	41	41
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
Completely complement	N	12	5	17
	%	70.60%	62.50%	68.00%
Do not complement	N	0	1	1
	%	0.00%	12.50%	4.00%
Partly complement	N	4	0	4
	%	23.50%	0.00%	16.00%
Unsure / Do not know	N	1	2	3
	%	5.90%	25.00%	12.00%
Total	N	17	8	25
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in humans)		MS v SH	
		MS	Total
Completely complement	N	17	17
	%	68.00%	68.00%
Do not complement	N	1	1
	%	4.00%	4.00%
Partly complement	N	4	4
	%	16.00%	16.00%
Unsure / Do not know	N	3	3
	%	12.00%	12.00%
Total	N	25	25
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
Completely complement	N	16	6	22
	%	50.00%	75.00%	55.00%
Do not complement	N	1	0	1
	%	3.10%	0.00%	2.50%
Partly complement	N	11	1	12
	%	34.40%	12.50%	30.00%
Unsure / Do not know	N	4	1	5
	%	12.50%	12.50%	12.50%
Total	N	32	8	40
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in animals)		MS v SH	
		MS	Total
Completely complement	N	22	22
	%	55.00%	55.00%
Do not complement	N	1	1
	%	2.50%	2.50%
Partly complement	N	12	12
	%	30.00%	30.00%
Unsure / Do not know	N	5	5
	%	12.50%	12.50%
Total	N	40	40
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	12	3	3	18
	%	36.40%	16.70%	37.50%	30.50%
Do not complement	N	3	4	1	8
	%	9.10%	22.20%	12.50%	13.60%
Not applicable	N	6	5	1	12
	%	18.20%	27.80%	12.50%	20.30%
Partly complement	N	3	5	2	10
	%	9.10%	27.80%	25.00%	16.90%
Unsure / Do not know	N	9	1	1	11
	%	27.30%	5.60%	12.50%	18.60%
Total	N	33	18	8	59
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of new effective antimicrobials)		MS v SH	
		MS	Total
Completely complement	N	18	18
	%	30.50%	30.50%
Do not complement	N	8	8
	%	13.60%	13.60%
Not applicable	N	12	12
	%	20.30%	20.30%
Partly complement	N	10	10
	%	16.90%	16.90%
Unsure / Do not know	N	11	11
	%	18.60%	18.60%
Total	N	59	59
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	13	3	5	21
	%	40.60%	16.70%	62.50%	36.20%
Do not complement	N	3	4	1	8
	%	9.40%	22.20%	12.50%	13.80%
Not applicable	N	3	4	0	7
	%	9.40%	22.20%	0.00%	12.10%
Partly complement	N	6	5	1	12
	%	18.80%	27.80%	12.50%	20.70%
Unsure / Do not know	N	7	2	1	10
	%	21.90%	11.10%	12.50%	17.20%
Total	N	32	18	8	58
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of alternatives for treatment of microbial infections)		MS v SH	
		MS	Total
Completely complement	N	21	21
	%	36.20%	36.20%
Do not complement	N	8	8
	%	13.80%	13.80%
Not applicable	N	7	7
	%	12.10%	12.10%
Partly complement	N	12	12
	%	20.70%	20.70%
Unsure / Do not know	N	10	10
	%	17.20%	17.20%
Total	N	58	58
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	17	8	6	31
	%	51.50%	44.40%	75.00%	52.50%
Do not complement	N	1	0	0	1
	%	3.00%	0.00%	0.00%	1.70%
Not applicable	N	3	0	0	3
	%	9.10%	0.00%	0.00%	5.10%
Partly complement	N	8	9	1	18
	%	24.20%	50.00%	12.50%	30.50%
Unsure / Do not know	N	4	1	1	6
	%	12.10%	5.60%	12.50%	10.20%
Total	N	33	18	8	59
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	31	31
	%	52.50%	52.50%
Do not complement	N	1	1
	%	1.70%	1.70%
Not applicable	N	3	3
	%	5.10%	5.10%
Partly complement	N	18	18
	%	30.50%	30.50%
Unsure / Do not know	N	6	6
	%	10.20%	10.20%
Total	N	59	59
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	21	9	5	35
	%	63.60%	50.00%	62.50%	59.30%
Not applicable	N	2	0	0	2
	%	6.10%	0.00%	0.00%	3.40%
Partly complement	N	7	8	2	17
	%	21.20%	44.40%	25.00%	28.80%
Unsure / Do not know	N	3	1	1	5
	%	9.10%	5.60%	12.50%	8.50%
Total	N	33	18	8	59
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	35	35
	%	59.30%	59.30%
Do not complement	N	2	2
	%	3.40%	3.40%
Partly complement	N	17	17
	%	28.80%	28.80%
Unsure / Do not know	N	5	5
	%	8.50%	8.50%
Total	N	59	59
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	25	15	6	46
	%	71.40%	83.30%	75.00%	75.40%
Not applicable	N	1	0	0	1
	%	2.90%	0.00%	0.00%	1.60%
Partly complement	N	7	2	1	10
	%	20.00%	11.10%	12.50%	16.40%
Unsure / Do not know	N	2	1	1	4
	%	5.70%	5.60%	12.50%	6.60%
Total	N	35	18	8	61
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	46	46
	%	75.40%	75.40%
Do not complement	N	1	1
	%	1.60%	1.60%
Partly complement	N	10	10
	%	16.40%	16.40%
Unsure / Do not know	N	4	4
	%	6.60%	6.60%
Total	N	61	61
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
Completely complement	N	15	5	20
	%	83.30%	62.50%	76.90%
Partly complement	N	2	1	3
	%	11.10%	12.50%	11.50%
Unsure / Do not know	N	1	2	3
	%	5.60%	25.00%	11.50%
Total	N	18	8	26
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in human)		MS v SH	
		MS	Total
Completely complement	N	20	20
	%	76.90%	76.90%
Partly complement	N	3	3
	%	11.50%	11.50%
Unsure / Do not know	N	3	3
	%	11.50%	11.50%
Total	N	26	26
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
Completely complement	N	22	7	29
	%	68.80%	87.50%	72.50%
Partly complement	N	8	0	8
	%	25.00%	0.00%	20.00%
Unsure / Do not know	N	2	1	3
	%	6.30%	12.50%	7.50%
Total	N	32	8	40
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH	
		MS	Total
Completely complement	N	29	29
	%	72.50%	72.50%
Partly complement	N	8	8
	%	20.00%	20.00%
Unsure / Do not know	N	3	3
	%	7.50%	7.50%
Total	N	40	40
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	14	5	5	24
	%	42.40%	27.80%	62.50%	40.70%
Do not complement	N	0	2	1	3
	%	0.00%	11.10%	12.50%	5.10%
Not applicable	N	2	2	0	4
	%	6.10%	11.10%	0.00%	6.80%
Partly complement	N	12	7	1	20
	%	36.40%	38.90%	12.50%	33.90%
Unsure / Do not know	N	5	2	1	8
	%	15.20%	11.10%	12.50%	13.60%
Total	N	33	18	8	59
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research into the causes of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	24	24
	%	40.70%	40.70%
Do not complement	N	3	3
	%	5.10%	5.10%
Not applicable	N	4	4
	%	6.80%	6.80%
Partly complement	N	20	20
	%	33.90%	33.90%
Unsure / Do not know	N	8	8
	%	13.60%	13.60%
Total	N	59	59
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	14	6	5	25
	%	43.80%	33.30%	62.50%	43.10%
Do not complement	N	2	1	0	3
	%	6.30%	5.60%	0.00%	5.20%
Not applicable	N	2	2	1	5
	%	6.30%	11.10%	12.50%	8.60%
Partly complement	N	8	7	1	16
	%	25.00%	38.90%	12.50%	27.60%
Unsure / Do not know	N	6	2	1	9
	%	18.80%	11.10%	12.50%	15.50%
Total	N	32	18	8	58
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH	
		MS	Total
Completely complement	N	25	25
	%	43.10%	43.10%
Do not complement	N	3	3
	%	5.20%	5.20%
Not applicable	N	5	5
	%	8.60%	8.60%
Partly complement	N	16	16
	%	27.60%	27.60%
Unsure / Do not know	N	9	9
	%	15.50%	15.50%
Total	N	58	58
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
Completely complement	N	12	5	17
	%	66.70%	62.50%	65.40%
Not applicable	N	0	1	1
	%	0.00%	12.50%	3.80%
Partly complement	N	5	1	6
	%	27.80%	12.50%	23.10%
Unsure / Do not know	N	1	1	2
	%	5.60%	12.50%	7.70%
Total	N	18	8	26
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for human health professionals)		MS v SH	
		MS	Total
Completely complement	N	17	17
	%	65.40%	65.40%
Not applicable	N	1	1
	%	3.80%	3.80%
Partly complement	N	6	6
	%	23.10%	23.10%
Unsure / Do not know	N	2	2
	%	7.70%	7.70%
Total	N	26	26
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
Completely complement	N	20	6	26
	%	58.80%	75.00%	61.90%
Partly complement	N	12	1	13
	%	35.30%	12.50%	31.00%
Unsure / Do not know	N	2	1	3
	%	5.90%	12.50%	7.10%
Total	N	34	8	42
	%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for people caring for animals)		MS v SH	
		MS	Total
Completely complement	N	26	26
	%	61.90%	61.90%
Partly complement	N	13	13
	%	31.00%	31.00%
Unsure / Do not know	N	3	3
	%	7.10%	7.10%
Total	N	42	42
	%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
Completely complement	N	17	14	6	37
	%	51.50%	77.80%	75.00%	62.70%
Not applicable	N	1	0	0	1
	%	3.00%	0.00%	0.00%	1.70%
Partly complement	N	10	3	1	14
	%	30.30%	16.70%	12.50%	23.70%
Unsure / Do not know	N	5	1	1	7
	%	15.20%	5.60%	12.50%	11.90%
Total	N	33	18	8	59
	%	100.00%	100.00%	100.00%	100.00%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for the general public)		MS v SH	
		MS	Total
Completely complement	N	37	37
	%	62.70%	62.70%
Not applicable	N	1	1
	%	1.70%	1.70%
Partly complement	N	14	14
	%	23.70%	23.70%
Unsure / Do not know	N	7	7
	%	11.90%	11.90%
Total	N	59	59
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
Little to no funding	N	8	1	9
	%	42.10%	14.30%	34.60%
Major funding priority	N	1	4	5
	%	5.30%	57.10%	19.20%
Receives some funding	N	6	1	7
	%	31.60%	14.30%	26.90%
Unsure / Do not know	N	4	1	5
	%	21.10%	14.30%	19.20%
Total	N	19	7	26
	%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in humans)		MS v SH	
		MS	Total
Little to no funding	N	9	9
	%	34.60%	34.60%
Major funding priority	N	5	5
	%	19.20%	19.20%
Receives some funding	N	7	7
	%	26.90%	26.90%
Unsure / Do not know	N	5	5
	%	19.20%	19.20%
Total	N	26	26
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in animals)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	13	0	2	15
	%	36.10%	0.00%	28.60%	34.10%
Major funding priority	N	3	0	2	5
	%	8.30%	0.00%	28.60%	11.40%
Not applicable	N	2	0	0	2
	%	5.60%	0.00%	0.00%	4.50%
Receives some funding	N	5	1	2	8
	%	13.90%	100.00%	28.60%	18.20%
Unsure / Do not know	N	13	0	1	14
	%	36.10%	0.00%	14.30%	31.80%
Total	N	36	1	7	44
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in animals)		MS v SH	
		MS	Total
Little to no funding	N	15	15
	%	34.10%	34.10%
Major funding priority	N	5	5
	%	11.40%	11.40%
Not applicable	N	2	2
	%	4.50%	4.50%
Receives some funding	N	8	8
	%	18.20%	18.20%
Unsure / Do not know	N	14	14
	%	31.80%	31.80%
Total	N	44	44
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
Little to no funding	N	5	0	5
	%	26.30%	0.00%	19.20%
Major funding priority	N	1	3	4
	%	5.30%	42.90%	15.40%
Receives some funding	N	10	3	13
	%	52.60%	42.90%	50.00%
Unsure / Do not know	N	3	1	4
	%	15.80%	14.30%	15.40%
Total	N	19	7	26
	%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in humans)		MS v SH	
		MS	Total
Little to no funding	N	5	5
	%	19.20%	19.20%
Major funding priority	N	4	4
	%	15.40%	15.40%
Receives some funding	N	13	13
	%	50.00%	50.00%
Unsure / Do not know	N	4	4
	%	15.40%	15.40%
Total	N	26	26
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in animals)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	10	0	0	10
	%	28.60%	0.00%	0.00%	23.30%
Major funding priority	N	2	0	2	4
	%	5.70%	0.00%	28.60%	9.30%
Not applicable	N	1	0	0	1
	%	2.90%	0.00%	0.00%	2.30%
Receives some funding	N	9	0	4	13
	%	25.70%	0.00%	57.10%	30.20%
Unsure / Do not know	N	13	1	1	15
	%	37.10%	100.00%	14.30%	34.90%
Total	N	35	1	7	43
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in animals)		MS v SH	
		MS	Total
Little to no funding	N	10	10
	%	23.30%	23.30%
Major funding priority	N	4	4
	%	9.30%	9.30%
Not applicable	N	1	1
	%	2.30%	2.30%
Receives some funding	N	13	13
	%	30.20%	30.20%
Unsure / Do not know	N	15	15
	%	34.90%	34.90%
Total	N	43	43
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	13	7	1	21
	%	36.10%	36.80%	14.30%	33.90%
Major funding priority	N	0	2	4	6
	%	0.00%	10.50%	57.10%	9.70%
Not applicable	N	4	3	0	7
	%	11.10%	15.80%	0.00%	11.30%
Receives some funding	N	3	2	0	5
	%	8.30%	10.50%	0.00%	8.10%
Unsure / Do not know	N	16	5	2	23
	%	44.40%	26.30%	28.60%	37.10%
Total	N	36	19	7	62
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of new effective antimicrobials)		MS v SH	
		MS	Total
Little to no funding	N	21	21
	%	33.90%	33.90%
Major funding priority	N	6	6
	%	9.70%	9.70%
Not applicable	N	7	7
	%	11.30%	11.30%
Receives some funding	N	5	5
	%	8.10%	8.10%
Unsure / Do not know	N	23	23
	%	37.10%	37.10%
Total	N	62	62
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	11	7	2	20
	%	29.70%	36.80%	28.60%	31.70%
Major funding priority	N	1	2	2	5
	%	2.70%	10.50%	28.60%	7.90%
Not applicable	N	2	3	0	5
	%	5.40%	15.80%	0.00%	7.90%
Receives some funding	N	7	2	2	11
	%	18.90%	10.50%	28.60%	17.50%
Unsure / Do not know	N	16	5	1	22
	%	43.20%	26.30%	14.30%	34.90%
Total	N	37	19	7	63
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of alternatives for treatment of microbial infections)		MS v SH	
		MS	Total
Little to no funding	N	20	20
	%	31.70%	31.70%
Major funding priority	N	5	5
	%	7.90%	7.90%
Not applicable	N	5	5
	%	7.90%	7.90%
Receives some funding	N	11	11
	%	17.50%	17.50%
Unsure / Do not know	N	22	22
	%	34.90%	34.90%
Total	N	63	63
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	9	8	1	18
	%	25.00%	42.10%	14.30%	29.00%
Major funding priority	N	2	1	3	6
	%	5.60%	5.30%	42.90%	9.70%
Not applicable	N	3	0	0	3
	%	8.30%	0.00%	0.00%	4.80%
Receives some funding	N	5	4	1	10
	%	13.90%	21.10%	14.30%	16.10%
Unsure / Do not know	N	17	6	2	25
	%	47.20%	31.60%	28.60%	40.30%
Total	N	36	19	7	62
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Little to no funding	N	18	18
	%	29.00%	29.00%
Major funding priority	N	6	6
	%	9.70%	9.70%
Not applicable	N	3	3
	%	4.80%	4.80%
Receives some funding	N	10	10
	%	16.10%	16.10%
Unsure / Do not know	N	25	25
	%	40.30%	40.30%
Total	N	62	62
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	10	7	1	18
	%	29.40%	36.80%	14.30%	30.00%
Major funding priority	N	3	2	2	7
	%	8.80%	10.50%	28.60%	11.70%
Not applicable	N	2	0	0	2
	%	5.90%	0.00%	0.00%	3.30%
Receives some funding	N	4	4	2	10
	%	11.80%	21.10%	28.60%	16.70%
Unsure / Do not know	N	15	6	2	23
	%	44.10%	31.60%	28.60%	38.30%
Total	N	34	19	7	60
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Little to no funding	N	18	18
	%	30.00%	30.00%
Major funding priority	N	7	7
	%	11.70%	11.70%
Not applicable	N	2	2
	%	3.30%	3.30%
Receives some funding	N	10	10
	%	16.70%	16.70%
Unsure / Do not know	N	23	23
	%	38.30%	38.30%
Total	N	60	60
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	2	4	0	6
	%	5.40%	21.10%	0.00%	9.50%
Major funding priority	N	14	4	3	21
	%	37.80%	21.10%	42.90%	33.30%
Receives some funding	N	13	8	3	24
	%	35.10%	42.10%	42.90%	38.10%
Unsure / Do not know	N	8	3	1	12
	%	21.60%	15.80%	14.30%	19.00%
Total	N	37	19	7	63
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		MS v SH	
		MS	Total
Little to no funding	N	6	6
	%	9.50%	9.50%
Major funding priority	N	21	21
	%	33.30%	33.30%
Receives some funding	N	24	24
	%	38.10%	38.10%
Unsure / Do not know	N	12	12
	%	19.00%	19.00%
Total	N	63	63
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
Little to no funding	N	5	0	5
	%	26.30%	0.00%	19.20%
Major funding priority	N	1	3	4
	%	5.30%	42.90%	15.40%
Receives some funding	N	10	3	13
	%	52.60%	42.90%	50.00%
Unsure / Do not know	N	3	1	4
	%	15.80%	14.30%	15.40%
Total	N	19	7	26
	%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial use in human)		MS v SH	
		MS	Total
Little to no funding	N	4	4
	%	15.40%	15.40%
Major funding priority	N	7	7
	%	26.90%	26.90%
Receives some funding	N	11	11
	%	42.30%	42.30%
Unsure / Do not know	N	4	4
	%	15.40%	15.40%
Total	N	26	26
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	8	0	0	8
	%	21.60%	0.00%	0.00%	17.80%
Major funding priority	N	6	1	3	10
	%	16.20%	100.00%	42.90%	22.20%
Not applicable	N	1	0	0	1
	%	2.70%	0.00%	0.00%	2.20%
Receives some funding	N	12	0	3	15
	%	32.40%	0.00%	42.90%	33.30%
Unsure / Do not know	N	10	0	1	11
	%	27.00%	0.00%	14.30%	24.40%
Total	N	37	1	7	45
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH	
		MS	Total
Little to no funding	N	8	8
	%	17.80%	17.80%
Major funding priority	N	10	10
	%	22.20%	22.20%
Not applicable	N	1	1
	%	2.20%	2.20%
Receives some funding	N	15	15
	%	33.30%	33.30%
Unsure / Do not know	N	11	11
	%	24.40%	24.40%
Total	N	45	45
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	8	6	2	16
	%	22.20%	31.60%	28.60%	25.80%
Major funding priority	N	3	2	3	8
	%	8.30%	10.50%	42.90%	12.90%
Not applicable	N	2	3	0	5
	%	5.60%	15.80%	0.00%	8.10%
Receives some funding	N	7	3	2	12
	%	19.40%	15.80%	28.60%	19.40%
Unsure / Do not know	N	16	5	0	21
	%	44.40%	26.30%	0.00%	33.90%
Total	N	36	19	7	62
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Research into the causes of antimicrobial resistance)		MS v SH	
		MS	Total
Little to no funding	N	16	16
	%	25.80%	25.80%
Major funding priority	N	8	8
	%	12.90%	12.90%
Not applicable	N	5	5
	%	8.10%	8.10%
Receives some funding	N	12	12
	%	19.40%	19.40%
Unsure / Do not know	N	21	21
	%	33.90%	33.90%
Total	N	62	62
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	8	8	2	18
	%	22.20%	42.10%	28.60%	29.00%
Major funding priority	N	2	1	3	6
	%	5.60%	5.30%	42.90%	9.70%
Not applicable	N	3	1	0	4
	%	8.30%	5.30%	0.00%	6.50%
Receives some funding	N	9	4	2	15
	%	25.00%	21.10%	28.60%	24.20%
Unsure / Do not know	N	14	5	0	19
	%	38.90%	26.30%	0.00%	30.60%
Total	N	36	19	7	62
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH	
		MS	Total
Little to no funding	N	18	18
	%	29.00%	29.00%
Major funding priority	N	6	6
	%	9.70%	9.70%
Not applicable	N	4	4
	%	6.50%	6.50%
Receives some funding	N	15	15
	%	24.20%	24.20%
Unsure / Do not know	N	19	19
	%	30.60%	30.60%
Total	N	62	62
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
Little to no funding	N	8	1	9
	%	42.10%	14.30%	34.60%
Major funding priority	N	1	3	4
	%	5.30%	42.90%	15.40%
Receives some funding	N	6	2	8
	%	31.60%	28.60%	30.80%
Unsure / Do not know	N	4	1	5
	%	21.10%	14.30%	19.20%
Total	N	19	7	26
	%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for human health professionals)		MS v SH	
		MS	Total
Little to no funding	N	9	9
	%	34.60%	34.60%
Major funding priority	N	4	4
	%	15.40%	15.40%
Receives some funding	N	8	8
	%	30.80%	30.80%
Unsure / Do not know	N	5	5
	%	19.20%	19.20%
Total	N	26	26
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for people caring for animals)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	11	0	1	12
	%	30.60%	0.00%	14.30%	27.30%
Major funding priority	N	3	0	1	4
	%	8.30%	0.00%	14.30%	9.10%
Not applicable	N	2	0	0	2
	%	5.60%	0.00%	0.00%	4.50%
Receives some funding	N	5	0	3	8
	%	13.90%	0.00%	42.90%	18.20%
Unsure / Do not know	N	15	1	2	18
	%	41.70%	100.00%	28.60%	40.90%
Total	N	36	1	7	44
	%	100.00%	100.00%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for people caring for animals)		MS v SH	
		MS	Total
Little to no funding	N	12	12
	%	27.30%	27.30%
Major funding priority	N	4	4
	%	9.10%	9.10%
Not applicable	N	2	2
	%	4.50%	4.50%
Receives some funding	N	8	8
	%	18.20%	18.20%
Unsure / Do not know	N	18	18
	%	40.90%	40.90%
Total	N	44	44
	%	100.00%	100.00%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
Little to no funding	N	12	7	1	20
	%	33.30%	36.80%	14.30%	32.30%
Major funding priority	N	1	1	2	4
	%	2.80%	5.30%	28.60%	6.50%
Not applicable	N	2	0	0	2
	%	5.60%	0.00%	0.00%	3.20%
Receives some funding	N	3	7	3	13
	%	8.30%	36.80%	42.90%	21.00%
Unsure / Do not know	N	18	4	1	23
	%	50.00%	21.10%	14.30%	37.10%
Total	N	36	19	7	62
	%	100.00%	100.00%	100.00%	100.00%

Y		MS v SH	
		MS	Total
Little to no funding	N	20	20
	%	32.30%	32.30%
Major funding priority	N	4	4
	%	6.50%	6.50%
Not applicable	N	2	2
	%	3.20%	3.20%
Receives some funding	N	13	13
	%	21.00%	21.00%
Unsure / Do not know	N	23	23
	%	37.10%	37.10%
Total	N	62	62
	%	100.00%	100.00%

Is the national antimicrobial resistance policy coordinated with other relevant policies in the country in which you live?		Animal v Human			
		Animal	Human	Both	Total
The national antimicrobial resistance policy is coordinated with other relevant national policies in my country	N	15	7	6	28
	%	46.90%	38.90%	75.00%	48.30%
There are no other relevant national policies in my country	N	4	6	1	11
	%	12.50%	33.30%	12.50%	19.00%
There are other relevant national policies in my country which are relevant to antimicrobial resistance, but these are d	N	6	2	1	9
	%	18.80%	11.10%	12.50%	15.50%
Unsure / Do not know	N	7	3	0	10
	%	21.90%	16.70%	0.00%	17.20%
Total	N	32	18	8	58
	%	100.00%	100.00%	100.00%	100.00%

Is the national antimicrobial resistance policy coordinated with other relevant policies in the country in which you live?		MS v SH	
		MS	Total
The national antimicrobial resistance policy is coordinated with other relevant national policies in my country	N	28	28
	%	48.30%	48.30%
There are no other relevant national policies in my country	N	11	11
	%	19.00%	19.00%
There are other relevant national policies in my country which are relevant to antimicrobial resistance, but these are d	N	9	9
	%	15.50%	15.50%
Unsure / Do not know	N	10	10
	%	17.20%	17.20%
Total	N	58	58
	%	100.00%	100.00%

Internal coherence

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Environment)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	26	15	3	44
	%	41.30%	33.30%	11.50%	32.80%
Disagree	N	6	4	7	17
	%	9.50%	8.90%	26.90%	12.70%
Strongly agree	N	13	13	5	31
	%	20.60%	28.90%	19.20%	23.10%
Strongly disagree	N	0	1	1	2
	%	0.00%	2.20%	3.80%	1.50%
Unsure / do not know	N	18	12	10	40
	%	28.60%	26.70%	38.50%	29.90%
Total	N	63	45	26	134
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Environment)		MS v SH		
		MS	SH	Total
Agree	N	20	24	44
	%	31.30%	34.30%	32.80%
Disagree	N	3	14	17
	%	4.70%	20.00%	12.70%
Strongly agree	N	20	11	31
	%	31.30%	15.70%	23.10%
Strongly disagree	N	0	2	2
	%	0.00%	2.90%	1.50%
Unsure / do not know	N	21	19	40
	%	32.80%	27.10%	29.90%
Total	N	64	70	134
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Human health)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	20	16	7	43
	%	32.80%	35.60%	26.90%	32.60%
Disagree	N	1	1	0	2
	%	1.60%	2.20%	0.00%	1.50%
Strongly agree	N	24	25	11	60
	%	39.30%	55.60%	42.30%	45.50%
Strongly disagree	N	1	0	0	1
	%	1.60%	0.00%	0.00%	0.80%
Unsure / do not know	N	15	3	8	26
	%	24.60%	6.70%	30.80%	19.70%
Total	N	61	45	26	132
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Human health)		MS v SH		
		MS	SH	Total
Agree	N	17	26	43
	%	26.60%	38.20%	32.60%
Disagree	N	0	2	2
	%	0.00%	2.90%	1.50%
Strongly agree	N	36	24	60
	%	56.30%	35.30%	45.50%
Strongly disagree	N	0	1	1
	%	0.00%	1.50%	0.80%
Unsure / do not know	N	11	15	26
	%	17.20%	22.10%	19.70%
Total	N	64	68	132
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Animal health and welfare)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	26	14	10	50
	%	41.90%	31.10%	38.50%	37.60%
Disagree	N	6	3	2	11
	%	9.70%	6.70%	7.70%	8.30%
Strongly agree	N	27	21	8	56
	%	43.50%	46.70%	30.80%	42.10%
Unsure / do not know	N	3	7	6	16
	%	4.80%	15.60%	23.10%	12.00%
Total	N	62	45	26	133
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Animal health and welfare)		MS v SH		
		MS	SH	Total
Agree	N	25	25	50
	%	39.10%	36.20%	37.60%
Disagree	N	0	11	11
	%	0.00%	15.90%	8.30%
Strongly agree	N	35	21	56
	%	54.70%	30.40%	42.10%
Unsure / do not know	N	4	12	16
	%	6.30%	17.40%	12.00%
Total	N	64	69	133
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Food safety)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	29	12	9	50
	%	46.00%	26.70%	34.60%	37.30%
Disagree	N	2	4	2	8
	%	3.20%	8.90%	7.70%	6.00%
Strongly agree	N	24	18	9	51
	%	38.10%	40.00%	34.60%	38.10%
Strongly disagree	N	0	1	0	1
	%	0.00%	2.20%	0.00%	0.70%
Unsure / do not know	N	8	10	6	24
	%	12.70%	22.20%	23.10%	17.90%
Total	N	63	45	26	134
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Food safety)		MS v SH		
		MS	SH	Total
Agree	N	24	26	50
	%	37.50%	37.10%	37.30%
Disagree	N	1	7	8
	%	1.60%	10.00%	6.00%
Strongly agree	N	32	19	51
	%	50.00%	27.10%	38.10%
Strongly disagree	N	0	1	1
	%	0.00%	1.40%	0.70%
Unsure / do not know	N	7	17	24
	%	10.90%	24.30%	17.90%
Total	N	64	70	134
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Agriculture)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	21	14	9	44
	%	33.30%	31.10%	34.60%	32.80%
Disagree	N	5	5	3	13
	%	7.90%	11.10%	11.50%	9.70%
Strongly agree	N	20	12	3	35
	%	31.70%	26.70%	11.50%	26.10%
Strongly disagree	N	0	1	1	2
	%	0.00%	2.20%	3.80%	1.50%
Unsure / do not know	N	17	13	10	40
	%	27.00%	28.90%	38.50%	29.90%
Total	N	63	45	26	134
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Agriculture)		MS v SH		
		MS	SH	Total
Agree	N	25	19	44
	%	39.10%	27.10%	32.80%
Disagree	N	2	11	13
	%	3.10%	15.70%	9.70%
Strongly agree	N	20	15	35
	%	31.30%	21.40%	26.10%
Strongly disagree	N	0	2	2
	%	0.00%	2.90%	1.50%
Unsure / do not know	N	17	23	40
	%	26.60%	32.90%	29.90%
Total	N	64	70	134
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Research)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	27	18	13	58
	%	43.50%	40.00%	50.00%	43.60%
Disagree	N	2	0	1	3
	%	3.20%	0.00%	3.80%	2.30%
Strongly agree	N	17	21	6	44
	%	27.40%	46.70%	23.10%	33.10%
Strongly disagree	N	0	1	0	1
	%	0.00%	2.20%	0.00%	0.80%
Unsure / do not know	N	16	5	6	27
	%	25.80%	11.10%	23.10%	20.30%
Total	N	62	45	26	133
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Research)		MS v SH		
		MS	SH	Total
Agree	N	26	32	58
	%	41.30%	45.70%	43.60%
Disagree	N	0	3	3
	%	0.00%	4.30%	2.30%
Strongly agree	N	26	18	44
	%	41.30%	25.70%	33.10%
Strongly disagree	N	0	1	1
	%	0.00%	1.40%	0.80%
Unsure / do not know	N	11	16	27
	%	17.50%	22.90%	20.30%
Total	N	63	70	133
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Competitiveness)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	13	12	5	30
	%	21.00%	27.30%	19.20%	22.70%
Disagree	N	8	6	3	17
	%	12.90%	13.60%	11.50%	12.90%
Strongly agree	N	9	10	3	22
	%	14.50%	22.70%	11.50%	16.70%
Strongly disagree	N	2	1	1	4
	%	3.20%	2.30%	3.80%	3.00%
Unsure / do not know	N	30	15	14	59
	%	48.40%	34.10%	53.80%	44.70%
Total	N	62	44	26	132
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Competitiveness)		MS v SH		
		MS	SH	Total
Agree	N	15	15	30
	%	23.80%	21.70%	22.70%
Disagree	N	4	13	17
	%	6.30%	18.80%	12.90%
Strongly agree	N	14	8	22
	%	22.20%	11.60%	16.70%
Strongly disagree	N	1	3	4
	%	1.60%	4.30%	3.00%
Unsure / do not know	N	29	30	59
	%	46.00%	43.50%	44.70%
Total	N	63	69	132
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (SMEs)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	11	8	1	20
	%	17.70%	17.80%	4.00%	15.20%
Disagree	N	3	4	5	12
	%	4.80%	8.90%	20.00%	9.10%
Strongly agree	N	5	8	2	15
	%	8.10%	17.80%	8.00%	11.40%
Strongly disagree	N	1	1	1	3
	%	1.60%	2.20%	4.00%	2.30%
Unsure / do not know	N	42	24	16	82
	%	67.70%	53.30%	64.00%	62.10%
Total	N	62	45	25	132
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (SMEs)		MS v SH		
		MS	SH	Total
Agree	N	9	11	20
	%	14.30%	15.90%	15.20%
Disagree	N	3	9	12
	%	4.80%	13.00%	9.10%
Strongly agree	N	11	4	15
	%	17.50%	5.80%	11.40%
Strongly disagree	N	0	3	3
	%	0.00%	4.30%	2.30%
Unsure / do not know	N	40	42	82
	%	63.50%	60.90%	62.10%
Total	N	63	69	132
	%	100.00%	100.00%	100.00%

External coherence

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Non-EU OECD countries (e.g. Switzerland, Norway, USA, Canada))		Animal v Human			
		Animal	Human	Both	Total
No	N	8	9	9	26
	%	13.10%	20.50%	33.30%	19.70%
Unsure / Do not know	N	17	2	1	20
	%	27.90%	4.50%	3.70%	15.20%
Yes	N	36	33	17	86
	%	59.00%	75.00%	63.00%	65.20%
Total	N	61	44	27	132
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Non-EU OECD countries (e.g. Switzerland, Norway, USA, Canada))		MS v SH		
		MS	SH	Total
No	N	0	26	26
	%	0.00%	37.70%	19.70%
Unsure / Do not know	N	20	0	20
	%	31.70%	0.00%	15.20%
Yes	N	43	43	86
	%	68.30%	62.30%	65.20%
Total	N	63	69	132
	%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Transatlantic Task Force on antimicrobial resistance (TATFAR))		Animal v Human			
		Animal	Human	Both	Total
No	N	7	17	10	34
	%	11.50%	37.80%	37.00%	25.60%
Unsure / Do not know	N	13	1	1	15
	%	21.30%	2.20%	3.70%	11.30%
Yes	N	41	27	16	84
	%	67.20%	60.00%	59.30%	63.20%
Total	N	61	45	27	133
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Transatlantic Task Force on antimicrobial resistance (TATFAR))		MS v SH		
		MS	SH	Total
No	N	0	34	34
	%	0.00%	49.30%	25.60%
Unsure / Do not know	N	15	0	15
	%	23.40%	0.00%	11.30%
Yes	N	49	35	84
	%	76.60%	50.70%	63.20%
Total	N	64	69	133
	%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Health Organization (WHO))		Animal v Human			
		Animal	Human	Both	Total
No	N	1	5	4	10
	%	1.60%	10.20%	14.80%	7.20%
Yes	N	62	44	23	129
	%	98.40%	89.80%	85.20%	92.80%
Total	N	63	49	27	139
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Health Organization (WHO))		MS v SH		
		MS	SH	Total
No	N	0	10	10
	%	0.00%	14.50%	7.20%
Yes	N	70	59	129
	%	100.00%	85.50%	92.80%
Total	N	70	69	139
	%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Organisation for Animal Health (OIE))		Animal v Human			
		Animal	Human	Both	Total
No	N	1	16	6	23
	%	1.60%	37.20%	22.20%	17.40%
Unsure / Do not know	N	2	8	0	10
	%	3.20%	18.60%	0.00%	7.60%
Yes	N	59	19	21	99
	%	95.20%	44.20%	77.80%	75.00%
Total	N	62	43	27	132
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Organisation for Animal Health (OIE))		MS v SH		
		MS	SH	Total
No	N	0	23	23
	%	0.00%	33.30%	17.40%
Unsure / Do not know	N	10	0	10
	%	15.90%	0.00%	7.60%
Yes	N	53	46	99
	%	84.10%	66.70%	75.00%
Total	N	63	69	132
	%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Food and Agriculture Organization of the United Nations (UN FAO))		Animal v Human			
		Animal	Human	Both	Total
No	N	6	16	8	30
	%	10.00%	39.00%	29.60%	23.40%
Unsure / Do not know	N	7	7	1	15
	%	11.70%	17.10%	3.70%	11.70%
Yes	N	47	18	18	83
	%	78.30%	43.90%	66.70%	64.80%
Total	N	60	41	27	128
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Food and Agriculture Organization of the United Nations (UN FAO))		MS v SH		
		MS	SH	Total
No	N	0	30	30
	%	0.00%	43.50%	23.40%
Unsure / Do not know	N	15	0	15
	%	25.40%	0.00%	11.70%
Yes	N	44	39	83
	%	74.60%	56.50%	64.80%
Total	N	59	69	128
	%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Other, please specify)		Animal v Human			
		Animal	Human	Both	Total
No	N	11	15	10	36
	%	40.70%	53.60%	62.50%	50.70%
Yes	N	16	13	6	35
	%	59.30%	46.40%	37.50%	49.30%
Total	N	27	28	16	71
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Other, please specify)		MS v SH		
		MS	SH	Total
No	N	1	35	36
	%	5.00%	68.60%	50.70%
Yes	N	19	16	35
	%	95.00%	31.40%	49.30%
Total	N	20	51	71
	%	100.00%	100.00%	100.00%

Do you think these actions are coordinated well with Member States in the EU?		Animal v Human			
		Animal	Human	Both	Total
No	N	8	9	2	19
	%	13.80%	20.90%	9.10%	15.40%
Unsure / Do not know	N	9	13	12	34
	%	15.50%	30.20%	54.50%	27.60%
Yes	N	41	21	8	70
	%	70.70%	48.80%	36.40%	56.90%
Total	N	58	43	22	123
	%	100.00%	100.00%	100.00%	100.00%

Do you think these actions are coordinated well with Member States in the EU?		MS v SH		
		MS	SH	Total
No	N	1	18	19
	%	1.60%	29.50%	15.40%
Unsure / Do not know	N	4	30	34
	%	6.50%	49.20%	27.60%
Yes	N	57	13	70
	%	91.90%	21.30%	56.90%
Total	N	62	61	123
	%	100.00%	100.00%	100.00%

1.6 Added value

Do you agree with the following statement? The EU Action Plan identifies actions best dealt with at EU level.		Animal v Human			Total
		Animal	Human	Both	Total
Agree	N	29	32	17	78
	%	46.00%	71.10%	63.00%	57.80%
Disagree	N	2	3	1	6
	%	3.20%	6.70%	3.70%	4.40%
Strongly Agree	N	24	8	4	36
	%	38.1%	17.8%	14.8%	26.6%
Unsure / Do not know	N	8	2	5	15
	%	12.70%	4.40%	18.50%	11.10%
Strongly disagree	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Total	N	63	45	27	135
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? The EU Action Plan identifies actions best dealt with at EU level.		MS v SH		Total
		MS	SH	Total
Agree	N	36	42	78
	%	55.40%	60.00%	57.80%
Disagree	N	3	3	6
	%	4.60%	4.30%	4.40%
Strongly Agree	N	23	13	36
	%	35.4%	18.6%	26.6%
Strongly disagree	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	3	12	15
	%	4.60%	17.10%	11.10%
Total	N	65	70	135
	%	100.00%	100.00%	100.00%

Do you agree with the following statement? Overall, the EU Action Plan has helped bring about improvements in the situation on antimicrobial resistance in the EU that would not have happened otherwise.		Animal v Human			
		Animal	Human	Both	Total
Agree	N	38	29	13	80
	%	61.30%	64.40%	48.10%	59.70%
Disagree	N	2	4	3	9
	%	3.20%	8.90%	11.10%	6.70%
Strongly Agree	N	15	6	3	24
	%	24.2%	13.4%	11.1%	17.9%
Unsure / Do not know	N	0	1	0	1
	%	0.00%	2.20%	0.00%	0.70%
Strongly disagree	N	7	5	8	20
	%	11.3%	11.1%	29.6%	14.9%
Total	N	62	45	27	134
	%	100.00%	100.00%	100.00%	100.00%

Do you agree with the following statement? Overall, the EU Action Plan has helped bring about improvements in the situation on antimicrobial resistance in the EU that would not have happened otherwise.		MS v SH		
		MS	SH	Total
Agree	N	37	43	80
	%	56.90%	62.30%	59.70%
Disagree	N	2	7	9
	%	3.10%	10.10%	6.70%
Strongly Agree	N	18	6	24
	%	27.7%	8.7%	17.9%
Strongly disagree	N	0	1	1
	%	0.00%	1.40%	0.70%
Unsure / Do not know	N	8	12	20
	%	12.30%	17.40%	14.90%
Total	N	65	69	134
	%	100.00%	100.00%	100.00%

Are you aware of activities related to tackling AMR in the country in which you live that were enabled by EU funds and would not have occurred without EU funding (or would have occurred more slowly or to a lesser extent)?		Animal v Human			
		Animal	Human	Both	Total
No	N	17	16	4	37
	%	27.40%	35.60%	14.80%	27.60%
Not applicable	N	1	1	4	6
	%	1.60%	2.20%	14.80%	4.50%
Unsure / Do not know	N	25	14	13	52
	%	40.30%	31.10%	48.10%	38.80%
Yes	N	19	14	6	39
	%	30.60%	31.10%	22.20%	29.10%
Total	N	62	45	27	134
	%	100.00%	100.00%	100.00%	100.00%

Are you aware of activities related to tackling AMR in the country in which you live that were enabled by EU funds and would not have occurred without EU funding (or would have occurred more slowly or to a lesser extent)?		MS v SH		
		MS	SH	Total
No	N	19	18	37
	%	29.70%	25.70%	27.60%
Not applicable	N	1	5	6
	%	1.60%	7.10%	4.50%
Unsure / Do not know	N	21	31	52
	%	32.80%	44.30%	38.80%
Yes	N	23	16	39
	%	35.90%	22.90%	29.10%
Total	N	64	70	134
	%	100.00%	100.00%	100.00%

General public consultation – synopsis report

Introduction

- A mandatory 12-week public consultation was conducted as part of the evaluation of the EU Action Plan against the rising threats from antimicrobial resistance (AMR) (COM(2011)748). The consultation was launched on 30th October 2015 and its objective was to receive the views of all interested stakeholders on the EU AMR Action Plan. The consultation took the form of a questionnaire hosted on the *Your voice in Europe* website, which was open to the general public.[116] The consultation questionnaire included questions on all five mandatory evaluation criteria: relevance, effectiveness, efficiency, coherence and added value.

- The evaluation covered the period 2011-2015 in all 28 EU Member States and relevant third countries and aimed to assess 1) whether the key strategic actions contained in the Action Plan were the most appropriate actions to be taken to combat AMR; 2) which elements worked well or not (and why); 3) whether the objectives are still relevant to the needs of tackling AMR; and 4) whether the approach was appropriately holistic.

- In parallel with the public consultation, the research team conducted two targeted surveys: a survey of Member State (MS) representatives and a survey of EU-level stakeholders (SH) such as representatives of professional bodies and private organisations. The public consultation questionnaire was open to the general public, but the targeted surveys were accessible by invitation only.

- In recognition of the possibility that some respondents who accessed the public consultation questionnaire would have a similar profile to those targeted by the Member State and stakeholder surveys, the general public consultation questionnaire was structured in a way that redirected these respondents to a questionnaire that was identical with the Member State and stakeholder survey instruments. In practice, public consultation respondents were routed to relevant questions based on their answers to the first question, which asked respondents to indicate in what capacity they were responding. Based on their answer:

  o Respondents answering as citizens/private individuals were invited to continue with the general questionnaire.
  o Respondents answering as representatives of national authorities were redirected to the targeted questionnaire for Member State representatives.
  o Respondents answering as representatives of other organisations were redirected to the targeted questionnaire for stakeholders.

- This approach was intended to help ensure the inclusion in targeted surveys of respondents and organisations who fit the profile of invitees in the Member State and stakeholder surveys but were not included in the original invitation list.

- In total, 64 contributions were received, 62 through the public consultation questionnaire and two directly via email. This synthesis report presents a demographic overview of all 62 respondents accessing the public consultation questionnaire via the *Your Voice in Europe* website and analysis of 32 responses provided by citizens/private individuals (two additional responses were received via email and were not based on the consultation questionnaire so they were not analysed with the other responses but are published in their original form on the consultation website). Responses provided by representatives of national authorities and other organisations were integrated with the results of the MS and SH surveys, respectively, and as such are reported in the main evaluation report. This synopsis report presents only the source data for the analysis of responses from rerouted respondents.

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[116] http://ec.europa.eu/dgs/health_food-safety/dgs_consultations/consultation_20151030_amr_en.htm

Demographic profile of consultation respondents.

The tables below provide an overview of the demographic profile of respondents to the public consultation. The overview is organised as follows:

- Respondents answering as citizens/private individuals

- Respondents answering as representatives of public authorities (rerouted to the MS survey)

- Respondents answering as representatives of other organisations (rerouted to the SH survey)

Respondents answering as citizens/private individuals

Table 10: Age (N = 32)

Age group	Per cent
15-24	6.3
25-39	37.5
40-54	21.9
55 or older	28.1
I prefer not to answer	6.3

Table 11: Gender (N = 32)

Gender	Per cent
Male	40.6
Female	46.9
I prefer not to answer	12.5

Table 12: Country of origin (N = 32)

Country	Number
Belgium	2
Croatia	1
Estonia	2
France	3
Germany	6
Greece	1
Ireland	2
Italy	1
Poland	1
Spain	1
Sweden	1
United Kingdom	3
Other	8
EU	*1*
Nigeria	*1*
Switzerland	*5*
USA	*1*

Table 13: Do you think the following statement is true or false? Antibiotics kill viruses. (N = 30)

Answer	Number	Per cent
FALSE	25	83.3
TRUE	4	13.3
Unsure / do not know	1	3.3

Table 14: Do you think the following statement is true or false? You should always finish the course of antibiotics prescribed. (N = 30)

Answer	Number	Per cent
FALSE	2	6.7
TRUE	27	90.0
Unsure / do not know	1	3.3

Table 15: Have you heard about European Antibiotic Awareness Day? (N = 30)

Answer	Number	Per cent
Yes	14	46.7
No	13	43.3
Unsure / do not know	3	10.0

Table 16: Are you aware of the EU Action Plan against risks arising from antimicrobial resistance? (N = 28)

Answer	Number	Per cent
Yes	20	71.4
No	8	28.6

Respondents answering as representatives of public authorities (rerouted to the MS survey)

Table 17: Country of origin (N = 3)

Country	Number
Germany	1
Italy	1
Sweden	1

Table 18: How would you best describe your affiliation? (N = 3)

Affiliation	Number
Public health authority	2
Food safety authority	1
Veterinary authority	1
Research organization	1

Table 19: Please specify (N = 3)

Organisation type	Number	Per cent
National government	1	33.3
Regional government	1	33.3
Academia	1	33.3

Table 20: How familiar are you with the EU's Action Plan against risks arising from antimicrobial resistance? (N = 3)

Answer	Number	Per cent
Very familiar	2	66.7
Somewhat familiar	1	40.0
Not at all familiar	0	0

Table 21: Have you participated in actions under the EU Action Plan? (N = 3)

Answer	Number	Per cent
Yes	0	0
No	1	33.3
Unsure / Don't know	1	33.3
Not applicable	1	33.3

Table 22: Are you in a position to comment on the areas above with respect to the human or animal contexts? (N = 3)

Answer	Number	Per cent
Animal health	1	33.3
Human health	0	0
Both animal and human	2	66.7
Unsure/Do not know	0	0

Respondents answering as representatives of other organisations (rerouted to the SH survey)

Table 23: Country of origin (N = 27)

Country	Number
Austria	2
Belgium	1
Denmark	1
EU*	8
Finland	1
France	1
Germany	2
Italy	2
Netherlands	1
Norway	1
Slovenia	1
United Kingdom	5
Not indicated	1

Note: *EU was offered as one of the options for situations where the respondent answers on behalf of an EU-level organisation

Table 24: How would you describe your main business activities or the activities of the organisation you represent? (N = 27)

Organisation type	Number
Academic or research centre	2
Of which private	*1*
Of which university (including teaching)	*1*
Consultancy	1*
Health care, hospital, health institution	6
Of which private	*4***
Of which public	*1*
Of which ownership not indicated	*1*
Industrial or trade association	4
Of which national	*1**
Of which international	*2*
Of which European	*1*
NGO	9
Of which national	*5*
Of which international	*4*
Private company	3
Of which international	*3****
General practice surgery	1
Veterinary surgeon	1

*Of which one microenterprise (<10 employees)

**Of which two microenterprises (<10 employees)

***Of which two large enterprises (>250 employees)

Table 25: How familiar are you with the EU's Action Plan against risks arising from antimicrobial resistance? (N = 27)

Answer	Number	Per cent
Very familiar	9	33.3
Somewhat familiar	16	59.3
Not at all familiar	1	3.7
Unsure/Don't know	1	3.7

Table 26: Are you in a position to comment on the areas above with respect to the human or animal contexts? (N = 27)

Answer	Number	Per cent
Animal health	9	33.3
Human health	14	51.9
Both animal and human	4	14.8
Unsure / Do not know	0	0

Analysis of responses from the general public

This section presents results *only* based on an analysis of responses from the general public. Responses from respondents matching MS and SH profiles (and rerouted to the MS and SH surveys respectively) are presented in the subsequent section. The analysis of MS and SH survey responses from respondents who were rerouted from the public consultation were analysed jointly with data from targeted MS and SH surveys. This joint analysis is presented in the final evaluation report.

Section 1: Relevance

Tables 27-29 present respondents' views on the relevance of the Action Plan's objectives. The majority of respondents agreed that each objective was very relevant and only five objectives were viewed by at least one respondent as not relevant.

Eleven respondents agreed that the list includes all existing important objectives and did not indicate that any area was missing. Eight respondents, however, thought there were important topics not covered by the Action Plan. These included diagnostics (mentioned by two respondents), monitoring of production diseases in animals,[117] improvements in husbandry conditions and regulation of antimicrobial use in animals, and reduction of antimicrobial use in countries with high levels of consumption in humans.

Nearly half of respondents agreed that all the issues covered by the Action Plan objectives will become more important in the future. A third of respondents believed that some issues will become more important and these included appropriate use of antimicrobials in humans and animals (1 respondent), development of alternatives (3 respondents), other research areas (3 respondents), communication (1 respondent), cooperation at international level (1 respondent), and prevalence of diseases in livestock (1 respondent). Only one respondent expected all of the issues to remain at the same level of importance.

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[117] i.e. diseases incudes by management practices.

Table 27: Please rate how relevant the following objectives are for tackling antimicrobial resistance

Relevance	Not relevant	Somewhat relevant	Very relevant	Unsure	N
Appropriate use in humans	0	3 (13.0%)	20 (87.0%)	0	23
Appropriate use in animals	0	5 (21.7%)	18 (78.3%)	0	23
Prevention of infections in humans	1 (4.8%)	5 (23.8%)	15 (71.4%)	0	21
Prevention of infections in animals	1 (4.5%)	4 (18.2%)	17 (77.3%)	0	22
Development new antimicrobials	1 (4.5%)	8 (36.4%)	13 (59.1%)	0	22
Development of alternatives	1 (4.5%)	7 (31.8%)	14 (63.6%)	0	22
Cooperation at international level	0	6 (27.3%)	15 (68.2%)	1 (4.5%)	22
Cooperation at EU level	0	4 (18.2%)	18 (81.8%)	0	22
Monitoring of resistance	0	1 (4.5%)	20 (90.9%)	1 (4.5%)	22
Monitoring of use in humans	0	2 (9.1%)	19 (86.4%)	1 (4.5%)	22
Monitoring of use in animals	0	1 (4.8%)	19 (90.5%)	1 (4.8%)	21
Research into the causes	2 (9.1%)	5 (22.7%)	15 (68.2%)	0	22
Research into prudent use	3 (13.6%)	2 (9.1%)	16 (72.7%)	1 (4.5%)	22
Communication to human health professionals	0	7 (31.8%)	15 (68.2%)	0	22
Communication to people caring for animals	0	6 (27.3%)	16 (72.7%)	0	22
Communications to general public	1 (4.5%)	2 (9.1%)	19 (86.4%)	0	22

Table 28: Are there any other important issues for addressing antimicrobial resistance not covered by the objectives listed above? (N = 23)

Answer	Number	Per cent
Yes	8	34.8
No, all of the important issues are covered	11	47.8
Unsure / do not know	4	17.4

Table 29: Do you expect some of these issues to become more important in the next 5-10 years than they are now? (N = 23)

Answer	Number	Per cent
Yes, all of these issues will become more important in 5-10 years	11	47.8
Yes, some of them will become more important in 5-10 years	8	34.8
No, I expect these issues to remain at the same level of importance as they are now	2	8.7
Unsure / Do not know	2	8.7

Section 2: Effectiveness

The majority of respondents agreed with the need for a holistic approach, as laid out in the EU Action Plan. More respondents felt that the EU Action Plan captured this holistic approach than those who did not. Still, the largest group of respondents (nearly half) did not know. In terms of recommendations on how the Action Plan could be made more holistic, one respondent suggested more in-depth actions on animal health issues, such as comparison of production systems to identify those that led to less resistance. Another respondent called for a greater focus on production diseases.

Table 30: The EU Action Plan against Antimicrobial Resistance states that, because antimicrobial resistance can spread between humans and animals and cross borders, tackling antimicrobial resistance requires a holistic approach involving many different sectors. Do you agree with the need for a holistic approach? (N = 27)

Answer	Number	Per cent
Yes	25	92.6
No	0	0.0
Unsure / do not know	2	7.4

Table 31: Do you think that the EU Action Plan against Antimicrobial Resistance captures this holistic approach? (N = 25)

Answer	Number	Per cent
Yes	9	36.0
No	6	24.0
Unsure / do not know	10	40.0

Section 3: Efficiency

Respondents were asked which Action Plan objectives should have the highest priority to receive EU financial support. Depending on the area in question, the proportion of respondents who felt that a topic should be a high priority ranged from eight respondents (38.1 per cent, research into the causes of AMR) to 17 respondents (81.0 per cent, development of alternatives to antimicrobials). Only a small number of respondents believed that some topics should be a low priority. This was most often indicated with the following areas: development new antimicrobials, cooperation at EU level, research into the causes of AMR, research into prudent use of antimicrobials, and communications to general public.

Table 32: EU funds have been spent on several interventions related to antimicrobial resistance. Which areas should have highest priority to receive financial support from the EU?

	High priority	Medium priority	Low priority	N
Appropriate use in humans	14 (66.7%)	6 (28.6%)	1 (4.8%)	21
Appropriate use in animals	14 (66.7%)	6 (28.6%)	1 (4.8%)	21
Prevention of infections in humans	14 (66.7%)	6 (28.6%)	1 (4.8%)	21
Prevention of infections in animals	16 (72.7%)	5 (22.7%)	1 (4.5%)	22
Development new antimicrobials	10 (47.6%)	8 (38.1%)	3 (14.3%)	21
Development of alternatives	17 (81.0%)	3 (14.3%)	1 (4.8%)	21
Cooperation at international level	15 (71.4%)	5 (23.8%)	1 (4.8%)	21
Cooperation at EU level	15 (71.4%)	4 (19.0%)	2 (9.5%)	21
Monitoring of resistance	13 (61.9%)	6 (28.6%)	2 (9.5%)	21
Monitoring of use in humans	11 (52,4%)	8 (38.1%)	2 (9.5%)	21
Monitoring of use in animals	12 (57.1%)	8 (38.1%)	1 (4.8%)	21
Research into the causes	8 (38.1%)	10 (47.6%)	3 (14.3%)	21
Research into prudent use	12 (57.1%)	7 (33.3%)	2 (9.5%)	21
Communication to human health professionals	10 (45.5%)	10 (45.5%)	2 (9.1%)	22
Communication to people caring for animals	12 (54.5%)	10 (45.5%)	0 (0.0%)	22
Communications to general public	12 (60.0%)	5 (25.0%)	3 (15.0%)	20

Section 4: Coherence

Approximately half of consultation respondents were aware of ongoing actions in their countries to tackle antimicrobial resistance. Of those respondents, four (28.6 per cent) believed that these actions were well coordinated with other Member States. Another quarter did not think they were well coordinated and a half did not know/were not sure. Examples of actions at the national level provided by respondents included ongoing research initiatives, national policy documents and strategies, monitoring systems and public communication campaigns.

Table 33: Are you aware of actions in your country for tackling antimicrobial resistance? (N = 27)

Answer	Number	Per cent
Yes	14	51.9
No	13	48.1

Table 34: Do you think these actions are coordinated well with Member States in the EU? (N = 14)

Answer	Number	Per cent
Yes	4	28.6
No	4	28.6
Unsure/ do not know	6	42.9

With respect to coherence at EU level, respondents believed that the EU AMR Action Plan complemented other EU policies. Two notable exceptions were the areas of competitiveness and SMEs. Nearly a third of respondents disagreed that EU AMR policy was coherent with EU policies on competitiveness. Almost half of respondents did not know if the Action Plan completed policies on SMEs.

Table 35: Do you agree with the following statement: EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas?

	Strongly agree	Agree	Disagree	Strongly disagree	Unsure / do not know	N
Environment	3 (14.3%)	9 (42.9%)	4 (19.0%)	1 (4.8%)	4 (19.0%)	21
Human health	11 (50.0%)	8 (36.4%)	1 (4.5%)	0	2 (9.1%)	22
Animal health	8 (38.1%)	7 (33.3%)	3 (14.3%)	1 (4.8%)	2 (9.5%)	21
Food safety	8 (38.1%)	8 (38.1%)	2 (9.5%)	0	3 (14.3%)	21
Agriculture	8 (42.1%)	6 (31.6%)	3 (15.8%)	0	2 (10.5%)	19
Research	5 (22.7%)	11 (50.0%)	5 (22.7%)	0	1 (4.5%)	22
Competitiveness	2 (9.5%)	9 (42.9%)	4 (19.0%)	2 (9.5%)	4 (19.0%)	21
SMEs	3 (13.6%)	5 (22.7%)	4 (18.2%)	1 (4.5%)	9 (40.7%)	22

Respondents were generally not very familiar with actions undertaken by international bodies. Correspondingly, the majority of respondents did not know whether international-level actions to tackle AMR were well coordinated with EU actions in the area. Of those who offered an assessment, more respondents felt that coordination was good than those who did not, although the overall number of respondents to this question was very small. The one exception was action taken by the WHO, about which more respondents were aware (12 respondents, 60 per cent) than unaware (8 respondents 40 per cent).

Table 36: Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below?

Entity	Yes	No	N
Non-EU OECD countries	8 (38.1%)	13 (61.9%)	21
TATFAR	5 (23.8%)	16 (76.2%)	21
WHO	12 (60.0%)	8 (40.0%)	20
OIE	6 (28.6%)	15 (71.4%)	21
FAO	9 (42.9%)	12 (52.1%)	21

Table 37: Do you think these actions at international level are coordinated well with EU policies and activities on antimicrobial resistance? (N = 13)

Answer	Number	Per cent
Yes	4	30.8
No	2	15.4
Unsure / do not know	7	53.8

Section 5: Added value

When asked whether they were aware of actions to tackle AMR taking place in their country which were enabled by EU funds, the majority of respondents were not sure and a third of respondents stated they did not now of such activities. No respondents indicated that they were aware of actions to tackle AMR in their country that were enabled by EU funds.

Table 38: Are you aware of activities related to tackling AMR in the country in which you live that were enabled by EU funds and would not have occurred without EU funding (or would have occurred more slowly or to a lesser extent)? (N = 19)

Answer	Number	Per cent
Yes	0	0.0
No	7	36.8
Not applicable	1	5.3
Unsure / Do not know	11	57.9

Section 6: Additional comments

In their final open-ended comments, respondents made the following observations. Two respondents stressed that existing communication about and awareness of AMR is inadequate. Another respondent indicated that efforts to tackle AMR were compromised by a focus on competitiveness and short-term economic gains. One respondent indicated that future AMR policy should focus on prevention and alternatives to antimicrobials. Another respondent urged more rapid commercialisation of new antimicrobials. One respondent felt that the Action Plan neglected the causes of antimicrobial use and called for greater focus on corresponding measures such as monitoring the prevalence of production diseases.

Responses from respondents rerouted to the MS and SH surveys

This section lists a summary of responses from public consultation respondents who were rerouted to the MS and SH surveys. These data were integrated with the results of the MS and SH surveys, respectively, for analysis and as such the analysis is reported in the main evaluation report.

Section 1: Relevance

Relevance – 2011

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	2	0	2
	%	14.3%	0.0%	10.5%
Unsure / Do not know	N	0	1	1
	%	0.0%	20.0%	5.3%
Very relevant	N	12	4	16
	%	85.7%	80.0%	84.2%
Total	N	14	5	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	2	2
	%	0.0%	11.8%	10.5%
Unsure / Do not know	N	0	1	1
	%	0.0%	5.9%	5.3%
Very relevant	N	2	14	16
	%	100.0%	82.4%	84.2%
Total	N	2	17	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	1	1	2
	%	10.0%	20.0%	13.3%
Very relevant	N	9	4	13
	%	90.0%	80.0%	86.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	0	2	2
	%	0.0%	16.7%	13.3%
Very relevant	N	3	10	13
	%	100.0%	83.3%	86.7%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	4	0	4
	%	28.6%	0.0%	21.1%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	5.3%
Very relevant	N	10	4	14
	%	71.4%	80.0%	73.7%
Total	N	14	5	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	4	4
	%	0.0%	23.5%	21.1%
Unsure / do not know	N	0	1	1
	%	0.0%	5.9%	5.3%
Very relevant	N	2	12	14
	%	100.0%	70.6%	73.7%
Total	N	2	17	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	3	0	3
	%	30.0%	0.0%	20.0%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Very relevant	N	7	4	11
	%	70.0%	80.0%	73.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	3	3
	%	0.0%	25.0%	20.0%
Unsure / do not know	N	0	1	1
	%	0.0%	8.3%	6.7%
Very relevant	N	3	8	11
	%	100.0%	66.7%	73.3%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	1	0	2
	%	10.0%	7.1%	0.0%	6.9%
Somewhat relevant	N	5	7	2	14
	%	50.0%	50.0%	40.0%	48.3%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	4	6	2	12
	%	40.0%	42.9%	40.0%	41.4%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
Not relevant	N	0	2	2
	%	0.0%	7.7%	6.9%
Somewhat relevant	N	0	14	14
	%	0.0%	53.8%	48.3%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	3	9	12
	%	100.0%	34.6%	41.4%
Total	N	3	26	29
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	0	1	0	1
	%	0.0%	7.1%	0.0%	3.4%
Somewhat relevant	N	1	6	0	7
	%	10.0%	42.9%	0.0%	24.1%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	9	7	4	20
	%	90.0%	50.0%	80.0%	69.0%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	3.8%	3.4%
Somewhat relevant	N	1	6	7
	%	33.3%	23.1%	24.1%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	2	18	20
	%	66.7%	69.2%	69.0%
Total	N	3	26	29
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Somewhat relevant	N	2	5	0	7
	%	20.0%	35.7%	0.0%	24.1%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	8	9	4	21
	%	80.0%	64.3%	80.0%	72.4%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	0	7	7
	%	0.0%	26.9%	24.1%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	3	18	21
	%	100.0%	69.2%	72.4%
Total	N	3	26	29
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Somewhat relevant	N	4	4	1	9
	%	40.0%	28.6%	20.0%	31.0%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	6	10	3	19
	%	60.0%	71.4%	60.0%	65.5%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	1	8	9
	%	33.3%	30.8%	31.0%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	2	17	19
	%	66.7%	65.4%	65.5%
Total	N	3	26	29
	%	100.00%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	0	1
	%	10.0%	0.0%	0.0%	3.4%
Somewhat relevant	N	3	4	0	7
	%	30.0%	28.6%	0.0%	24.1%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	6	10	4	20
	%	60.0%	71.4%	80.0%	69.0%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	3.8%	3.4%
Somewhat relevant	N	0	7	7
	%	0.0%	26.9%	24.1%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	3	17	20
	%	100.0%	65.4%	69.0%
Total	N	3	26	29
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	4	0	4
	%	28.6%	0.0%	21.1%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	5.3%
Very relevant	N	10	4	14
	%	71.4%	80.0%	73.7%
Total	N	14	5	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in human)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	4	4
	%	0.0%	23.5%	21.1%
Unsure / do not know	N	0	1	1
	%	0.0%	5.9%	5.3%
Very relevant	N	2	12	14
	%	100.0%	70.6%	73.7%
Total	N	2	17	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
Somewhat relevant	N	1	0	1
	%	10.0%	0.0%	6.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Very relevant	N	9	4	13
	%	90.0%	80.0%	86.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	0	1	1
	%	0.0%	8.3%	6.7%
Unsure / do not know	N	0	1	1
	%	0.0%	8.3%	6.7%
Very relevant	N	3	10	13
	%	100.0%	83.3%	86.7%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	0	1
	%	10.0%	0.0%	0.0%	3.4%
Somewhat relevant	N	3	5	2	10
	%	30.0%	35.7%	40.0%	34.5%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	6	9	2	17
	%	60.0%	64.3%	40.0%	58.6%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	3.8%	3.4%
Somewhat relevant	N	1	9	10
	%	33.3%	34.6%	34.5%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	2	15	17
	%	66.7%	57.7%	58.6%
Total	N	3	26	29
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	0	1
	%	10.0%	0.0%	0.0%	3.4%
Somewhat relevant	N	3	6	0	9
	%	30.0%	42.9%	0.0%	31.0%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	6	8	4	18
	%	60.0%	57.1%	80.0%	62.1%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	3.8%	3.4%
Somewhat relevant	N	0	9	9
	%	0.0%	34.6%	31.0%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	3	15	18
	%	100.0%	57.7%	62.1%
Total	N	3	26	29
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	6	0	6
	%	42.9%	0.0%	31.6%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	5.3%
Very relevant	N	8	4	12
	%	57.1%	80.0%	63.2%
Total	N	14	5	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	6	6
	%	0.0%	35.3%	31.6%
Unsure / do not know	N	0	1	1
	%	0.0%	5.9%	5.3%
Very relevant	N	2	10	12
	%	100.0%	58.8%	63.2%
Total	N	2	17	19
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	1	0	1
	%	10.0%	0.0%	7.1%
Unsure / do not know	N	0	1	1
	%	0.0%	25.0%	7.1%
Very relevant	N	9	3	12
	%	90.0%	75.0%	85.7%
Total	N	10	4	14
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	1	0	1
	%	50.0%	0.0%	7.1%
Unsure / do not know	N	0	1	1
	%	0.0%	8.3%	7.1%
Very relevant	N	1	11	12
	%	50.0%	91.7%	85.7%
Total	N	2	12	14
	%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	0	1	0	1
	%	0.0%	7.1%	0.0%	3.4%
Somewhat relevant	N	0	7	0	7
	%	0.0%	50.0%	0.0%	24.1%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.4%
Very relevant	N	10	6	4	20
	%	100.0%	42.9%	80.0%	69.0%
Total	N	10	14	5	29
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each objective was for tackling antimicrobial resistance when the Action Plan was established in 2011. (Communication, education and training for the general public)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	3.8%	3.4%
Somewhat relevant	N	0	7	7
	%	0.0%	26.9%	24.1%
Unsure / do not know	N	0	1	1
	%	0.0%	3.8%	3.4%
Very relevant	N	3	17	20
	%	100.0%	65.4%	69.0%
Total	N	3	26	29
	%	100.0%	100.0%	100.0%

Relevance – 2015

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
Somewhat relevant	N	3	0	3
	%	23.1%	0.0%	16.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	5.6%
Very relevant	N	10	4	14
	%	76.9%	80.0%	77.8%
Total	N	13	5	18
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	0	3	3
	%	0.0%	18.8%	16.7%
Unsure / do not know	N	0	1	1
	%	0.0%	6.3%	5.6%
Very relevant	N	2	12	14
	%	100.0%	75.0%	77.8%
Total	N	2	16	18
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Very relevant	N	10	4	14
	%	100.0%	80.0%	93.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	0	1	1
	%	0.0%	8.3%	6.7%
Very relevant	N	3	11	14
	%	100.0%	91.7%	93.3%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	3	0	3
	%	23.1%	0.0%	16.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	5.6%
Very relevant	N	10	4	14
	%	76.9%	80.0%	77.8%
Total	N	13	5	18
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	3	3
	%	0.0%	18.8%	16.7%
Unsure / do not know	N	0	1	1
	%	0.0%	6.3%	5.6%
Very relevant	N	2	12	14
	%	100.0%	75.0%	77.8%
Total	N	2	16	18
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Very relevant	N	10	4	14
	%	100.0%	80.0%	93.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	0	1	1
	%	0.0%	8.3%	6.7%
Unsure / do not know	N	3	11	14
	%	100.0%	91.7%	93.3%
Very relevant	N	3	12	15
	%	100.0%	100.0%	100.0%
Total	N	0	1	1
	%	0.0%	8.3%	6.7%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	1	0	2
	%	10.0%	7.7%	0.0%	7.1%
Somewhat relevant	N	4	4	1	9
	%	40.0%	30.8%	20.0%	32.1%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.6%
Very relevant	N	5	8	3	16
	%	50.0%	61.5%	60.0%	57.1%
Total	N	10	13	5	28
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
Not relevant	N	0	2	2
	%	0.0%	8.0%	7.1%
Somewhat relevant	N	0	9	9
	%	0.0%	36.0%	32.1%
Unsure / do not know	N	0	1	1
	%	0.0%	4.0%	3.6%
Very relevant	N	3	13	16
	%	100.0%	52.0%	57.1%
Total	N	3	25	28
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	0	1	0	1
	%	0.0%	7.7%	0.0%	3.6%
Somewhat relevant	N	1	4	0	5
	%	10.0%	30.8%	0.0%	17.9%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.6%
Very relevant	N	9	8	4	21
	%	90.0%	61.5%	80.0%	75.0%
Total	N	10	13	5	28
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	4.0%	3.6%
Somewhat relevant	N	0	5	5
	%	0.0%	20.0%	17.9%
Unsure / do not know	N	0	1	1
	%	0.0%	4.0%	3.6%
Very relevant	N	3	18	21
	%	100.0%	72.0%	75.0%
Total	N	3	25	28
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	0	1	0	1
	%	0.0%	7.7%	0.0%	3.6%
Somewhat relevant	N	3	1	0	4
	%	30.0%	7.7%	0.0%	14.3%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.6%
Very relevant	N	7	11	4	22
	%	70.0%	84.6%	80.0%	78.6%
Total	N	10	13	5	28
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	4.0%	3.6%
Somewhat relevant	N	0	4	4
	%	0.0%	16.0%	14.3%
Unsure / do not know	N	0	1	1
	%	0.0%	4.0%	3.6%
Very relevant	N	3	19	22
	%	100.0%	76.0%	78.6%
Total	N	3	25	28
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Somewhat relevant	N	3	3	0	6
	%	30.0%	25.0%	0.0%	22.2%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.7%
Very relevant	N	7	9	4	20
	%	70.0%	75.0%	80.0%	74.1%
Total	N	10	12	5	27
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Somewhat relevant	N	0	6	6
	%	0.0%	25.0%	22.2%
Unsure / do not know	N	0	1	1
	%	0.0%	4.2%	3.7%
Very relevant	N	3	17	20
	%	100.0%	70.8%	74.1%
Total	N	3	24	27
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	0	1
	%	10.0%	0.0%	0.0%	3.6%
Somewhat relevant	N	1	4	0	5
	%	10.0%	30.8%	0.0%	17.9%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.6%
Very relevant	N	8	9	4	21
	%	80.0%	69.2%	80.0%	75.0%
Total	N	10	13	5	28
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	4.0%	3.6%
Somewhat relevant	N	0	5	5
	%	0.0%	20.0%	17.9%
Unsure / do not know	N	0	1	1
	%	0.0%	4.0%	3.6%
Very relevant	N	3	18	21
	%	100.0%	72.0%	75.0%
Total	N	3	25	28
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	2	0	2
	%	16.7%	0.0%	11.8%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	5.9%
Very relevant	N	10	4	14
	%	83.3%	80.0%	82.4%
Total	N	12	5	17
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in humans)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	2	2
	%	0.0%	13.3%	11.8%
Unsure / do not know	N	0	1	1
	%	0.0%	6.7%	5.9%
Very relevant	N	2	12	14
	%	100.0%	80.0%	82.4%
Total	N	2	15	17
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	1	0	1
	%	10.0%	0.0%	6.7%
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Very relevant	N	9	4	13
	%	90.0%	80.0%	86.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	8.3%	6.7%
Somewhat relevant	N	0	1	1
	%	0.0%	8.3%	6.7%
Unsure / do not know	N	3	10	13
	%	100.0%	83.3%	86.7%
Very relevant	N	3	12	15
	%	100.0%	100.0%	100.0%
Total	N	0	1	1
	%	0.0%	8.3%	6.7%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	0	1
	%	10.0%	0.0%	0.0%	3.6%
Somewhat relevant	N	4	6	2	12
	%	40.0%	46.2%	40.0%	42.9%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.6%
Very relevant	N	5	7	2	14
	%	50.0%	53.8%	40.0%	50.0%
Total	N	10	13	5	28
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	4.0%	3.6%
Somewhat relevant	N	2	10	12
	%	66.7%	40.0%	42.9%
Unsure / do not know	N	0	1	1
	%	0.0%	4.0%	3.6%
Very relevant	N	1	13	14
	%	33.3%	52.0%	50.0%
Total	N	3	25	28
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
Not relevant	N	1	0	0	1
	%	10.0%	0.0%	0.0%	3.6%
Somewhat relevant	N	3	5	0	8
	%	30.0%	38.5%	0.0%	28.6%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.6%
Very relevant	N	6	8	4	18
	%	60.0%	61.5%	80.0%	64.3%
Total	N	10	13	5	28
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
Not relevant	N	0	1	1
	%	0.0%	4.0%	3.6%
Somewhat relevant	N	0	8	8
	%	0.0%	32.0%	28.6%
Unsure / do not know	N	0	1	1
	%	0.0%	4.0%	3.6%
Very relevant	N	3	15	18
	%	100.0%	60.0%	64.3%
Total	N	3	25	28
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	4	0	4
	%	30.8%	0.0%	22.2%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	5.6%
Very relevant	N	9	4	13
	%	69.2%	80.0%	72.2%
Total	N	13	5	18
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	4	4
	%	0.0%	25.0%	22.2%
Somewhat relevant	N	0	1	1
	%	0.0%	6.3%	5.6%
Unsure / do not know	N	2	11	13
	%	100.0%	68.8%	72.2%
Very relevant	N	2	16	18
	%	100.0%	100.0%	100.0%
Total	N	0	4	4
	%	0.0%	25.0%	22.2%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Very relevant	N	10	4	14
	%	100.0%	80.0%	93.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	0	1	1
	%	0.0%	8.3%	6.7%
Very relevant	N	3	11	14
	%	100.0%	91.7%	93.3%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for the general public)		Animal v Human			Total
		Animal	Human	Both	Total
Not relevant	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	5	0	5
	%	0.0%	38.5%	0.0%	17.9%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	3.6%
Very relevant	N	10	8	4	22
	%	100.0%	61.5%	80.0%	78.6%
Total	N	10	13	5	28
	%	100.0%	100.0%	100.0%	100.0%

Please rate how relevant each EU Action Plan objective is for the current (2015) situation on antimicrobial resistance. (Communication, education and training for the general public)		MS v SH		Total
		MS	SH	Total
Not relevant	N	0	0	0
	%	0.0%	0.0%	0.0%
Somewhat relevant	N	0	5	5
	%	0.0%	20.0%	17.9%
Unsure / do not know	N	0	1	1
	%	0.0%	4.0%	3.6%
Very relevant	N	3	19	22
	%	100.0%	76.0%	78.6%
Total	N	3	25	28
	%	100.0%	100.0%	100.0%

Are there any other important issues for addressing antimicrobial resistance not covered by the objectives listed above?		Animal v Human			
		Animal	Human	Both	Total
No, all of the important issues are covered	N	2	5	0	7
	%	20.0%	41.7%	0.0%	25.9%
Unsure / Do not know	N	1	0	0	1
	%	10.0%	0.0%	0.0%	3.7%
Yes	N	7	7	5	19
	%	70.0%	58.3%	100.0%	70.4%
Total	N	10	12	5	27
	%	100.0%	100.0%	100.0%	100.0%

Are there any other important issues for addressing antimicrobial resistance not covered by the objectives listed above?		MS v SH		
		MS	SH	Total
No, all of the important issues are covered	N	1	6	7
	%	33.3%	25.0%	25.9%
Unsure / Do not know	N	0	1	1
	%	0.0%	4.2%	3.7%
Yes	N	2	17	19
	%	66.7%	70.8%	70.4%
Total	N	3	24	27
	%	100.0%	100.0%	100.0%

Do you expect some of these issues to become more important in the next 5-10 years than they are now?		Animal v Human			
		Animal	Human	Both	Total
No, I expect these issues to decrease in importance in the next 5-10 years	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
No, I expect these issues to remain at the same level of importance as they are now	N	0	1	1	2
	%	0.0%	8.3%	20.0%	7.4%
Unsure / Do not know	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Yes, all of these issues will become more important in 5-10 years	N	3	7	4	14
	%	30.0%	58.3%	80.0%	51.9%
Yes, some of them will become more important in 5-10 years	N	7	4	0	11
	%	70.0%	33.3%	0.0%	40.7%
Total	N	10	12	5	27
	%	100.0%	100.0%	100.0%	100.0%

Do you expect some of these issues to become more important in the next 5-10 years than they are now?		MS v SH		
		MS	SH	Total
No, I expect these issues to decrease in importance in the next 5-10 years	N	0	0	0
	%	0.0%	0.0%	0.0%
No, I expect these issues to remain at the same level of importance as they are now	N	1	1	2
	%	33.3%	4.2%	7.4%
Unsure / Do not know	N	0	0	0
	%	0.0%	0.0%	0.0%
Yes, all of these issues will become more important in 5-10 years	N	2	12	14
	%	66.7%	50.0%	51.9%
Yes, some of them will become more important in 5-10 years	N	0	11	11
	%	0.0%	45.8%	40.7%
Total	N	3	24	27
	%	100.0%	100.0%	100.0%

Distribution of actions

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in humans)		Animal v Human		
		Human	Both	Total
No	N	3	1	4
	%	27.3%	20.0%	25.0%
Unsure / do not know	N	4	2	6
	%	36.4%	40.0%	37.5%
Yes	N	4	2	6
	%	36.4%	40.0%	37.5%
Total	N	11	5	16
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
No	N	0	4	4
	%	0.0%	28.6%	25.0%
Unsure / Do not know	N	1	5	6
	%	50.0%	35.7%	37.5%
Yes	N	1	5	6
	%	50.0%	35.7%	37.5%
Total	N	2	14	16
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
No	N	1	1	2
	%	10.0%	20.0%	13.3%
Unsure / do not know	N	6	2	8
	%	60.0%	40.0%	53.3%
Yes	N	3	2	5
	%	30.0%	40.0%	33.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
No	N	0	2	2
	%	0.0%	16.7%	13.3%
Unsure / Do not know	N	1	7	8
	%	33.3%	58.3%	53.3%
Yes	N	2	3	5
	%	66.7%	25.0%	33.3%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
No	N	3	0	3
	%	27.3%	0.0%	18.8%
Unsure / do not know	N	4	2	6
	%	36.4%	40.0%	37.5%
Yes	N	4	3	7
	%	36.4%	60.0%	43.8%
Total	N	11	5	16
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
No	N	0	3	3
	%	0.0%	21.4%	18.8%
Unsure / Do not know	N	1	5	6
	%	50.0%	35.7%	37.5%
Yes	N	1	6	7
	%	50.0%	42.9%	43.8%
Total	N	2	14	16
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	6	2	8
	%	60.0%	50.0%	57.1%
Yes	N	4	2	6
	%	40.0%	50.0%	42.9%
Total	N	10	4	14
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
No	N	1	7	8
	%	33.3%	63.6%	57.1%
Unsure / Do not know	N	2	4	6
	%	66.7%	36.4%	42.9%
Yes	N	3	11	14
	%	100.0%	100.0%	100.0%
Total	N	1	7	8
	%	33.3%	63.6%	57.1%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
No	N	0	2	0	2
	%	0.0%	18.2%	0.0%	7.7%
Unsure / do not know	N	7	7	2	16
	%	70.0%	63.6%	40.0%	61.5%
Yes	N	3	2	3	8
	%	30.0%	18.2%	60.0%	30.8%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
No	N	0	2	2
	%	0.0%	8.7%	7.7%
Unsure / Do not know	N	2	14	16
	%	66.7%	60.9%	61.5%
Yes	N	1	7	8
	%	33.3%	30.4%	30.8%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
No	N	3	3	0	6
	%	30.0%	27.3%	0.0%	23.1%
Unsure / do not know	N	4	5	2	11
	%	40.0%	45.5%	40.0%	42.3%
Yes	N	3	3	3	9
	%	30.0%	27.3%	60.0%	34.6%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
No	N	0	6	6
	%	0.0%	26.1%	23.1%
Unsure / Do not know	N	2	9	11
	%	66.7%	39.1%	42.3%
Yes	N	1	8	9
	%	33.3%	34.8%	34.6%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	1	2	1	4
	%	10.0%	18.2%	20.0%	15.4%
Unsure / do not know	N	5	6	2	13
	%	50.0%	54.5%	40.0%	50.0%
Yes	N	4	3	2	9
	%	40.0%	27.3%	40.0%	34.6%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	0	4	4
	%	0.0%	17.4%	15.4%
Unsure / Do not know	N	1	12	13
	%	33.3%	52.2%	50.0%
Yes	N	2	7	9
	%	66.7%	30.4%	34.6%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	1	4	1	6
	%	10.0%	36.4%	20.0%	23.1%
Unsure / do not know	N	5	5	2	12
	%	50.0%	45.5%	40.0%	46.2%
Yes	N	4	2	2	8
	%	40.0%	18.2%	40.0%	30.8%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	0	6	6
	%	0.0%	26.1%	23.1%
Unsure / Do not know	N	1	11	12
	%	33.3%	47.8%	46.2%
Yes	N	2	6	8
	%	66.7%	26.1%	30.8%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	1	2	0	3
	%	10.0%	18.2%	0.0%	11.5%
Unsure / do not know	N	5	5	3	13
	%	50.0%	45.5%	60.0%	50.0%
Yes	N	4	4	2	10
	%	40.0%	36.4%	40.0%	38.5%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	0	3	3
	%	0.0%	13.0%	11.5%
Unsure / Do not know	N	1	12	13
	%	33.3%	52.2%	50.0%
Yes	N	2	8	10
	%	66.7%	34.8%	38.5%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
No	N	2	0	2
	%	18.2%	0.0%	12.5%
Unsure / do not know	N	5	3	8
	%	45.5%	60.0%	50.0%
Yes	N	4	2	6
	%	36.4%	40.0%	37.5%
Total	N	11	5	16
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in human)		MS v SH		
		MS	SH	Total
No	N	0	2	2
	%	0.0%	14.3%	12.5%
Unsure / Do not know	N	1	7	8
	%	50.0%	50.0%	50.0%
Yes	N	1	5	6
	%	50.0%	35.7%	37.5%
Total	N	2	14	16
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
No	N	1	0	1
	%	10.0%	0.0%	6.7%
Unsure / do not know	N	5	3	8
	%	50.0%	60.0%	53.3%
Yes	N	4	2	6
	%	40.0%	40.0%	40.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
No	N	0	1	1
	%	0.0%	8.3%	6.7%
Unsure / Do not know	N	1	7	8
	%	33.3%	58.3%	53.3%
Yes	N	2	4	6
	%	66.7%	33.3%	40.0%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
No	N	0	1	0	1
	%	0.0%	9.1%	0.0%	3.8%
Unsure / do not know	N	6	7	2	15
	%	60.0%	63.6%	40.0%	57.7%
Yes	N	4	3	3	10
	%	40.0%	27.3%	60.0%	38.5%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
No	N	0	1	1
	%	0.0%	4.3%	3.8%
Unsure / Do not know	N	2	13	15
	%	66.7%	56.5%	57.7%
Yes	N	1	9	10
	%	33.3%	39.1%	38.5%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
No	N	0	3	0	3
	%	0.0%	27.3%	0.0%	11.5%
Unsure / do not know	N	5	7	3	15
	%	50.0%	63.6%	60.0%	57.7%
Yes	N	5	1	2	8
	%	50.0%	9.1%	40.0%	30.8%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
No	N	0	3	3
	%	0.0%	13.0%	11.5%
Unsure / Do not know	N	1	14	15
	%	33.3%	60.9%	57.7%
Yes	N	2	6	8
	%	66.7%	26.1%	30.8%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
No	N	4	0	4
	%	40.0%	0.0%	26.7%
Unsure / do not know	N	5	3	8
	%	50.0%	60.0%	53.3%
Yes	N	1	2	3
	%	10.0%	40.0%	20.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
No	N	0	4	4
	%	0.0%	30.8%	26.7%
Unsure / Do not know	N	1	7	8
	%	50.0%	53.8%	53.3%
Yes	N	1	2	3
	%	50.0%	15.4%	20.0%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / do not know	N	5	3	8
	%	50.0%	60.0%	53.3%
Yes	N	5	2	7
	%	50.0%	40.0%	46.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	1	7	8
	%	33.3%	58.3%	53.3%
Yes	N	2	5	7
	%	66.7%	41.7%	46.7%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
No	N	0	2	0	2
	%	0.0%	18.2%	0.0%	7.7%
Unsure / do not know	N	5	6	3	14
	%	50.0%	54.5%	60.0%	53.8%
Yes	N	5	3	2	10
	%	50.0%	27.3%	40.0%	38.5%
Total	N	10	11	5	26
	%	100.0%	100.0%	100.0%	100.0%

Is the distribution of actions and responsibilities between the EU and Member States in the areas below appropriate? (Communication, education and training for the general public)		MS v SH		
		MS	SH	Total
No	N	0	2	2
	%	0.0%	8.7%	7.7%
Unsure / Do not know	N	1	13	14
	%	33.3%	56.5%	53.8%
Yes	N	2	8	10
	%	66.7%	34.8%	38.5%
Total	N	3	23	26
	%	100.0%	100.0%	100.0%

Section 2: Effectiveness

Holistic approach

The EU Action Plan states that, because antimicrobial resistance can spread between humans and animals and cross borders, tackling antimicrobial resistance requires a holistic approach involving many different sectors (e.g. medicine, veterinary medicine, animal husbandry, agriculture, environment and trade). Do you agree with the need for a holistic approach?		Animal v Human			
		Animal	Human	Both	Total
No	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Unsure / Do not know	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Yes	N	10	11	6	27
	%	100.0%	100.0%	100.0%	100.0%
Total	N	10	11	6	27
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan states that, because antimicrobial resistance can spread between humans and animals and cross borders, tackling antimicrobial resistance requires a holistic approach involving many different sectors (e.g. medicine, veterinary medicine, animal husbandry, agriculture, environment and trade). Do you agree with the need for a holistic approach?		MS v SH		
		MS	SH	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	0	0	0
	%	0.0%	0.0%	0.0%
Yes	N	3	24	27
	%	100.0%	100.0%	100.0%
Total	N	3	24	27
	%	100.0%	100.0%	100.0%

Does the EU Action Plan capture this holistic approach?		Animal v Human			
		Animal	Human	Both	Total
No	N	5	4	4	13
	%	50.0%	36.4%	66.7%	48.1%
Unsure / Do not know	N	3	3	0	6
	%	30.0%	27.3%	0.0%	22.2%
Yes	N	2	4	2	8
	%	20.0%	36.4%	33.3%	29.6%
Total	N	10	11	6	27
	%	100.0%	100.0%	100.0%	100.0%

Does the EU Action Plan capture this holistic approach?		MS v SH		
		MS	SH	Total
No	N	1	12	13
	%	33.3%	50.0%	48.1%
Unsure / Do not know	N	0	6	6
	%	0.0%	25.0%	22.2%
Yes	N	2	6	8
	%	66.7%	25.0%	29.6%
Total	N	3	24	27
	%	100.0%	100.0%	100.0%

Trends

In the past four years (since 2011), what has been the trend in the total consumption of antimicrobials for use in humans in the country in which you live?		Animal v Human		
		Human	Both	Total
Decrease in the use of antimicrobials	N	2	1	3
	%	18.2%	20.0%	18.8%
Increase in the use of antimicrobials	N	5	3	8
	%	45.5%	60.0%	50.0%
No change in the use of antimicrobials	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	4	1	5
	%	36.4%	20.0%	31.3%
Total	N	11	5	16
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what has been the trend in the total consumption of antimicrobials for use in humans in the country in which you live?		MS v SH		
		MS	SH	Total
Decrease in the use of antimicrobials	N	1	2	3
	%	50.0%	14.3%	18.8%
Increase in the use of antimicrobials	N	1	7	8
	%	50.0%	50.0%	50.0%
No change in the use of antimicrobials	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	0	5	5
	%	0.0%	35.7%	31.3%
Total	N	2	14	16
	%	100.0%	100.0%	100.0%

Can the trend in the total consumption of antimicrobials for use in humans be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	5	2	7
	%	71.4%	50.0%	63.6%
Unsure / Do not know	N	2	2	4
	%	28.6%	50.0%	36.4%
Yes	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	7	4	11
	%	100.0%	100.0%	100.0%

Can the trend in the total consumption of antimicrobials for use in humans be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	1	6	7
	%	50.0%	66.7%	63.6%
Unsure / Do not know	N	1	3	4
	%	50.0%	33.3%	36.4%
Yes	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	2	9	11
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what has been the trend in the appropriate use of antimicrobials in humans in the country in which you live?		Animal v Human		
		Human	Both	Total
Decrease in appropriate use of antimicrobials	N	1	0	1
	%	9.1%	0.0%	6.3%
Increase in appropriate use of antimicrobials	N	4	1	5
	%	36.4%	20.0%	31.3%
No change in appropriate use of antimicrobials	N	5	3	8
	%	45.5%	60.0%	50.0%
Unsure / Do not know	N	1	1	2
	%	9.1%	20.0%	12.5%
Total	N	11	5	16
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what has been the trend in the appropriate use of antimicrobials in humans in the country in which you live?		MS v SH		
		MS	SH	Total
Decrease in appropriate use of antimicrobials	N	0	1	1
	%	0.0%	7.1%	6.3%
Increase in appropriate use of antimicrobials	N	0	5	5
	%	0.0%	35.7%	31.3%
No change in appropriate use of antimicrobials	N	2	6	8
	%	100.0%	42.9%	50.0%
Unsure / Do not know	N	0	2	2
	%	0.0%	14.3%	12.5%
Total	N	2	14	16
	%	100.0%	100.0%	100.0%

Can the trend in the appropriate use of antimicrobials in humans be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	3	1	4
	%	30.0%	25.0%	28.6%
Unsure / Do not know	N	4	2	6
	%	40.0%	50.0%	42.9%
Yes	N	3	1	4
	%	30.0%	25.0%	28.6%
Total	N	10	4	14
	%	100.0%	100.0%	100.0%

Can the trend in the appropriate use of antimicrobials in humans be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	1	3	4
	%	50.0%	25.0%	28.6%
Unsure / Do not know	N	1	5	6
	%	50.0%	41.7%	42.9%
Yes	N	0	4	4
	%	0.0%	33.3%	28.6%
Total	N	2	12	14
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what has been the trend in country-level indicators of resistance in microorganisms of major public health importance (e.g. multidrug-resistant tuberculosis or multidrug-resistant Salmonella), including Hospital Acquired Infections (HAIs) in the country in which you live?		Animal v Human		
		Human	Both	Total
General improvement	N	1	0	1
	%	9.1%	0.0%	6.3%
Generally becoming worse	N	7	2	9
	%	63.6%	40.0%	56.3%
No change	N	1	1	2
	%	9.1%	20.0%	12.5%
Unsure / Do not know	N	2	2	4
	%	18.2%	40.0%	25.0%
Total	N	11	5	16
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what has been the trend in country-level indicators of resistance in microorganisms of major public health importance (e.g. multidrug-resistant tuberculosis or multidrug-resistant Salmonella), including Hospital Acquired Infections (HAIs) in the country in which you live?		MS v SH		
		MS	SH	Total
General improvement	N	0	1	1
	%	0.0%	7.1%	6.3%
Generally becoming worse	N	0	9	9
	%	0.0%	64.3%	56.3%
No change	N	1	1	2
	%	50.0%	7.1%	12.5%
Unsure / Do not know	N	1	3	4
	%	50.0%	21.4%	25.0%
Total	N	2	14	16
	%	100.0%	100.0%	100.0%

Can the trend in country-level indicators of resistance in microorganisms of major public health importance be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	7	2	9
	%	77.8%	66.7%	75.0%
Unsure / Do not know	N	2	1	3
	%	22.2%	33.3%	25.0%
Yes	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	9	3	12
	%	100.0%	100.0%	100.0%

Can the trend in country-level indicators of resistance in microorganisms of major public health importance be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	1	8	9
	%	100.0%	72.7%	75.0%
Unsure / Do not know	N	0	3	3
	%	0.0%	27.3%	25.0%
Yes	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	1	11	12
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of prescription-only requirements for antimicrobial agents.)		Animal v Human		
		Human	Both	Total
Achieved	N	2	1	3
	%	20.0%	20.0%	20.0%
No progress	N	4	0	4
	%	40.0%	0.0%	26.7%
Not applicable	N	1	1	2
	%	10.0%	20.0%	13.3%
Partly achieved	N	1	0	1
	%	10.0%	0.0%	6.7%
Unsure / Do not know		2	3	5
		20.0%	60.0%	33.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of prescription-only requirements for antimicrobial agents.)		MS v SH		
		MS	SH	Total
Achieved	N	1	2	3
	%	50.0%	15.4%	20.0%
No progress	N	0	4	4
	%	0.0%	30.8%	26.7%
Not applicable	N	1	1	2
	%	50.0%	7.7%	13.3%
Partly achieved	N	0	1	1
	%	0.0%	7.7%	6.7%
Unsure / Do not know	N	0	5	5
	%	0.0%	38.5%	33.3%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of control measures against antimicrobial resistance in nursing homes and long-term care facilities.)		Animal v Human		
		Human	Both	Total
Achieved	N	0	1	1
	%	0.0%	20.0%	6.7%
No progress	N	2	0	2
	%	20.0%	0.0%	13.3%
Not applicable	N	0	0	0
	%	0.0%	0.0%	0.0%
Partly achieved	N	5	2	7
	%	50.0%	40.0%	46.7%
Unsure / Do not know		3	2	5
		30.0%	40.0%	33.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Implementation of control measures against antimicrobial resistance in nursing homes and long-term care facilities.)		MS v SH		
		MS	SH	Total
Achieved	N	1	0	1
	%	50.0%	0.0%	6.7%
No progress	N	0	2	2
	%	0.0%	15.4%	13.3%
Not applicable	N	0	0	0
	%	0.0%	0.0%	0.0%
Partly achieved	N	1	6	7
	%	50.0%	46.2%	46.7%
Unsure / Do not know	N	0	5	5
	%	0.0%	38.5%	33.3%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Development of education and training for healthcare workers on all aspects of antimicrobial resistance.)		Animal v Human		
		Human	Both	Total
Achieved	N	0	1	1
	%	0.0%	20.0%	6.7%
No progress	N	1	0	1
	%	10.0%	0.0%	6.7%
Partly achieved	N	8	2	10
	%	80.0%	40.0%	66.7%
Unsure / Do not know		1	2	3
		10.0%	40.0%	20.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Development of education and training for healthcare workers on all aspects of antimicrobial resistance.)		MS v SH		
		MS	SH	Total
Achieved	N	1	0	1
	%	50.0%	0.0%	6.7%
No progress	N	0	1	1
	%	0.0%	7.7%	6.7%
Partly achieved	N	1	9	10
	%	50.0%	69.2%	66.7%
Unsure / Do not know	N	0	3	3
	%	0.0%	23.1%	20.0%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Improvement in monitoring and assessment at national level of the implementation and efficiency of national strategies and control measures)		Animal v Human		
		Human	Both	Total
Achieved	N	0	1	1
	%	0.0%	20.0%	6.7%
No progress	N	3	0	3
	%	30.0%	0.0%	20.0%
Not applicable	N	0	0	0
	%	0.0%	0.0%	0.0%
Partly achieved	N	5	2	7
	%	50.0%	40.0%	46.7%
Unsure / Do not know		2	2	4
		20.0%	40.0%	26.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Please indicate whether in your opinion the following aspects of this recommendation have been achieved in the past four years (since 2011) in the country in which you live (or EU). (Improvement in monitoring and assessment at national level of the implementation and efficiency of national strategies and control measures)		MS v SH		
		MS	SH	Total
Achieved	N	1	0	1
	%	50.0%	0.0%	6.7%
No progress	N	0	3	3
	%	0.0%	23.1%	20.0%
Not applicable	N	0	0	0
	%	0.0%	0.0%	0.0%
Partly achieved	N	1	6	7
	%	50.0%	46.2%	46.7%
Unsure / Do not know	N	0	4	4
	%	0.0%	30.8%	26.7%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Can these developments be attributed (wholly or in part) to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	1	1	2
	%	10.0%	20.0%	13.3%
Unsure / Do not know	N	6	3	9
	%	60.0%	60.0%	60.0%
Yes	N	3	1	4
	%	30.0%	20.0%	26.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Can these developments be attributed (wholly or in part) to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	1	1	2
	%	50.0%	7.7%	13.3%
Unsure / Do not know	N	1	8	9
	%	50.0%	61.5%	60.0%
Yes	N	0	4	4
	%	0.0%	30.8%	26.7%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what do you think has been the trend in the total consumption of antimicrobials for use in animals in the country in which you live?		MS v SH		
		MS	SH	Total
Decrease in use of antimicrobials in animals	N	2	6	8
	%	66.7%	50.0%	53.3%
Increase in use of antimicrobials in animals	N	1	1	2
	%	33.3%	8.3%	13.3%
No change	N	0	2	2
	%	0.0%	16.7%	13.3%
Unsure / Do not know	N	0	3	3
	%	0.0%	25.0%	20.0%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

In the past four years (since 2011), what do you think has been the trend in the total consumption of antimicrobials for use in animals in the country in which you live?		Animal v Human		
		Animal	Both	Total
Decrease in use of antimicrobials in animals	N	6	2	8
	%	60.0%	40.0%	53.3%
Increase in use of antimicrobials in animals	N	1	1	2
	%	10.0%	20.0%	13.3%
No change	N	2	0	2
	%	20.0%	0.0%	13.3%
Unsure / Do not know	N	1	2	3
	%	10.0%	40.0%	20.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Can the trend in the total consumption of antimicrobials for use in animals be attributed, wholly or in part, to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	1	1	2
	%	33.3%	10.0%	15.4%
Unsure / Do not know	N	1	7	8
	%	33.3%	70.0%	61.5%
Yes	N	1	2	3
	%	33.3%	20.0%	23.1%
Total	N	3	10	13
	%	100.0%	100.0%	100.0%

Can the trend in the total consumption of antimicrobials for use in animals be attributed, wholly or in part, to the EU Action Plan?		Animal v Human		
		Animal	Both	Total
No	N	1	1	2
	%	10.0%	33.3%	15.4%
Unsure / Do not know	N	6	2	8
	%	60.0%	66.7%	61.5%
Yes	N	3	0	3
	%	30.0%	0.0%	23.1%
Total	N	10	3	13
	%	100.0%	100.0%	100.0%

Developing new AMs

Improvement in efficiency of research and development through open sharing of knowledge (e.g. through the launch of a programme for research on new antibiotics with the European Federation of Pharmaceutical Industries and Associations within the Innovative Medicines Initiative Joint Undertaking) in the country in which you live.		Animal v Human			
		Animal	Human	Both	Total
There has been no progress in this area since 2011	N	0	3	0	3
	%	0.0%	27.3%	0.0%	17.6%
This has partly been achieved	N	0	3	1	4
	%	0.0%	27.3%	20.0%	23.5%
Unsure / Do not know	N	1	3	4	8
	%	100.0%	27.3%	80.0%	47.1%
Yes, this has been achieved	N	0	2	0	2
	%	0.0%	18.2%	0.0%	11.8%
Total	N	1	11	5	17
	%	100.0%	100.0%	100.0%	100.0%

Improvement in efficiency of research and development through open sharing of knowledge (e.g. through the launch of a programme for research on new antibiotics with the European Federation of Pharmaceutical Industries and Associations within the Innovative Medicines Initiative Joint Undertaking) in the country in which you live.		MS v SH		
		MS	SH	
There has been no progress in this area since 2011	N	0	3	3
	%	0.0%	20.0%	17.6%
This has partly been achieved	N	1	3	4
	%	50.0%	20.0%	23.5%
Unsure / Do not know	N	1	7	8
	%	50.0%	46.7%	47.1%
Yes, this has been achieved	N	0	2	2
	%	0.0%	13.3%	11.8%
Total	N	2	15	17
	%	100.0%	100.0%	100.0%

Can this development in open sharing of knowledge be attributed (wholly or in part), to the EU Action Plan?		Animal v Human			Total
		Animal	Human	Both	
No	N	0	3	0	3
	%	0.0%	37.5%	0.0%	30.0%
Unsure / Do not know	N	1	3	0	4
	%	100.0%	37.5%	0.0%	40.0%
Yes	N	0	2	1	3
	%	0.0%	25.0%	100.0%	30.0%
Total	N	1	8	1	10
	%	100.0%	100.0%	100.0%	100.0%

Can this development in open sharing of knowledge be attributed (wholly or in part), to the EU Action Plan?		MS v SH		
		MS	SH	
No	N	0	3	3
	%	0.0%	33.3%	30.0%
Unsure / Do not know	N	0	4	4
	%	0.0%	44.4%	40.0%
Yes	N	1	2	3
	%	100.0%	22.2%	30.0%
Total	N	1	9	10
	%	100.0%	100.0%	100.0%

Establishment of adequate market and pricing conditions for new antibiotics in the country in which you live.		Animal v Human			Total
		Animal	Human	Both	
There has been no progress in this area since 2011	N	0	4	0	4
	%	0.0%	36.4%	0.0%	23.5%
This has partly been achieved	N	0	3	1	4
	%	0.0%	27.3%	20.0%	23.5%
Unsure / Do not know	N	1	4	4	9
	%	100.0%	36.4%	80.0%	52.9%
Yes, this has been achieved	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Total	N	1	11	5	17
	%	100.0%	100.0%	100.0%	100.0%

Establishment of adequate market and pricing conditions for new antibiotics in the country in which you live.		MS v SH		
		MS	SH	
There has been no progress in this area since 2011	N	0	4	4
	%	0.0%	26.7%	23.5%
This has partly been achieved	N	1	3	4
	%	50.0%	20.0%	23.5%
Unsure / Do not know	N	1	8	9
	%	50.0%	53.3%	52.9%
Yes, this has been achieved	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	2	15	17
	%	100.0%	100.0%	100.0%

Can this development in the establishment of adequate market and pricing conditions for new antibiotics be attributed (wholly or in part), to the EU Action Plan?		Animal v Human			
		Animal	Human	Both	Total
No	N	0	3	0	3
	%	0.0%	42.9%	0.0%	33.3%
Unsure / Do not know	N	1	1	1	3
	%	100.0%	14.3%	100.0%	33.3%
Yes	N	0	3	0	3
	%	0.0%	42.9%	0.0%	33.3%
Total	N	1	7	1	9
	%	100.0%	100.0%	100.0%	100.0%

Can this development in the establishment of adequate market and pricing conditions for new antibiotics be attributed (wholly or in part), to the EU Action Plan?		MS v SH		
		MS	SH	
No	N	0	3	3
	%	0.0%	37.5%	33.3%
Unsure / Do not know	N	1	2	3
	%	100.0%	25.0%	33.3%
Yes	N	0	3	3
	%	0.0%	37.5%	33.3%
Total	N	1	8	9
	%	100.0%	100.0%	100.0%

Implementing fast track procedures for the marketing authorisation of new antimicrobials in the country in which you live.		Animal v Human			Total
		Animal	Human	Both	
There has been no progress in this area since 2011	N	0	2	0	2
	%	0.0%	18.2%	0.0%	11.8%
This has partly been achieved	N	0	3	0	3
	%	0.0%	27.3%	0.0%	17.6%
Unsure / Do not know	N	1	6	5	12
	%	100.0%	54.5%	100.0%	70.6%
Yes, this has been achieved	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Total	N	1	11	5	17
	%	100.0%	100.0%	100.0%	100.0%

Implementing fast track procedures for the marketing authorisation of new antimicrobials in the country in which you live.		MS v SH		
		MS	SH	
There has been no progress in this area since 2011	N	0	2	2
	%	0.0%	13.3%	11.8%
This has partly been achieved	N	0	3	3
	%	0.0%	20.0%	17.6%
Unsure / Do not know	N	2	10	12
	%	100.0%	66.7%	70.6%
Yes, this has been achieved	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	2	15	17
	%	100.0%	100.0%	100.0%

Can this development in implementing fast track procedures for the marketing authorisation of new antimicrobials be attributed (wholly or in part), to the EU Action Plan?		Animal v Human		
		Animal	Human	Total
No	N	0	1	1
	%	0.0%	50.0%	33.3%
Unsure / Do not know	N	1	1	2
	%	100.0%	50.0%	66.7%
Yes	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	1	2	3
	%	100.00%	100.00%	100.00%

Can this development in implementing fast track procedures for the marketing authorisation of new antimicrobials be attributed (wholly or in part), to the EU Action Plan?		MS v SH		
		MS	SH	
No	N	1	1	1
	%	33.3%	33.3%	33.3%
Unsure / Do not know	N	2	2	2
	%	66.7%	66.7%	66.7%
Yes	N	0	0	0
	%	0.0%	0.0%	0.0%
Total	N	3	3	3
	%	100.0%	100.0%	100.0%

Surveillance

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (Reviews of the monitoring of antimicrobial resistance in zoonotic bacteria and indicator bacteria from humans, animals and food.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	2	2	2	6
	%	40.0%	20.0%	40.0%	30.0%
Not effective	N	0	1	0	1
	%	0.0%	10.0%	0.0%	5.0%
Partly effective	N	1	2	2	5
	%	20.0%	20.0%	40.0%	25.0%
Unsure / Do not know	N	2	5	1	8
	%	40.0%	50.0%	20.0%	40.0%
Total	N	5	10	5	20
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (Reviews of the monitoring of antimicrobial resistance in zoonotic bacteria and indicator bacteria from humans, animals and food.)		MS v SH		
		MS	SH	Total
Effective	N	1	5	6
	%	50.0%	27.8%	30.0%
Not effective	N	0	1	1
	%	0.0%	5.6%	5.0%
Partly effective	N	1	4	5
	%	50.0%	22.2%	25.0%
Unsure / Do not know	N	0	8	8
	%	0.0%	44.4%	40.0%
Total	N	2	18	20
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	1	2	1	4
	%	20.0%	20.0%	20.0%	20.0%
Not effective	N	2	2	0	4
	%	40.0%	20.0%	0.0%	20.0%
Partly effective	N	0	2	2	4
	%	0.0%	20.0%	40.0%	20.0%
Unsure / Do not know	N	2	4	2	8
	%	40.0%	40.0%	40.0%	40.0%
Total	N	5	10	5	20
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on strengthening surveillance systems on antimicrobial resistance and antimicrobial consumption in animal medicine that has relevance for public health. In your assessment, please indicate the potential effectiveness of the following aspects of this action for helping to tackle antimicrobial resistance in the country in which you live. (With the support of the relevant EU agencies, establishment of harmonisation between human and veterinary surveillance to allow comparison of data.)		MS v SH		
		MS	SH	Total
Effective	N	0	4	4
	%	0.0%	22.2%	20.0%
Not effective	N	0	4	4
	%	0.0%	22.2%	20.0%
Partly effective	N	1	3	4
	%	50.0%	16.7%	20.0%
Unsure / Do not know	N	1	7	8
	%	50.0%	38.9%	40.0%
Total	N	2	18	20
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	5	2	7
	%	50.0%	40.0%	46.7%
Not changed	N	2	0	2
	%	20.0%	0.0%	13.3%
Unsure / Do not know	N	3	3	6
	%	30.0%	60.0%	40.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	1	6	7
	%	50.0%	46.2%	46.7%
Not changed	N	0	2	2
	%	0.0%	15.4%	13.3%
Unsure / Do not know	N	1	5	6
	%	50.0%	38.5%	40.0%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	4	1	5
	%	40.0%	20.0%	33.3%
Not changed	N	3	1	4
	%	30.0%	20.0%	26.7%
Unsure / Do not know	N	3	3	6
	%	30.0%	60.0%	40.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	0	5	5
	%	0.0%	38.5%	33.3%
Not changed	N	1	3	4
	%	50.0%	23.1%	26.7%
Unsure / Do not know	N	1	5	6
	%	50.0%	38.5%	40.0%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Human	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	4	2	6
	%	40.0%	40.0%	40.0%
Not changed	N	2	0	2
	%	20.0%	0.0%	13.3%
Unsure / Do not know	N	4	3	7
	%	40.0%	60.0%	46.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		
		MS	SH	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	2	4	6
	%	100.0%	30.8%	40.0%
Not changed	N	0	2	2
	%	0.0%	15.4%	13.3%
Unsure / Do not know	N	0	7	7
	%	0.0%	53.8%	46.7%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	5	3	8
	%	55.6%	60.0%	57.1%
Yes	N	4	2	6
	%	44.4%	40.0%	42.9%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	1	7	8
	%	50.0%	58.3%	57.1%
Yes	N	1	5	6
	%	50.0%	41.7%	42.9%
Total	N	2	12	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	6	2	8
	%	60.0%	40.0%	53.3%
Not changed	N	1	0	1
	%	10.0%	0.0%	6.7%
Unsure / Do not know	N	3	3	6
	%	30.0%	60.0%	40.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	1	7	8
	%	50.0%	53.8%	53.3%
Not changed	N	0	1	1
	%	0.0%	7.7%	6.7%
Unsure / Do not know	N	1	5	6
	%	50.0%	38.5%	40.0%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		
		Human	Both	Total
Improved	N	6	2	8
	%	60.0%	40.0%	53.3%
Not changed	N	2	0	2
	%	20.0%	0.0%	13.3%
Unsure / Do not know	N	2	3	5
	%	20.0%	60.0%	33.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Improved	N	1	7	8
	%	50.0%	53.8%	53.3%
Not changed	N	0	2	2
	%	0.0%	15.4%	13.3%
Unsure / Do not know	N	1	4	5
	%	50.0%	30.8%	33.3%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Human	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	4	2	6
	%	40.0%	40.0%	40.0%
Not changed	N	2	0	2
	%	20.0%	0.0%	13.3%
Unsure / Do not know	N	4	3	7
	%	40.0%	60.0%	46.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in humans in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		
		MS	SH	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	2	4	6
	%	100.0%	30.8%	40.0%
Not changed	N	0	2	2
	%	0.0%	15.4%	13.3%
Unsure / Do not know	N	0	7	7
	%	0.0%	53.8%	46.7%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Human	Both	Total
No	N	1	0	1
	%	10.0%	0.0%	6.7%
Unsure / Do not know	N	5	3	8
	%	50.0%	60.0%	53.3%
Yes	N	4	2	6
	%	40.0%	40.0%	40.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	0	1	1
	%	0.0%	7.7%	6.7%
Unsure / Do not know	N	1	7	8
	%	50.0%	53.8%	53.3%
Yes	N	1	5	6
	%	50.0%	38.5%	40.0%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Animal	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	7	1	8
	%	77.8%	20.0%	57.1%
Not changed	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	2	4	6
	%	22.2%	80.0%	42.9%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		
		MS	SH	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	2	6	8
	%	66.7%	54.5%	57.1%
Not changed	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	1	5	6
	%	33.3%	45.5%	42.9%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		
		Animal	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	6	0	6
	%	66.7%	0.0%	42.9%
Not changed	N	0	1	1
	%	0.0%	20.0%	7.1%
Unsure / Do not know	N	3	4	7
	%	33.3%	80.0%	50.0%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	1	5	6
	%	33.3%	45.5%	42.9%
Not changed	N	1	0	1
	%	33.3%	0.0%	7.1%
Unsure / Do not know	N	1	6	7
	%	33.3%	54.5%	50.0%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Animal	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	6	2	8
	%	66.7%	40.0%	57.1%
Not changed	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	3	3	6
	%	33.3%	60.0%	42.9%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

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Thinking about surveillance and monitoring of antimicrobial use in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		Total
		MS	SH	
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	3	5	8
	%	100.0%	45.5%	57.1%
Not changed	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	0	6	6
	%	0.0%	54.5%	42.9%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		Total
		Animal	Both	
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	5	4	9
	%	55.6%	80.0%	64.3%
Yes	N	4	1	5
	%	44.4%	20.0%	35.7%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	1	8	9
	%	33.3%	72.7%	64.3%
Yes	N	2	3	5
	%	66.7%	27.3%	35.7%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		Animal v Human		
		Animal	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	6	1	7
	%	66.7%	20.0%	50.0%
Not changed	N	1	0	1
	%	11.1%	0.0%	7.1%
Unsure / Do not know	N	2	4	6
	%	22.2%	80.0%	42.9%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Data coverage across EU Member States)		MS v SH		Total
		MS	SH	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	2	5	7
	%	66.7%	45.5%	50.0%
Not changed	N	0	1	1
	%	0.0%	9.1%	7.1%
Unsure / Do not know	N	1	5	6
	%	33.3%	45.5%	42.9%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		Animal v Human		Total
		Animal	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	2	1	3
	%	22.2%	20.0%	21.4%
Not changed	N	4	0	4
	%	44.4%	0.0%	28.6%
Unsure / Do not know	N	3	4	7
	%	33.3%	80.0%	50.0%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Harmonisation of data gathered across EU Member States)		MS v SH		
		MS	SH	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	2	1	3
	%	66.7%	9.1%	21.4%
Not changed	N	0	4	4
	%	0.0%	36.4%	28.6%
Unsure / Do not know	N	1	6	7
	%	33.3%	54.5%	50.0%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		Animal v Human		
		Animal	Both	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	2	2	4
	%	22.2%	40.0%	28.6%
Not changed	N	4	0	4
	%	44.4%	0.0%	28.6%
Unsure / Do not know	N	3	3	6
	%	33.3%	60.0%	42.9%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Thinking about surveillance and monitoring of antimicrobial resistance in animals in the EU in the past four years (2011 onwards), what changes have occurred? (Sustainability of surveillance)		MS v SH		
		MS	SH	Total
Became worse	N	0	0	0
	%	0.0%	0.0%	0.0%
Improved	N	3	1	4
	%	100.0%	9.1%	28.6%
Not changed	N	0	4	4
	%	0.0%	36.4%	28.6%
Unsure / Do not know	N	0	6	6
	%	0.0%	54.5%	42.9%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Animal	Both	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	5	4	9
	%	55.6%	80.0%	64.3%
Yes	N	4	1	5
	%	44.4%	20.0%	35.7%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		
		MS	SH	Total
No	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	1	8	9
	%	33.3%	72.7%	64.3%
Yes	N	2	3	5
	%	66.7%	27.3%	35.7%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Animal regulatory framework

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Appropriate warnings and guidance are provided on labels of veterinary antimicrobials.)		Animal v Human		
		Animal	Both	Total
Achieved	N	4	0	4
	%	40.0%	0.0%	26.7%
Not achieved	N	2	0	2
	%	20.0%	0.0%	13.3%
Partly achieved	N	2	1	3
	%	20.0%	0.0%	20.0%
Unsure / Do not know	N	2	4	6
	%	20.0%	80.0%	40.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Appropriate warnings and guidance are provided on labels of veterinary antimicrobials.)		MS v SH		
		MS	SH	Total
Achieved	N	0	4	4
	%	0.0%	33.3%	26.7%
Not achieved	N	0	2	2
	%	0.0%	16.7%	13.3%
Partly achieved	N	2	1	3
	%	66.7%	8.3%	20.0%
Unsure / Do not know	N	1	5	6
	%	33.3%	41.7%	40.0%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Restrictions have been considered on regular or off-label use of certain new or critically important antimicrobials for humans in the veterinary sector)		Animal v Human		
		Animal	Both	Total
Achieved	N	1	1	2
	%	10.0%	20.0%	13.3%
Not achieved	N	1	0	1
	%	10.0%	0.0%	6.7%
Partly achieved	N	4	2	6
	%	40.0%	40.0%	40.0%
Unsure / Do not know	N	4	2	6
	%	40.0%	40.0%	40.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Restrictions have been considered on regular or off-label use of certain new or critically important antimicrobials for humans in the veterinary sector)		MS v SH		
		MS	SH	Total
Achieved	N	2	0	2
	%	66.7%	0.0%	13.3%
Not achieved	N	0	1	1
	%	0.0%	8.3%	6.7%
Partly achieved	N	1	5	6
	%	33.3%	41.7%	40.0%
Unsure / Do not know	N	0	6	6
	%	0.0%	50.0%	40.0%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Improvements to rules for advertisement of veterinary antimicrobials)		Animal v Human		
		Animal	Both	Total
Achieved	N	3	1	4
	%	30.0%	20.0%	26.7%
Not achieved	N	2	0	2
	%	20.0%	0.0%	13.3%
Partly achieved	N	1	1	2
	%	10.0%	20.0%	13.3%
Unsure / Do not know	N	4	3	7
	%	40.0%	60.0%	46.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Improvements to rules for advertisement of veterinary antimicrobials)		MS v SH		
		MS	SH	Total
Achieved	N	1	3	4
	%	33.3%	25.0%	26.7%
Not achieved	N	0	2	2
	%	0.0%	16.7%	13.3%
Partly achieved	N	1	1	2
	%	33.3%	8.3%	13.3%
Unsure / Do not know	N	1	6	7
	%	33.3%	50.0%	46.7%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Authorisation requirements sufficiently address risks and benefits of antimicrobial medicines)		Animal v Human		
		Animal	Both	Total
Achieved	N	3	2	5
	%	33.3%	40.0%	35.7%
Not achieved	N	1	1	2
	%	11.1%	20.0%	14.3%
Partly achieved	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	5	2	7
	%	55.6%	40.0%	50.0%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action to strengthen the regulatory framework on veterinary medicines and medicated feed. Please indicate whether the following aspects of the action have been achieved in the past four years (since 2011) in the country where you live (or the EU): (Authorisation requirements sufficiently address risks and benefits of antimicrobial medicines)		MS v SH		
		MS	SH	Total
Achieved	N	2	3	5
	%	100.0%	25.0%	35.7%
Not achieved	N	0	2	2
	%	0.0%	16.7%	14.3%
Partly achieved	N	0	0	0
	%	0.0%	0.0%	0.0%
Unsure / Do not know	N	0	7	7
	%	0.0%	58.3%	50.0%
Total	N	2	12	14
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		Animal v Human		
		Animal	Both	Total
No	N	0	1	1
	%	0.0%	20.0%	6.7%
Unsure / Do not know	N	5	4	9
	%	50.0%	80.0%	60.0%
Yes	N	5	0	5
	%	50.0%	0.0%	33.3%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Can these developments be attributed wholly or in part to the EU Action Plan?		MS v SH		Total
		MS	SH	Total
No	N	1	0	1
	%	33.3%	0.0%	6.7%
Unsure / Do not know	N	1	8	9
	%	33.3%	66.7%	60.0%
Yes	N	1	4	5
	%	33.3%	33.3%	33.3%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

Are you familiar with the recommendations for prudent use of antimicrobials in veterinary medicine?		Animal v Human		Total
		Animal	Both	Total
No	N	2	1	3
	%	20.0%	20.0%	20.0%
Unsure / Do not know	N	1	2	3
	%	10.0%	40.0%	20.0%
Yes	N	7	2	9
	%	70.0%	40.0%	60.0%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Are you familiar with the recommendations for prudent use of antimicrobials in veterinary medicine?		MS v SH		
		MS	SH	Total
No	N	0	3	3
	%	0.0%	25.0%	20.0%
Unsure / Do not know	N	1	2	3
	%	33.3%	16.7%	20.0%
Yes	N	2	7	9
	%	66.7%	58.3%	60.0%
Total	N	3	12	15
	%	100.0%	100.0%	100.0%

In your assessment, will the recommendations for prudent use of antimicrobials in veterinary medicine be effective in improving the prudent use of antimicrobials in veterinary medicine?		Animal v Human		
		Animal	Both	Total
No	N	3	1	4
	%	30.0%	25.0%	28.6%
Unsure / Do not know	N	3	2	5
	%	30.0%	50.0%	35.7%
Yes	N	4	1	5
	%	40.0%	25.0%	35.7%
Total	N	10	4	14
	%	100.0%	100.0%	100.0%

In your assessment, will the recommendations for prudent use of antimicrobials in veterinary medicine be effective in improving the prudent use of antimicrobials in veterinary medicine?		MS v SH		
		MS	SH	Total
No	N	1	3	4
	%	50.0%	25.0%	28.6%
Unsure / Do not know	N	0	5	5
	%	0.0%	41.7%	35.7%
Yes	N	1	4	5
	%	50.0%	33.3%	35.7%
Total	N	2	12	14
	%	100.0%	100.0%	100.0%

First, has the request for scientific advice to clarify whether the development of new veterinary antimicrobials would reduce antimicrobial resistance been an effective step for tackling antimicrobial resistance in the EU?		Animal v Human		
		Animal	Both	Total
It was partly effective	N	1	1	2
	%	11.1%	20.0%	14.3%
No, it was not effective	N	1	1	2
	%	11.1%	20.0%	14.3%
Unsure / Do not know	N	3	3	6
	%	33.3%	60.0%	42.9%
Yes, it was an effective step	N	4	0	4
	%	44.4%	0.0%	28.6%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

First, has the request for scientific advice to clarify whether the development of new veterinary antimicrobials would reduce antimicrobial resistance been an effective step for tackling antimicrobial resistance in the EU?		MS v SH		
		MS	SH	Total
It was partly effective	N	1	1	2
	%	33.3%	9.1%	14.3%
No, it was not effective	N	1	1	2
	%	33.3%	9.1%	14.3%
Unsure / Do not know	N	1	5	6
	%	33.3%	45.5%	42.9%
Yes, it was an effective step	N	0	4	4
	%	0.0%	36.4%	28.6%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Second, how does the current EU regulatory and market environment for veterinary medicines impact innovation in antimicrobials and related products?		Animal v Human		
		Animal	Both	Total
Barriers discourage innovation in this area	N	3	0	3
	%	33.3%	0.0%	21.4%
Incentives exist that are effective in promoting innovation	N	1	0	1
	%	11.1%	0.0%	7.1%
Other	N	0	0	0
	%	0.0%	0.0%	0.0%
There are insufficient incentives to promote innovation	N	2	1	3
	%	22.2%	20.0%	21.4%
Unsure / Do not know	N	3	4	7
	%	33.3%	80.0%	50.0%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Second, how does the current EU regulatory and market environment for veterinary medicines impact innovation in antimicrobials and related products?		MS v SH		Total
		MS	SH	
Barriers discourage innovation in this area	N	0	3	3
	%	0.0%	27.3%	21.4%
Incentives exist that are effective in promoting innovation	N	0	1	1
	%	0.0%	9.1%	7.1%
Other	N	0	0	0
	%	0.0%	0.0%	0.0%
There are insufficient incentives to promote innovation	N	2	1	3
	%	66.7%	9.1%	21.4%
Unsure / Do not know	N	1	6	7
	%	33.3%	54.5%	50.0%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Bilateral and multilateral mechanisms

Are you aware of bilateral or multilateral mechanisms for preventing or controlling the spread of antimicrobial resistance between the country in which you live and other countries or regions? (examples include WHO EURO regional strategies, OIE health codes, Codex Alimentarius international standards, cooperation on reducing pollution by antimicrobial medicines in the environment, and the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR))		Animal v Human			
		Animal	Human	Both	Total
No	N	1	1	1	3
	%	11.1%	10.0%	20.0%	12.5%
Unsure / Do not know	N	2	3	1	6
	%	22.2%	30.0%	20.0%	25.0%
Yes	N	6	6	3	15
	%	66.7%	60.0%	60.0%	62.5%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of bilateral or multilateral mechanisms for preventing or controlling the spread of antimicrobial resistance between the country in which you live and other countries or regions? (examples include WHO EURO regional strategies, OIE health codes, Codex Alimentarius international standards, cooperation on reducing pollution by antimicrobial medicines in the environment, and the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR))		MS v SH		
		MS	SH	Total
No	N	1	2	3
	%	33.3%	9.5%	12.5%
Unsure / Do not know	N	0	6	6
	%	0.0%	28.6%	25.0%
Yes	N	2	13	15
	%	66.7%	61.9%	62.5%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Can the existence of these bilateral or multilateral mechanisms between the country in which you live and other countries or regions be attributed (wholly or in part) to the EU Action Plan?		Animal v Human			Total
		Animal	Human	Both	
No	N	2	0	0	2
	%	33.3%	0.0%	0.0%	13.3%
Not applicable	N	3	2	3	8
	%	50.0%	33.3%	100.0%	53.3%
Unsure / Do not know	N	1	4	0	5
	%	16.7%	66.7%	0.0%	33.3%
Yes	N	6	6	3	15
	%	100.0%	100.0%	100.0%	100.0%
Total	N	2	0	0	2
	%	33.3%	0.0%	0.0%	13.3%

Can the existence of these bilateral or multilateral mechanisms between the country in which you live and other countries or regions be attributed (wholly or in part) to the EU Action Plan?		MS v SH		Total
		MS	SH	
No	N	0	2	2
	%	0.0%	15.4%	13.3%
Not applicable	N	2	6	8
	%	100.0%	46.2%	53.3%
Unsure / Do not know	N	0	5	5
	%	0.0%	38.5%	33.3%
Yes	N	2	13	15
	%	100.0%	100.0%	100.0%
Total	N	0	2	2
	%	0.0%	15.4%	13.3%

Animal Health Law

Are you aware of the new EU Animal Health Law (agreed by the EP and Council on 1 June 2015, and currently undergoing the procedure for adoption and publication)?		Animal v Human		
		Animal	Both	Total
No	N	2	1	3
	%	22.2%	20.0%	21.4%
Unsure / Do not know	N	2	2	4
	%	22.2%	40.0%	28.6%
Yes	N	5	2	7
	%	55.6%	40.0%	50.0%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Are you aware of the new EU Animal Health Law (agreed by the EP and Council on 1 June 2015, and currently undergoing the procedure for adoption and publication)?		MS v SH		
		MS	SH	Total
No	N	1	2	3
	%	33.3%	18.2%	21.4%
Unsure / Do not know	N	1	3	4
	%	33.3%	27.3%	28.6%
Yes	N	1	6	7
	%	33.3%	54.5%	50.0%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

In your assessment, please indicate the potential effectiveness of the new Animal Health Law for tackling antimicrobial resistance:		Animal v Human		
		Animal	Both	Total
High potential to be effective	N	2	0	2
	%	22.2%	0.0%	14.3%
Little to no potential to be effective	N	0	0	0
	%	0.0%	0.0%	0.0%
Some potential to be effective	N	3	3	6
	%	33.3%	60.0%	42.9%
Unsure / Do not know	N	4	2	6
	%	44.4%	40.0%	42.9%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

In your assessment, please indicate the potential effectiveness of the new Animal Health Law for tackling antimicrobial resistance:		MS v SH		
		MS	SH	Total
High potential to be effective	N	1	1	2
	%	33.3%	9.1%	14.3%
Little to no potential to be effective	N	0	0	0
	%	0.0%	0.0%	0.0%
Some potential to be effective	N	1	5	6
	%	33.3%	45.5%	42.9%
Unsure / Do not know	N	1	5	6
	%	33.3%	45.5%	42.9%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

In your assessment, please indicate the potential effectiveness of the inclusion of a legal basis for monitoring antimicrobial resistance in animal pathogens in the Commission's proposal for a new EU Animal Health Law.		Animal v Human		
		Animal	Both	Total
High potential to be effective	N	4	0	4
	%	44.4%	0.0%	28.6%
Little to no potential to be effective	N	1	0	1
	%	11.1%	0.0%	7.1%
Some potential to be effective	N	2	2	4
	%	22.2%	40.0%	28.6%
Unsure / Do not know	N	2	3	5
	%	22.2%	60.0%	35.7%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

In your assessment, please indicate the potential effectiveness of the inclusion of a legal basis for monitoring antimicrobial resistance in animal pathogens in the Commission's proposal for a new EU Animal Health Law.		MS v SH		
		MS	SH	Total
High potential to be effective	N	1	3	4
	%	33.3%	27.3%	28.6%
Little to no potential to be effective	N	0	1	1
	%	0.0%	9.1%	7.1%
Some potential to be effective	N	1	3	4
	%	33.3%	27.3%	28.6%
Unsure / Do not know	N	1	4	5
	%	33.3%	36.4%	35.7%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Research

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research aimed at better understanding antimicrobial resistance and pathogenic-host interactions.)		Animal v Human			Total
		Animal	Human	Both	Total
Effective	N	1	0	0	1
	%	11.1%	0.0%	0.0%	4.2%
Not effective	N	0	2	0	2
	%	0.0%	20.0%	0.0%	8.3%
Partly effective	N	4	4	1	9
	%	44.4%	40.0%	20.0%	37.5%
Too early to say	N	3	3	2	8
	%	33.3%	30.0%	40.0%	33.3%
Unsure / do not know	N	1	1	2	4
	%	11.1%	10.0%	40.0%	16.7%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research aimed at better understanding antimicrobial resistance and pathogenic-host interactions.)		MS v SH		
		MS	SH	Total
Effective	N	1	0	1
	%	33.3%	0.0%	4.2%
Not effective	N	0	2	2
	%	0.0%	9.5%	8.3%
Partly effective	N	0	9	9
	%	0.0%	42.9%	37.5%
Too early to say	N	1	7	8
	%	33.3%	33.3%	33.3%
Unsure / do not know	N	1	3	4
	%	33.3%	14.3%	16.7%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of diagnostic tools.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	1	1	0	2
	%	11.1%	10.0%	0.0%	8.3%
Not effective	N	3	1	0	4
	%	33.3%	10.0%	0.0%	16.7%
Partly effective	N	1	3	2	6
	%	11.1%	30.0%	40.0%	25.0%
Too early to say	N	3	4	1	8
	%	33.3%	40.0%	20.0%	33.3%
Unsure / do not know	N	1	1	2	4
	%	11.1%	10.0%	40.0%	16.7%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of diagnostic tools.)		MS v SH		
		MS	SH	Total
Effective	N	1	1	2
	%	33.3%	4.8%	8.3%
Not effective	N	0	4	4
	%	0.0%	19.0%	16.7%
Partly effective	N	1	5	6
	%	33.3%	23.8%	25.0%
Too early to say	N	0	8	8
	%	0.0%	38.1%	33.3%
Unsure / do not know	N	1	3	4
	%	33.3%	14.3%	16.7%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of vaccines and other preventative strategies.)		Animal v Human			Total
		Animal	Human	Both	Total
Effective	N	1	1	0	2
	%	11.1%	10.0%	0.0%	8.3%
Not effective	N	3	1	0	4
	%	33.3%	10.0%	0.0%	16.7%
Partly effective	N	0	2	2	4
	%	0.0%	20.0%	40.0%	16.7%
Too early to say	N	4	3	1	8
	%	44.4%	30.0%	20.0%	33.3%
Unsure / do not know	N	1	3	2	6
	%	11.1%	30.0%	40.0%	25.0%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Promotion of further research on the development of vaccines and other preventative strategies.)		MS v SH		
		MS	SH	Total
Effective	N	1	1	2
	%	33.3%	4.8%	8.3%
Not effective	N	0	4	4
	%	0.0%	19.0%	16.7%
Partly effective	N	1	3	4
	%	33.3%	14.3%	16.7%
Too early to say	N	0	8	8
	%	0.0%	38.1%	33.3%
Unsure / do not know	N	1	5	6
	%	33.3%	23.8%	25.0%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of a Joint Programming Initiative aimed at coordinating national research activities related to antimicrobial resistance.)		Animal v Human			
		Animal	Human	Both	Total
Effective	N	2	1	0	3
	%	22.2%	10.0%	0.0%	12.5%
Not effective	N	0	2	0	2
	%	0.0%	20.0%	0.0%	8.3%
Partly effective	N	0	0	0	0
	%	0.0%	0.0%	0.0%	0.0%
Too early to say	N	5	3	2	10
	%	55.6%	30.0%	40.0%	41.7%
Unsure / do not know	N	2	4	3	9
	%	22.2%	40.0%	60.0%	37.5%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of a Joint Programming Initiative aimed at coordinating national research activities related to antimicrobial resistance.)		MS v SH		
		MS	SH	Total
Effective	N	1	2	3
	%	33.3%	9.5%	12.5%
Not effective	N	0	2	2
	%	0.0%	9.5%	8.3%
Partly effective	N	0	0	0
	%	0.0%	0.0%	0.0%
Too early to say	N	1	9	10
	%	33.3%	42.9%	41.7%
Unsure / do not know	N	1	9	9
	%	33.3%	42.9%	37.5%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of the Global Research Collaboration for Infectious Disease Preparedness (GLOPID-R))		Animal v Human			
		Animal	Human	Both	Total
Effective	N	1	1	0	2
	%	11.1%	10.0%	0.0%	8.3%
Not effective	N	0	1	0	1
	%	0.0%	10.0%	0.0%	4.2%
Partly effective	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Too early to say	N	6	4	2	12
	%	66.7%	40.0%	40.0%	50.0%
Unsure / do not know	N	2	4	2	8
	%	22.2%	40.0%	40.0%	33.3%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

The EU Action Plan includes an action on the reinforcement and coordination of research efforts. Please state whether the following aspects of this action have been effective, partly effective or not effective for helping to tackle antimicrobial resistance in the EU or it is too early to say. (Support of launch of the Global Research Collaboration for Infectious Disease Preparedness (GLOPID-R))		MS v SH		
		MS	SH	Total
Effective	N	1	1	2
	%	33.3%	4.8%	8.3%
Not effective	N	0	1	1
	%	0.0%	4.8%	4.2%
Partly effective	N	0	1	1
	%	0.0%	4.8%	4.2%
Too early to say	N	1	11	12
	%	33.3%	52.4%	50.0%
Unsure / do not know	N	1	7	8
	%	33.3%	33.3%	33.3%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Awareness

Has the country in which you live implemented campaigns to improve awareness and/or education about antimicrobial resistance among the general public?		Animal v Human			
		Animal	Human	Both	Total
No	N	1	2	1	4
	%	11.1%	20.0%	20.0%	16.7%
Unsure / Do not know	N	2	0	1	3
	%	22.2%	0.0%	20.0%	12.5%
Yes	N	6	8	3	17
	%	66.7%	80.0%	60.0%	70.8%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Has the country in which you live implemented campaigns to improve awareness and/or education about antimicrobial resistance among the general public?		MS v SH		Total
		MS	SH	
No	N	0	4	4
	%	0.0%	19.0%	16.7%
Unsure / Do not know	N	0	3	3
	%	0.0%	14.3%	12.5%
Yes	N	3	14	17
	%	100.0%	66.7%	70.8%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

To what extent have these activities been effective?		Animal v Human			Total
		Animal	Human	Both	
Not effective	N	0	4	0	4
	%	0.0%	50.0%	0.0%	21.1%
Somewhat effective	N	4	3	2	9
	%	50.0%	37.5%	66.7%	47.4%
Unsure / Do not know	N	3	1	1	5
	%	37.5%	12.5%	33.3%	26.3%
Very effective	N	1	0	0	1
	%	12.5%	0.0%	0.0%	5.3%
Total	N	8	8	3	19
	%	100.0%	100.0%	100.0%	100.0%

To what extent have these activities been effective?		MS v SH		
		MS	SH	Total
Not effective	N	0	4	4
	%	0.0%	25.0%	21.1%
Somewhat effective	N	3	6	9
	%	100.0%	37.5%	47.4%
Unsure / Do not know	N	0	5	5
	%	0.0%	31.3%	26.3%
Very effective	N	0	1	1
	%	0.0%	6.3%	5.3%
Total	N	3	16	19
	%	100.0%	100.0%	100.0%

Did either the EU Action Plan or other forms of EU support play a role in the decision to implement these activities?		Animal v Human			
		Animal	Human	Both	Total
No, neither the EU Action Plan nor other forms of EU support	N	0	1	0	1
	%	0.0%	12.5%	0.0%	5.6%
Unsure / Do not know	N	1	4	2	7
	%	14.3%	50.0%	66.7%	38.9%
Yes, both the EU Action Plan and other forms of support	N	6	2	1	9
	%	85.7%	25.0%	33.3%	50.0%
Yes, other forms of support, but not the EU Action Plan	N	0	1	0	1
	%	0.0%	12.5%	0.0%	5.6%
Total	N	7	8	3	18
	%	100.0%	100.0%	100.0%	100.0%

Did either the EU Action Plan or other forms of EU support play a role in the decision to implement these activities?		MS v SH		Total
		MS	SH	
No, neither the EU Action Plan nor other forms of EU support	N	0	1	1
	%	0.0%	6.7%	5.6%
Unsure / Do not know	N	1	6	7
	%	33.3%	40.0%	38.9%
Yes, both the EU Action Plan and other forms of support	N	2	7	9
	%	66.7%	46.7%	50.0%
Yes, other forms of support, but not the EU Action Plan	N	0	1	1
	%	0.0%	6.7%	5.6%
Total	N	3	15	18
	%	100.0%	100.0%	100.0%

Section 3: Efficiency

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in humans)		Animal v Human		Total
		Human	Both	
High priority	N	9	4	13
	%	90.00%	80.00%	86.67%
Medium priority	N	1	0	1
	%	10.00%	0.00%	6.67%
Unsure / do not know	N	0	1	1
	%	0.00%	20.00%	6.67%
Total	N	10	5	15
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in humans)		MS v SH		
		MS	SH	Total
High priority	N	2	11	13
	%	100.00%	84.62%	86.67%
Medium priority	N	0	1	1
	%	0.00%	7.69%	6.67%
Unsure / do not know	N	0	1	1
	%	0.00%	7.69%	6.67%
Total	N	2	13	15
	%	100.00%	100.00%	100.00%

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
High priority	N	4	4	8
	%	44.4%	80.0%	57.1%
Medium priority	N	5	0	5
	%	55.6%	0.0%	35.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	7.1%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Appropriate use of antimicrobials in animals)		MS v SH		
		MS	SH	Total
High priority	N	3	5	8
	%	100.0%	45.5%	57.1%
Medium priority	N	0	5	5
	%	0.0%	45.5%	35.7%
Unsure / do not know	N	0	1	1
	%	0.0%	9.1%	7.1%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in humans)		Animal v Human		
		Human	Both	Total
High priority	N	6	4	10
	%	60.0%	80.0%	66.7%
Medium priority	N	4	0	4
	%	40.0%	0.0%	26.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in humans)		MS v SH		
		MS	SH	Total
High priority	N	2	8	10
	%	100.0%	61.5%	66.7%
Medium priority	N	0	4	4
	%	0.0%	30.8%	26.7%
Unsure / do not know	N	0	1	1
	%	0.0%	7.7%	6.7%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
High priority	N	6	4	10
	%	66.7%	80.0%	71.4%
Low priority	N	3	0	3
	%	33.3%	0.0%	21.4%
Medium priority	N	0	1	1
	%	0.0%	20.0%	7.1%
Unsure / do not know	N	9	5	14
	%	100.0%	100.0%	100.0%
Total	N	6	4	10
	%	66.7%	80.0%	71.4%

Which areas do you think should have highest priority to receive financial support from the EU? (Prevention of microbial infections and their spread in animals)		MS v SH		
		MS	SH	Total
High priority	N	3	7	10
	%	100.0%	63.6%	71.4%
Low priority	N	0	3	3
	%	0.0%	27.3%	21.4%
Medium priority	N	0	1	1
	%	0.0%	9.1%	7.1%
Unsure / do not know	N	3	11	14
	%	100.0%	100.0%	100.0%
Total	N	3	7	10
	%	100.0%	63.6%	71.4%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of new effective antimicrobials)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	4	5	3	12
	%	44.4%	50.0%	60.0%	50.0%
Low priority	N	2	3	1	6
	%	22.2%	30.0%	20.0%	25.0%
Medium priority	N	3	2	0	5
	%	33.3%	20.0%	0.0%	20.8%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of new effective antimicrobials)		MS v SH		
		MS	SH	Total
High priority	N	3	9	12
	%	100.0%	42.9%	50.0%
Low priority	N	0	6	6
	%	0.0%	28.6%	25.0%
Medium priority	N	0	5	5
	%	0.0%	23.8%	20.8%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of alternatives for treatment of microbial infections)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	7	8	4	19
	%	77.8%	80.0%	80.0%	79.2%
Low priority	N	2	2	0	4
	%	22.2%	20.0%	0.0%	16.7%
Medium priority	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Unsure / do not know	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%
Total	N	7	8	4	19
	%	77.8%	80.0%	80.0%	79.2%

Which areas do you think should have highest priority to receive financial support from the EU? (Development of alternatives for treatment of microbial infections)		MS v SH		
		MS	SH	Total
High priority	N	3	16	19
	%	100.0%	76.2%	79.2%
Medium priority	N	0	4	4
	%	0.0%	19.0%	16.7%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	3	6	4	13
	%	33.3%	60.0%	80.0%	54.2%
Low priority	N	2	0	0	2
	%	22.2%	0.0%	0.0%	8.3%
Medium priority	N	4	4	0	8
	%	44.4%	40.0%	0.0%	33.3%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	3	10	13
	%	100.0%	47.6%	54.2%
Low priority	N	0	2	2
	%	0.0%	9.5%	8.3%
Medium priority	N	0	8	8
	%	0.0%	38.1%	33.3%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	3	5	3	11
	%	33.3%	50.0%	60.0%	45.8%
Low priority	N	2	0	1	3
	%	22.2%	0.0%	20.0%	12.5%
Medium priority	N	4	5	0	9
	%	44.4%	50.0%	0.0%	37.5%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	3	8	11
	%	100.0%	38.1%	45.8%
Low priority	N	0	3	3
	%	0.0%	14.3%	12.5%
Medium priority	N	0	9	9
	%	0.0%	42.9%	37.5%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	5	5	2	12
	%	55.6%	50.0%	40.0%	50.0%
Low priority	N	1	0	0	1
	%	11.1%	0.0%	0.0%	4.2%
Medium priority	N	3	5	2	10
	%	33.3%	50.0%	40.0%	41.7%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	2	10	12
	%	66.7%	47.6%	50.0%
Low priority	N	0	1	1
	%	0.0%	4.8%	4.2%
Medium priority	N	1	9	10
	%	33.3%	42.9%	41.7%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in human)		Animal v Human		
		Human	Both	Total
High priority	N	7	2	9
	%	70.0%	40.0%	60.0%
Low priority	N	1	0	1
	%	10.0%	0.0%	6.7%
Medium priority	N	2	2	4
	%	20.0%	40.0%	26.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in human)		MS v SH		
		MS	SH	Total
High priority	N	1	8	9
	%	50.0%	61.5%	60.0%
Low priority	N	0	1	1
	%	0.0%	7.7%	6.7%
Medium priority	N	1	3	4
	%	50.0%	23.1%	26.7%
Unsure / do not know	N	0	1	1
	%	0.0%	7.7%	6.7%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
High priority	N	5	2	7
	%	55.6%	40.0%	50.0%
Low priority	N	1	0	1
	%	11.1%	0.0%	7.1%
Medium priority	N	3	2	5
	%	33.3%	40.0%	35.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	7.1%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH		
		MS	SH	Total
High priority	N	2	5	7
	%	66.7%	45.5%	50.0%
Low priority	N	0	1	1
	%	0.0%	9.1%	7.1%
Medium priority	N	1	4	5
	%	33.3%	36.4%	35.7%
Unsure / do not know	N	0	1	1
	%	0.0%	9.1%	7.1%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Research into the causes of antimicrobial resistance)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	2	2	1	5
	%	22.2%	20.0%	20.0%	20.8%
Low priority	N	3	3	1	7
	%	33.3%	30.0%	20.0%	29.2%
Medium priority	N	4	5	2	11
	%	44.4%	50.0%	40.0%	45.8%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Research into the causes of antimicrobial resistance)		MS v SH		
		MS	SH	Total
High priority	N	2	3	5
	%	66.7%	14.3%	20.8%
Low priority	N	1	6	7
	%	33.3%	28.6%	29.2%
Medium priority	N	0	11	11
	%	0.0%	52.4%	45.8%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	1	7	2	10
	%	11.1%	70.0%	40.0%	41.7%
Low priority	N	1	1	0	2
	%	11.1%	10.0%	0.0%	8.3%
Medium priority	N	7	2	2	11
	%	77.8%	20.0%	40.0%	45.8%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH		
		MS	SH	Total
High priority	N	2	8	10
	%	66.7%	38.1%	41.7%
Low priority	N	0	2	2
	%	0.0%	9.5%	8.3%
Medium priority	N	1	10	11
	%	33.3%	47.6%	45.8%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for human health professionals)		Animal v Human		
		Human	Both	Total
High priority	N	7	2	9
	%	70.0%	40.0%	60.0%
Low priority	N	1	0	1
	%	10.0%	0.0%	6.7%
Medium priority	N	2	2	4
	%	20.0%	40.0%	26.7%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	6.7%
Total	N	10	5	15
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for human health professionals)		MS v SH		
		MS	SH	Total
High priority	N	2	7	9
	%	100.0%	53.8%	60.0%
Low priority	N	0	1	1
	%	0.0%	7.7%	6.7%
Medium priority	N	0	4	4
	%	0.0%	30.8%	26.7%
Unsure / do not know	N	0	1	1
	%	0.0%	7.7%	6.7%
Total	N	2	13	15
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
High priority	N	6	3	9
	%	66.7%	60.0%	64.3%
Low priority	N	1	0	1
	%	11.1%	0.0%	7.1%
Medium priority	N	2	1	3
	%	22.2%	20.0%	21.4%
Unsure / do not know	N	0	1	1
	%	0.0%	20.0%	7.1%
Total	N	9	5	14
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for people caring for animals)		MS v SH		
		MS	SH	Total
High priority	N	3	6	9
	%	100.0%	54.5%	64.3%
Low priority	N	0	1	1
	%	0.0%	9.1%	7.1%
Medium priority	N	0	3	3
	%	0.0%	27.3%	21.4%
Unsure / do not know	N	0	1	1
	%	0.0%	9.1%	7.1%
Total	N	3	11	14
	%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for the general public)		Animal v Human			
		Animal	Human	Both	Total
High priority	N	5	6	3	14
	%	55.6%	60.0%	60.0%	58.3%
Low priority	N	1	1	0	2
	%	11.1%	10.0%	0.0%	8.3%
Medium priority	N	3	3	1	7
	%	33.3%	30.0%	20.0%	29.2%
Unsure / do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Which areas do you think should have highest priority to receive financial support from the EU? (Communication, education and training for the general public)		MS v SH		
		MS	SH	Total
High priority	N	2	12	14
	%	66.7%	57.1%	58.3%
Low priority	N	0	2	2
	%	0.0%	9.5%	8.3%
Medium priority	N	1	6	7
	%	33.3%	28.6%	29.2%
Unsure / do not know	N	0	1	1
	%	0.0%	4.8%	4.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Are you aware of any ways in which the allocation of EU spending on AMR has been inappropriate or inefficient? Inappropriate and inefficient spending would include spending on unnecessary activities, spending on areas that may be of a lower priority than others that did not receive funding, and spending on activities that are unlikely to help EU efforts to tackle AMR.		Animal v Human			
		Animal	Human	Both	Total
No	N	4	7	4	15
	%	40.0%	70.0%	80.0%	60.0%
Yes	N	6	3	1	10
	%	60.0%	30.0%	20.0%	40.0%
Total	N	10	10	5	25
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of any ways in which the allocation of EU spending on AMR has been inappropriate or inefficient? Inappropriate and inefficient spending would include spending on unnecessary activities, spending on areas that may be of a lower priority than others that did not receive funding, and spending on activities that are unlikely to help EU efforts to tackle AMR.		MS v SH		
		MS	SH	Total
No	N	2	13	15
	%	66.7%	59.1%	60.0%
Yes	N	1	9	10
	%	33.3%	40.9%	40.0%
Total	N	3	22	25
	%	100.0%	100.0%	100.0%

Section 4: Coherence

Coherence with MS policies

Does the country in which you live have a strategic policy dedicated to combating antimicrobial resistance? (N=3)		Animal	Both	Total
A strategy	N	1	2	3
An action plan	N	1	2	3
Other	N	0	1	1
No, my country does not have a policy in this area	N	0	0	0
Unsure / Do not know	N	0	0	0

Does the country in which you live have a strategic policy dedicated to combating antimicrobial resistance? (N=3)		MS	Total
A strategy	N	3	3
An action plan	N	3	3
Other	N	1	1
No, my country does not have a policy in this area	N	0	0
Unsure / Do not know	N	0	0

What is your level of familiarity with the national antimicrobial resistance policy in the country in which you live?		Animal v Human			
		Animal	Human	Both	Total
Very familiar	N	1	2	3	1
	%	100.0%	100.0%	100.0%	100.0%
Total	N	1	2	3	1
	%	100.0%	100.0%	100.0%	100.0%

| What is your level of familiarity with the national antimicrobial resistance policy in the country in which you live? | | MS v SH | |
		MS	Total
Very familiar	N	3	3
	%	100.0%	100.0%
Total	N	3	3
	%	100.0%	100.0%

| At which level is the strategic policy developed/implemented? | | Animal v Human | | | |
		Animal	Human	Both	Total
Both national and regional levels	N	0	1	1	0
	%	0.0%	50.0%	33.3%	0.0%
National	N	1	1	2	1
	%	100.0%	50.0%	66.7%	100.0%
Total	N	1	2	3	1
	%	100.0%	100.0%	100.0%	100.0%

| At which level is the strategic policy developed/implemented? | | MS v SH | |
		MS	Total
Both national and regional levels	N	1	1
	%	33.3%	33.3%
National	N	2	2
	%	66.7%	66.7%
Total	N	3	3
	%	100.0%	100.0%

Did the EU Action Plan have any influence on the formulation of the national policy in the country in which you live?		Animal v Human		
		Animal	Both	Total
The national policy was influenced by the EU Action Plan	N	1	0	1
	%	100.0%	0.0%	33.3%
Unsure / Do not know	N	0	2	2
	%	0.0%	100.0%	66.7%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Did the EU Action Plan have any influence on the formulation of the national policy in the country in which you live?		MS v SH	
		MS	Total
The national policy was influenced by the EU Action Plan	N	1	1
	%	33.3%	33.3%
Unsure / Do not know	N	2	2
	%	66.7%	66.7%
Total	N	3	3
	%	100.0%	100.0%

How do the national policy and the EU Action Plan compare in terms of scope?		Animal v Human		
		Animal	Both	Total
The national policy and the EU Action Plan have similar scope	N	1	1	2
	%	100.0%	50.0%	66.7%
The national policy is broader in scope (i.e. some areas of the national policy are not addressed by the EU Action Plan)	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

How do the national policy and the EU Action Plan compare in terms of scope?		MS v SH	
		MS	Total
The national policy and the EU Action Plan have similar scope	N	2	2
	%	66.7%	66.7%
The national policy is broader in scope (i.e. some areas of the national policy are not addressed by the EU Action Plan)	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Are you aware of any ways that the EU and Member State governments are coordinating their activities for tackling antimicrobial resistance?		Animal v Human			
		Animal	Human	Both	Total
No	N	4	6	4	14
	%	50.0%	54.5%	100.0%	60.9%
Yes	N	4	5	0	9
	%	50.0%	45.5%	0.0%	39.1%
Total	N	8	11	4	23
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of any ways that the EU and Member State governments are coordinating their activities for tackling antimicrobial resistance?		MS v SH	
		SH	
No	N	14	14
	%	60.9%	60.9%
Yes	N	9	9
	%	39.1%	39.1%
Total	N	23	23
	%	100.0%	100.0%

How effective are these coordination efforts?		Animal v Human		
		Animal	Human	Total
Not very effective	N	0	2	2
	%	0.0%	50.0%	20.0%
Somewhat effective	N	4	1	5
	%	66.7%	25.0%	50.0%
Unsure / do not know	N	2	1	3
	%	33.3%	25.0%	30.0%
Total	N	6	4	10
	%	100.0%	100.0%	100.0%

How effective are these coordination efforts?		MS v SH	
		SH	Total
Not very effective	N	2	2
	%	20.0%	20.0%
Somewhat effective	N	5	5
	%	50.0%	50.0%
Unsure / do not know	N	3	3
	%	30.0%	30.0%
Total	N	10	10
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in humans)		Animal v Human	
		Both	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in humans)		MS v SH	
		MS	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Appropriate use of antimicrobials in animals)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in humans)		Animal v Human	
		Both	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in humans)		MS v SH	
		MS	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Prevention of microbial infections and their spread in animals)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of new effective antimicrobials)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of new effective antimicrobials)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of alternatives for treatment of microbial infections)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Development of alternatives for treatment of microbial infections)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	0	1
	%	100.0%	0.0%	33.3%
Partly complement	N	0	1	1
	%	0.0%	50.0%	33.3%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	1	1
	%	33.3%	33.3%
Partly complement	N	1	1
	%	33.3%	33.3%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	0	1
	%	100.0%	0.0%	33.3%
Partly complement	N	0	1	1
	%	0.0%	50.0%	33.3%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	1	1
	%	33.3%	33.3%
Partly complement	N	1	1
	%	33.3%	33.3%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	0	1
	%	100.0%	0.0%	33.3%
Partly complement	N	0	1	1
	%	0.0%	50.0%	33.3%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	1	1
	%	33.3%	33.3%
Partly complement	N	1	1
	%	33.3%	33.3%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

| To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in human) | | Animal v Human | |
		Both	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

| To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in human) | | MS v SH | |
		MS	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

| To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals) | | Animal v Human | | |
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research into the causes of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research into the causes of antimicrobial resistance)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for human health professionals)		Animal v Human	
		Both	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for human health professionals)		MS v SH	
		MS	Total
Completely complement	N	1	1
	%	50.0%	50.0%
Unsure / Do not know	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for people caring for animals)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for the general public)		Animal v Human		
		Animal	Both	Total
Completely complement	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

To what extent do the objectives of the EU Action Plan complement the national policies/priorities related to antimicrobial resistance in the country in which you live? (Communication, education and training for the general public)		MS v SH	
		MS	Total
Completely complement	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in humans)		Animal v Human	
		Both	Total
Major funding priority	N	1	1
	%	50.0%	50.0%
Receives some funding	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in humans)		MS v SH	
		MS	Total
Major funding priority	N	1	1
	%	50.0%	50.0%
Receives some funding	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in animals)		Animal v Human		
		Animal	Both	Total
Little to no funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Appropriate use of antimicrobials in animals)		MS v SH	
		MS	Total
Little to no funding	N	1	1
	%	33.3%	33.3%
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in humans)		Animal v Human	
		Both	Total
Receives some funding	N	2	2
	%	100.0%	100.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in humans)		MS v SH	
		MS	Total
Receives some funding	N	2	2
	%	100.0%	100.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in animals)		Animal v Human		
		Animal	Both	Total
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	2	2
	%	0.0%	100.0%	66.7%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Prevention of microbial infections and their spread in animals)		MS v SH	
		MS	Total
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	2	2
	%	66.7%	66.7%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of new effective antimicrobials)		Animal v Human		
		Animal	Both	Total
Major funding priority	N	0	1	1
	%	0.0%	50.0%	33.3%
Receives some funding	N	1	0	1
	%	100.0%	0.0%	33.3%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of new effective antimicrobials)		MS v SH	
		MS	Total
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	1	1
	%	33.3%	33.3%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of alternatives for treatment of microbial infections)		Animal v Human		
		Animal	Both	Total
Receives some funding	N	1	1	2
	%	100.0%	50.0%	66.7%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Development of alternatives for treatment of microbial infections)		MS v SH	
		MS	Total
Receives some funding	N	2	2
	%	66.7%	66.7%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at international level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	1	1
	%	33.3%	33.3%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Unsure / Do not know	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Cooperation at EU level to contain the risk of antimicrobial resistance)		MS v SH	
		MS	Total
Major funding priority	N	1	1
	%	33.3%	33.3%
Not applicable	N	1	1
	%	33.3%	33.3%
Unsure / Do not know	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	2	2
	%	0.0%	100.0%	66.7%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial resistance)		MS v SH	
		MS	Total
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	2	2
	%	66.7%	66.7%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial use in humans)		Animal v Human	
		Both	Total
Receives some funding	N	2	2
	%	100.0%	100.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial use in humans)		MS v SH	
		MS	Total
Receives some funding	N	2	2
	%	100.0%	100.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals)		Animal v Human		
		Animal	Both	Total
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	2	2
	%	0.0%	100.0%	66.7%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Monitoring and surveillance of antimicrobial use in animals)		MS v SH	
		MS	Total
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	2	2
	%	66.7%	66.7%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Research into the causes of antimicrobial resistance)		Animal v Human		
		Animal	Both	Total
Little to no funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Research into the causes of antimicrobial resistance)		MS v SH	
		MS	Total
Little to no funding	N	1	1
	%	33.3%	33.3%
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in	Animal v Human	Total

the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		Animal	Both	
Little to no funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Research on the prudent use of antimicrobials and the impact of imprudent use)		MS v SH	
		MS	Total
Little to no funding	N	1	1
	%	33.3%	33.3%
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for human health professionals)		Animal v Human	
		Both	Total
Little to no funding	N	1	1
	%	50.0%	50.0%
Major funding priority	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in	MS v SH	Total

the country in which you live? (Communication, education and training for human health professionals)		MS	
Little to no funding	N	1	1
	%	50.0%	50.0%
Major funding priority	N	1	1
	%	50.0%	50.0%
Total	N	2	2
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for people caring for animals)		Animal v Human		
		Animal	Both	Total
Little to no funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for people caring for animals)		MS v SH	
		MS	Total
Little to no funding	N	1	1
	%	33.3%	33.3%
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in	Animal v Human	Total

the country in which you live? (Communication, education and training for the general public)		Animal	Both	
Little to no funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Major funding priority	N	1	0	1
	%	100.0%	0.0%	33.3%
Receives some funding	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Which of the following EU Action Plan areas receive funding in the country in which you live? (Communication, education and training for the general public)		MS v SH	
		MS	Total
Little to no funding	N	1	1
	%	33.3%	33.3%
Major funding priority	N	1	1
	%	33.3%	33.3%
Receives some funding	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Is the national antimicrobial resistance policy coordinated with other relevant policies in the country in which you live?		Animal v Human		Total
		Animal	Both	
The national antimicrobial resistance policy is coordinated with other relevant national policies in my country	N	1	2	3
	%	100.0%	100.0%	100.0%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Is the national antimicrobial resistance policy coordinated with other relevant policies in the country in which you live?		MS v SH	
		MS	Total
The national antimicrobial resistance policy is coordinated with other relevant national policies in my country	N	3	3
	%	100.0%	100.0%
Total	N	3	3
	%	100.0%	100.0%

Internal coherence

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Environment)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	2	5	1	8
	%	22.2%	50.0%	20.0%	33.3%
Disagree	N	2	0	1	3
	%	22.2%	0.0%	20.0%	12.5%
Strongly agree	N	2	2	0	4
	%	22.2%	20.0%	0.0%	16.7%
Unsure / do not know	N	3	3	3	9
	%	33.3%	30.0%	60.0%	37.5%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Environment)		MS v SH		
		MS	SH	Total
Agree	N	0	8	8
	%	0.0%	38.1%	33.3%
Disagree	N	0	3	3
	%	0.0%	14.3%	12.5%
Strongly agree	N	1	3	4
	%	33.3%	14.3%	16.7%
Unsure / do not know	N	2	7	9
	%	66.7%	33.3%	37.5%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Human health)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	3	4	0	7
	%	37.5%	40.0%	0.0%	30.4%
Strongly agree	N	3	4	3	10
	%	37.5%	40.0%	60.0%	43.5%
Unsure / do not know	N	2	2	2	6
	%	25.0%	20.0%	40.0%	26.1%
Total	N	8	10	5	23
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Human health)		MS v SH		
		MS	SH	Total
Agree	N	0	7	7
	%	0.0%	35.0%	30.4%
Strongly agree	N	2	8	10
	%	66.7%	40.0%	43.5%
Unsure / do not know	N	1	5	6
	%	33.3%	25.0%	26.1%
Total	N	3	20	23
	%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Animal health and welfare)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	2	2	2	6
	%	22.2%	20.0%	40.0%	25.0%
Disagree	N	3	2	0	5
	%	33.3%	20.0%	0.0%	20.8%
Strongly agree	N	2	3	1	6
	%	22.2%	30.0%	20.0%	25.0%
Unsure / do not know	N	2	3	2	7
	%	22.2%	30.0%	40.0%	29.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Animal health and welfare)		MS v SH		
		MS	SH	Total
Agree	N	0	6	6
	%	0.0%	28.6%	25.0%
Disagree	N	0	5	5
	%	0.0%	23.8%	20.8%
Strongly agree	N	2	4	6
	%	66.7%	19.0%	25.0%
Unsure / do not know	N	1	6	7
	%	33.3%	28.6%	29.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Food safety)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	5	2	1	8
	%	55.6%	20.0%	20.0%	33.3%
Disagree	N	0	1	1	2
	%	0.0%	10.0%	20.0%	8.3%
Strongly agree	N	1	2	1	4
	%	11.1%	20.0%	20.0%	16.7%
Strongly disagree	N	0	1	0	1
	%	0.0%	10.0%	0.0%	4.2%
Unsure / do not know	N	3	4	2	9
	%	33.3%	40.0%	40.0%	37.5%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

o you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Food safety)		MS v SH		
		MS	SH	Total
Agree	N	1	7	8
	%	33.3%	33.3%	33.3%
Disagree	N	0	2	2
	%	0.0%	9.5%	8.3%
Strongly agree	N	1	3	4
	%	33.3%	14.3%	16.7%
Strongly disagree	N	0	1	1
	%	0.0%	4.8%	4.2%
Unsure / do not know	N	1	8	9
	%	33.3%	38.1%	37.5%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Agriculture)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	3	3	2	8
	%	33.3%	30.0%	40.0%	33.3%
Disagree	N	0	2	0	2
	%	0.0%	20.0%	0.0%	8.3%
Strongly agree	N	1	2	0	3
	%	11.1%	20.0%	0.0%	12.5%
Strongly disagree	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Unsure / do not know	N	5	3	2	10
	%	55.6%	30.0%	40.0%	41.7%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Agriculture)		MS v SH		
		MS	SH	Total
Agree	N	2	6	8
	%	66.7%	28.6%	33.3%
Disagree	N	0	2	2
	%	0.0%	9.5%	8.3%
Strongly agree	N	0	3	3
	%	0.0%	14.3%	12.5%
Strongly disagree	N	0	1	1
	%	0.0%	4.8%	4.2%
Unsure / do not know	N	1	9	10
	%	33.3%	42.9%	41.7%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Research)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	5	5	3	13
	%	55.6%	50.0%	60.0%	54.2%
Strongly agree	N	1	3	0	4
	%	11.1%	30.0%	0.0%	16.7%
Unsure / do not know	N	3	2	2	7
	%	33.3%	20.0%	40.0%	29.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Research)		MS v SH		
		MS	SH	Total
Agree	N	2	11	13
	%	66.7%	52.4%	54.2%
Strongly agree	N	0	4	4
	%	0.0%	19.0%	16.7%
Unsure / do not know	N	1	6	7
	%	33.3%	28.6%	29.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Competitiveness)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	2	2	0	4
	%	22.2%	20.0%	0.0%	16.7%
Disagree	N	2	1	0	3
	%	22.2%	10.0%	0.0%	12.5%
Strongly agree	N	1	2	0	3
	%	11.1%	20.0%	0.0%	12.5%
Unsure / do not know	N	4	5	5	14
	%	44.4%	50.0%	100.0%	58.3%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (Competitiveness)		MS v SH		
		MS	SH	Total
Agree	N	1	3	4
	%	33.3%	14.3%	16.7%
Disagree	N	0	3	3
	%	0.0%	14.3%	12.5%
Strongly agree	N	0	3	3
	%	0.0%	14.3%	12.5%
Unsure / do not know	N	2	12	14
	%	66.7%	57.1%	58.3%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (SMEs)		Animal v Human			
		Animal	Human	Both	Total
Agree	N	3	3	0	6
	%	33.3%	30.0%	0.0%	25.0%
Disagree	N	0	1	1	2
	%	0.0%	10.0%	20.0%	8.3%
Strongly agree	N	0	1	0	1
	%	0.0%	10.0%	0.0%	4.2%
Unsure / do not know	N	6	5	4	15
	%	66.7%	50.0%	80.0%	62.5%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? EU antimicrobial resistance policy and strategy complement and/or reinforce existing EU policies in the following areas. (SMEs)		MS v SH		
		MS	SH	Total
Agree	N	1	5	6
	%	33.3%	23.8%	25.0%
Disagree	N	0	2	2
	%	0.0%	9.5%	8.3%
Strongly agree	N	0	1	1
	%	0.0%	4.8%	4.2%
Unsure / do not know	N	2	13	15
	%	66.7%	61.9%	62.5%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

External coherence

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Documents published by other EU Member States)		Animal v Human		
		Animal	Both	Total
No	N	0	1	1
	%	0.0%	50.0%	33.3%
Yes	N	1	1	2
	%	100.0%	50.0%	66.7%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Documents published by other EU Member States)		MS v SH	
		MS	Total
No	N	1	1
	%	33.3%	33.3%
Yes	N	2	2
	%	66.7%	66.7%
Total	N	3	3
	%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Documents published by non-EU international organisations)		Animal v Human		
		Animal	Both	Total
No	N	1	1	2
	%	100.0%	50.0%	66.7%
Yes	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Documents published by non-EU international organisations)		MS v SH	
		MS	Total
No	N	2	2
	%	66.7%	66.7%
Yes	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Documents published by non-EU countries)		Animal v Human		
		Animal	Both	Total
No	N	1	1	2
	%	100.0%	50.0%	66.7%
Yes	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Documents published by non-EU countries)		MS v SH	
		MS	Total
No	N	2	2
	%	66.7%	66.7%
Yes	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (No, there are no other policies in other countries that are relevant for my antimicrobial resistance work)		Animal v Human		
		Animal	Both	Total
No	N	1	2	3
	%	100.0%	100.0%	100.0%
Yes	N	1	2	3
	%	100.0%	100.0%	100.0%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (No, there are no other policies in other countries that are relevant for my antimicrobial resistance work)		MS v SH	
		MS	Total
No	N	3	3
	%	100.0%	100.0%
Yes	N	3	3
	%	100.0%	100.0%
Total	N	3	3
	%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Unsure / Do not know)		Animal v Human		
		Animal	Both	Total
No	N	1	1	2
	%	100.0%	50.0%	66.7%
Yes	N	0	1	1
	%	0.0%	50.0%	33.3%
Total	N	1	2	3
	%	100.0%	100.0%	100.0%

Are there other policies originating from outside of the country in which you live that are relevant for your work in the area of antimicrobial resistance? (Unsure / Do not know)		MS v SH	
		MS	Total
No	N	2	2
	%	66.7%	66.7%
Yes	N	1	1
	%	33.3%	33.3%
Total	N	3	3
	%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Non-EU OECD countries (e.g. Switzerland, Norway, USA, Canada))		Animal v Human			
		Animal	Human	Both	Total
No	N	4	3	3	10
	%	44.4%	30.0%	60.0%	41.7%
Unsure / Do not know	N	1	0	1	2
	%	11.1%	0.0%	20.0%	8.3%
Yes	N	4	7	1	12
	%	44.4%	70.0%	20.0%	50.0%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Non-EU OECD countries (e.g. Switzerland, Norway, USA, Canada))		MS v SH		
		MS	SH	Total
No	N	0	10	10
	%	0.0%	47.6%	41.7%
Unsure / Do not know	N	2	0	2
	%	66.7%	0.0%	8.3%
Yes	N	1	11	12
	%	33.3%	52.4%	50.0%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Transatlantic Task Force on antimicrobial resistance (TATFAR))		Animal v Human			
		Animal	Human	Both	Total
No	N	4	7	3	14
	%	44.4%	70.0%	60.0%	58.3%
Unsure / Do not know	N	1	0	1	2
	%	11.1%	0.0%	20.0%	8.3%
Yes	N	4	3	1	8
	%	44.4%	30.0%	20.0%	33.3%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Transatlantic Task Force on antimicrobial resistance (TATFAR))		MS v SH		
		MS	SH	Total
No	N	0	14	14
	%	0.0%	66.7%	58.3%
Unsure / Do not know	N	2	0	2
	%	66.7%	0.0%	8.3%
Yes	N	1	7	8
	%	33.3%	33.3%	33.3%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Health Organization (WHO))		Animal v Human			
		Animal	Human	Both	Total
No	N	1	3	2	6
	%	11.1%	30.0%	40.0%	25.0%
Yes	N	8	7	3	18
	%	88.9%	70.0%	60.0%	75.0%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Health Organization (WHO))		MS v SH		
		MS	SH	Total
No	N	0	6	6
	%	0.0%	28.6%	25.0%
Yes	N	3	15	18
	%	100.0%	71.4%	75.0%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Organisation for Animal Health (OIE))		Animal v Human			
		Animal	Human	Both	Total
No	N	1	6	2	9
	%	11.1%	60.0%	40.0%	37.5%
Unsure / Do not know	N	8	4	3	15
	%	88.9%	40.0%	60.0%	62.5%
Yes	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%
Total	N	1	6	2	9
	%	11.1%	60.0%	40.0%	37.5%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (World Organisation for Animal Health (OIE))		MS v SH		
		MS	SH	Total
No	N	0	9	9
	%	0.0%	42.9%	37.5%
Unsure / Do not know	N	3	12	15
	%	100.0%	57.1%	62.5%
Yes	N	3	21	24
	%	100.0%	100.0%	100.0%
Total	N	0	9	9
	%	0.0%	42.9%	37.5%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Food and Agriculture Organization of the United Nations (UN FAO))		Animal v Human			
		Animal	Human	Both	Total
No	N	2	6	2	10
	%	22.2%	60.0%	40.0%	41.7%
Unsure / Do not know	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.2%
Yes	N	7	4	2	13
	%	77.8%	40.0%	40.0%	54.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Food and Agriculture Organization of the United Nations (UN FAO))		MS v SH		
		MS	SH	Total
No	N	0	10	10
	%	0.0%	47.6%	41.7%
Unsure / Do not know	N	1	0	1
	%	33.3%	0.0%	4.2%
Yes	N	2	11	13
	%	66.7%	52.4%	54.2%
Total	N	3	21	24
	%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Other, please specify)		Animal v Human			
		Animal	Human	Both	Total
No	N	3	5	2	10
	%	42.9%	50.0%	100.0%	52.6%
Yes	N	4	5	0	9
	%	57.1%	50.0%	0.0%	47.4%
Total	N	7	10	2	19
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of actions at international level for tackling antimicrobial resistance undertaken by the entities listed below? (Other, please specify)		MS v SH		
		MS	SH	Total
No	N	10	10	10
	%	52.6%	52.6%	52.6%
Yes	N	9	9	9
	%	47.4%	47.4%	47.4%
Total	N	19	19	19
	%	100.0%	100.0%	100.0%

Do you think these actions are coordinated well with Member States in the EU?		Animal v Human			Total
		Animal	Human	Both	Total
No	N	2	4	0	6
	%	28.6%	50.0%	0.0%	37.5%
Unsure / Do not know	N	2	3	1	6
	%	28.6%	37.5%	100.0%	37.5%
Yes	N	3	1	0	4
	%	42.9%	12.5%	0.0%	25.0%
Total	N	7	8	1	16
	%	100.0%	100.0%	100.0%	100.0%

Do you think these actions are coordinated well with Member States in the EU?		MS v SH		Total
		MS	SH	Total
No	N	6	6	6
	%	37.5%	37.5%	37.5%
Unsure / Do not know	N	6	6	6
	%	37.5%	37.5%	37.5%
Yes	N	4	4	4
	%	25.0%	25.0%	25.0%
Total	N	16	16	16
	%	100.0%	100.0%	100.0%

Section 5: Added value

Do you agree with the following statement? The EU Action Plan identifies actions best dealt with at EU level.		Animal v Human			Total
		Animal	Human	Both	Total
Agree	N	4	7	1	12
	%	44.4%	70.0%	20.0%	50.0%
Disagree	N	1	0	0	1
	%	11.1%	0.0%	0.0%	4.2%
Strongly Agree	N	1	1	3	4
	%	11.1%	10.0%	60.0%	16.6%
Unsure / Do not know	N	3	2	2	7
	%	33.3%	20.0%	40.0%	29.2%
Total	N	9	10	5	24
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? The EU Action Plan identifies actions best dealt with at EU level.		MS v SH		
		MS	SH	Total
Agree	N	0	12	12
	%	0.0%	57.1%	50.0%
Disagree	N	0	1	1
	%	0.0%	4.8%	4.2%
Strongly Agree	N	2	2	4
	%	66.7%	9.5%	16.6%
Strongly disagree	N	1	6	7
	%	33.3%	28.6%	29.2%
Unsure / Do not know	N	3	21	24
	%	100.0%	100.0%	100.0%
Total	N	0	12	12
	%	0.0%	57.1%	50.0%

Do you agree with the following statement? Overall, the EU Action Plan has helped bring about improvements in the situation on antimicrobial resistance in the EU that would not have happened otherwise.		Animal v Human			
		Animal	Human	Both	Total
Agree	N	6	4	2	12
	%	75.0%	40.0%	40.0%	52.2%
Disagree	N	0	1	0	1
	%	0.0%	10.0%	0.0%	4.4%
Strongly Agree	N	2	1	1	4
	%	25.0%	10.0%	20.0%	17.4%
Unsure / Do not know	N	0	4	2	6
	%	0.0%	40.0%	40.0%	26.1%
Total	N	8	10	5	23
	%	100.0%	100.0%	100.0%	100.0%

Do you agree with the following statement? Overall, the EU Action Plan has helped bring about improvements in the situation on antimicrobial resistance in the EU that would not have happened otherwise.		MS v SH		
		MS	SH	Total
Agree	N	0	12	12
	%	0.0%	60.0%	52.2%
Disagree	N	0	1	1
	%	0.0%	5.0%	4.4%
Strongly Agree	N	2	2	4
	%	66.7%	10.0%	17.4%
Unsure / Do not know	N	1	5	6
	%	33.3%	25.0%	26.1%
Total	N	3	20	23
	%	100.0%	100.0%	100.0%

Are you aware of activities related to tackling AMR in the country in which you live that were enabled by EU funds and would not have occurred without EU funding (or would have occurred more slowly or to a lesser extent)?		Animal v Human			
		Animal	Human	Both	Total
No	N	2	5	1	8
	%	25.0%	50.0%	20.0%	34.8%
Not applicable	N	0	0	1	1
	%	0.0%	0.0%	20.0%	4.4%
Unsure / Do not know	N	4	4	2	10
	%	50.0%	40.0%	40.0%	43.5%
Yes	N	2	1	1	4
	%	25.0%	10.0%	20.0%	17.4%
Total	N	8	10	5	23
	%	100.0%	100.0%	100.0%	100.0%

Are you aware of activities related to tackling AMR in the country in which you live that were enabled by EU funds and would not have occurred without EU funding (or would have occurred more slowly or to a lesser extent)?		MS v SH		
		MS	SH	Total
No	N	0	8	8
	%	0.0%	38.1%	34.8%
Not applicable	N	0	1	1
	%	0.0%	4.8%	4.4%
Unsure / Do not know	N	1	9	10
	%	50.0%	42.9%	43.5%
Yes	N	1	3	4
	%	50.0%	14.3%	17.4%
Total	N	2	21	23
	%	100.0%	100.0%	100.0%

APPENDIX M: ADDITIONAL DATA

Table 39: Ratio of the consumption of broad-spectrum to the consumption of narrow-spectrum antibacterials (encompassing penicillins, cephalosporins and macrolides)

Country	2011	2012	2013	2014
Austria	7.79	8.09	8.25	8.17
Belgium	64.32	79.17	80.12	79.92
Bulgaria	8.01	10.07	11.83	17.7
Croatia	6.05	8.15	7.89	8.75
Cyprus**	29.74	28.45	36.87	37.87
Czech Republic	4.03	5.43	4.79	5.11
Denmark	0.53	0.59	0.62	0.63
Estonia	9.98	10.54	11.6	11.9
Finland	0.88	0.82	0.73	0.73
France	46.03	50.63	47.64	40.21
Germany	5.01	4.94	5.66	5.62
Greece	133.58	258.32	318.32	606.81
Hungary	19.66	21.71	25.74	37.55
Iceland**	1.76	1.68	2.08	1.99
Ireland	6.26	6.46	5.68	5.07
Italy	140.15	158.44	171.64	184.26
Latvia	7.66	11.5	11.75	12.35
Lithuania	4.72	10.54	11.69	10.49
Luxembourg	38.23	47.38	53.42	52.42
Malta	142.7	162.07	153.27	180.36
Netherlands	7.4	7.82	7.84	7.77
Norway	0.21	0.23	0.23	0.21
Poland	57.63	36.93	34.87	29.02
Portugal	32.26	34.85	34.26	37.88
Romania**	6.45	8.39	11.03	11.88
Slovakia	8.77	8.85	9.84	10.33
Slovenia	3.36	3.22	3.54	3.96
Spain	63.1	65.69	74.68	76.13

Sweden	0.17	0.17	0.2	0.37
United Kingdom	1.15	1.35	1.5	1.64

Note: Table shows the ratio of the consumption of broad-spectrum (J01(CR+DC+DD+(F-FA01))) to the consumption of narrow-spectrum penicillins, cephalosporins and macrolides (J01(CE+DB+FA01)).

* Denominator for relative consumption;

** Country provided only total care data

Source: ESAC database http://ecdc.europa.eu/en/healthtopics/antimicrobial_resistance/esac-net-database

Table 40. Trends in antibacterials consumption (ATC groups J01 and J01C) outside of hospitals in EU/EEA countries, expressed as DDD per 1,000 inhabitants and per day (2011–2014)[d]

	Consumption of J01 (all antibacterials)						Consumption of J01C (including penicillins)					
	Year				Average annual change 2011-14		Year				Average annual change 2011-14	
	2011	2012	2013	2014	Average annual change	p-value[c]	2011	2012	2013	2014	Average annual change[b]	p-value[c]
EU average[a]	*21.6*	*21.7*	*22.3*	*21.9*	*0.13*	*0.736*	*10.8*	*10.8*	*11.2*	*11.0*	*0.09*	*0.652*
Austria	14.5	14	16.3	13.9	0.05	0.896	6.5	6.3	7.4	6.5	0.11	0.595
Belgium	28.8	29.5	29.4	28.2	-0.19	0.619	16.6	17	16.9	16	-0.19	0.36
Bulgaria	19.5	18.5	20	21.3	0.69	0.074	8.4	7.8	8.5	8.3	0.04	0.847
Croatia	19.5	21.7	21.1	21.4	0.51	0.184	9.6	11.2	11.3	11.6	0.61	0.004
Cyprus*	32	29.7	28.3	26.1	-1.91	<0.01	15.4	13.8	12.9	11.7	-1.2	<0.01
Czech Rep.	18.5	17.7	19	19.3	0.37	0.334	8.1	7	8.1	8.1	0.11	0.595
Denmark	17.4	16.4	16.4	15.9	-0.45	0.24	10.9	10.2	10.5	10.5	-0.09	0.664
Estonia	12.2	11.7	11.7	11.7	-0.15	0.694	4.6	4.5	4.5	4.6	0.00	1
Finland	20.1	19.5	18.3	18.1	-0.72	0.063	6.6	6.5	6.2	6.4	-0.09	0.664

	Consumption of J01 (all antibacterials)						Consumption of J01C (including penicillins)					
	Year				Average annual change 2011-14		Year				Average annual change 2011-14	
	2011	2012	2013	2014	Average annual change	p-value[c]	2011	2012	2013	2014	Average annual change[b]	p-value[c]
France	28.7	29.7	30.1	29	0.13	0.733	16.5	17.4	18.4	18	0.55	0.01
Germany	14.1	14.9	15.8	14.6	0.24	0.53	3.9	4.5	4.8	4.6	0.24	0.249
Greece	35.7	32.5	32.2	34	-0.54	0.16	12.4	12.9	12.6	13.9	0.42	0.046
Hungary	16.2	15.1	15.6	16.2	0.05	0.896	7.1	6.7	6.8	6.8	-0.08	0.699
Iceland*	22.3	22.1	21.9	19.3	-0.92	0.018	12.1	12	11.6	10.5	-0.52	0.014
Ireland	22.6	23	23.8	23.1	0.23	0.547	12.2	12.5	13.1	13.2	0.36	0.086
Italy	28.2	27.6	28.6	27.8	-0.02	0.958	15.6	15.4	16.1	15.7	0.1	0.629
Latvia	12.8	13	13.5	12.6	-0.01	0.979	6.1	6.2	6.6	6.1	0.04	0.847
Lithuania	19	16.2	18.5	16	-0.67	0.083	10.4	9.1	10.6	9	-0.27	0.195
Luxemb.	27.8	27.7	27.7	25.8	-0.6	0.119	13.5	13.7	13.8	12.9	-0.17	0.413
Malta	23.4	22.5	23.8	23.7	0.22	0.564	10.2	9	9.5	9.7	-0.1	0.629
Netherla.	11.4	11.3	10.8	10.6	-0.29	0.448	4.5	4.5	4.4	4.2	-0.1	0.629
Norway	16.5	16.9	16.2	15.9	-0.25	0.513	6.8	6.8	6.6	6.5	-0.11	0.595
Poland	22.1	22.9	23.6	22.8	0.28	0.464	11.8	9.2	9.5	8.9	-0.84	<0.01
Portugal	23.2	22.7	19.6	20.3	-1.18	0.003	12.3	12.4	11.1	11.6	-0.34	0.104
Romania*	30.9	30.4	31.6	31.2	0.21	0.582	17.6	17.2	17.9	16.6	-0.23	0.269
Slovakia	23.8	20	23.6	20.9	-0.51	0.184	9.3	7.9	9	8.1	-0.25	0.23
Slovenia	14.4	14.3	14.5	14.2	-0.04	0.916	9.7	9.6	9.8	9.5	-0.04	0.847

	Consumption of J01 (all antibacterials)						Consumption of J01C (including penicillins)					
	Year				Average annual change 2011-14		Year				Average annual change 2011-14	
	2011	2012	2013	2014	Average annual change	p-value[c]	2011	2012	2013	2014	Average annual change[b]	p-value[c]
Spain	20.9	19.7	20.3	21.6	0.27	0.48	13.1	12.3	12.8	14	0.32	0.126
Sweden	14.3	14.1	13	13	-0.5	0.193	7.1	7	6.6	6.9	-0.1	0.629
UK	18.8	20.1	20.6	20.9	0.68	0.078	8.7	9.3	9.2	9.3	0.17	0.413

*Total care data, including the hospital sector.

a EU average refers to the corresponding population-weighted mean consumption.

b Average annual change was calculated using a similar method to that used by ECDC in annual Surveillance of antimicrobial consumption in Europe reports (e.g. (ECDC, 2014)). A linear regression was applied with the dependent variable being antimicrobial consumption in DDD per 1 000 inhabitants and per day, and the explanatory variables being country and country*year dummies.

C P-value considered for statistical significance: p<0.05

D The data shown are newly released and do not yet appear in any of ECDC's annual Surveillance of antimicrobial consumption in Europe reports since these currently include data only for years 2011-2012 (ECDC, 2014).

Source: ESAC database http://ecdc.europa.eu/en/healthtopics/antimicrobial_resistance/esac-net-database

Figure 4: Sales, in tonnes of active ingredients, of veterinary antimicrobials for food-producing animals, including horses for 26 EU/EEA countries (2010-2013).

Source: ESVAC database (http://www.ema.europa.eu/ema/)
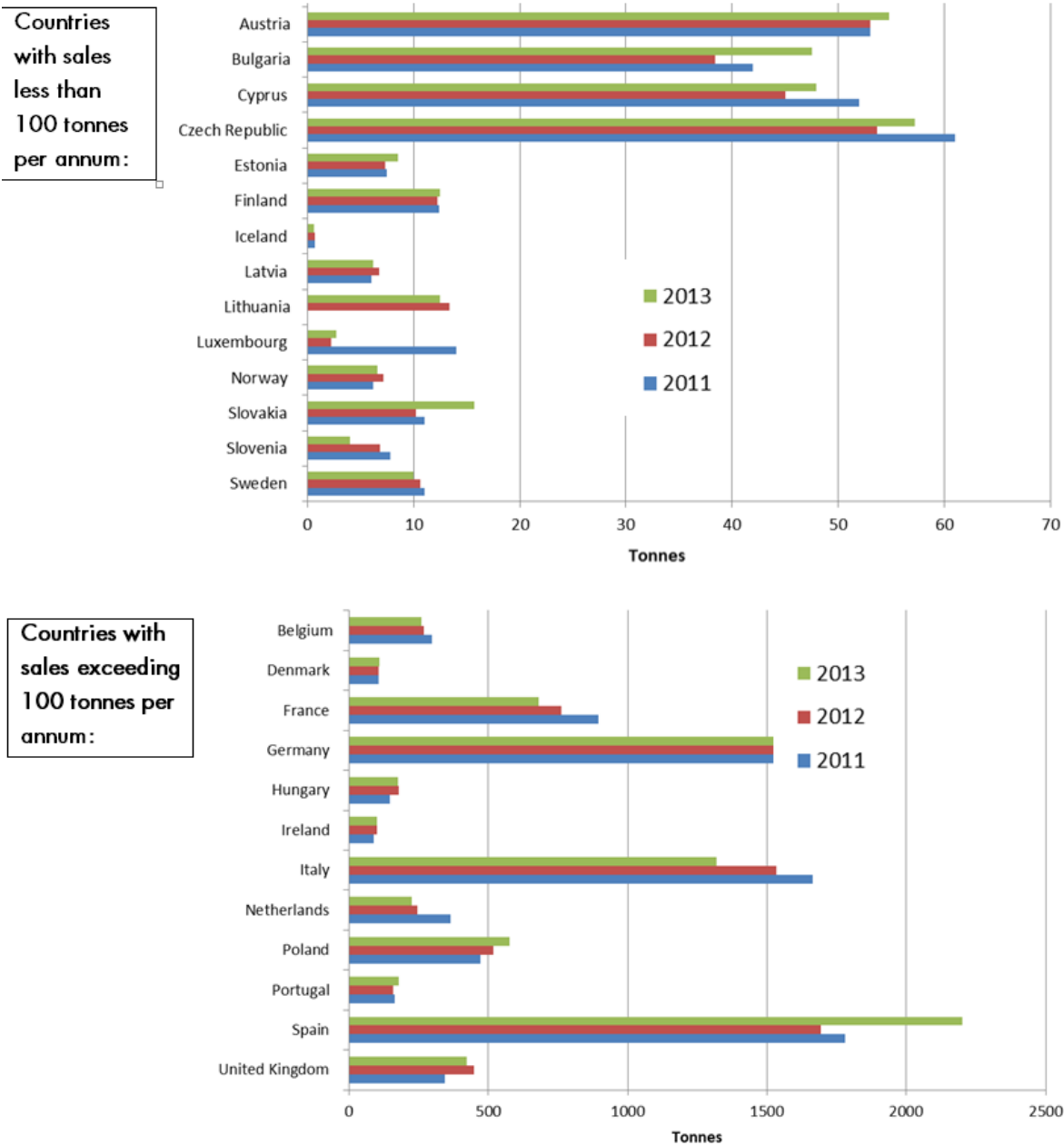
Table 41: Overview of ND4BB research programmes

Programme	Size	Launched	Expected completion date	Objectives
COMBACTE[118]	250 million EUR	Early 2013	December 2019	To establish a pan-European network of excellence of clinical investigation sites prepared for and experienced in performing high-quality clinical studies with new antibiotics against multi-resistant bacterial pathogens
TRANSLOCATION[119]	29 million EUR	Early 2013	December 2017	To identify new ways of getting potential antibiotics into bacteria and preventing bacteria from destroying or expelling the drugs before they can take effect
ENABLE[120]	101 million EUR	Early 2014	January 2020	To take promising novel molecules identified in the early stages of drug discovery with a view to developing them further into candidate drugs that could be used to treat Gram-negative bacteria
DRIVE-AB[121]	11 million EUR	Autumn 2014	September 2017	To develop a new business model for antibiotic development while also addressing the issue of the responsible use of antibiotics
COMBACTE-CARE[122]	85 million EUR	Early 2015	February 2020	To shed new light on the best ways to understand and treat CRE infections; to run clinical trials of a novel antibiotic combination product designed to tackle a sub-type of CRE infections for which there are limited or no treatment options
COMBACTE-MAGNET[123]	169 million EUR	Early 2015	December 2021	To evaluate a new approach to preventing and treating life-threatening infections caused by Gram-negative bacteria. To set up a pan-European epidemiological network (EPI-Net) that will help to optimise the surveillance of antibiotic resistance and healthcare associated infections in Europe
iABC[124]	51 million EUR	August 2015	July 2020	To develop antibiotics that can be inhaled to treat respiratory infections in people with cystic fibrosis and related conditions

Source: ND4BB website125 and websites of individual projects

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[118] www.combacte.com [last accessed 18 December 2015]

[119] www.imi.europa.eu/content/translocation [last accessed 18 December 2015]

[120] www.imi.europa.eu/content/enable [last accessed 18 December 2015]

[121] drive-ab.eu [last accessed 18 December 2015]

[122] www.imi.europa.eu/content/combacte-care [last accessed 18 December 2015]

[123] www.combacte.com/About-us/COMBACTE-MAGNET [last accessed 18 December 2015]

[124] http://www.imi.europa.eu/content/iabc [last accessed 18 December 2015]

[125] http://www.nd4bb.eu/ [last accessed 18 December 2015]

Table 42: The results of selected assessments of national campaigns

Country	Name of initiative	Years	Results	References
Belgium	Use antibiotics less frequently, but better	2000 - 2003	Outpatient antibiotic use decreased by 36% between 1997 and 2007	Goossens et al. 2008
	Antibiotics are ineffective for the common cold, acute bronchitis and flu	2004 - 2007	Resistance of *Streptococcus pneumoniae* to penicillin decreased from 18% in 2000 to 7% in 2009 as well as antibiotic consumption	Goossens 2014
	Prenez les antibiotiques comme il faut et uniquement quand il faut!	2014–2018	No results yet. Objectives: 5% annual reduction in antibiotic packages consumed.	Harbarth et al. 2015
France	"Antibiotics are not automatic" Yearly national antibiotic campaign since 2001	2002-2007	Reduction of 26.5% of the number of antibiotic prescriptions.	Sabuncu et al. 2009
Scotland	Scotland National antibiotic stewardship	Since 2008	Net decrease in the incidence of CDI (*Clostridium difficile* infection) between 2008 and 2013What meaning or relevance does this have in the context of this report ?	Huttner et al. 2014, Nathwani et al. 2011
Sweden	Swedish Strategic Programme Against Antibiotic Resistance (Strama)	Since 1995	Strama has played a major part in the reduction of total antibiotic use, and may have limited the spread of multiresistant pneumococcal clones.	Molstad et al. 2008
United Kingdom	Antibiotic Guardian campaign	Since 2014	The campaign has limited reach to the public audience and more is required to change behaviour and attitude.	Ashiru-Oredope & Hopkins 2015 you may need to explain how a 2013 paper is used to assess a campaign running since 2014 apparently

Source: Compiled by RAND Europe based on available studies

Table 43: EU legislation relating to AMR[126]

2011-2015

- COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT pursuant to Article 294(6) of the Treaty on the Functioning of the European Union concerning the position of the Council at first reading with a view to the adoption of a Regulation of the European Parliament and of the Council on transmissible animal diseases (Animal Health Law)
- Commission Implementing Decision (EU) 2015/2444 of 17 December 2015 laying down standard requirements for the submission by Member States of national programmes for the eradication, control and surveillance of animal diseases and zoonoses for Union financing and repealing Decision 2008/425/EC (notified under document C(2015) 9192) (Text with EEA relevance)
- Council Decision (EU) 2015/2367 of 30 November 2015 on the position to be taken on behalf of the European Union within the Joint Veterinary Committee set up by the Agreement between the European Community and the Swiss Confederation on trade in agricultural products in relation to Decision No 1/2015 regarding the amendment of Appendices 1, 2, 3, 4, 5, 6, 7, 10 and 11 to Annex 11 to the Agreement
- Guidelines for the prudent use of antimicrobials in veterinary medicine (2015)
- Commission Decision of 03/10/2014 declaring a concentration to be compatible with the common market (Case No COMP/M.7277 - ELI LILLY / NOVARTIS ANIMAL HEALTH) according to Council Regulation (EC) No 139/2004 (Only the English text is authentic)
- Decision of the EEA Joint Committee No 166/2014 of 25 September 2014 amending Annex I (Veterinary and phytosanitary matters) to the EEA Agreement [2015/1234]
- Commission Decision of 14/08/2014 declaring a concentration to be compatible with the common market (Case No COMP/M.7323 - NORDIC CAPITAL / GHD VERWALTUNG) according to Council Regulation (EC) No 139/2004 (Only the English text is authentic)
- Council Regulation (EU) No 557/2014 of 6 May 2014 establishing the Innovative Medicines Initiative 2 Joint Undertaking Text with EEA relevance
- Commission Regulation (EU) No 358/2014 of 9 April 2014 amending Annexes II and V to Regulation (EC) No 1223/2009 of the European Parliament and of the Council on cosmetic products Text with EEA relevance
- Regulation (EU) No 282/2014 of the European Parliament and of the Council of 11 March 2014 on the establishment of a third Programme for the Union's action in the field of health (2014-2020) and repealing Decision No 1350/2007/EC Text with EEA relevance
- Regulation (EU) No 1291/2013 of the European Parliament and of the Council of 11 December 2013 establishing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decision No 1982/2006/EC Text with EEA relevance
- Council Decision of 3 December 2013 establishing the specific programme implementing Horizon 2020 - the Framework Programme for Research and Innovation (2014-2020) and repealing Decisions 2006/971/EC, 2006/972/EC, 2006/973/EC, 2006/974/EC and 2006/975/EC Text with EEA relevance
- Decision No 1082/2013/EU of the European Parliament and of the Council of 22 October 2013 on serious cross-border threats to health and repealing Decision

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[126] EU Regulations require all Member States to act in the same way under the conditions of the Regulation; EU Decisions required Member States to whom they are addressed to act in the manner specified; EU Directives require all Member States to act but action is not always specified; EU Recommendations usually suggest actions but Member States are not obliged to act.

No 2119/98/EC Text with EEA relevance

- Guidelines on the details of the various categories of variations, on the operation of the procedures laid down in Chapters II, IIa, III and IV of Commission Regulation (EC) No 1234/2008 of 24 November 2008 concerning the examination of variations to the terms of marketing authorisations for medicinal products for human use and veterinary medicinal products and on the documentation to be submitted pursuant to those procedures
- Council Directive 2013/20/EU of 13 May 2013 adapting certain directives in the field of food safety, veterinary and phytosanitary policy, by reason of the accession of the Republic of Croatia
- Commission Regulation (EU) No 122/2013 of 12 February 2013 amending Regulation (EC) No 1950/2006 establishing, in accordance with Directive 2001/82/EC of the European Parliament and of the Council on the Community code relating to veterinary medicinal products, a list of substances essential for the treatment of equidae Text with EEA relevance
- Commission Regulation (EU) No 101/2013 of 4 February 2013 concerning the use of lactic acid to reduce microbiological surface contamination on bovine carcases Text with EEA relevance
- Commission Regulation (EU) No 1190/2012 of 12 December 2012 concerning a Union target for the reduction of Salmonella Enteritidis and Salmonella Typhimurium in flocks of turkeys, as provided for in Regulation (EC) No 2160/2003 of the European Parliament and of the Council Text with EEA relevance
- Commission Decision of 14 November 2012 establishing the ecological criteria for the award of the EU Ecolabel for Industrial and Institutional Automatic Dishwasher Detergents (notified under document C(2012) 8054) Text with EEA relevance
- Commission Decision of 14 November 2012 establishing the ecological criteria for the award of the EU Ecolabel for Industrial and Institutional Laundry Detergents (notified under document C(2012) 8055) Text with EEA relevance
- Commission Regulation (EU) No 200/2012 of 8 March 2012 concerning a Union target for the reduction of Salmonella enteritidis and Salmonella typhimurium in flocks of broilers, as provided for in Regulation (EC) No 2160/2003 of the European Parliament and of the Council Text with EEA relevance
- Commission Regulation (EU) No 1086/2011 of 27 October 2011 amending Annex II to Regulation (EC) No 2160/2003 of the European Parliament and of the Council and Annex I to Commission Regulation (EC) No 2073/2005 as regards salmonella in fresh poultry meat Text with EEA relevance
- Commission Recommendation of 27 October 2011 on the research Joint Programming Initiative The Microbial Challenge — An Emerging Threat to Human Health
- Public health threat of *antimicrobial* resistance European Parliament resolution of 27 October 2011 on the public health threat of *antimicrobial* resistance
- Commission Decision of 06/07/2011 declaring a concentration to be compatible with the common market (Case No COMP/M.6205 - ELI LILLY / JANSSEN PHARMACEUTICA ANIMAL HEALTH BUSINESS ASSETS) according to Council Regulation (EC) No 139/2004 (Only the English text is authentic)
- Commission Decision of 28 June 2011 on establishing the ecological criteria for the award of the EU Ecolabel to all-purpose cleaners and sanitary cleaners (notified under document C(2011) 4442) Text with EEA relevance
- Commission Decision of 24 June 2011 on establishing the ecological criteria for the award of the EU Ecolabel to hand dishwashing detergents (notified under document C(2011) 4448) Text with EEA relevance
- Commission Regulation (EU) No 546/2011 of 10 June 2011 implementing Regulation (EC) No 1107/2009 of the European Parliament and of the Council as regards uniform principles for evaluation and authorisation of plant protection products Text with EEA relevance

- Commission Regulation (EU) No 517/2011 of 25 May 2011 implementing Regulation (EC) No 2160/2003 of the European Parliament and of the Council as regards a Union target for the reduction of the prevalence of certain Salmonella serotypes in laying hens of Gallus gallus and amending Regulation (EC) No 2160/2003 and Commission Regulation (EU) No 200/2010 Text with EEA relevance
- Antibiotic resistance European Parliament resolution of 12 May 2011 on antibiotic resistance
- Commission Decision of 28 April 2011 on establishing the ecological criteria for the award of the EU Ecolabel for laundry detergents (notified under document C(2011) 2815) Text with EEA relevance
- Commission Decision of 28 April 2011 on establishing the ecological criteria for the award of the EU Ecolabel to detergents for dishwashers (notified under document C(2011) 2806) Text with EEA relevance
- Commission Decision of 1 April 2011 amending Annexes II to IV to Council Directive 2009/158/EC on animal health conditions governing intra-Community trade in, and imports from third countries of, poultry and hatching eggs (notified under document C(2011) 2068) Text with EEA relevance
- Commission Regulation (EU) No 208/2011 of 2 March 2011 amending Annex VII to Regulation (EC) No 882/2004 of the European Parliament and of the Council and Commission Regulations (EC) No 180/2008 and (EC) No 737/2008 as regards lists and names of EU reference laboratories Text with EEA relevance

Source: Compiled by RAND Europe

APPENDIX N: CASE STUDIES

1. Healthcare Associated Infections: understanding progress at EU and country level, focusing on the Netherlands and Portugal

2. Multidrug and extensively drug-resistant TB: Progress and challenges in Eastern European countries in the EU

3. TARGET Antibiotics Toolkit for antimicrobial stewardship

4. Getting the data: ESVAC successes and future directions

5. The effect of the Action Plan on work across animals, food and human settings and its impact on the prevalence of drug resistance in Salmonella in the EU

6. Lessons from French awareness programmes on human health with extension to animals

7. Aquaculture and AMR in maritime waters

8. Trends in community antibiotic use and public awareness: Italy and Sweden

Case study 1: Healthcare Associated Infections: understanding progress at EU and country level, focusing on the Netherlands and Portugal

Summary

- The case study describes the evolution of EU initiatives addressing HAI (which can be resistant to antimicrobials) and provides examples of progress in two countries: the Netherlands and Portugal.

- To date there has only been one point prevalence survey at EU level, therefore trends of country-level indicators across years are difficult to interpret as there could be differences in protocols for collecting national data.

- Still, the case study presents data from EARS-Net on resistance to antibiotics for two important organisms, *Klebsiella pneumoniae* and *Staphylococcus aureus*, in the two selected countries. These data show mixed progress.

- At EU level progress made includes: adoption of general and specific case definitions for HAI, provision of a standardized methodology and framework for the national surveillance of HAI, and improvements in collection of data on HAI through the ECDC PPS.

- The country-level perspective highlighted success towards gathering better data as well as establishing antimicrobial stewardship efforts in both countries. This perspective showed evidence of the move towards better data collection and measurement of HAI as well as challenges that remain, particularly relating to harmonization.

- While causal links between the EC Action Plan and HAI trends cannot be made, there is coherence between the EC Action Plan's objectives, the EU recommendations to which it refers (e.g. in Action 4), and initiatives taken at country level to contain the risks of HAI.

- Further improvements are still needed in the EU in areas including targeted surveillance (e.g. for surgical site infections), inclusion of LTCFs alongside hospitals in surveillance, training of healthcare professionals, ensuring compliance with infection control guidelines, and stewardship more widely.

Introduction

Background

Healthcare Associated Infections (HAI), which are infections that arise through patients receiving medical treatment, occur in a range of healthcare settings including hospitals or same-day surgical centres, ambulatory outpatient clinics, and long-term care facilities (LTCFs) such as nursing homes or rehabilitation facilities. HAI are relevant for AMR because the microbes responsible for the infection may be resistant to antibiotics. In the EU, an estimated 4,100,000 patients acquire HAI annually, resulting in 37,000 deaths (ECDC 2015d).

Action 4 of the EC Action Plan against AMR is concerned with strengthening infection prevention and control in healthcare settings. As part of this, there is a stated aim to conduct analysis and publish a report identifying the changes made by Member States (MS) in implementing the 2009 Council Recommendation (2009/C 151/01 on patient safety including the prevention and control of HAI) with a special focus on: the development of guidance on infection prevention and control; strengthening surveillance of HAI; and organizing specific and targeted education and training for healthcare workers.

Case study focus

This case study aims to describe the evolution of the EU initiatives addressing HAIs and provides examples of developments in two countries, The Netherlands and Portugal, to illustrate how country-level initiatives developed alongside those at EU level.

The case study considers the extent to which actions aimed at containing the risks of spreading AMR have been effective by examining:

- Country-level indicators of resistance in microorganisms of major public health importance (relating to judgement criteria 4.1)

To date, one point prevalence survey (PPS), assessing HAIs and antimicrobial use in acute hospital settings, has been conducted at EU level. It was conducted using a recently developed standardised methodology to facilitate country comparisons. (Due to varying data collection approaches, country-level indicators collected outside the PPS should be compared and interpreted with caution.)

The case study sought to identify two EU countries with different experiences of HAI. Portugal was selected because, according to the ECDC 2011-2012 PPS (ECDC 2013a), it had the highest percentage of patients in acute hospitals with an HAI (10.8 per cent). The Netherlands was selected because, though it also had a HAI prevalence above the EU average (5.7 per cent), it has made improvements in this area. According to data from the Netherlands, the percentage of hospitalized patients with an HAI decreased from 6.2 per cent in 2008 to 3.2 per cent in 2013 (van den Berg 2014). Moreover, participants at the evaluation's first stakeholder workshop identified it as a country that could provide important learning in terms of progress made and good practice.

Methods and data sources

The case study is based on a review of academic and grey literature documenting the evolution of requirements and recommendations on HAI at EU level and in the selected countries. Key documents included a selection of ECDC reports and publications and the reports on Council Recommendation 2009/C 151/01 implementation. Data on HAI prevalence and trends in selected countries was obtained from the ECDC HAI-Net PPS interactive database (2012), ECDC (2014a, 2014f) and EARS-Net (2015). In the absence of trend data, data on individual organisms was sought to give some insight into trends in the two countries.

Findings

Country level indicator: trends in HAI in Portugal and The Netherlands

Table 1 presents data on resistance to antibiotics of one gram-negative pathogen – *Klebsiella pneumoniae* and one gram-positive pathogen – *Staphylococcus aureus*. K. pneumoniae and multidrug resistance associated with it have been increasing in more than one third of EU/EEA countries (EARS-Net 2015). Carbapenems are one of the few last-line antibiotics for treating multidrug resistant K. pneumonia, but there are indications that its resistance to these is also increasing (EARS-Net 2015). Methicillin-resistant S. aureus (MRSA) is also an extremely serious HAI. The data indicates that, in Portugal, prevalence of antibiotic resistance in K. pneumoniae and S. aureus has stayed the same or increased from 2011 to 2014. For the Netherlands, the indicators show decreased prevalence of resistance or no change over the same period.

Table 2 presents data from two EU wide surveys on resistance among LTCF residents for 2010 and 2013 (ECDC 2014a, 2014f). Here, both Portugal and the Netherlands show an

increased prevalence in that period and both were above the average crude prevalence rate in 2013, suggesting there is still room for improvement in both cases.

In the sections below we consider policy responses to HAI at EU and country level, highlighting areas of acheivement and areas for improvement going forward.

Table 44: Trends in resistance to antibiotics for K. pneumoniae and S. aureus in Netherlands and Portugal (EARS-Net 2015). N= Total numbers of isolates tested. %R= Percentage of resistance to the indicated antibiotic. Trends were judged on the basis of the figures below as well as data from 2012 and 2013. Cases where figures show a mix of increases and decreases (including in the intervening years) are marked 'no clear trend'.

Pathogen / Antibiotic	2011		2014		2011-14 Trend
	N	% R	N	%R	
K. pneumoniae/ 3rd-gen. Cephalosporins					
Netherlands	720	8.1%	911	5.5%	No clear trend
Portugal	616	35.4%	1712	40.9%	**Increase**
K. pneumoniae/ Aminoglycosides					
Netherlands	729	8.1%	900	3.9%	**Decrease**
Portugal	619	31.5%	1706	31.3%	No clear trend
K. pneumoniae/ Carbapenems					
Netherlands	722	0.3%	903	0.2%	No clear trend
Portugal	580	0.3%	1701	1.8%	**Increase**
K. pneumoniae/ Fluoroquinolones					
Netherlands	728	7.3%	886	4.7%	No clear trend
Portugal	617	36.3%	1712	36.5%	No clear trend
K. pneumoniae/ 3rd-gen Cephalosporins, Fluoroquinolones and Aminoglycosides					
Netherlands	720	4.3%	867	2.0%	**Decrease**
Portugal	614	20.8%	1705	23.0%	No clear trend
S. aureus/ Methicillin					
Netherlands	1801	1.4%	2524	1.0%	**Decrease**
Portugal	1307	54.6%	1515	47.4%	**Decrease**

Table 45: Trends in crude prevalence of LTCF residents with at least one HAI in the Netherlands and Portugal (ECDC 2014a,b).

LTCF Survey Year	Crude prevalence (%) of residents with at least one HAI		
	Netherlands	Portugal	Average across all countries in dataset
2010	1.0%	7.4%	2.4%
2013	5.8%	9.5%	3.4%

Successes

At **EU level**, among actions in the Council Recommendation 2009/C 151/01 on patient safety including the prevention and control of HAI are the following:

- making use of structure and process indicators as well as of results of accreditation and certification processes in order to foster adherence to prevention and control measures,
- having efficient governance structures as well as qualified and trained personnel to ensure efficient prevention and control programmes,
- organising prevalence surveys at set intervals, encouraging collection and maintaining of high quality microbiological documentation and patient records and provision of understandable and reliable information to the patients by healthcare institutions.

Overall the successes registered in the EU in regards to HAI, as per the last review (EC 2014a) are:

- Leading the adoption of a general and specific case definition for HAI
- Providing a standardized methodology and framework for the national surveillance of HAI
- Improvement of collection of data on HAI through the ECDC PPS

With respect to point (3), ECDC has conducted one EU PPS in acute care hospitals in 2011-2012 (ECDC 2013a) and two in long-term care facilities (LTCFs) in 2010 and 2013 (ECDC 2014a,b). These surveys employed a standardized methodology and involved the training of personnel in the proposed methodologies.

Other key EU policy developments in the area of HAI are: (1) the Commission Decision 2012/506/EU issued in 2012 (which includes case definitions of HAI and reporting instructions for each condition with the aim of allowing consistent reporting across Member States) and (2) Decision no. 1082/2013/EU on serious cross-border health threats (which also addresses HAI with a special emphasis on risk measures) (European Parliament and the Council of the EU, 2013).

Related to these, several evidence-based guidance documents have been issued to improve practice around the prevention and reporting of HAI, including health professional compliance with use of perioperative antibiotic prophylaxis and infection control measures in hospital and LTCFs (EC 2014a), and for key high-risk environments such as intensive care units and around cardiac surgery (ECDC 2015b, e, f). A systematic review of the effectiveness of infection control measures to prevent transmission through cross-border transfer of patients has also been published (ECDC 2014e).

Portugal has taken steps towards making use of accreditation and certification processes. The Department of Health Care Quality (Departamento da Qualidade na Saúde, DQS) with the Directorate-General of Health (Direcção-Geral da Saúde, DGS) has developed and rolled out quality standards and accreditation such as the ACSA accreditation programme, currently present in 22 per cent of the hospitals involved in the programme (OECD 2015). Programmes around patient safety and adverse events such as the National System of Notification of Incidents and Adverse Events or the Project Safe Surgery Safe Lives have also been developed. Hospital information structure is nationally standardised, which allows comparison based on monthly gathered data of clinical outcomes of hospital services (OECD 2015). Furthermore, networks of Quality and Safety Commissions are being established in each hospital or hospital centre. These aim to ensure the implementation of more effective and efficient clinical processes (OECD 2015). These measures come in addition to the implementation of wider

Antibiotic Stewardship Programmes in all health facilities from the end of 2015 which includes education for healthcare professionals (Neves et al. 2015).

The Netherlands has also further developed its HAI monitoring and surveillance capacity. Annual national prevalence studies have been conducted in hospitals by PREZIES (prevention of healthcare associated infections through surveillance). A total of 70 hospitals, of which 7 are academic medical centers, participate in this study. However, these data do not lend themselves to international comparisons (van den Berg et. al 2014).

Table 1 showed a decreasing trend in MRSA and, during the ECDC PPS survey, no MRSA isolates were reported. An important policy in addressing MRSA in the Netherlands has been the 'search and destroy' policy in hospitals. This policy has been in effect since 2002 and comprises of: performing testing cultures to pre-screening patients before admitting them in the hospital, isolating patients that could be infected with resistant bacteria, quarantining patients infected with resistant bacteria and screening of staff members (Vos et al. 2009). Another area of progress has been the establishment of regional cooperative laboratory networks (Schippers et al. 2015). In addition to surveillance activities, the networks are involved in enhancing training of professionals. For example, the 'Regional Microbiological Infectiological Symposium' (REMIS) is a monthly event, where different professionals can meet for additional training as well as exchange and analysis of current data. REMIS is also meant to signal the appearance of unique microorganisms in the institutions within the region (Schippers et al. 2015).

Again, steps to reduce HAI in the Netherlands are in the context of broader stewardship on the use of antibiotics in hospitals. In 2013, the Dutch Working Party on Antibiotic Policy (SWAB) introduced multidisciplinary Antibiotic teams (A-teams) in every hospital with the aim to provide training and advice, and to authorise use of antibiotics for special indications (Hospital Pharmacy Europe 2013).

Areas for improvement

The second report assessing the implementation of the Council Recommendation 2009/C 151/01 highlights the following needs with regard to tackling HAI (EC 2014a):

1. More efforts on targeted surveillance of HAI in surgical site infection, intensive care units and nursing homes and other LTCFs.

2. Improvement of routine case ascertainment of HAI by developing and adopting national diagnostic guidelines.

3. Provision of training and having an adequate number of healthcare workers that would be specialized in infection control.

4. Need of laboratory and other diagnostic capacity in healthcare institutions.

5. Ensuring sufficient isolation capacity for patients infected with clinically relevant microorganisms.

6. Standardised surveillance of alcohol hand rub consumption.

The ECDC PPS Data also suggests that specific focus should be given to HAI in surgical site infection as it accounts for 33 per cent of HAI in the Netherlands and 26 per cent in Portugal (ECDC 2013a).

While significant steps have been made in standardisation of national surveillance for HAI, data from the Netherlands suggest that further improvements could be made in harmonising national PPS protocols to the ECDC PPS protocol (ECDC 2013a).

At country level, both Portugal and the Netherlands recognise the need for ongoing improvements to combat HAI in context of efforts to address AMR. In the Netherlands there has been a call for including nursing homes and hospitals in regional surveillance efforts (Schippers et al. 2015). In Portugal, it has been suggested that the DGS take stronger steps to ensure implementation of clinical practice guidelines, perhaps through the use of well-designed financial incentives or sanctions (OECD 2015).

Extent to which case study developments can be linked with the Action Plan

There are several commonalities between the Council Recommendation 2009/C 151/01, its subsequent revisions, the conclusions of the ECDC PPS and the developments noted in the two selected counties. While the mentioned 'search and destroy' Dutch initiative is a long-standing programme, it is worth highlighting in this context as it is in line with several EU recommendations developed at different time points which would suggest a coherence between national and EU approaches. Other initiatives highlighted for both countries were more recent and have synergistic effects with the EU recommendations due to the focus on qualified healthcare personnel in preventing and combating HAI. A significant advancement has been in data collection and reporting. While data on HAI was being collected at national level, a notable direct influence of the ECDC PPS has been the improved HAI data collection in a format that will allow international comparisons, although further harmonisation could be achieved.

Conclusions

The case study informs EQ4 (Effectiveness – To what extent have the actions aimed at containing the risks of spreading AMR been effective?) and corresponds to judgement criterion 4.1 (Improvements or no changes have occurred in country-level indicators of resistance in microorganisms of major public health importance, including HAI). As there has been only one ECDC PPS it is difficult to assess trends over time. Nonetheless, in-country comparisons over time show a positive trend towards improving HAI in the Netherlands. There is coherence between the EU recommendations, which are linked to the EC Action Plan, and initiatives taken in the Netherlands and Portugal.

Despite notable steps taken at EU and country level, the data indicate that further efforts are required to reduce levels of HAI, which in some cases were increasing. At an EU and country level, areas for improvement included targeted surveillance, (e.g. for surgical site infections) and inclusion of nursing homes and LTCFs alongside hospitals in surveillance efforts. Training of healthcare professionals and ensuring compliance with infection control guidelines are also crucial, in line with wider AMR stewardship initiatives.

Case study 2: Multidrug and extensively drug-resistant TB: Progress and challenges in Eastern European countries in the EU

Summary

- Multi drug and extensively drug-resistant tuberculosis (M/XDR-TB) represents a major public health concern globally and within the EU.

- The EU AMR Action Plan does not explicitly address M/XDR-TB, rather it is targeted through national and transnational tuberculosis related policies. This case study aims to understand where the AMR Action Plan has set out provisions that could contribute to an effective M/XDR-TB.

- The case study examines trends in M/XDR-TB in Estonia, Latvia, Lithuania and Romania and considers key successes and remaining challenges in these countries.

- This research showed that most of the success and areas of improvement in the M/XDR TB response seem to fall within the remit of targeted TB actions where there are international initiatives aimed at addressing M/XDR TB.

- Synergies could exist with the EU AMR AP in the areas of strengthening infection prevention and control and surveillance systems, and improving coordination in research and innovation.

- In regional and national AMR action plans, consideration should be given to ensure coherence with existing policy instruments that address M/XDR TB.

Introduction

Background

This case study is concerned with multidrug and extensively drug-resistant tuberculosis (M/XDR-TB). Tuberculosis incidence has steadily declined in the European Union (EU) region since 2001, at an average rate of 4.3 per cent per year (ECDC/WHO EURO 2015). However, despite this success, the emergence of multidrug (MDR-TB) and extensively drug-resistant TB (XDR-TB) endangers progress made so far. Several states in Eastern Europe are experiencing what are considered to be some of the most concerning rates of M/XDR-TB in the world (van der Werf & Antoine 2015). These types of resistance are particularly worrying as they require a long duration of treatment with medicines that are often very expensive and have significant side effects that affect quality of life and patient adherence to treatment (Ignatyeva et al. 2015).

Case study focus

This case study explores how the EU's Action Plan against AMR may contribute to an effective M/XDR-TB response.

Several actors have designed interventions and initiatives to tackle M/XDR-TB. At a transnational level, the WHO Regional Office for Europe and the ECDC have developed strategies and frameworks in this area. Both the 2011-2015 Consolidated action plan to prevent and combat multidrug- and extensively drug-resistant tuberculosis in the WHO European Region (WHO EURO 2011a) and the 2008 ECDC Framework Action Plan to fight TB in the European Union (ECDC 2008) emphasized the need to ensure access to prevention, diagnosis and treatment of M/XDR-TB as well as strengthen surveillance capacities.

Therefore attributing improvements in the area of M/XDR-TB to the EC Action Plan is complex because: (1) there are other initiatives that could have impacted more directly on the incidence and prevalence of M/XDR TB and (2) M/XDR-TB can be considered a unique problem within the wider issue of AMR because of its particular socio-economic determinants. With this in mind, this case study examines trends in M/XDR-TB in selected European countries and ongoing challenges faced in these countries in trying to combat the problem. Through this, the case study aims to understand where the EC Action Plan has set out provisions that could have contributed to an effective M/XDR-TB response and draw lessons from this going forward.

In terms of the evaluation criteria the case study will consider the potential role of the Action Plan through examining two indicators:

- Country level indicators of resistance in microorganisms of major public health importance (relating to judgement criteria 4.1)
- Multilateral and bilateral commitments for prevention and control of AMR in all sectors (relating to judgement criteria 4.4)

M/XDR-TB provides and important example of a major public health concern. The EU AMR Action Plan does not explicitly address the case of M/XDR-TB, but it is important to consider the extent to which it complements and relates to distinct initiatives to tackle M/XDR-TB, and what may be important to consider to ensure complementarity rather than tensions between these initiatives.

Country focus

M/XDR-TB is present in all EU countries but Eastern European states are consistently among those with the highest prevalence (Acosta et al. 2015). This case study focuses on Estonia, Latvia, Lithuania and Romania. All four were among the 18 High Priority Countries in the WHO European Region between 2007–2015 (WHO EURO 2007). Estonia, Latvia and Lithuania are also among the 27 high multidrug-resistant (MDR) TB burden countries in the world (Global Health Education 2015). Drug susceptibility testing results from 2013 show that MDR TB was reported for 1,484 (4.1%) of the 36,349 cases tested overall in the European region but for 12–23% of cases tested in Estonia, Latvia and Lithuania (ECDC/WHO 2015).

Methods and data sources used

This case study was based on desk research. Country level indicators of resistance in microorganisms of major public health importance were drawn from the ECDC (European Centre for Disease Prevention and Control)/WHO EURO 2015 *Tuberculosis surveillance and monitoring in Europe* report. Academic and grey literature was reviewed to understand the challenges faced in tackling M/XDR-TB in the four selected countries. Academic literature was identified through PubMed, focusing on the years 2010 to 2015. The search focused initially on Eastern Europe and then on individual countries. Additional documents were identified from the reference lists of key articles and a search of relevant websites was undertaken.

In order to understand the multilateral and bilateral commitments relevant to drug resistant TB, the desk research also included a review of relevant national and international strategies and policies, including: the ECDC Framework Action Plan to Fight Tuberculosis in the European Union, the WHO European Region Consolidated Action Plan to Prevent and Combat Multidrug- and Extensively Drug-Resistant Tuberculosis in the WHO European Region 2011-2015, and the Romanian National TB Control Strategy 2015-2020. The desk research was limited to articles and sources in English and Romanian.

Findings

Country level indicators of resistance: trends in multidrug resistant TB rates in Estonia, Latvia, Lithuania and Romania

Focusing on multidrug resistant TB, Figure 5 shows the number of MDR-TB cases and proportion of MDR TB relative to overall TB for the period 2004 to 2013. Cases are categorized according to whether they are new cases, indicating primary drug resistance due to infection with resistant bacteria, or cases among those previously treated – which most often occur because of inappropriate or incomplete treatment but may also result from exogenous re-infection. The figure shows that all four countries have experienced an overall decline in the number of MDR TB cases from 2004 to 2013, although the size and rate of decline varies considerably between countries and all countries experience some fluctuation in the number of cases. In line with global trends, the percentage of MDR-TB in new TB cases is lower than for cases that have previously received treatment. There are notable differences between countries. For instance, Romania has the highest total number of MDR TB cases of the four countries but lowest proportion of new TB cases that are MDR TB; less than 5% of cases each year from 2005 onwards. Estonia, by contrast, shows rates of new cases between 10 and 20% from 2004 to 2013.

Figure 5: MDR TB cases by previous treatment history, 2004-2013 in Estonia, Latvia, Lithuania and Romania.
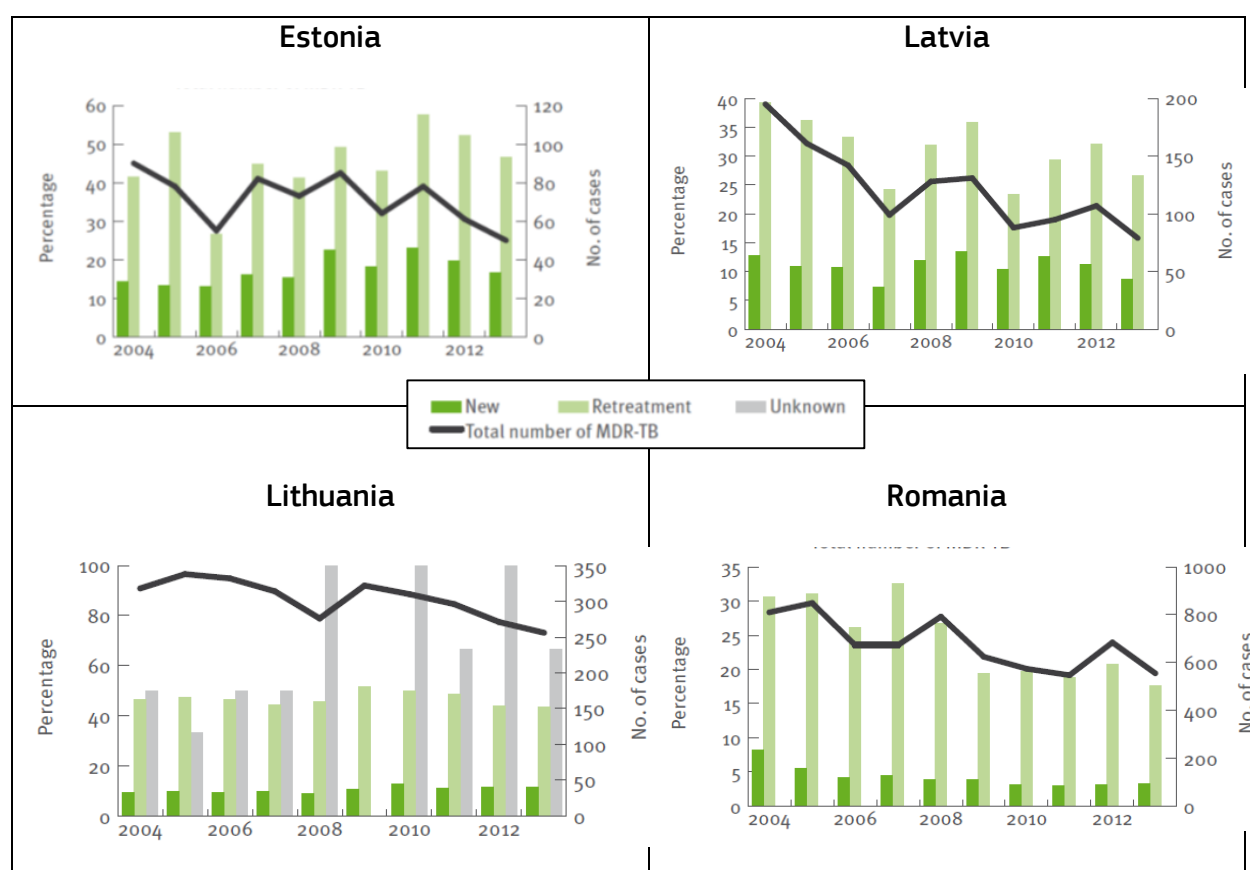
Source: (reprinted from ECDC/WHO EURO 2015)

Table 46 further presents data from 2013 on the total number of MDR and XDR TB cases in the selected countries as compared to the EU/EEA average (ECDC/WHO EURO 2015). The table reiterates that while all four countries have seen a decrease in MDR TB, the rates of MDR and XDR TB cases remains higher in these countries than the EU/EEA average.

Table 46: 2013 TB drug resistance surveillance data from Estonia, Latvia, Lithuania and Romania (ECDC/WHO EURO 2015)

	Estonia	Latvia	Lithuania	Romania	Total EU/EEA
MDR cases (As a percentage of lab-confirmed TB cases)	50 (22.7%)	79 (11.6 %)	256 (18.9 %)	555 (7.8 %)	1484 (4.1 %)
XDR cases (As a percentage of MDR cases)	8 (16.0%)	15 (19.0 %)	47 (18.4 %)	44 (7.9 %)	169 (17.5 %)

Policy response to MDR TB

Five priority actions have been identified by the WHO to address MDR-TB globally: (i) prevention of drug resistance through high quality treatment of drug-susceptible TB; (ii) rapid testing and detection of drug resistant TB cases; (iii) prompt access to effective treatment and care; (iv) prevention of transmission through infection control; (v) increased political commitment and financing for care and research (WHO 2015c). In relation to Europe, there are several relevant international and regional policy documents that have sought to address TB over the past decade. These include: the Berlin Declaration on Tuberculosis 2007, the ECDC Framework Action Plan to Fight Tuberculosis in the European Union 2008, the WHO's End TB Strategy (which will replace and build on the Stop TB Strategy in 2015), the Global Plan to Stop TB 2016-2020, the WHO European Region Consolidated Action Plan to Prevent and Combat Multidrug- and Extensively Drug-Resistant Tuberculosis in the WHO European Region 2011-2015, and the Tuberculosis Action Plan for the WHO European Region 2016-2020. Commonalities across all of these initiatives include a focus on enhancing surveillance systems, and improving medical and technical capacity at national level to ensure prevention, diagnosis and treatment.

These international commitments are accompanied by national-level policy documents and all four selected countries have national M/XDR-TB response plans (WHO 2015a, 2016a, 2016b, Ministry of Health Romania 2015; Acosta et al. 2014).

Successes

Available literature highlights some areas of success of the four selected countries in relation to increasing capacity to improve diagnosis of MDR-TB, strengthening human and financial resources and increased political commitment.

Improved diagnosis through increased laboratory capacity

Accurate and rapid detection of multidrug resistant cases can ensure targeted treatment and in turn avoid relapses in MDR-TB which could lead to cases of XDR-TB and the literature highlights progress in all countries with regard to this. In Estonia, the WHO highlights several areas of success including a competent laboratory network that includes quality assurance and rapid testing (WHO 2016a). Progress in Latvia is associated with performing drug susceptibility testing for all culture-positive patients (Kuksa et al. 2014). Also its National Reference Laboratory is serving as a Supranational Reference Laboratory to Ukraine (WHO EURO 2015d). Lithuania has also taken steps towards ensuring availability of adequate, accurate and rapid diagnosis of TB and MDR-TB (Pimkina et al. 2015). These steps include the introduction of rapid molecular TB testing in 2009 as part of the National TB program to fight escalating MDR-TB. The

Lithuanian population has access to four laboratories: three that provide access to rapid testing using Xpert MTB/RIF assay and one that uses line-probe assays.

In Romania, rapid diagnosis of MDR TB has been established in the two national TB reference laboratories (De Colombani et al. 2014).

Strengthened political commitment

Efforts towards developing national plans to address TB, and in particular M/XDR TB, have been made in the selected countries (WHO 2015 a,b,c,d). The TB National Plan for Estonia is considered to correspond well to the epidemiological needs of the country although, as Estonia reaches a level of low incidence of MDR-TB, there is concern that maintaining necessary political and financial commitments may be challenging (WHO 2015a). Romania has adopted a National Strategic Plan for Tuberculosis Control 2015‑20: Stopping the wave of multi-drug resistant TB in early 2015, which sets several provisions in regards to MDR TB. One objective is that by 2020 the state will provide universal rapid MDR testing, achieving diagnosis of at least 85 per cent of estimated sensitive TB and MDR TB cases and successfully treating at least 70 per cent of MDR TB cases (Ministry of Health of Romania 2015). These endeavors show steps towards securing political will and concrete targets for M/XDR TB. No up to date data were found for the remaining countries.

One challenge for Latvia is that the national TB plan has not been available in writing (ECDC 2013b). This said, in respect to political actions at international level, Latvia has organized the 1st Eastern Partnership Ministerial Conference on Tuberculosis and Multi-Drug Resistance Tuberculosis. This conference took place in March 2015 under the Latvian presidency of the Council of the EU and was designed to bring together high level officials from national governments, international and non-governmental organizations (Ministry of Health of the Republic of Latvia 2015). The conference represented a multisectoral approach to addressing this type of resistance and a move towards collective actions.

Strengthening human and financial resources

An important factor in all four countries has been the extent to which action on MDR TB is integrated with the health system and the extent to which the health system has been strengthened appropriately to tackle MDR TB. Estonia has made notable progress in the integration of TB services with other health services and in developing a financing system that enables universal coverage and access irrespective of legal and insurance status (WHO 2015a). Further priorities in health system strengthening are around adequate training of healthcare professionals. Latvia has a WHO Collaborating Centre of Latvia for Research and Training on MDR-TB Management which provides international training courses on drug-resistant TB (WHO 2015d).

Areas for improvement

The literature identified several challenges the selected countries face towards further improving the M/XDR TB response.

More targeted approaches needed to reach vulnerable populations

All selected countries experience transmission of TB among vulnerable populations such as homeless people, injecting drug users, itinerant people, migrants and refugees (WHO 2015a,b,c,d). Active screening and contact tracing and examinations are particularly challenging when it comes to these populations (WHO EURO 2016b). Estonia and Lithuania are also facing a high number of TB/HIV co-infected patients and intravenous drug users (WHO EURO 2016a,c). Additionally there is a need to improve limited social

and psychological support to patients, stigma and limited growth of prevention activities, especially among poor and vulnerable populations (Ministry of Health Romania 2015). Despite the progresses achieved by these states, TB & MDR-TB remains prevalent in prisons (Dara et al. 2015).

Enhancing health system capacity

Another challenge pertains to capacity for providing specialized health care. All countries are experiencing emigration of staff which is seen to take a negative toll on the provision of health care and laboratory services (WHO EURO 2015a,d,e). Furthermore the economic changes following the financial crisis have negatively impacted MDR-TB control. Expensive hospitalization, insufficient control measures for hospital acquired infections and weak directly observed treatment in the ambulatory setting are areas where these health systems struggle (WHO EURO 2015a,d,e).

Access to treatment

In Romania it is estimated that 800-1,200 new MDR-TB cases appear annually; of these only 62 per cent are identified and only 20 per cent of those identified are successfully treated (Ministry of Health Romania 2015). To improve the situation, the country is receiving financial support for drug procurement. This support comes from the EU, the Norwegian government and the Global Fund (Ministry of Health Romania 2015). As M/XDR-TB often arises from discontinuation of treatment, national and international efforts need to address access to treatment. Furthermore, there is a need to capture indicators that could provide information on discontinuation of treatment at national level (Ignatyeva et al. 2015).

Need to develop responses in context of increased migration

There are several challenges that arise from migration of population at EU level. In 2013, 69.8 per cent of all TB cases were in individuals born in the reporting country, 28 per cent were of foreign origin and 2.1 per cent were of unknown origin (ECDC/WHO EURO 2015). Changes in the migration patterns of people originating from EU countries (including those with high M/XDR-TB notification rates) as well as populations from outside the EU such as refugees could affect the trends in M/XDR-TB. This is an area that would deserve increased attention moving forward as the identified health system capacity problems in high-burden M/XDR-TB EU states could be exacerbated by migration.

Links to the Action Plan

As mentioned above, it would not be appropriate to seek to evaluate the impact of the EC Action Plan directly on X/MDR-TB in this case study but it is important to consider areas of synergy, and potential synergy, between the Action Plan and the MDR TB responses within countries and with other MDR TB specific initiatives.

The EC Action Plan was adopted and implemented shortly after the ECDC Framework Action Plan to Fight Tuberculosis in the European Union (2008) and concomitantly with the WHO European Region Consolidated Action Plan to Prevent and Combat Multidrug- and Extensively Drug-Resistant Tuberculosis in the WHO European Region 2011-2015. There are two relevant areas of potential synergy between these two action plans that are important to consider: (1) complementarity in areas of strengthening infection prevention and control and monitoring and surveillance systems, and (2) improved coordination in research and innovation.

Strengthening infection prevention and control and improving surveillance systems

The emphasis the EC Action Plan has placed, through Action 4, on strengthening infection prevention and control in healthcare settings is relevant for TB nosocomial infections. Based on the challenges noticed in all four countries, infection control is an area where progress could positively contribute to the M/XDR TB control. In the selected countries, prison services in particular remain ill-equipped to reduce the transmission of MDR-TB. EC Action Plan Action 1, which refers to the appropriate use of antimicrobials) addresses improving the implementation of control measures against AMR in nursing homes and long-term care facilities. This action could be developed by encouraging such measures at prison level as well.

Action 9 of the EC Action Plan refers to strengthening surveillance systems. In line with this, from 2008, the ECDC and WHO Regional Office for Europe have worked together to improve TB surveillance in the WHO European Region. Improvements in data gathering are linked to case detection but, as shown by the situation in Romania, further action is required.

Improved coordination in research

There are also areas where the coexistence of international plans could have led to more coordinated research. Action 6 from the EC Action Plan (promoting unprecedented collaborative research and development efforts to bring new antibiotics to patients) and Action 11, (reinforcement and co-ordination of research efforts) could also have positive effects for M/XDR TB. Area 7 from the ECDC Framework Action Plan to Fight Tuberculosis in the European Union calls for new tools for TB control by setting priorities for basic, applied and operational research in the EU and providing funding and coordination. The EU has several programmes that have contributed or are contributing to TB research, including FP7, Horizon 2020, the European & Developing Countries Clinical Trials Partnership (EDCTP) and the Innovative Medicines Initiative (IMI). Through FP7, over €100 million were invested in the areas of new drugs (€20.2 million for More Medicines for TB (MM4TB) and Open Collaborative Project for Tuberculosis Lead Optimization (ORCHID)), vaccines (€16.3 million for discovery and preclinical development of new generation tuberculosis vaccine (NEWTBVAC)), diagnostics (€6.3 million for two point of care tests for MDR- and XDR-TB have been supported) and clinical management of drug-resistant TB (€19 million) (European Commission 2015g). While it is important to have a coordinated approach to R&D, at present there is limited evidence from which to understand the degree to which research efforts are currently coordinated.

The First Eastern Partnership Ministerial Conference on Tuberculosis and Multi-Drug Resistance Tuberculosis provides an example of a regional cooperation endeavor. While action 8 from EC Action Plan calls for cooperation at international level to contain the risks of AMR, the development of multilateral collaboration and coordination between ECDC, the Commission, individual countries, WHO and other stakeholders is listed as one area of the ECDC Framework Action Plan to fight TB in the European Union (2008). There are clear synergies therefore between the two action plans and going forward it will be important to consider if these are mutually reinforcing to prevent tensions for Member States in trying to tackle TB and AMR.

Conclusions

The case study aimed at increasing the understanding of the areas where the EC Action Plan set out provisions that could have contributed to the M/XDR-TB response, focusing particularly on four of the most affected European countries. This analysis showed that most of the success and areas of improvement in the M/XDR-TB response seem to fall within the remit of targeted TB actions where there are national, regional and international initiatives aimed at addressing M/XDR-TB. However the analysis also highlighted problems that require a wider health systems approach such as the need for qualified personnel as well as consideration of the impacts of migration. Synergies could

exist with the EC Action Plan in the areas of strengthening infection, prevention and control, surveillance systems, and coordination in research and innovation. Moving forward in the elaboration of regional and national AMR action plans, a special consideration should be given to already existing policy instruments that address M/XDR TB and policy makers should aim for complementarity and coherence with these initiatives.

Case study 3: TARGET Antibiotics Toolkit for antimicrobial stewardship

Summary

- The TARGET ('Treat Antibiotics Responsibly, Guidance, Education, Tools') Antibiotics toolkit is an on-line antimicrobial stewardship resource developed in the UK and launched in 2012.

- It aims to improve antibiotic use in primary care settings by influencing both prescribers and patients.

- The toolkit, available online, consists of guidance for clinicians, educational materials (a presentation template and clinical modules for clinicians; waiting room videos and other materials for patients), and tools (a self-assessment tool and audit materials for GP surgeries; leaflets for patients and parents of young patients).

- The toolkit is directly linked to the UK's AMR strategy (not the EC Action Plan), but it makes use of European e-Bug education resources and involved developers who engaged with EU networks.

- The toolkit has received support in the form of high-level UK political commitment on AMR (without which it would not have been created) and been referenced by national resources, including national guidelines on AMR. Its patient leaflet has been widely endorsed and is now used in adapted form in other settings (e.g. pharmacies).

- Challenges to implementation have included a lack of staff with the necessary expertise to provide GP training sessions and the fact that GPs must take one hour out of their practice time to attend.

- There is limited evidence at present about the toolkit's effectiveness (an evaluation is ongoing). However, to date its uptake has been lower than that of a UK antimicrobial stewardship toolkit targeting hospitals.

- The toolkit has been successful in presenting consistent messages across healthcare providers, patients and services.

Introduction

Background

This case study aims at analysing the TARGET Antibiotics toolkit, where 'TARGET' stands for 'Treat Antibiotics Responsibly, Guidance, Education, Tools'. TARGET is an on-line antimicrobial stewardship resource developed in the UK that aims to "influence prescribers and patients' personal attitudes, social norms and perceived barriers to optimal antibiotic prescribing" (Royal College of General Practitioners 2016). It can be used as a resource for clinicians, primary care staff and patients, and can also be used for a one-hour workshop within the GP's practices (Bonk 2015).

This primary care education toolkit was developed by the former Health Protection Agency (now Public Health England) in collaboration with several other professional bodies including the Antimicrobial Stewardship in Primary Care (ASPIC) Collaboration (Bhattacharya et al 2014), which gathered a variety of health professionals including, microbiologists, clinicians, GPs, pharmacists, guidance developers and other stakeholders (McNulty 2012). It was developed as part of the Royal College of General Practitioners' Antimicrobial Stewardship clinical priority programme and was launched on

the occasion of the 2012 European Antibiotic Awareness Day. It aims to encourage to clinicians to make antimicrobial stewardship a clinical priority and to increase primary care clinicians' awareness of the importance of antimicrobial resistance and the consequential need for responsible antibiotic use (McNulty 2012). The Toolkit was designed originally to target GPs and to be run in practice meetings, however due to some implementation challenges, it has been widened to other groups of healthcare professionals (CS5-1).

The toolkit supports the recommendations in the NICE guideline published in August 2015 and is compliant with the Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance.

TARGET is hosted on the Royal College of General Practitioners (RCGP) website, and includes clinical resources (including posters and links to useful web pages), patient resources (including leaflets and a self-management form), parent resources (a set of information leaflets for parents including the 'When should I worry' booklet) and an audit report template for throat infection. It also includes a PowerPoint presentation for local champions of stewardship to present to prescribers, and materials for primary care staff to promote the importance of appropriate antibiotic use to staff and the public (Bhattacharya et al 2014). Table 47 summarises the various guidance, education and tools that can be used to support responsible antibiotic use by both prescribers and patients (McNulty 2012). The toolkit has recently been updated with a clinical e-learning module to support its implementation (G7 Germany 2015).

Table 47: Resources on the RCGP TARGET Antibiotics web site

TARGET resources	For clinicians	For patients
Guidance	antibiotic guidance for local adaptation; antibiotic app	guidance for GPs on how to optimize use of the patient materials
Education	PowerPoint presentation template for local adaptation; links to clinical modules covering antimicrobial use (e.g. RTI and UTI) on RCGP and other web sites	materials to share with the patient during the consultation; life channel antibiotic videos to run in the waiting room; links to e-Bug educational activities
Tools	self-assessment tool to assess locality and GP surgery antimicrobial stewardship programmes, guidance, education and audit; audit materials to evaluate GP surgery antimicrobial use	patient leaflet to be used within consultation; children's leaflet to be used with parents within consultation; links to other leaflets and tools to use with patients

Source: McNulty (2012)

Case study focus

This case study aims to assess the TARGET Antibiotics Toolkit as a means of tackling AMR through better stewardship and awareness among healthcare professionals.

In terms of the evaluation, the case study addresses the following judgement criteria:

- Improvement in approaches to treating infections in humans (judgement criteria 3.3).
- Awareness of AMR amongst the general public and health practitioners has improved or is not decreasing (judgement criteria 4.2).

The TARGET Antibiotics Toolkit is an example of a significant initiative at Member State level and of an antimicrobial stewardship programme that is developing several interventions in parallel to target health practitioners' antibiotics prescribing behaviour and patient education to improve the approaches to treating infections in humans. This case study explores how the scheme aligns to the AMR Action Plan and seeks to identify lessons for EU and Member States going forward.

Methods and data sources used

This case study relied primarily on a literature review. The review included academic literature and notable papers written by the initiator of the toolkit, experts from NHS England and Public Health England, and from the Department of Healthcare-Associated Infection & Antimicrobial Resistance. It also drew on an evaluation of the European Antibiotics Awareness Day (EAAD) 2013 in the UK and official documentation from Public Health England. In addition, one key informant interview was conducted with an expert involved in the conception and implementation of the TARGET toolkit (CS5-1). In the absence of many publications about the TARGET toolkit, the interview was an important source of additional insights about what had worked well and remaining challenges. The desk research highlighted in general that there is a paucity of evidence around the TARGET toolkit. Nonetheless, where possible, evidence of key developments and potential lessons for other initiatives are drawn out below.

Findings

Successes

Both a recent Patient Safety Alert issued jointly by NHS England and Public Health England and antimicrobial stewardship guidelines issued by the National Institute for Health and Care Excellence recommend the use of the TARGET resource to support effective stewardship (Johnson et al. 2015). An evaluation performed on the 2013 EAAD reported an "unprecedented level of online access of the DH Educational Materials including widespread uptake of the TARGET toolkit for primary care" as testified by the high level of TARGET web traffic (Bhattacharya et al 2014). This was particularly the case for one of the resources, the 'When should I worry?' booklet, which was highly used by primary care prescribers to share with parents. The evaluation ran a survey which highlighted the success of the booklet among prescribers to better inform parents during consultations. The evaluation report ends by stating that even though the reduction in prescribing over the years cannot entirely be attributed to EAAD, EAAD activities and especially TARGET are "likely to have been significant contributors to the outcome of reduced prescribing."

Bonk (2015) reported that the toolkit has helped to deliver changes in local prescription practice reducing unnecessary antibiotic use and that, according to prior analyses, 50 per cent of GPs were expected to consult the website leading to improved quality of prescribing in primary care. Bonk (2015) stated that TARGET has proved to be successful and takes it as an example of best practice.

One of the key factors in the success of the toolkit, according to the interviewee, is that it has been referenced by some national resources, notably policy documents such as the NICE guidance for AMR in August 2015 as well as the Health and Social Care Act, the legislative document against which all healthcare providers in England are assessed by the Care Quality Commission (CS5-1). The strength of the toolkit lies in the way it has been largely supported by national policies and integrated into the national quality assessment process; additionally it has been largely diffused to all healthcare providers through the national patient safety alerting system (CS5-1).

Another factor of success has been the use of financial incentives for commissioning organisations to reduce primary care prescriptions of antibiotics by promoting the use of the TARGET toolkit (CS5-1).

Finally, the most successful element, according to the interviewee, is the "Treating your infection" patient information leaflet. It has been endorsed by the Professional Royal Colleges that supported the toolkit along with Public Health England, NHS England and multiple organisations working in the field of AMR. The leaflet has now also been adapted for use by other healthcare practitioners, notably community pharmacists and those in urgent care. This is seen as the most successful element because it is easy to adopt and use, cheap, informative, and it can be combined with another strategy they are implementing, delayed prescribing[127] (CS5-1).

The interviewee identified lessons from this initiative that could benefit other EU Member States, notably the use of a "systematic whole health economy approach"; structuring patient messages consistently across healthcare practitioners and services is considered to be an excellent way to change public behaviour, and it is an approach which could be replicated in other countries (CS5-1). The toolkit has benefited from the strong support of national efforts; the interviewee recognised that it would not have been adopted without a national push. In the UK, the current Chief Medical Officer in England has prioritised AMR and the UK published a five year AMR strategy (2013 to 2018) (Department of Health, 2013).

Other Member States could seek to emulate this experience of joined-up implementation, by relying on various implementation levers, the interviewee suggested. However, as some EU countries may have different prescribing practices, the antibiotic stewardship initiative needs to be adapted to the national context by putting emphasis on the places where people are the most likely to obtain their antibiotics (in the pharmacies in some countries but to the GPs in the UK) (CS5-1).

Challenges and areas for improvement

Several challenges are associated with the implementation of the TARGET Antibiotics Toolkit. One of them concerns the difficulty in assessing the individual impact of various interventions. Indeed the TARGET toolkit is made up of a bundle of interventions which are complementary to each other, such as educating healthcare professionals, performing audits of practice, and providing financial incentives to change behaviours (CS5-1). Additionally TARGET's interventions cannot be disentangled from wider public education initiatives such as the Antibiotics Guardian Campaign, targeting both the general public and healthcare professionals. The interviewee confirmed that a formal evaluation of the impact of the toolkit by Public Health England is currently ongoing while its implementation is still going on, which according to the interviewee would explain the current lack of data on this matter (CS5-1).

An area for improvement concerns the fact that the development of the antimicrobial stewardship initiative has not been entirely evidence-based; however the results of the evaluation should enable to improve the design and implementation of the toolkit (CS5-1).

A recent blogpost published by Public Health England highlighted that despite antimicrobial stewardship programmes having proved to be efficient in improving the effective treatment of infections and reducing antibiotic resistance, the TARGET toolkit

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[127] Also referred to as 'backup prescriptions', this is an approach where a patient is given a prescription but advised to wait a short period to see how their illness evolves before using it (Little et al. 2014).

was still experiencing low adoption rate among primary care practitioners (Newton and Fenton 2015). Indeed the article reports the results of a Public Health England (PHE) survey, which shows that "only 18% of Clinical Commissioning Groups (CCGs) have an antimicrobial stewardship committee in place to oversee activities and promote the use of PHE's toolkits". Only 13 per cent of GP practices have an action plan in place to implement the TARGET toolkit, compared to 46 per cent of hospitals for the Start Smart Then Focus antimicrobial stewardship programme for secondary care settings (Newton and Fenton 2015).

The issue of low adoption was discussed by the interviewee, who highlighted that some challenges were encountered in the implementation of the educational element to be used in GP practice (CS5-1). It has been designed to last one hour and requires delivery by a fairly expert person, such as a microbiologist. However, few microbiologists work in the community practice, so the implementation has to rely on commissioning pharmacists, who may not possess the necessary expertise in AMR. Another challenge, according to the interviewee, is related to the difficulty of engaging with GPs because it requires GPs to dedicate one hour of their practice time. One of the solutions the designers of the toolkit are currently thinking about is to change the way the educational intervention is delivered by delivering it to groups of nurses or a selection of practices gathered in professional meetings, which could lead to more efficient implementation of the educational element (CS5-1).

Links to the Action Plan

According to the interviewee, the EC Action Plan has not formally influenced the design of the TARGET Toolkit, as it has been driven mostly by the UK national strategy. However, the person at the origin of the toolkit has worked across the EU with the E-bug educational resources for children in schools and it is likely, according to the interviewee, that these interactions led to there being some EU influence (CS5-1). On the other side, lessons may be drawn from the TARGET toolkit for the EC Action Plan going forward, notably when it comes to collaborative work, joint actions and developing joint consistent messages.

Conclusions

This case study highlights some important lessons for the evaluation. The TARGET toolkit is an example of an antimicrobial stewardship initiative considered successful in targeting health practitioners and patients at the same time. However, there is very limited evidence about the effectiveness of its implementation from which to draw lessons at present. Still, the case study highlights the importance of strong political support in its implementation. It also highlights that some elements can be more challenging than others to implement and that the implementation should be flexible enough to adjust to this. Finally it shows an example of an initiative having structured patient messages consistently across healthcare practitioners and services, which is thought likely to be effective in changing public behavior, although evaluations of this are lacking.

Case study 4: Getting the data: ESVAC successes and future directions

Summary

- The European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project collects information on how antimicrobial medicines are used in food-producing animals across the EU/EEA. This type of information can play a role in the identification of possible risk factors that could lead to the development and spread of antimicrobial resistance in animals.

- This case study describes progress made since the launch of ESVAC in 2009 in terms of the collection and reporting of harmonised national-level data on the sale of antibiotics for use in animals.

- The national-level sales data currently collected by ESVAC is important for studying trends in antimicrobial consumption within Member States since the Action Plan was launched.

- However, in the current form in which it is collected, the data has numerous limitations which must be acknowledged in order to prevent misinterpretation or misleading claims being made (about the relative performance of Member States, for example).

- Germany and the Netherlands provide good examples of how policies within Member States have evolved in line with the requirements of ESVAC, as well as how higher quality farm- and/or veterinarian- level data might be used to provide more reliable insights into the consumption of antimicrobials across all Member States in the future.

- Farm and/or veterinarian level data could be valuable in terms of providing a high level of transparency about antimicrobial consumption and be used to benchmark individual farms and veterinarians in order to support improvements in prescribing practices and reductions in inappropriate antimicrobial consumption.

Introduction

Background

Prior to the AMR Action Plan, a number of Member States already had well-established and well-developed systems for the collection of data at the national-level on the sale of antibiotics for use in animals. However, the lack of a uniform approach to the collection of data meant that no reliable comparisons between those countries could be made, whilst some other Member States lagged behind without an appropriate national-level surveillance system in place. Thus the role of the ESVAC project was to promote and harmonize the collection and reporting of national-level data on antibiotic sales which could be used to support cross-country comparisons of trends in the sales of a variety of different types of antibiotics over time. Such information might be used to identify lessons that can be learnt from the best performing countries and to set targets based on benchmarks to help reduce the inappropriate consumption of antibiotics. It could also contribute to efforts to identify possible risk factors that might lead to the development or spread of antimicrobial resistance in animals.

This case study describes synergies between the ESVAC project and the EC Action Plan on AMR in terms of supporting improved reporting and analysis of data on antimicrobial sales and/or consumption. The focus on the animal sector enables consideration of specific challenges which are distinct from the more general, and in some respects lesser challenges associated with collecting and reporting data on human consumption of

antimicrobials. The case study is particularly timely because of the relatively rapid improvements in data reporting which have occurred since 2009, but also because of the potential changes and improvements that are now on the horizon.

Case study description

This case study describes progress made since the European Surveillance of Veterinary Antimicrobial Consumption (ESVAC) project was established in 2009. Whilst reporting on the value of ESVAC in terms of supporting the EC Action Plan on AMR, the case study also highlights the limitations of the data that is currently collected. Germany and the Netherlands are used as examples of how policies within Member States have evolved in line with the requirements of ESVAC, as well as providing a potential guide as to how some of the limitations may be addressed in the future.

In terms of the evaluation, the following judgement criteria area addressed:

- Reduction or no increase in antimicrobial consumption for use in animals (judgement criteria 3.4)
- Strengthened surveillance systems on AMR and antimicrobial consumption (judgement criteria 4.5)

Whilst the principal focus of this case study is the role of ESVAC in supporting the collection and reporting of harmonised antimicrobial sales data across all Member States, some additional detail is provided on Germany and the Netherlands. Germany was selected because significant changes in the collection of national-level antimicrobial sales data has occurred since 2009, but also because more stringent rules on the reporting of farm-level consumption of antimicrobials have been imposed since 2015. The Netherlands was selected because of the well-developed approach to the collection of data and benchmarking of antimicrobial consumption at the level of the individual farm and veterinarian. The approaches taken in both countries could be informative to the development of ESVAC in coming years.

Methods and data sources used

This case study is based primarily on a review of relevant literature, including documents from relevant websites of the European Union (e.g. ECDC) and a search of academic literature using databases such as Google Scholar. Comments and clarifications were sought (by email on Tuesday 12th January 2016) on a preliminary draft of the case study from four German and Dutch experts identified in the literature search.[128] Responses from three of these experts were incorporated into this version of the case study (on 16th January 2016).

Findings

Successes

In 2009, the ESVAC project was successfully launched by the European Medicines Agency (EMA) to collect information on how antimicrobial medicines are used in animals across the European Union (EU). This type of information can play a role in the

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[128] The experts identified in the literature review (because they were lead author of a relevant study) and contacted by RAND Europe were: Nico Bondt (Wageningen University and Research Centre, the Netherlands), Marian Bos (Utrecht University), Dick Heederik (Utrecht University) and Roswitha Merle (Free University of Berlin)

identification of possible risk factors that could lead to the development and spread of antimicrobial resistance in animals.

The launch followed the European Council's 2008 Conclusions on antimicrobial resistance, in which Member States were called on to, amongst other things, strengthen surveillance systems and improve data quality on the consumption of antimicrobial agents in the veterinary sector. It was also consistent with an earlier 15-point EU Strategy against Antimicrobial Resistance which, in 2001, recommended 'improving the collection of data on consumption of antimicrobial agents in all sectors.'(European Commission, 2001)

Chronologically, the initial work of ESVAC until 2011 included:

- Identifying and examining existing surveillance systems for the collection of national-level data on sales of veterinary antimicrobial agents in Member States.

- Analysis of existing data on national-level sales for the period 2005 to 2009 from nine Member States which already had well-established surveillance systems (Czech Republic, Denmark, Finland, France, the Netherlands, Norway, Sweden and the United Kingdom) for publication in ESVAC's First Annual Report (ESVAC, 2011), the first time that such data had been published in a single document. The report drew attention to a decreasing trend in overall sales of antimicrobials, and substantial differences in sales and prescribing patterns between countries.

- Establishing a network of experts to advise on the harmonisation of data collection across all Member States. This included representatives of those countries which already had established surveillance systems, representatives from ECDC with experience of similar data collection on antimicrobial consumption in humans, and other stakeholders from the pharmaceutical industry and veterinary associations (Grave et al., 2014).

- Devising a standardised data collection protocol and common template (now web-based (EMA, 2015c)) for use in reporting by Member States, and establishing a network of national representatives from all Member States, nominated by national competent authorities, with responsibility for responding to ESVAC's annual requests for data (Grave et al., 2014).

- Agreement on use of mg/PCU as a standardised measure of antimicrobial sales (the Population Correction Unit (PCU) is a proxy for the size in kg of the animal population in each Member State used to normalise national-level sales data measured by mg of active ingredient) (EMA, 2015a).

- Since publication of the First Annual Report in 2011, ESVAC has achieved further progress, including:

- Year-on-year increases in the number of Member States using the standardised data collection protocol to report national-level sales of antimicrobial medicinal products. By 2013, this comprised 26 countries (representing 95% of the food-producing animal population in the EU/EEA), up from 25 in 2011 and 19 in 2010 (EMA, 2015a).

- Supporting the development of new or revised rules in many Member States whereby distributors (drug sellers and wholesalers) of relevant antimicrobial products are legally required to report annual sales figures to the national competent authority.

- Publication of four further annual reports each year since the First Annual Report, for data collected in 2010, 2011, 2012 and 2013. As a visual aid to the annual reports, an interactive database has also been developed so customised graphs and charts can be created.

- The data has enabled analyses of trends over time and comparisons between countries in terms of normalised national-level sales data. These may be broken down by pharmaceutical form (e.g. oral solutions or injectable preparations) and antimicrobial class or subclass (supporting, for example, a focus on those antimicrobials on the WHO list of critical importance to human health).

- The data analyses have enabled speculation on possible reasons for changes or differences that are observed in antimicrobial consumption and thus provided some insights for policy making (e.g. observed differences in prescribing behaviour could be due to differences between countries in the veterinarians' prescribing behaviour which could be influenced through policy changes) (EMA, 2015a).

- The data also supports researchers addressing broader questions on antimicrobial resistance (e.g. temporal associations between antibiotic consumption in animals and antibiotic resistance in humans and animals) (ECDC/EFSA/EMA, 2015; Chantziaras et al., 2014).

- Ongoing consultation on the development of more nuanced measures of antimicrobial consumption which go beyond normalised national-level sales data and provide a more accurate guide to the risks posed to human and animal health. For example, these measures could account for differences in the mix of animal species used in farming between countries, and variations in dosing (daily dosing and length of treatment) used in different antimicrobial agents within a class or between different formulations.(Grave et al., 2014; EMA 2015b)

Germany and the Netherlands

As ESVAC has developed over time, policy and practice within Member States has also evolved.

For example, in **Germany,** the ESVAC data collection procedure was initiated by the Federal Office of Consumer Protection and Food Safety (BVL) in 2011. Thus, whereas data from the majority of Member States had been available for publication in the Second Annual Report (with data on nine member states going back to 2005), German data did not appear in ESVAC reports until the Third Annual Report in 2013. Prior to this, drugs were dispensed directly to farmers without any further reporting to a central database, thus preventing any meaningful analysis of national-level antimicrobial usage (Menz, Schneider and Kümmerer, 2015). More recently, amendments to the German Medicinal Products Act mean that, in addition to the collection of national-level sales data, individual livestock farmers are now legally required to report biannually on the quantity and type of antibiotics which have been administered (German Federal Ministry of Health, 2015; Byrne, 2014). These rules are not currently a requirement of ESVAC and exceed what is required in many other Member States (although similar schemes are already operating in some countries (Jensen et al., 2014; Bondt et al., 2013)). In contrast to existing national-level sales data, the new farm-level data enables comparisons to be made between livestock producers in Germany which can lead to penalties being imposed on those deemed to use antibiotics irresponsibly.

In contrast to Germany and the majority of other Member States, **the Netherlands** is one of the countries to have provided aggregate data on sales of veterinary antimicrobial agents for publication in all ESVAC Annual Report reports since publication of the first

report in 2011 (the Netherlands was one of nine countries to provide data going back to 2005). When compared to other Member States, the Netherlands was also one of the first to implement a national surveillance system for antimicrobial consumption in animals and currently maintains one of the more stringent and advanced systems of any of the Member States. In 2010, an independent institution, the Netherlands Veterinary Medicines Authority (SDa), was formed with the purpose of ensuring full transparency in the consumption of antimicrobials by specific animal species at the farm- and veterinarian- level. Usage on farms is expressed in terms of animal daily dosages per year (add/y) (Bos et al., 2013). By 2012, it was mandatory to register all antibiotics supplied to all farms in the country. Each time a veterinarian prescribes and supplies medicines, these are entered into a Practice Management Systems (PMS) and transferred to a national database (Bos et al., 2013). The system supports the benchmarking of individual farms, as well as individual veterinarians, enabling targeted measures to reduce and improve the quality of antimicrobial consumption as well as providing valuable information for farmers and veterinarians to support decision making. Farmers and veterinarians thus have a common responsibility for the use of antimicrobials in animals (Bos et al., 2015). The SDa also uses the data to analyse annual trends in consumption patterns (including at the level of individual farm, veterinarian and animal species). Most recently, in 2015, the SDa published 'Usage of Antibiotics in Agricultural Livestock in the Netherlands in 2014 Trends and benchmarking of livestock farms and veterinarians' which reported antibiotic usage data of over 41,000 livestock farms as well as veterinarians' prescription patterns (Netherlands Veterinary Medicines Authority (SDa), 2015).

Areas for improvement

Whilst ESVAC has played an important role in improving the reporting of antimicrobial sales across EU Member States, the crude mg/PCU national-level measures provide only a very rough indicator of the potential risks to human and animal health for various reasons (Grave et al., 2014; Menz, Schneider and Kümmerer, 2015; Bondt et al., 2013). These include:

- Sales data may not reflect actual consumption in animals (e.g. due to wastage) or in the Member State in which it was sold (e.g. if sales and consumption occur in different countries)

- Use of more powerful antibiotics at lower doses would have a negative but spurious impact on mg/PCU. Yet the potency of the various antimicrobial agents within a class, and between formulations, can be very different.(Grave et al., 2014) For example, Oxytetracyclines have 28 mg of active substance per kg of live weight, whereas Doxycycline have 9 mg per kg.

- Between-country comparisons of mg/PCU could be misleading due to (unobserved) differences in the composition of the animal population (and sales data alone could never capture these differences because most products are approved for more than one species). For example, the intensity of use would be expected to be much higher in countries with a relatively large poultry, pig or veal calf population when compared to countries with a high proportion of beef or dairy cattle.

Furthermore, alongside consumption data, other factors could determine actual exposure to risk in human and animal health, including accurate information on compliance with authorised dosing regimens.

The farm-level data being collected in Germany and the Netherlands (and veterinarian-level data being collected in the Netherlands) have considerable potential to support more meaningful comparisons between countries since it would be possible, for example,

to account for differences in the types of animals in the farming sector, and differences in dosage. If such data were used to support a system of benchmarking at the individual farm- (or veterinarian-) level then there is scope for using behavioural incentives to deliver change in antibiotic consumption. Hence the German and Dutch models should be closely examined with a view to being rolled-out more widely in a standardized way by ESVAC in the future. Nevertheless, when compared to the collection of national-level sales data in mg/PCU, more advanced systems for tracking antibiotic consumption would likely incur significant additional costs and bureaucracy as well as other new challenges. As suggested by one expert, Member States and ESVAC could consider whether or not it is cost-effective to assess consumption at all farms in each country, or better to focus resources on a smaller representative sample of farms: "A central registration system for sure is very nice, but the costs are much higher than a sample survey." (Bondt, pers. comm).

Links to the Action Plan

There are clear synergies between the aims and objectives of ESVAC, which has supported a step-change in the harmonisation of the data collection and reporting across Member States, and the Action Plan, which calls for strengthened surveillance systems on antimicrobial consumption.

Conclusions

The synergies between the aims and objectives of the ESVAC project and the Action Plan objective to improve surveillance of antimicrobial consumption are clear. The ESVAC antimicrobial sales data is of critical importance to the identification of trends in antimicrobial consumption across the EU, and within Member States, during the period of time since the Action Plan was launched (see J.C. 3.4 and 3.5). Nevertheless, appropriate caution should be maintained when interpreting mg/PCU measurements, not least since these are only a proxy for actual consumption.

Case study 5: The effect of the Action Plan on work across animals, food and human settings and its impact on the prevalence of drug resistance in Salmonella in the EU

Summary

- Salmonella and food-borne salmonellosis are considered a major health problem in the EU, and antibiotic resistance can arise in salmonella.

- The Action Plan addresses Salmonella and similar zoonotic infections through a variety of measures, which complement existing regulation.

- This case study analysed how the EC's Action Plan on AMR links to Salmonella infection control in the EU and reporting of drug resistance in Salmonella, and whether it captures the One Health approach in this area.

- The Action Plan included an action of developing a new animal health law to contribute to the better prevention of animal pathogens and diseases of EU concern, as well as to improve surveillance of animal pathogens, potentially including those which are resistant to antimicrobials. It is expected to be enacted in 2016.

- The Action Plan's call for better and more integrated surveillance and monitoring systems across Member States has led to the development of interagency surveillance reporting in the EU, which combines data for animal and human use for the first time. However, there is a need for species-specific data in animals and further integration of existing regulation.

- Salmonella infection control and interagency reporting on AMR and antimicrobial consumption highlights the progress that has been made at the EU level to develop a holistic response to a zoonotic infection, drawing on different agencies across sectors.

- Salmonella infection rates have been falling across Europe for the last years. While the Action Plan's proposed activities affect the control of infections, this effect is more likely due to the implementation of other EU policies and national programmes, some of which predate the Action Plan.

- Data on resistance in zoonoses from 2014, analysed and published by the ECDC and EFSA, indicated that rates of resistance to common antibiotics were high in salmonella from humans and poultry; it showed varying trends across Member States for the period 2008-2014.

- To capture the principles of a 'One Health' approach more fully, the Action Plan should strengthen its profile on environmental issues of antimicrobial resistance.

Introduction

Background

Infections with Salmonella and food-borne salmonellosis have long been recognised as one of the most important zoonoses an important public health problem. Infections in humans are most frequently caused by contaminated food products, but also through contact with infected animals, via person-to-person transmission or via a contaminated environment. The problem of salmonellosis is further exacerbated by the emergence of

bacterial strains that are resistant to antibiotics. For patients, antibiotic resistance in Salmonella is associated with more frequent and longer hospital stays, a more severe cause of illness, a higher risk of invasive infection as well as a twofold increase in the risk of death in the two years after infection (World Health Organization, 2011a). Within the European Union there exists extensive legislation to address this problem and reduce incidence and prevalence of Salmonella infections. This includes, for example, mandatory reporting of Salmonella outbreaks, and harmonized reporting standards. To better understand how zoonotic infections spread, the European Commission's Action Plan against the rising threat from Antimicrobial Resistance outlined the need to strengthen surveillance systems on AMR and antimicrobial consumption in animal medicine (Action no. 10) (European Commission, 2011). Moreover, the Action Plan recognises that zoonotic infections require an integrated approach, which combines actions across different policy areas to effectively address the problem. It calls for the introduction of a new animal health law to ensure cross-sectoral enforcement of the appropriate use of antibiotics in order to prevent a further spread of resistance and of infections caused by bacteria that are resistant to antibiotics (Action 5) (ibid.).

Case study focus

This case study discusses how proposed actions in the Action Plan complement current strategies to monitor and address outbreaks of food-borne infections caused by Salmonella in Europe. Furthermore, it considers to what extent the Action Plan addresses the problems from a holistic perspective, i.e. across agencies and sectors.

The case study evaluates how well the case of Salmonella control in Europe captures the Action Plan's goal of implementing cross-sectoral and interagency activities in accordance with the One Health approach. While 'One Health' is not consistently defined across the policy spectrum, for this evaluation we take 'One Health' to refer to an approach that brings together animal and human health, and the environment. The following indicators are considered for this case study (all relating to judgement criteria 5.1):

- Actions identified in the Action Plan cover the areas required for taking a holistic approach (reference years 2011-15)

- Responsibility for actions in the Action Plan have been allocated to appropriate DGs, with no gaps identified

- Evidence that DGs have successfully carried out the Action Plan actions in their remit.

- Evidence indicates that Action Plan actions support the 'One Health' concept.

Methods and data sources used

This case study was conducted through a combination of literature review and interviews with three experts in the fields of antibiotic use in farm animals and surveillance of AMR and antimicrobial consumption. Interviewees came from different backgrounds and professions. Interviewee 1 (CS8-1) works as a veterinarian and has experience with industrial farming. Interviewee 2 (CS8-2) is a senior policy advisor for an animal welfare organization and interviewee 3 (CS8-3) holds a senior management position in an international health agency. The material reviewed includes publications by EU agencies, national governments and scientific journal articles.

Findings

Key developments

There are longstanding efforts in Europe to reduce outbreaks of food-borne infections caused by zoonotic bacteria such as Salmonella and Campylobacter. Over the past decade, the systematic reduction of the incidence of salmonellosis in Europe has been a success. This is largely the result of establishing effective surveillance and reporting systems, as well as multi-sectoral policies to prevent infection or control its spread (Barrow et al, 2012).

The EC has played an important role in this process. Since 1999, the reporting of salmonellosis in Europe has been mandatory and food-borne outbreaks must be investigated (European Commission, 1999). In addition, over the past decade national control programmes for Salmonella for livestock, especially in poultry, have been set up in EU Member States (EC, 2005). Member States report data on Salmonella infections on a monthly basis and prevalence of Salmonella in animals and feed is now regularly measured and reported by the European Food Safety Authority (EFSA) and the European Centre for Disease Prevention and Control (ECDC) (EFSA 2013 & 2015). While national control programs for Salmonella control vary somewhat in their design, they are all structured around routine surveillance and immediate infection control once a Salmonella infection is detected (Hugas & Beloeil, 2014).

In parallel to these infection monitoring, prevention and control measures, a step-wise ban of the non-therapeutic use of antibiotics was introduced in the EU ending the once common practice of adding antibiotics to animal feed as a growth promoter or infection prevention measure (WHO, 2011a). While some classes of antibiotics that were essential to treating infections in humans and animals were already banned in the EU for use as growth promoters in the 1970s, the complete ban came into force in 2006 (Castanon 2007).

Successes

The European response to Salmonella is a good example of an integrated policy approach which combines regulation on both veterinary and human use and combines data for infections and antibiotic resistance. The EC has developed legislation for the control of Salmonella along all stages of production, processing and distribution of meat products (ECDC, EFSA & EMA, 2015). Many of the Action Plan's proposed activities also affect the control of Salmonella infections, which are zoonotic. There are two areas of the Action Plan where particular progress has been achieved.

Strengthening legislation in the animal sector

The European Parliament and the EC reached an agreement on the new European Animal Health Law, which was adopted by the EC in May 2013 and is currently undergoing procedural steps before publication, which is foreseen in May 2016 (European Commission, 2015i). Among other things, the new regulation will increase the responsibilities of operators, such as poultry farmers, to ensure their animals achieve the required level of health. It also establishes the responsibility of authorities to protect animals, humans and the environment from drug-resistant pathogens, and it further clarifies obligations to ensure appropriate monitoring, surveillance and early detection of pathogens across agencies (European Commission, 2015i). The new Animal Health Law is thus focused on preventative measures and further strengthening of monitoring and surveillance capacity. By improving conditions for animal husbandry and through extended infection control measures, the new regulation aims to reduce the number of infections in animals, which is then expected to lead to a reduced need for antibiotics (EC, 2015c).

Improving monitoring and surveillance

Perhaps the most significant achievement of the EC's Action Plan in relation to Salmonella control has been the improvement of surveillance data for antibiotic use and resistance across both humans and animals. In 2012, the EC commissioned a joint, interagency report from ECDC, EFSA and the European Medicines Agency (EMA) to analyse how the consumption of antimicrobial agents and the occurrence of antimicrobial resistance in bacteria were linked, in both humans and food-producing animals (ECDC, EFSA & EMA, 2015). This report was released in 2015, and combines data across five surveillance programmes from three agencies: EARS-Net, ESAC-Net, FWD-Net (ECDC), the Scientific Network for Zoonosis Monitoring Data (EFSA), and ESVAC (EMA).[129] The respective programmes collect data on antibiotic use and antibiotic resistance in animals and humans and allow for an examination of possible links between the consumption of antibiotics and its effect on the emergence of antibiotic resistance (ECDC, EFSA & EMA, 2015). The analysis found that consumption was higher in animals than humans overall, but this varied across countries. In addition, for most combinations of drug and species analysed, higher levels of resistance were positively correlated with antimicrobial consumption. However, there were limitations to the data and analyses due to differences in how the data were collected and reported. The report emphasised that the findings should be interpreted with caution and states that ongoing improvements will enable improved cross-analysis.

In order to further improve reporting standards for Salmonella in EU and EEA countries and following publication of the Action Plan, the ECDC launched a protocol for harmonised monitoring of AMR in humans for Salmonella and Campylobacter isolates (ECDC, EFSA & EMA, 2015). This protocol sets standards for susceptibility testing in accordance with recommendations from the European Committee on Antimicrobial Susceptibility Testing (EUCAST) and provides guidance on how to compare data obtained from animals and humans (ECDC 2014f). The protocol is another step towards better comparability of national data sets and harmonised reporting of resistance standards, made possible by standardised testing procedures and breakpoints for assessing resistance levels in bacteria.[130]

Data from 2014 on resistance in zoonoses were reported by EFSA and ECDC (EFSA & ECDC, 2016). Resistance to common antimicrobials (e.g. tetracyclines, sulphonamides and ampicillin) and multidrug resistance were frequently detected in Salmonella from humans and poultry, but resistance rates varied widely across Member States. Data covering the period 2008 to 2014 were available for some Member States, and a mix of increasing and decreasing trends were observed.

Effects of the Action Plan and other policies

Assessing the effect that the Action Plan has had on incidence and prevalence of Salmonella infections and drug resistance – in both humans and animals – is difficult for a number of reasons, which were discussed by the interviewees. One issue is that

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[129] EARS-Net is the European Antimicrobial Resistance Surveillance Network, ESAC-Net is the European Surveillance of Antimicrobial Consumption Network, and ESVAC is the European Surveillance of Antimicrobial Consumption

[130] Breakpoints are defined antimicrobial concentrations, which can be used by clinicians to establish whether a bacteria are susceptible to an antibiotic or not. In Europe, EUCAST is tasked with harmonising breakpoints across member states for better comparability of resistance data.

incomplete data makes an accurate assessment of change over time in all Member States challenging (CS8-3). More importantly, however, is the issue that it is very difficult to accurately attribute successes in reducing the infectious disease burden to any one specific policy measure, especially when implemented at the regional, and not the national level. The stakeholders that were interviewed for this case study all expressed scepticism about the possibility to credit the EC's Action Plan with specific progress that has been achieved related to salmonella control and resistance in salmonella, especially since the Action Plan did not have an inbuilt monitoring and evaluation framework and baseline data was not available across all action fields (CS8-1, CS8-2, CS8-3).

Nevertheless, the interviewed stakeholders felt that the Action Plan generated important political momentum, and provided an important opportunity to highlight the need for cross-sectoral European action in the field of AMR (CS8-2 & CS8-3).

While keeping in mind the limitations of available data, there is still some evidence to suggest that the overall effect of Salmonella policy in the EU has been positive and the disease burden of salmonellosis has been reduced (Table 48). ECDC and EFSA believe that the main reason for this reduction lies in the introduction of effective national control programs for poultry across the EU, most of which have met their specified annual targets for reducing the incidence of Salmonella infections, and have subsequently also reduced the prevalence of Salmonella in food products and thus the risk for salmonellosis (EFSA 2014a). This view was also supported by one of the interviewed stakeholders, who cited more comprehensive vaccination of poultry as an important reason for a reduction in salmonella infections (CS8-2). However, given that many national control programmes were introduced before 2011, this also suggests that much of the effect would be explained by policy measures that precede the Action Plan (Hugas & Beloeil, 2014). The same is true for many aspects of the monitoring of salmonellosis that were already in effect before the Action Plan was introduced.

Improvements in zoonoses resistance data over time were highlighted in the recent ECDC/EFSA joint report; for example, 2014 was the first year that all Member States reported data on poultry and poultry meat at the level of bacterial isolates, enabling EU- and country-level analysis of resistance patterns (EFSA & ECDC, 2016).

The move towards greater integration of monitoring and surveillance across agencies and DGs, and the publication of the first interagency report on antimicrobial consumption and resistance are good examples of successful implementation of actions that further the Action Plan's objectives, which will also be of great value for future surveillance efforts in the EU.

Table 48: Reported cases of human salmonellosis in the EU,[131] 2008-2012 (EFSA 2014a).

Year	2008	2009	2010	2011	2012
Confirmed cases	134,580	110,190	101,052	95,527	91,034

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[131] Note that while the data reported here is the most recently published, the report is currently undergoing checks for consistency by ECDC.

Areas for improvement

While the strengthening of surveillance and the improved collaboration between agencies has been highlighted as a success of the Action Plan, it must also be noted that the implementation of these measures is far from being completed. As the recent post-publication review and partial retraction of data from a published report by ECDC and EFSA on Salmonella shows, there is still some way to go before national data can be easily and reliably compared (EFSA, 2014b). This is especially true for the comparison between human and animal use/sales data, where substantial differences in the kinds of data that are collected persist. For instance, ESVAC does not currently collect animal species-specific data. Instead, antibiotic consumption in animals is calculated in terms of population correction units (PCU), which are expressed as milligrams of antibiotics per estimated biomass per year (ECDC, EFSA & EMA, 2015). However, since different animal species receive varying degrees of antibiotics, this approach makes it difficult to interpret the data and to identify overuse. The interviewed stakeholders also expressed concern about the use of PCU data in policy making and for comparisons of antibiotic use between countries, citing difficulties in making data usable and understandable (CS8-1 & CS8-2).

Given the EC's stated goal of developing an AMR policy that approaches the problem from a 'One Health' perspective, current efforts also appear to be lacking a clear strategy when it comes to the occurrence of antibiotic resistance in the environment, which, as outlined before, is one of the defined target sites for a 'One Health' approach (as discussed in the main report). However, the Commission services have recently begun to address this issue more systematically, and it is expected that a strategic approach for action on pharmaceuticals in the environment (e.g. the pollution of drinking water) will be delivered by 2016, with specific actions to be proposed by 2017 (EC, 2015c). It remains to be seen, how comprehensive this strategy will be, and to what extent it will be able to address other environmental concerns not covered by the Action Plan, such as the spread of drug-resistant bacteria through manure and animal waste. The stakeholder interviews also revealed some concern about the lack of stringency in existing guidelines, especially in relation to legislation on medicated feed (CS8-1 & CS8-2).

Links to the Action Plan

The control and monitoring of Salmonella in the EU has been expanded significantly as a result of the EC's action plan. This relates particularly to the Action Plan's actions 5 (Introduction of the new Animal Health Law) and 10 (Strengthen surveillance systems on AMR and antimicrobial consumption in animal medicine). With the new Animal Health Law, which will be important for further reductions in Salmonella infections, now in the final stages of legislative processing, action 5 will likely be delivered in 2016. The law's emphasis on the promotion of prevention over treatment also means that it will support the implementation of Action 3 (the introduction of prudent use standards for the veterinary use of antibiotics). Finally, the creation of a more integrated surveillance and reporting system, as evidenced by the EMA's, EFSA's and ECDC's recent interagency report, and the combination of data from different surveillance systems suggests that significant progress has been achieved in the strengthening of surveillance systems on AMR and antibiotic consumption (Action 10). To improve the EU-wide monitoring of not only salmonellosis, but also drug-resistant isolates, a more standardised surveillance system will allow for better comparability of national data.

Conclusions

1. Actions identified in the Action Plan cover the areas required for taking a holistic approach (reference years 2011-15)

The actions outlined in the Action Plan have helped to address a lack of integration between established programmes and led to the expansion of existing platforms for surveillance. In combination with many of the EU and Member State policies on Salmonella, which predate the Action Plan, this moves current regulations and practices closer to a holistic approach to AMR. However, the implementation of many of these actions will be time-consuming and has so far not been completed.

2. Responsibility for actions in the AP have been allocated to appropriate DGs, with no gaps identified

There is currently no specific action covering the environmental aspects of antimicrobial resistance in the Action Plan. This gap has been acknowledged by the EC, and future actions can be expected to address this issue.

3. Evidence that DGs have successfully carried out the AP actions in their remit.

The increased cooperation between the veterinary and human sectors with regard to surveillance shows that European Commission DGs have made progress on actions outlined in the Action Plan. However, a holistic and integrated response to Salmonella infections and other zoonotic diseases will require more coordination among Member States and the further strengthening of surveillance and monitoring standards, especially in the animal sector where species-specific antimicrobial consumption data is not yet available.

4. Evidence indicates that AP actions support the 'One Health' concept.

With the notable exception of environmental factors, the Action Plan promotes collaboration and coordination across agencies and the animal and human health sectors. While much existing EU regulation on Salmonella precedes the Action Plan, the latter has taken important steps towards closing the gaps towards a 'One Health' approach.

Case study 6: Lessons from French awareness programmes on human health with extension to animal health

Summary

- This case study examined the French awareness campaigns launched successively from 2002, with a particular focus on the first one «Les antibiotiques c'est pas automatique» ("Antibiotics are not automatic"), which ran in three phases from 2002 to 2012. A campaign called «Les antibiotiques pour nous non plus c'est pas automatique» ("Antibiotics are not automatic for us either"), which extended to animal health, was launched in 2014.

- The campaign on human health has been considered a success and good value for money because it was accompanied by a reduction in antibiotics consumption (and achievement of national targets for the reduction of antibiotic prescriptions).

- The animal health campaign may have helped reduce antibiotics consumption in the veterinary sector but has not been formally evaluated.

- It is challenging to establish causal links between awareness campaigns and better outcomes because the campaigns run in parallel with multiple initiatives.

- The French example highlights the risk that campaign effects can be lost once campaigns are discontinued.

- Overall, French awareness campaigns have been successful in integrating both human and animal components as part of a multifaceted approach that aligns with the 'One Health' approach.

- The first campaign helped inspire the annual European Antibiotic Awareness Day (EAAD) established in 2008.

- The French campaigns would still have been launched in absence of the Action Plan.

- Lessons from the French campaigns could be useful for informing EU-level guidance and Member State initiatives. Lessons include the importance of establishing what the public's baseline knowledge level is about AMR in animals, and the importance of simple messaging adapted to local contexts.

Introduction

Background

France is known for high rates of antibiotic use and pneumococcal resistance in Europe (Huttner 2009). The country ranked first in Europe for outpatient consumption of antimicrobial agents in 2002, which represented 80% of the antibiotics prescribed of which 30% were inappropriate (Goossens et al 2005).

In 2001, French public health authorities issued a coordinated and multifaceted strategy for the control of antimicrobial resistance. Following this, three national action plans (2001–2005, 2007–2010, and 2011– 2016) to preserve the effectiveness of antibiotics have been implemented. As part of the action plans, an intensive annual public campaign was launched called 'Antibiotics are not automatic'. It aimed primarily to educate caregivers and the public that antibiotics are not always necessary and to describe the appropriate use of antibiotics, with a specific focus on viral respiratory tract infections (Huttner et al 2009; Humphreys 2011). The campaign also sought to indirectly reduce use by improving vaccine coverage against bacterial diseases, such as invasive pneumococcal disease (Dommergues & Hentgen 2010).

The initial campaign was repeated every winter from 2002 to 2007. From 2007 to 2009 the campaign changed to focus on the idea that antibiotics cannot heal viral disease and in 2010 another campaign was launched with the slogan "antibiotics, if you use them incorrectly, they will be less strong" *(« Les antibiotiques utilisés à tort, ils deviendront moins forts »)*. Figure 6 summarises the evolution of French awareness campaigns from 2002 to 2012. A different campaign from 2005 to 2008 was conducted with the aim to explain the inefficiency of antibiotics against viruses; however AMR was not explicitly covered (Carlet and Le Coz 2015).

Figure 6: Evolution of French awareness campaigns in human health from 2002 to 2012

2002 - 2007 "Antibiotics are not automatic"
Tools used: TV and radio adverts, leaflets for parents, press, exhibition for children

2008 - 2010 same slogan
More focus on the inefficiency of antibiotics against viruses

2010 - 2012: "Antibiotics, if you use them incorrectly, they will be less strong"
Tools: used web based communication (social media) besides radio and TV adverts, use of games

Source: compiled by RAND Europe

The current 2011-2016 "National Antimicrobial Alert Plan" is pursuing actions initiated under previous plans with the addition of some major new initiatives, in particular a target of reducing antimicrobial prescriptions by 25% over a five-year period, which would take France close to the European average for antibiotic consumption (G7 Germany 2015). Furthermore, quantitative indicators on prescribing practices have been developed to help measure and tackle antimicrobial over-prescription in the community (Cecchini et al 2015).

The public campaigns have used a range of tools, including TV and radio spots and information booklets for parents of young children. For the wider public, an exhibition entitled "micro-organisms in questions" toured around France, and press releases gave advice on good antibiotic use for those likely to use them more. Additionally, several tools were promoted for physicians including guidelines, leaflets and a dedicated website, as well as the promotion of streptococcal rapid antigen testing and one-on-one tutorials targeting primary care physicians (G7 Germany 2015; Humphreys 2011). The campaign "antibiotics are not automatic" in itself cost 22.5 million euros (Ashiru-Oredope & Hopkins 2015).

In 2012, another plan was issued regarding animal health, called "EcoAntibio 2017" in order to account for the links between human and veterinary sectors as part of the One Health approach on the fight against AMR (Cecchini et al 2015). The plan runs from 2012 to 2017 and foresees the extension of the existing awareness campaign to the use of antibiotics in veterinary medicine with the aim to reduce antibiotics consumption by 25% in veterinary medicine over 5 years (French Ministry of Agriculture 2013). □A campaign called *« les antibiotiques pour nous non plus c'est pas automatique »* ("Antibiotics are not automatic for us either") started in September 2014 and addresses appropriate use of antibiotics for animals. The awareness campaign was set up as part of action 13 of the plan, "promoting good use of antibiotics by pet owners" (French Ministry of Agriculture 2015). This measure aims specifically at mobilising the general public on the issue of antibiotics resistance in the veterinary sector (CS9-1). Before launching the campaign, a preliminary study was conducted to establish the level of knowledge and the practices of pet owners (CS9-1; CS9-2). An additional new national communication campaign directed

at bovine farmers in order to promote vaccination has just been launched and will run throughout 2016 (CS9-1).

The campaigns targeted at human health and for pet owners were similar in their conception (CS9-1). The Ministry of Agriculture decided to reuse the slogan that had been used in human medicine ("Les antibiotiques c'est pas automatique") and to adapt it for pets. However, the two campaigns did not receive the same financial support and therefore their communication means were different. Whereas the campaign in human health was largely diffused on the TV, the campaign for animal health mainly used the radio (with 11 chronicles of 90 seconds each broadcast on 124 French radio stations), social media and the specialised and general press (CS9-1). The campaign also used the distribution of leaflets in veterinary clinics, pharmacists and veterinary schools, and videos on the Ministry's website.

Case study description

This case study focuses on French AMR awareness campaigns, which have focused on human health since 2002 and extended to animal health in 2014. It aims to analyse the evolution of the campaigns and the extent to which this is in line with the EC Action Plan. A specific focus is given to what lessons can be drawn from the recent awareness campaign launched for the veterinary sector.

This case study focuses on France because the awareness campaigns there have been widely considered successful. The recent integration of human and animal health also provides potentially important learning for other EU Member States and EU level initiatives, particularly around the implementation of awareness campaigns involving the veterinary sectors or seeking to adopt an integrated approach.

In terms of the evaluation, the following judgement criteria are addressed:

- Improvement in approaches to treating infections in humans (judgement criteria 3.3)
- Awareness of AMR amongst the general public and health practitioners has improved or is not decreasing (judgement criteria 4.2)

Methods and data sources used

This case study was based on a literature review and key informant interviews. The literature review focused primarily on evaluations of the first French awareness campaign ("*Les antibiotiques c'est pas automatique"*). Information was also found on the websites of the French Ministry of Health and Agriculture, and publications from French national bodies such as the *Agence nationale de sécurité du médicament et des produits de santé* (ANSM) or the *Institut de Veille Sanitaire.* Publications from key international (G7, OECD, WHO) and European organisations (EMA, Eurobarometers, European Antibiotic Awareness Day Collaborative Group). Three interviews were conducted with four key informants; three from French government Ministries (CS9-1, CS9-3, CS9-4) and one from a French government agency (CS9-2). The interviewees were selected because of their involvement in the awareness campaigns or role and responsibilities relating to human and animal health. The interviews were designed to supplement the literature; providing context and explanation and to address gaps in understanding, particularly for the more recent campaign incorporating animal health.

Findings

Successes

The antibiotic awareness campaign "Antibiotics are not automatic" regarding human health has been judged successful in reducing antibiotic use and resistance in France by a

number of observers (notably Sabuncu et al 2009; Goossens 2014; Bartlett et al., 2013; Huttner et al 2010).

A survey in 2006 revealed that the general public had improved their knowledge of antibiotics use and had modified their habits (Gautier et al 2008). Moreover, overall antibiotic consumption in France fell by 10.7% between 2000 and 2013 (ANSM 2014). The campaign "Antibiotics are not automatic" also coincided with a significant reduction of unnecessary antibiotic prescriptions (Sabuncu et al. 2009). Analysing prescribing data provided by the national health insurance (covering over 90 per cent of the population) for two winters before and five winters after the launch of the first campaign, Sabuncu et al. (2009) found that the first national campaign (which ran from 2002 to 2007) led to a reduction in the total number of antibiotic prescriptions per 100 inhabitants by 26.5 per cent overall, with the greatest reduction (35.8%) in antibiotic consumers aged 6-15 years old. This surpassed the national target of 25 per cent reduction over five years (Goossens 2014). Additionally, between 2001 and 2010, overall prescriptions for children decreased between 57.2 per cent in children aged 0 – 24 months and 45.8 per cent for children above 6 years of age (Dommergues & Hentgen 2010). One of the reasons advanced for this success was considered to be the specific focus of the campaign on prescribers (Sabuncu et al. 2009; Bartlett et al., 2013).

Following the launch of the EcoAntiobio 2017 plan in 2011 and the media campaign targeted at use of antibiotics in animals, overall exposure to antimicrobials decreased by 12.513% between 2012 and 2014 across animal species (Carlet and Le Coz 2015). Between 2012 and 2014, there was a 15 per cent reduction in the sale of veterinary antibiotics in Europe, in France the reduction was 22 per cent (EMA 2014).

Additionally, a decreasing trend in the resistance to certain antibiotics coincided with the first campaign "Antibiotics are not automatic". However, it is difficult to attribute this improvement specifically to the campaign. Over the period 2002 to 2004, Ashiru-Oredope and S. Hopkins (2015) noted a decrease in the rate of pneumococci resistant to penicillin (47% to 32% of isolates) and macrolides (49% to 36%) in France. EARS-Net data shows that France also experienced a dramatic decrease of MRSA infections during the past decade (Goossens 2014). The French Ministry of Health also reported a decrease in antibiotics resistance in the veterinary sector during the same period.[132]

Overall, the first campaign on human health was described as successful because of "its scope, but also for the inclusion of interventions targeting physicians through detailing and massive promotion of a rapid streptococcal antigen test in combination with a clinical score for sore throat" (Huttner et al. 2010). It has enabled improvements in the approaches to treating infections in humans by targeting practitioners and was considered as an example to change the method of prescribing antibiotics (WHO 2011). Doctors were simultaneously targeted, notably through the provision of diagnostic tests (CS9-3, CS9-4). The campaign was designed to target the high baseline antibiotic use in France by using a multifaceted approach based on mass media as well as targeting physicians (Huttner & Harbarth 2009). One of the key success factors identified for the first campaign was that the message delivered was simple and striking (CS9-3, CS9-4). Evaluations have also suggested that in its implementation, the programme achieved its goals thanks to well coordinated national efforts (Huttner & Harbarth 2009). Additionally, regarding the amount spent on the campaign (€22.5 million), the resulting effect was considered good value for money, since the reduction in antibiotic costs in France outweighed the cost of the public campaign (Ashiru-Oredopeand & Hopkins 2015; Huttner & Harbarth 2009). Interviewees CS9-3, CS9-4 confirmed that for each euro invested in the campaign, fourteen euros had been gained as a result of a decrease in antibiotics reimbursement (Carlet and Le Coz 2015). The European Centre for Disease Prevention and Control (ECDC) decided to establish the

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[132] http://social-sante.gouv.fr/actualite-presse,42/breves,2325/journee-europeenne-de,18177.html

European Antibiotic Awareness Day (EAAD) following the success of the French national campaign taken as an example to inspire further campaigns at the national level (Earnshaw et al 2014).

On the veterinary side, according to one interviewee, it has been estimated that 2.3 million people have heard the campaign's messages on the radio, and the campaign benefited from large national press coverage, and it is likely to target many pet owners despite its limited budget (€200,000) (CS9-1). The multimodal aspect of the campaign is considered as one of its factors of success, according to the same interviewee. The large aftermath from the radio and national press campaign was confirmed by another interviewee from the veterinary sector (CS9-2). One potential success factor was the survey on pet owners' knowledge and attitude run before the launch of the campaign, which enabled adapting of messages (CS9-2). Moreover the veterinary campaign is embedded within larger actions implemented within the framework of the EcoAntibio plan. Different types of actors are targeted at the same time. A campaign targeted at bovine farmers started at the beginning of 2016 and will last the whole year (CS9-1). Additionally, veterinarians, technicians and farmers are all targeted simultaneously by the plan through training but also through colloquia and awareness days (CS9-1; CS9-2). They are also informed through extensive coverage by the press and online about the conclusions of the annual report on antibiotics consumption in the veterinary sector (CS9-2). Factors of success of the campaign rely on this holistic approach with actions adapted to the different target audience (CS9-2).

Areas for improvement

Sustainability of awareness campaigns

Despite the successive awareness campaigns, France still has among the highest rates of antibiotics prescription in Europe (Cecchini et al 2015; ANSM 2014). Elsewhere, such as Sweden, there has been decreased in antibiotics consumption without any major awareness campaigns (Sabuncu et al 2009). Moreover, while the first French campaign mainly resulted in a decrease in antibiotics consumption for young children, recent analysis suggests that older adults should also be targeted (Bernier et al 2014). The level of outpatient use has also been increasing again in recent years, indicating the campaign's impact may have levelled off (Huttner et al 2014; ANSM 2014). Data from the Agence nationale de sécurité du médicament et des produits de santé (ANSM) highlight that, despite earlier reductions in antibiotic consumption that there has been increasing trend in antibiotic consumption since 2010 (ANSM 2014) and that the level of consumption in 2013 was higher than that in 2003 (InSV – ANSM 2014). One of the reasons may be the increasing incidence of winter pathologies between 2010 and 2013 (InSV – ANSM 2014). Antibiotic prescriptions due to otitis in children notably increased from 22.5 per cent in 2000 to 42.3 per cent in 2010 (Dommergues & Hentgen 2010). Additionally, despite its success, the first campaign has not managed to reduce the consumption of antibiotics for bronchitis, otitis and sinusitis (Carlet and Le Coz 2015). Additionally, Huttner and Harbarth (2009) noted that despite the decline of antibiotic use in the first years of the campaign, a relative increase in fluoroquinolone use (12.8%) was observed, which, according to them, indicated the possibility that antibiotic selection may have become less appropriate in the context of certain treatment indications.

Interviewees CS9-3, CS9-4 noted that no campaigns has been run since 2012, which might also partly explain the increasing level of consumption and emphasises the challenge in ensuring the sustainability of the programme over the long-term (CS9-3, CS9-4). A report from the Ministry of Health confirmed that in the absence of a large communication campaign, antibiotics consumption increases (Carlet and Le Coz 2015). The report indicates that the last campaign has failed to take into account the variety of audience perspectives, and states that despite the three campaigns, the issue of AMR remains unknown for many in the general public (Carlet and Le Coz 2015), and it suggests using the British "Antibiotic Guardian" campaign as a model for raising collective consciousness and responsibility regarding antibiotics use.

Antibiotic prescriptions due to otitis in children notably increased from 22.5 per cent in 2000 to 42.3 per cent in 2010 (Dommergues & Hentgen 2010). Additionally, Huttner and Harbarth (2009) noted that despite the decline of antibiotic use in the first years of the campaign, a relative increase in fluoroquinolone use (12.8%) was observed, which, according to them, indicated the possibility that antibiotic selection may have become less appropriate in the context of certain treatment indications.

The effect on antimicrobial resistance is difficult to determine

The effect of the campaign on antimicrobial resistance is difficult to separate from that of other interventions (e.g. the conjugate pneumococcal vaccine) (Huttner & Harbarth 2009). Despite the marked decrease in the incidence of infections caused by MRSA, incidence of infections by resistant bacteria remains high, particularly in S. aureus (Cecchini et al 2015). The Institut de veille sanitaire (InVS) and l'Agence nationale de sécurité du médicament et des produits de santé (ANSM) 2014 observed that even though some improvements have been made in the spread of certain resistant bacteria (MRSA, penicillin-resistant pneumococci), the situation has worsened for some others (enteric bacteria with the growing diffusion of beta-lactamase positive strains).

Existing evaluations are limited

While the first campaign has generally been regarded as successful, the two following campaigns have encountered less success (CS9-3, CS9-4). The reasons advanced are notably related to the fact the messages were too complicated and less striking than the previous campaign (CS9-3, CS9-4). Additionally, the available evaluations on the first campaign have notable limitations. The main evaluation conducted could not formally establish any causal link between the campaign and the reduction in antibiotic prescribing due to the absence of a control group (Sabuncu et al. 2009). Additionally, the evaluation failed to provide indicators to explain the campaign success, such as the public's awareness of the campaign or changes in knowledge and attitudes among physicians and the public (Huttner & Harabarth 2009). Besides, as the campaign took place within a multi-faceted programme, it is hard to disentangle its effect from other interventions (Huttner & Harbarth 2009). Although the most recent campaign seemed to have a positive impact, further evaluations are needed (Huttner & Harbarth 2009) to understand the impact of the campaign on behavioural change over time.

Finally, there has been no formal evaluation of the veterinary campaign, and the impact of awareness campaigns around antibiotics consumption on animal health is unknown (Lhermie et al 2014). The two interviewees from the veterinary sector (CS9-1, CS9-2) confirmed that it is very difficult to link the specific media campaign to the evolution of antibiotics use in animals since it is part of larger actions that have been implemented within the EcoAntibio plan. It is therefore difficult to disentangle the impact of the different actions. It would be necessary to repeat the same survey, on pet owners' knowledge and attitudes, to analyse the impact (CS9-2). The encouraging results achieved in terms of antibiotics use (noted above) testify to the commitment of livestock farmers and veterinary to reduce antibiotics consumption in animals (French Ministry of Health 2015). However, efforts need to be maintained in order to achieve the objective of 25 per cent reduction of the EcoAntibio Plan for the period 2012-2016 (French Ministry of Health 2015). The French Agency for Food, Environmental and Occupational Health Safety (ANSES) (2015) reported an 11.8 per cent increase in antibiotics sales compared to 2013, which could be attributed to a 1st January 2015 law that ended discounts and rebates on veterinary antibiotics, leading to a pre-emptive storage effect from actors in the sector. The trend in veterinary antibiotics consumption would therefore need to be further analysed in the coming years to take into account the effect of the campaign. One interviewee suggested the campaign on animal health be repeated over time with more powerful slogans, otherwise there is the risk that progresses made would not be sustainable (CS9-2).

Links to the Action Plan

The first French national campaign predates the Action Plan. It was developed following the Community Strategy Against Antimicrobial Resistance, which was presented by the Commission in 2001 and included recommendations for surveillance, prevention, research and development, and international cooperation. The campaigns that followed evolved little in their messages and target audiences, though there were developments in the tools used. The most recent campaign, even if it has no formal links with the EC Action Plan, has been designed in cooperation with the European Antibiotics Awareness Day (Carlet and Le Coz 2015). The campaign has evolved to integrate awareness raising tools towards healthcare establishments and establishments for dependent old persons. Interviewees perceived that the EAAD had an impact on raising awareness of policymakers but that messages should be simpler and targeted to each Member State's specific context to be more efficient (CS9-3, CS9-4). The EAAD and the EC Action Plan were perceived by two interviewees to be a general framework to mobilise all European countries (CS9-3, CS9-4).

The veterinary part of the campaign was developed after the Action Plan was issued. The Ministry of Agriculture acknowledges that the EcoAntibio plan is aligned with the objectives of the EC Action Plan regarding both animal and human health and takes into account that the growing use of antimicrobials for livestock farming has been an issue of increasing concern (French Ministry of Agriculture 2012). Interviewees confirmed that although the communication campaign is aligned with the EC Action Plan, the latter has not influenced its conception and the campaign would have been launched even without the existence of an EC Action Plan (CS9-1; CS9-2). However, having a European plan was perceived as useful for European coordination and to push Member States that have not yet implemented communication campaigns or those that do not have sufficiently structured actions (CS9-2). The campaign has been developed following the 'One Health' approach of the EC Action Plan and is coherent with the recent WHO global plan launched in May 2015 and the common declaration of Tatfar (French Ministry of Health 2015). The *Institut de Veille Sanitaire* and the ANSM (2014) recall that the actions led by France to raise awareness among professionals and the public are part of the "One Health" approach and integrated within a wider European and international context. However, the French example goes beyond the recommendations of the Action Plan. Indeed, the animal health campaign aligns with the 'Guidelines for the prudent use of antimicrobials in veterinary medicine' which were adopted by the European Commission in 2015 and recommend the implementation of "prudent use campaigns in the veterinary sector […] targeted at specific groups, in particular farmers, veterinarians, other professionals involved in animal production and pet owners." The Action Plan could benefit from having an action that specifically supports national authorities in developing national awareness campaigns in the veterinary sector, according to one key informant (CS9-1).

More generally, one interviewee felt that the EC Action Plan could emulate the French approach by introducing detailed indicators and targets for reductions in antibiotics consumption (CS9-2). The interviewees also suggested that the other Member States, particularly those that have yet to implement campaigns, might find it helpful to model their campaigns on the French examples, with appropriate adaptations for local contexts (CS9-2; CS9-3, CS9-4).

Conclusions

This case study shows that awareness campaigns aimed at animal care professionals and the public can be successful in helping to reduce the consumption of antibiotics and that they can successfully integrate both animal and human health components. However, although awareness campaigns are important they must be part of a multifaceted approach as effects may be hard to sustain over time and not sufficient on their own to achieve the reductions in consumption or improvements in appropriateness of prescribing that are required. Additionally more robust evaluations are required to maximise learning, understand effectiveness and make judgements on campaigns' value for money. Finally, the more recent French campaigns, which have run in parallel with the EC Action Plan,

have brought lessons about what works and what doesn't that could be useful to inform future EU actions and Member State initiatives. These lessons include the importance of establishing what the public's baseline knowledge level is about AMR in the context of animals, and the importance of simple messaging adapted to local contexts.

Case study 7: Aquaculture and AMR in maritime waters

Summary

This case study focuses on antimicrobial resistance in maritime aquaculture – an issue of growing relevance to the health of both marine species and humans. Specifically, it examines on efforts to move towards vaccination as a means of reducing consumption of antimicrobials through an exploration of practices Norway's aquaculture industry. Over the past 2 decades, Norway has drastically reduced antimicrobial consumption while maintaining a rapidly growing aquaculture industry. This case study draws lessons of relevance to the EC Action Plan by looking at the role of Norway's shift towards vaccination in reducing antimicrobial use, and identifying the factors that facilitated that shift. The study's key findings are as follows:

- Effective vaccination against key diseases reduces infection rates and, as a result, the need for antimicrobials.

- Loss of profits in the aquaculture industry due to outbreaks of bacterial diseases was the key driver of Norway's move towards vaccination.

- Tighter regulations on use of antimicrobials can help increase emphasis on vaccination.

- The shift towards vaccination requires the availability of high-quality vaccines, which in turn depends on the incentives in place for manufacturers of new drugs.

- "Creative governance" can help overcome the challenge of incentivising drug development in veterinary medicine.

- Engagement between government and industry is vital in ensuring awareness and uptake of new drugs and regulations.

Introduction

Aquaculture is specifically mentioned in the Action Plan as one of the areas in which action is required to improve infection prevention and control in farm animals. As in other types of farming, the use of antibiotics in aquaculture has the potential to increase levels of antimicrobial resistance and make it harder to control infectious diseases in fish and other aquatic species.[133] There are also potential consequences for human health, as resistance genes may be transferred through the aquaculture environment, the food chain or other pathways.[134] In response to these risks, the EC's 2015 guidelines on prudent use of antibiotics in veterinary medicine includes a recommendation that "The same strategies as are used for reducing the use of antimicrobials in other farm animals should also be considered in aquaculture" (EC 2015b). This case study will focus on efforts to reduce antibiotic use in marine aquaculture, particularly through the use of vaccination instead of antibiotics, with a view to considering whether this is something that the EC could explore in depth.

The case study will focus on Norway, which was selected due to the notable progress it has made in reducing antibiotic use in aquaculture, and the long-term commitment that has been required to achieve this reduction. An additional reason for the selection of Norway was the size of its aquaculture industry, which, as of 2012, was the largest in Europe and the fifth largest in the world by volume of production (FAO, 2012). The case study will

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[133] See for example Smith, 2008.

[134] See for example Heuer et al., 2009.

explore Norway's successes and areas for improvement, and examine potential links to the Action Plan. It will look at Norway's policies in this area in the context of wider literature on policies designed to combat AMR in aquaculture. Our initial intention was to study Scotland, another European country with a significant aquaculture industry, alongside Norway. However, due to the lack of readily available sources of information in which data on antimicrobial consumption and policies in Scotland are disaggregated from data on the UK as a whole, it was not possible to develop a sufficient evidence base for a full case study on Scotland. Instead, we will present the evidence found on Scotland alongside more detailed analysis of the Norwegian case.

This case study relates to the following evaluation question (EQ) and judgment criteria (JC):

- EQ 3: Effectiveness: of actions for improving infection treatment
- JC 3.5: Improvements in the prudent use of antimicrobials in veterinary medicine
- JC 3.6: Improvements in rules, guidance and authorisation requirements for veterinary medicines and feed
- JC 3.7: Increased support for collaborative R&D to bring new antibiotics to patients
- JC 3.8: Improvement in the conditions for the introduction of new veterinary antimicrobials

Aquaculture was selected as a case study topic due to its relevance to both human and animal health. In addition, the fact that aquaculture is the fastest growing animal food-producing sector worldwide, and is growing at a faster rate than the world's population (FAO, 2014), means that safe and sustainable aquaculture will be an issue of increasing relevance in years to come. Examining the Norwegian case will make it possible to identify good practices, and to assess ways in which EU actions have contributed to those practices or could be amended to reflect them.

Methods and data sources used

This case study is based on a review of relevant documentation, including academic literature and national- and EU-level policy documents, as well as grey literature such as position papers from stakeholder organisations. It also draws on evidence from interviews (both on the Action plan overall and on Norwegian aquaculture specifically) and the report produced by the workshop conducted by RAND Europe as part of this evaluation.

Findings

The rapid growth of Norwegian aquaculture in the early 1980s led to a sharp rise in the use of antimicrobials in the industry (Heuer et al., 2009). This resulted in a concerted effort to reduce antimicrobial consumption in Norwegian aquaculture (Midtlyng et al., 2011). Below we examine the focus and impact of that effort.

Successes

In 2014, antimicrobials were prescribed to only 1 per cent of Norwegian seawater salmon farms (Lillehaug and Grave, 2015). This compares favourably to Scotland, where the government estimates that around 3.6% of marine aquaculture sites report antimicrobial use each year (Scottish Government, 2015). Between 1987 and 2007, Norway achieved a 99 per cent reduction in the use of antimicrobials in aquaculture, despite a huge increase in the sector's production (Heuer et al., 2009). A significant portion of that decrease occurred in the 1990s: between 1992 and 1994, the weight of antimicrobials used per kilogram of fish produced in Norway fell from around 210mg to just 6mg (Heuer et al., 2009). According to Midtlyng et al. (2011), this success was achieved through five key initiatives, which are examined below.

Use of vaccination as the predominant infection-prevention strategy

A key factor in the emphasis placed on vaccination in Norwegian aquaculture is the requirement that antimicrobials for use in aquaculture be prescribed by a veterinarian (Lillehaug et al., 2003; Romero et al., 2012). According to Romero et al. (2012), this means that the use of antimicrobials is primarily therapeutic rather than prophylactic. Moreover, prudent prescription is encouraged by the requirement that veterinarians must provide the Food Safety Authority and the Norwegian Veterinary Prescription Register with a prescription form that details the type and amount of antimicrobial prescribed, the species and weight of fish being treated, and the date treatment was started (Lillehaug et al., 2003). Similarly, vaccination programmes are credited with facilitating a reduction in antimicrobial consumption in Scottish aquaculture (Scottish Government, 2012.), and legislation requires that any use of chemicals (including medicines) in aquaculture sites is reported to the Scottish Environmental Protection Agency along with the quantity to be used and details of measures taken to minimise use (Scottish Environmental Protection Agency, 2011).

Collaboration between government and industry

One interviewee (CS7-1), a representative of a Norwegian government institution, explained that the drive towards vaccination came primarily from the aquaculture industry. However, industry received significant government support in this work. In the late 1980s, the Norwegian Veterinary Institute (NVI - a government institution), the Fish Farmers Sales Organisation (FFSO – an industry association) and a number of scientific organisations partnered to advance mass vaccination through several initiatives (Midtlyng et al., 2011). One type of initiative consisted of the evaluation of vaccines for cold-water vibriosis and furunculosis, which were the main drivers of antimicrobial consumption in the 1980s and early 1990s respectively. There was also a campaign to promote the use of vaccines in aquaculture, which was aimed at fish farmers carried out by the FFSO. These parallel efforts produced an effective vaccination while spreading knowledge of its effectiveness among fish farmers, leading to rapid and widespread adoption (Midtlyng et al., 2011).

Development of high-quality vaccines

Lillehaug and Grave (2015) assert that trends in antimicrobial consumption in Norwegian aquaculture have been shaped by the availability of effective vaccines for key diseases. Sales of antimicrobials for use in aquaculture peaked in 1987 due to frequent outbreaks of coldwater vibriosis (caused by a gram-negative bacteria) affecting farmed salmon, and declined sharply following the introduction that year of vaccines (Lillehaug and Grave, 2015). Another spike in antimicrobial sales occurred in 1990, this time caused by outbreaks of furunculosis, followed by another drastic reduction in sales after more effective vaccines against this disease were made available (Lillehaug and Grave, 2015). The fact that both disease levels and antimicrobial consumption in Norwegian aquaculture have remained low since then (Lillehaug and Grave, 2015) suggests that the availability of effective vaccines reduces infection rates and, as a result, demand for antimicrobials.

The abovementioned interviewee from a Norwegian government institution (CS7-1) stated that early work on vaccines was mainly financed by the aquaculture industry, which funded basic research at academic institutions. The same interviewee added that pharmaceutical companies were initially reluctant to invest in developing new vaccines due to a perceived lack of potential profitability (CS7-1). According to Midtlyng et al. (2011), Norway's "creative governance" of its veterinary pharmaceutical industry also helped to incentivise private sector involvement in the development of the vaccines required to reduce antimicrobial consumption. Central to this was collaboration between public and private actors. In exchange for a 3 per cent tax on all sales of veterinary vaccines, the NVI offered free evaluation of vaccine prototypes on the premise that results would be made public. This lessened the risk to be taken by veterinary pharmaceutical companies, and thus reduced a key barrier to the development of new vaccines (Midtlyng et al., 2011).

Mandatory fallowing periods to break re-infection cycles

Fallowing (the practice of leaving an aquaculture area empty between periods of cultivation) is an established method of breaking re-infection cycles (see for example OIE 2015b). Norway has implemented regulations including a requirement that only one generation of fish be produced at a marine aquaculture site, followed by a mandatory fallowing period (Midtlyng et al., 2011). For example, salmon and trout cultivation areas must be left fallow for a minimum of two months between periods of cultivation (FAO, 2016).

Spatial arrangement of aquaculture areas designed to prevent horizontal spread of infections

Norway's veterinary authorities coordinate mandatory "zoning" of producing units, and also regulate movements and transport of live fish. According to Midtlyng et al. (2011), the establishment of these zoning and transport measures at the regional level in collaboration with fish farmers, and their resultant acceptance and effective implementation, are another example of the role of regulator-stakeholder collaboration in Norway's successful reduction of antimicrobial use in aquaculture.

Areas for improvement

The document review did not produce evidence of any areas requiring significant improvement with respect to antimicrobial use in Norwegian aquaculture. Instead, the literature highlights a number of challenges resulting from Norway's success in this area and difficulties in sustaining this performance. Midtlyng et al. (2011) argue that the diminished need for therapeutic treatments of infections reduces the profitability of developing such treatments. As a result, there is limited incentive for the Norwegian veterinary pharmaceutical industry to develop new antimicrobials, which increases the risk of the development of resistance to existing treatments in instances where they are used (Midtlyng et al., 2011).

Links to the Action Plan

Given that Norway's reduction in the use of antimicrobials in aquaculture occurred prior to the Action Plan's publication, the country's success cannot be attributed to the Plan. Instead, it is possible to identify a number of areas in which the EC may consider following Norway's lead. A key example is the way in which Norway's shift to vaccination was facilitated by the development of high-quality vaccines, driven by the "creative governance" and incentives described above. At the European level, stakeholders have argued that not enough has been done to incentivise pharmaceutical companies by increasing the profitability and reducing the risk of developing new antimicrobials or alternatives to antimicrobials – particularly in veterinary medicine (INT01). This may involve increased public-private collaboration of the type employed in Norway in order to facilitate the movement of new drugs through the clinical trial phase (INT01).

EU-level guidelines resulting from the Action Plan advise against routine prophylactic use of antimicrobials and provide guidance on alternatives, although the EU does not impose an outright ban. For example, the 2015 guidelines for the prudent use of antimicrobials in veterinary medicine (2015/C 299/04) advise that "Routine prophylaxis must be avoided", but qualify this statement by adding that "prophylaxis should be reserved for exceptional case-specific indications". Representatives of the European Commission have reported that an outright ban would be potentially detrimental to animal health, as prophylactic use of antimicrobials is considered justified in exceptional cases, such as certain surgical procedures (pers. comm.). Moreover, the Commission is following discussions in the European Parliament and Council regarding the definitions of prophylactic and metaphylactic use of antimicrobials, in the framework of the legislative procedure for the proposal for a new Regulation on veterinary medicinal products. However, the absence of an outright ban on prophylactic use of antimicrobials in these guidelines has been criticised

by some stakeholder organisations (see for example European Consumer Organisation, 2015).

Conclusions

The key conclusion to be drawn from this case study is the positive impact of a move towards vaccination on levels of antimicrobial consumption. This study has shown that this was decisive in enabling Norway's improvement in the prudent use of antimicrobials (JC 3.5) in its aquaculture. The Norwegian case also showed that this change can be facilitated by improved rules, guidance and authorisation requirements for veterinary medicines (JC 3.6), particularly in the area of prophylactic use of antimicrobials. However, the case study also highlighted the need for high-quality vaccines. In this regard, the EU may consider following Norway's lead by further increasing support for collaborative research and development on new drugs (JC 3.7), particularly by building on its existing efforts in the area of public-private collaboration and reducing the barriers to bring new drugs to market through "creative governance" (JC 3.8).

Case study 8: Trends in community antibiotic use and public awareness: Italy and Sweden

Summary

- The case study examined trends in the consumption of macrolides, penicillin and cephalosporin in Italy and Sweden over the period 2010-2014, as well as public awareness about AMR assessed in 2009 and 2013.

- Between 2010 and 2014, there was an overall decline in the use of macrolides, penicillin and cephalosporin in both Italy and Sweden.

- Italy remains among the highest users of carbapenems in the EU, however some improvements were also observed in public awareness.

- Compared to Italy, Sweden has had lower rates of antibiotic consumption and higher levels of public awareness about the appropriate use of antibiotics.

- Sweden introduced a national action plan on AMR in 2005 (with other initiatives dating back earlier), while Italy has been less active in policy in this area and introduced a National Prevention Plan (2015-2018) in 2015.

- Italy also hosted a conference on AMR and One Health during its 2014 Council presidency, which may have stimulated political activity on AMR.

- It is unlikely that the EU plan is responsible for the progress made in Sweden; however the EU's 2002 Council Recommendation on prudent use of antibiotics and the EC Action Plan may have contributed to progress in Italy.

- There are synergies between the EC Action Plan and the national plans.

Introduction

Case study focus

This case study focuses on trends in the consumption in Italy and Sweden of broad-spectrum to narrow spectrum penicillin, cephalosporin, and macrolides over a five year period (2010 – 2014) in humans.

It focuses on elements of the EC Action Plan pertaining to the promotion of the appropriate use of antimicrobials in humans, monitoring consumption of antimicrobials in humans and awareness raising/educational activities (Actions 1, 9 and 12). Specifically the case study aims to understand the influence of the EC Action Plan on national level trends in antimicrobial consumption and on national policy responses using Italy and Sweden as case examples.

In terms of the evaluation, the following judgement criteria are addressed:

- Reduction in or no change in the consumption of antimicrobials (judgement criteria 3.1)

It is difficult to attribute changes in antimicrobial consumption to any one policy such as the EC Action Plan, rather this case study considers how national policy responses have evolved in relation to the EC Action Plan, what factors may have contributed to observed trends in the two countries and lessons that can be drawn from these and remaining challenges within the countries.

Country selection

Italy and Sweden were chosen because they differ significantly in terms of the prevalence of AMR. Italy is among one of the EU countries with the highest resistance to antibiotics (ANSA, 2014) whereas Sweden has been noteworthy in containing levels of resistance (Struwe, 2008). Similarly, there are differences in antibiotic consumption between the countries. In 2012, 27.6 per 1000 Italian inhabitants reportedly consumed antibiotics compared to 14.1 per 1000 Swedish inhabitants (ECDC, N.d. a). The countries also seem to differ in terms of national policy development in relation to AMR and antibiotic consumption and related initiatives. Sweden for example has had a national action plan, the *National strategy on prevention of antimicrobial resistance and healthcare-associated infections* (2005), which is complemented by other policies and initiatives, while information suggests that Italy followed the European Commission Recommendation 2002/77/EC (Gerards, 2011) until 2015 when it released[135] a four-year National Prevention Plan (2015-2018).

The contrasting situation in Italy and Sweden provides a useful focus in the case study to consider the influence of the EC Action Plan and lessons for going forward.

Methods and data

The case study was based on a literature review and secondary data analysis. The literature reviewed included mainly country level reports and reports from international bodies. The review was restricted to documents available in English. The main source of data was the ECDC, through the European Antimicrobial Consumption Interactive Database (ESAC-Net), which provides data on antimicrobial consumption by country and by healthcare sector (primary or secondary). These data were collected by the ECDC from Member States and generated using figures from either the sales of antimicrobials or reimbursement of antimicrobials as proxies for consumption. In Sweden, data from the community sector were generated from sales data, while in Italy these data were generated using sales data (2011 and 2012) or both reimbursement and sales data (2005-2010, 2013 and 2014) (ECDC, N.d. b). All data is presented in respect to defined daily doses (DDDs).[136] We present data from the last ten years of full available data, 2005 to 2014, but analysis was limited to the period 2010-2014 to focus on a period that overlaps with the implementation of the EC Action Plan.

In addition, data on consumption of antibiotics and perceptions of their use in Europe in 2010 and 2013 was drawn from survey data gathered in the Special Eurobarometer 407: AMR (TNS Opinion & Social, 2013). (The Special Eurobarometer is an in-depth study on a specific topic, which relies on survey data collected in each Member State.)

Findings

Overall, there is a consistent downward trend in the use of antibiotics in both Sweden and Italy, with a few exceptions. The data in this section shows trends in beta-lactam antibacterials,[137] extended-spectrum penicillin, cephalosporin, and macrolides.

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[135] The research team has been unable to locate this document, although it has been referenced by Cecchini et al. (2015).

[136] Defined daily doses are assigned to all drugs with an ATC code and correspond to the 'assumed average maintenance dose per day' (WHOCC, N.d.).

[137] Beta-lactam antibacterials are broad spectrum antibiotics, a group also to which penicillins and cephalosporins belong (Marshall Protocol Knowledge Base, N.d.).
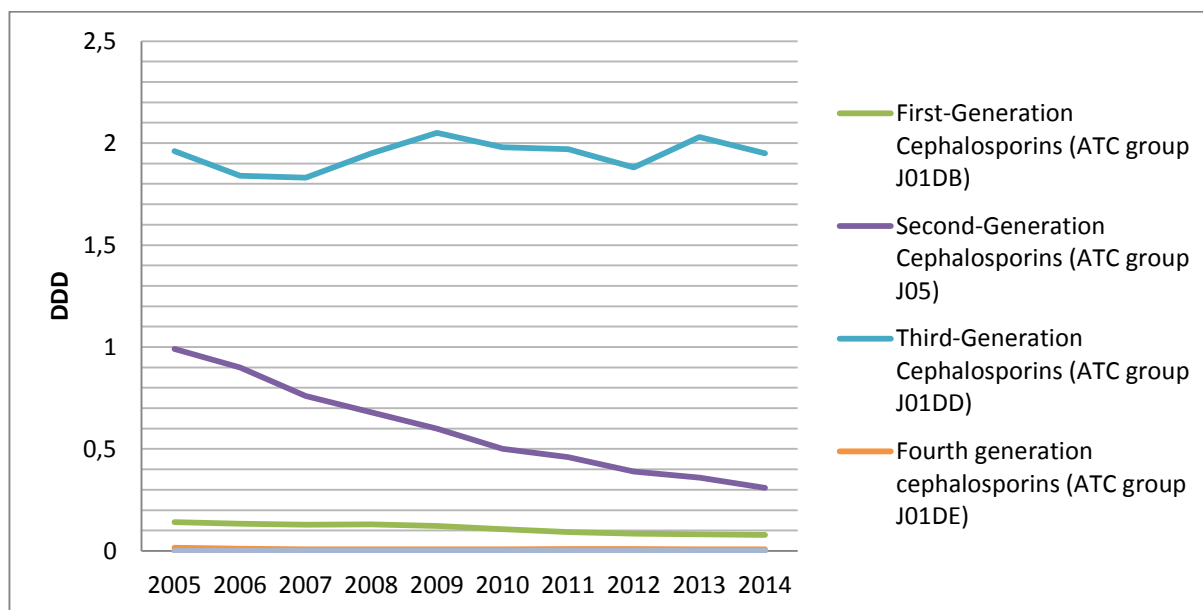
Italy

The Special Eurobarometer 407 (TNS Opinion & Social, 2013) reports a ten per cent decrease in use of antibiotics in Italy between 2009 and 2013, consistent with ECDC data. In Italy, there was a six per cent increase in consumption of beta-lactam antibacterials from 2010 to 2014 (Figure 7). However, a different trend emerges in relation to penicillin with extended spectrum for which consumption steadily declined since 2005, with a decrease in consumption between 2010 and 2014 of 21 per cent.

Figure 7: Consumption of Beta-Lactam Antibacterials, Penicillins; and Penicillins with Extended Spectrum in Italy (2005-2014) (ECDC N.d.a)
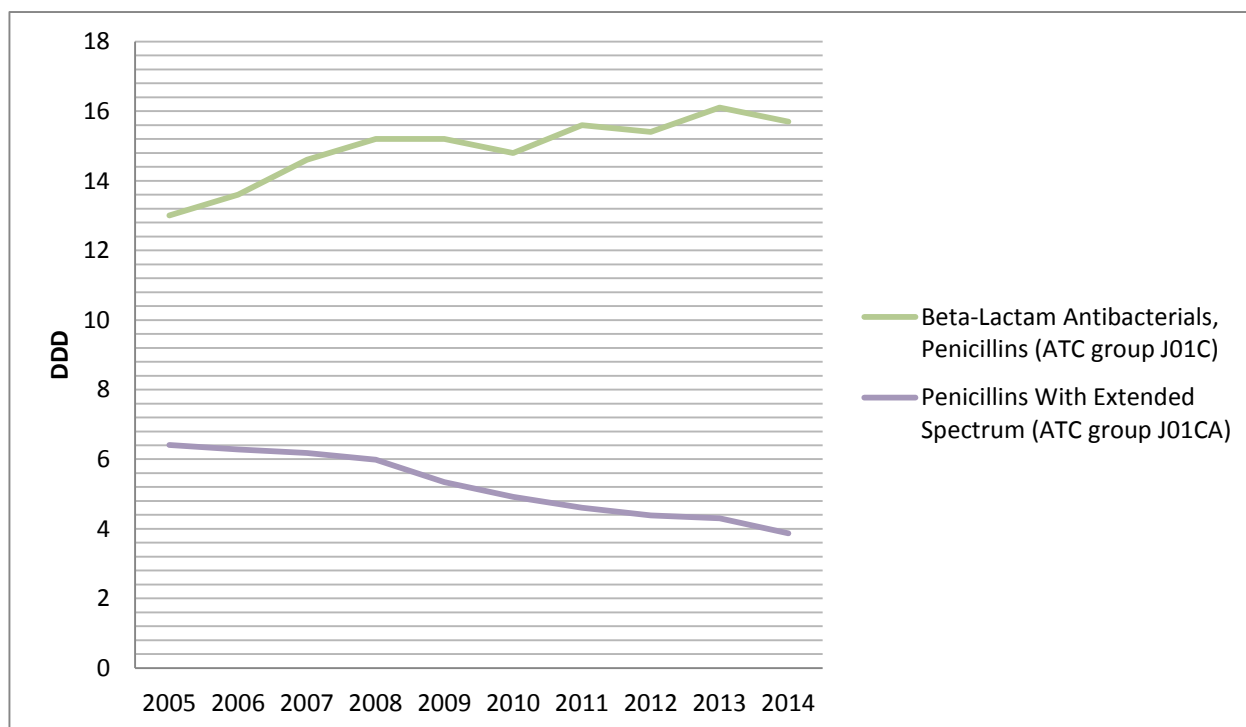
These overall figures can hide some variation in trends in consumption for individual classes of antimicrobials. For cephalosporin, which belong to the beta-lactam group, an overall decline in consumption has been driven by a 38 per cent decline in the consumption of second generation cephalosporin between 2010 (.5 DDD) and 2014 (.31 DDD). Consumption for the other generations of cephalosporin has remained relatively stable with very low consumption of first generation and fourth generation cephalosporin and zero consumption for other cephalosporin and penems.

Figure 8: Cephalosporins consumption in Italy 2005 – 2014 (ECDC N.d.a)

Sweden

The use of beta-lactam antibacterials decreased slightly (2.8 per cent) over the period 2010 to 2014 (Figure 9) but starting levels of consumption were much lower than for Italy. Within this, a notable trend in consumption of cephalosporin from 2010 to 2014 has been in the consumption of first generation cephalosporin decreased by 18.75 per cent between 2010 and 2014 (from .144 DDD to .117 DDD). Consumption of other generations of cephalosporin have reduced to zero or remained low and stable throughout the same period.

Figure 9: Penicillin consumption in Sweden 2005-2014 (ECDC N.d.a)
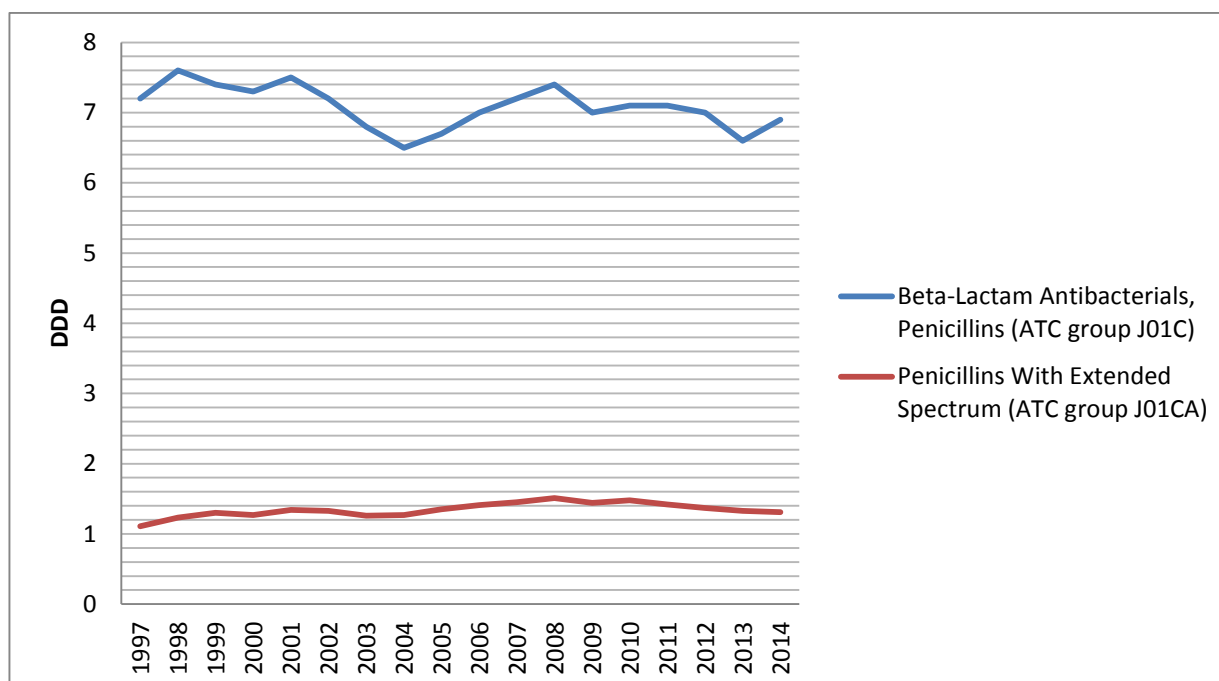
For Sweden, a larger decline is evident in the consumption of macrolides, showing a 32.5 per cent decrease between 2010 and 2014 (from .43 DDD in 2010 to .29), and a decline of 16.6 per cent in the consumption of intermediate-acting macrolides (from .06 DDD in 2010

to .05 DDD in 2014). The consumption of long-acting macrolides increased by 50 per cent from .06 in 2010 to .1 in 2013, with a slight decrease again to .09 in 2014 (Figure 10).

Figure 10: Macrolides consumption in Sweden 2005-2014 (ECDC N.d.a)
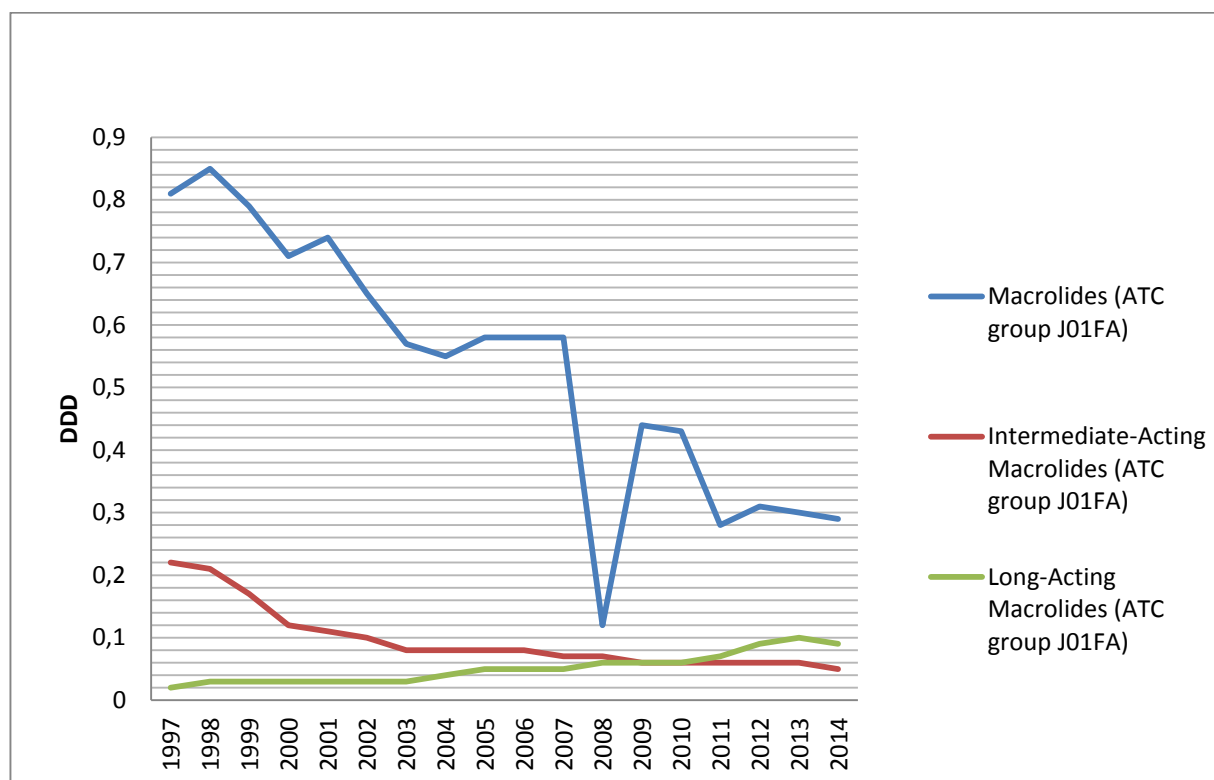
Policy initiatives to reduce antimicrobial consumption

Italy

Although Italy has been noted for its high levels of antibiotic consumption and resistance, there is evidence that AMR has become an increasingly important issue for Italy since its 2014 presidency of the Council of the EU and launch of the National Prevention Plan in 2015. Italy, during its Council presidency, held a conference in Rome which focused on the current status of AMR, the animal and food safety sector and the One Health approach (Ministero della Salute, 2014a). The Ministro della Salute (2014b) also produced a press release on the European Antibiotics Awareness Day on 18 November 2014 highlighting the need to understand the prudent use of antibiotics and the importance of a prescription. Also in 2014, Italy was involved in a number of cross-national collaborations to reduce the threat of infectious diseases, including AMR (Cecchini et al., 2015).

The four-year National Prevention Plan 2015-2018 is the country's first nationally implemented plan around AMR. The plan calls for increased media and educational campaigns at a regional level for the prevention and control of AMR as well as improved surveillance and monitoring of the consumption of antimicrobials (Cecchini et al., 2015), both of which are in line with EC Action Plan objectives (European Commission, 2011).

Although the plan provides evidence of Italy's commitment to combatting AMR, it does not account for the downward trend in antimicrobial consumption in the years 2010-2014. According to Gerards (2011), Italy had implemented a number of conditions outlined in the 2002 Council Recommendation on the prudent use of antimicrobial agents, including: running awareness activities on the appropriate use of antibiotics, contributing to the EARS-Net (measuring antimicrobial consumption) and ESAC (measuring antimicrobial resistance), creating methods for prevention and infection control by reducing the number of antibiotics sold without prescription, and establishing guidelines on appropriate use.

Sweden

In contrast to Italy, Sweden has had longstanding initiatives at a national level to combat AMR. A key example is its 1986 ban on the use of antibiotics as growth promoters. It has also made efforts to implement Recommendation 2002/77/EC on all scores including the creation of an action plan and guidelines on appropriate use, and national surveillance programmes (community and hospital) among other elements (Gerards, 2011).

Sweden also has its own action plan against AMR, published in 2005. A key tenet of this action plan is to ensure adequate prevention in human medicine, including good hygiene in health, dental and elderly care, and vaccinations. The action plan also called for the establishment of the Infectious Diseases Institute (SMI) to take stock of microbiological mixtures (Government Offices of Sweden Oxford et al., 2013, 2005). In addition, the Swedish Public Health Agency publishes statistics on the consumption of antibiotics and encourages the use of these data at the local level, especially in consultation with local physicians in hospitals. To ensure that data are accessible to all, they are often communicated to local and national media through press conferences or releases (Public Health Agency of Sweden, 2014). However, in an interview for the Public Health Agency, Otto Cars from the Swedish Public Health Agency, stated that the creation of local Strama groups was a great stride forward in terms of resources; however, at council level, often short-term budget cuts are implemented without thought for future consequences (Public Health Agency of Sweden, 2014).

Sweden has been engaged in campaigns at a local and regional level, calling for councils to take greater responsibility over their communities in relation to AMR and infectious diseases. According to Swedres-Svarm (2014) between 2011 and 2014, a patient safety initiative which identified antibiotic resistance and rational use as important factors for consideration, was run by the Government and the Swedish Association of Local Authorities and Regions provided incentives in the form of reimbursements to county councils provided they adhered to certain requirements. One requirement, met by all county councils by 2011, was to establish a local Strama group. Op Cit. (2014) attributes some of the decrease in sales in antibiotics over this period to the patient safety initiative given the awareness raising activities that occurred as a result.

Remaining challenges: public awareness and appropriate use

Knowledge and awareness about the appropriate use of antibiotics among healthcare professionals and the public is one of key challenges facing all countries. Evidence suggests that a lack of awareness about appropriate use can lead to patients exerting pressure on health care professionals for a prescription (Oxford et al., 2015; TNS Opinion & Social, 2013) and that patients' perceptions of the reliability of information from (or trust in) healthcare professionals can impact on consumption of antimicrobials (TNS Opinion & Social, 2013).

Between 2009 and 2013, the Special Eurobarometer 407 (TNS Opinion & Social, 2013) revealed that Italy has made substantial improvements in the consumption of antimicrobials. What remains evident, however, it that there is still a knowledge gap in the appropriate use of antibiotics and issues with the perceptions of reliable information sources in Italy. The majority of respondents in both Italy (52 per cent) and Sweden (77 per cent) correctly stated that antibiotics are ineffective against the cold and flu. (TNS Opinion & Social, 2013). Another striking result from the Special Eurobarometer Survey (EC 2013b) is that 98 per cent of Swedish respondents know that antibiotics become ineffective with unnecessary use in comparison to 68 per cent of Italians. Although a majority of Italian respondents provided the correct answer, there remains a gap to be addressed in Italy.

Overall, the Special Eurobarometer 407 reveals that Swedish respondents have a great awareness of the appropriate use of antimicrobials (TNS Opinion & Social, 2013). Interestingly, 27 per cent of Swedish respondents attribute their knowledge on the

unnecessary use of antibiotics to media campaigns, while no information is provided for Italy on this point. However, it was noted that 18 per cent of Italians received this advice from professionals. Compared to 2009, there was a 15 percentage increase in the number of Italian respondents who have changed their mind about the use of antibiotics when informed of their appropriate use.

Links to the Action Plan

Both Sweden and Italy showed reductions overall in antibiotic consumption with some variation in trends within different classes of antimicrobials over the 2010-2014 period. Attributing these changes to any specific policies is challenging. However, in the case of Italy (which did not have an AMR action plan until 2015), there is evidence that changes were implemented in line with the 2002 Council Recommendation on the prudent use of antibiotics; these are steps that could have contributed to the improvements observed. However, it is unclear whether the introduction of the Action Plan had an additional impact in the Italian context beyond the 2002 Council Recommendation. Indeed, in the case of Italy, other important recent developments have been the development of its Acton Plan and the conference held in Rome in 2014 on the current status of AMR, the animal and food safety sector and the One Health approach.

Sweden, which has been implementing national AMR initiatives over a longer period than Italy, has achieved lower levels of antibiotic consumption and resistance. The Swedish action plan, the *National strategy on prevention of antimicrobial resistance and healthcare-associated infections*, was launched in 2005 a major objective is to monitor resistance and prescribing in human health and foster knowledge development, the latter of which included stocktaking exercises of antibiotic use in the community and in-patient care. Given that the national plan preceded the EC Action Plan by several years, it seems less plausible that the EC Action Plan would have had a major impact over and above national initiatives.

Conclusion

Both Italy and Sweden have monitored either sales or reimbursement of antibiotics and used this as an indicator for antibiotic consumption, providing the ECDC with information since 1999 and 1997, respectively. Between 2010 and 2014, there was an overall decline in the use of macrolides, penicillin and cephalosporin in both Italy and Sweden. Compared to Italy, Sweden has had lower rates of antibiotic consumption and higher levels of public awareness about the appropriate use of antibiotics.

Given that the Swedish national plan, predated the EC Action Plan, it is unlikely that the EU plan is responsible for the progress made in Sweden; however EU recommendations and the EC Action Plan may have contributed to progress in Italy. This said, there are clear synergies between the EC Action Plan and the national plans. The data suggest that further can be done in terms of raising awareness among the public, particularly in Italy.