



Joint Action  
Antimicrobial Resistance and  
Healthcare-Associated Infections



Co-funded by the  
Health Programme  
of the European Union

# Work Package n° 7 : Appropriate use of antimicrobials in human and animals : WP leaders:

FHI (Norway) & AEMPS (Spain)



Norwegian Institute of Public Health



MINISTERIO  
DE SANIDAD, SERVICIOS SOCIALES  
E IGUALDAD

agencia española de  
medicamentos y  
productos sanitarios



WP objectives. By task



Work description, progress and achievements towards WP objectives



Timeline: Tasks, Deliverables & Milestones status



Stakeholders involvement



Risks encountered



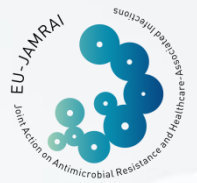
Next steps for Year 2

Tasks	Leader
7.1 - Guidelines, tools and implementation methods for antibiotic stewardship	FHI (Norway) / AEMPS (Spain)
7.2- Workshop involving all the registered partners to discuss models of implementation	FHI (Norway) / AEMPS (Spain)
7.3- Qualitative evaluation of the level of implementation and acceptance of antibiotic stewardship at different levels of healthcare and in animals. Identify success factors and barriers	FHI (Norway) / AEMPS (Spain)
7.4.1 -Surveillance of AMR and AMC in humans	AEMPS (Spain) and SAS (Spain)
7.4.2.Surveillance of AMR in animals	ANSES (France) / ISS (Italy)

# Work description, progress and achievements

# 7.1 - Guidelines, tools and implementation methods for antibiotic stewardship

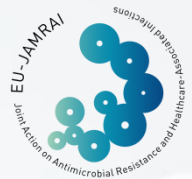
# 7.1 - Guidelines, tools and implementation methods for antibiotic stewardship



## Contributors

- Norwegian Directorate of Health;
- Conselleria de Salut del Govern de les Illes Balears (Spain);
- Fundación para la Formación e Investigación Sanitarias de la Región de Murcia (Spain);
- The National Medicines Institute (Poland),
- The Norwegian Veterinary Institute;
- University of Foggia (Italy);
- Dutch Ministry of Health, Welfare and
- Statens Serum Institut (Denmark);
- University of Medicine and Pharmacy "Iuliu Hatieganu" Cluj -Napoca (Romania);
- Robert Koch-Institute (Germany);
- Austrian Public Health Institute;
- Istituto Superiore Di Sanita (Italy);
- French Agency for Food, Environmental and Occupational Health & Safety (France);
- Croatian Institute of Public Health;
- The Hospital of Lithuanian University of Health Sciences Kauno Klinikos;
- National Public Health Centre (Lithuania).
- Federal Public Service Health, Food Chain Safety and Environment (Belgium)

# 7.1 - Guidelines, tools and implementation methods for antibiotic stewardship.



## Aims

### Human Health:

Update and expand the information available on the ECDC website to include information on existing guidelines, implementation methodology and work at different levels of the healthcare system.



### Animal Health:

Identify guidelines or tools that have been successful in controlling the consumption and resistance of antimicrobials in the animal population and what is needed next.



## Methods

- Survey
- Revision of available materials on the implementation of Antibiotic Stewardship Programmes
  
- Survey

# Calls to Action

[About us](#) [Our work](#) [Get Involved](#) [News](#) [Results](#) [Contact us](#)

## Questionnaire for associations, vets, farmers and other professionals related to animal health

This questionnaire is a working  
JAMRAI), co-funded by the Hez  
The Joint Action will enhance o

## Survey to map the Antibiotic Stewardship Programmes in primary care, long-term care and hospitals in Europe

As part of the WP7, Appropriate use of antimicrobials in human and animals, we are developing a task that implies to collect information resources to assist in planning and implementing Antibiotic Stewardship Programmes at all levels of healthcare and with different levels of available resources. Therefore, we have designed a survey to complement the information already available on this topic. The survey is currently being distributed to relevant respondents within the Member States and Associated Countries. In order to identify what has been effective and what hasn't worked, we need to know what has already been implemented; under what conditions this occurred and what the outcomes were.

Contact person for the survey:

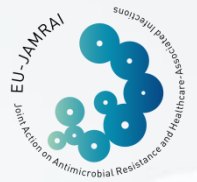
Live Storehagen (Norwegian Institute of Public Health – NIPH), Oliver Kacelnik (NIPH), Paloma Crespo Robledo (Spanish Agency of Medicines and Medical Devices- AEMPS) and Antonio López Navas (AEMPS)

Contact: [live.storehagen@fhi.no](mailto:live.storehagen@fhi.no) and [pcrespo\\_externo@aemps.es](mailto:pcrespo_externo@aemps.es)

Deadline: 20 July 2018



# 7.1 - Guidelines, tools and implementation methods for antibiotic stewardship

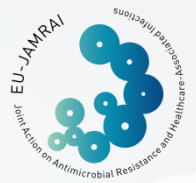


## Human health

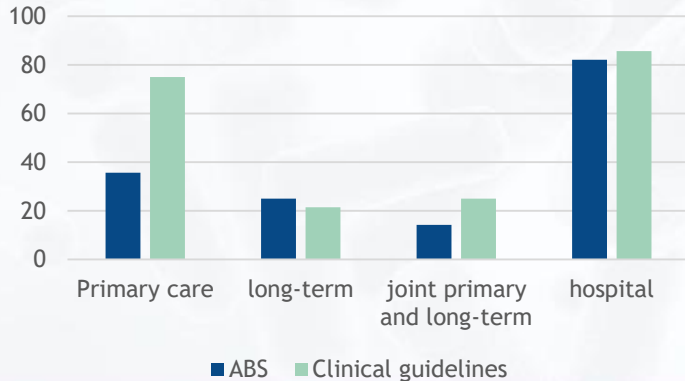
### ✓ Survey:

- **Description:**
  - Identification of respondents for the questionnaire
  - Development questionnaire and partner feedback
  - Utilisation of electronic tools (QuestBack)
  - Distribution of questionnaire, 14 May - 20 July 2018
- **Progress:** finished
- **Achivements:**
  - Presented and discussed in WS held yesterday (7/11/18).

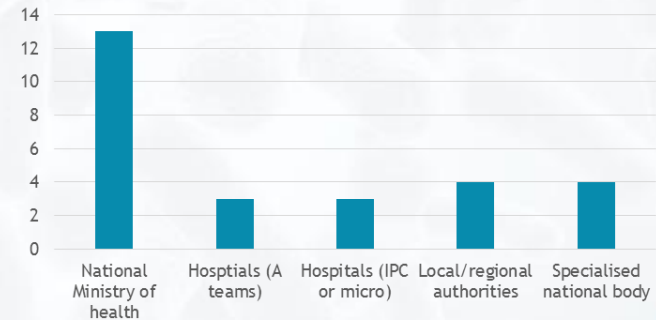
# Short summary of survey



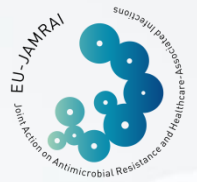
Total number of respondents:	95
Number of countries:	28
Number of respondents - hospitals	60
Number of respondents - primary care	56
Number of respondents - long-term care	22



Who is responsible for the content of programmes in hospitals



# 7.1 - Guidelines, tools and implementation methods for antibiotic stewardship



## Human health

- ✓ Revision of available materials on the implementation of Antibiotic Stewardship Programmes
  - Description:
    - Perform protocol for development of the task
    - Increase involvement from partners in this task: videoconference, minutes and presentation
    - Mapping
    - Layout and publication in website
  - Progress: finished
  - Achievements:
    - First deliverable release on EC portal: 7.1
    - Directory available and downloadable in [eu-jamrai.eu/results](http://eu-jamrai.eu/results)



# Guidelines, tools and implementation methods for antibiotic stewardship

Below is a collection of documents about implementation of antibiotic stewardship at different levels of care. Inside each list you can access the original documents. This is not an exhaustive list but is intended as a resource-bank. The links are correct at the time of publication but may change over time.

## LISTS BY LEVEL OF CARE

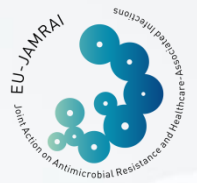


All levels of care (Hospital care, Community/primary care and Long-term facility care)



Hospital care

# 7.1 - Guidelines, tools and implementation methods for antibiotic stewardship



## Animal health

### ✓ Survey:

#### ▪ Description:

- Identification of respondents for the questionnaire
- Development questionnaire, partner stakeholder feedback
- Utilisation of electronic tools (Survey Monkey)
- Distribution of questionnaire: 16 March - 15 June 2018

#### ▪ Progress: finished

- Results: will need to be publish analysing the guidelines and opinions gathered





QUESTIONNAIRE FOR ASSOCIATIONS, VETS, FARMERS AND OTHER PROFESSIONALS RELATED TO ANIMAL HEALTH

This questionnaire is a working document prepared by [Yvonne Kockot](#) ("Appropriate use of antimicrobials in human and animals", as part of the [European Joint Action on Antimicrobial Resistance and Healthcare Associated Infections \(EU-JAMRAI\)](#), co-funded by the Health Programme of the European Union).

The Joint Action will enhance cooperation between Member States, the European Commission and its agencies and other international organisations and will enable each target group to contribute to address the issue of AMR and Healthcare Associated Infections.

Objective of this questionnaire: this consultation aims to collect the views of associations, vets, farmers and other professionals related to animal health on which guidelines or tools have been effective to decrease antimicrobials consumption and improve the prudent use in animals, and the gaps or needs in improvement.

The results will be summarise globally, so responses will remain anonymous and published within the EU-JAMRAI web and will be the base for a coming workshop on November 7th 2018, in Vienna, Austria.

**EU-JAMRAI**  
@EUJamrai

[Seguir](#)

#Questionnaire for associations, #vets, #farmers and other professionals related to #animal health that aims to collect data on which guidelines or tools have been effective to decrease #antimicrobials consumption and improve the prudent use in animals 🙋  
[eu-jamrai.eu/campaigns/](http://eu-jamrai.eu/campaigns/)



Appropriate use of antimicrobials in human and animals

This work has been tested to collate and organise into a usable database the current guidelines for antibiotic stewardship at all levels of the European health system and selected animal species, and to establish working tools to facilitate the implementation of antibiotic stewardship in all 11 Member States.

## Distribution of the survey

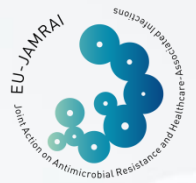
1)



2)



# Animal health Survey. Title: Questionnaire for Associations, vets, farmers and other professionals related to Animal Health

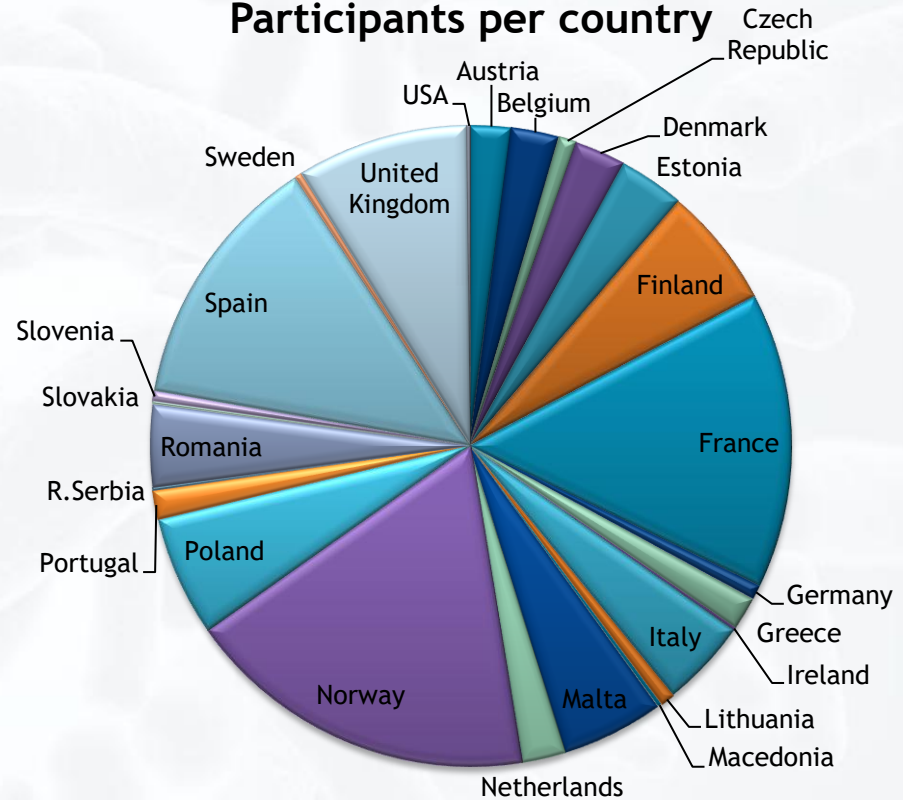


 **5 min** spent to fill

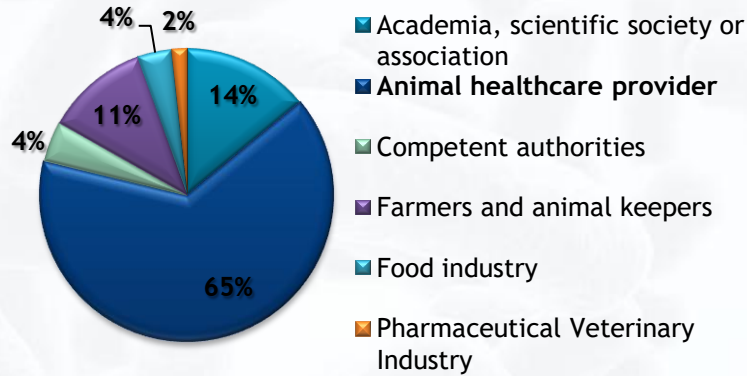
 **7 items**

 **522 responders**  
**26 countries**

## Participants per country




# Sector



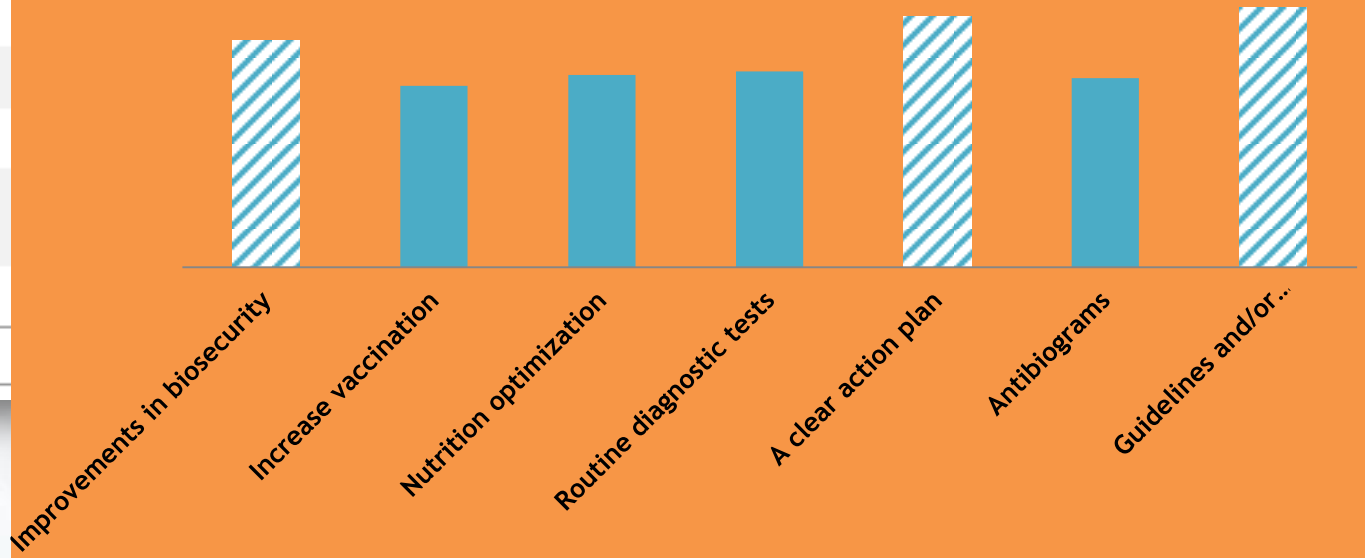
Sector/ Type of animal expertise	Production									Companion			
	Fish	Pigs	Poultry	Large Ruminant (milk)	Large Ruminant (meat)	Small ruminant (milk)	Small ruminant (meat)	Rabbit	Horse (meat)	Cat	Dog	Exotic	Horse
Academia, scientific society or association	11	42	35	43	35	27	27	13	9	24	27	13	18
Animal healthcare provider	14	82	55	136	118	52	78	37	30	246	251	83	87
Competent authorities	7	21	18	18	19	15	18	8	11	11	11	7	9
Farmers and animal keepers	4	15	13	16	27	5	30	3	4	7	9	0	8
Food industry	4	6	13	5	4	3	4	4	3	3	3	0	3
Pharmaceutical Veterinary Industry	2	4	4	5	4	3	3	2	3	6	5	1	3
<b>Total</b>	<b>42</b>	<b>171</b>	<b>138</b>	<b>224</b>	<b>208</b>	<b>105</b>	<b>161</b>	<b>67</b>	<b>60</b>	<b>298</b>	<b>307</b>	<b>104</b>	<b>129</b>



\* 5. Which of the following tools has been most useful to you to decrease antimicrobial consumption and improve the prudent use? 

	Strongly disagree	Disagree	Slightly disagree	Slightly agree	Agree	Strongly agree
Improvements in biosecurity	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Increase vaccination	<input type="radio"/>					
Nutrition optimization	<input type="radio"/>					
Routine diagnostic tests	<input type="radio"/>					
A clear action plan	<input type="radio"/>					
Antibiograms	<input type="radio"/>					
Guidelines and/or recommendations	<input type="radio"/>					
Other (please specify)	<input type="text"/>					

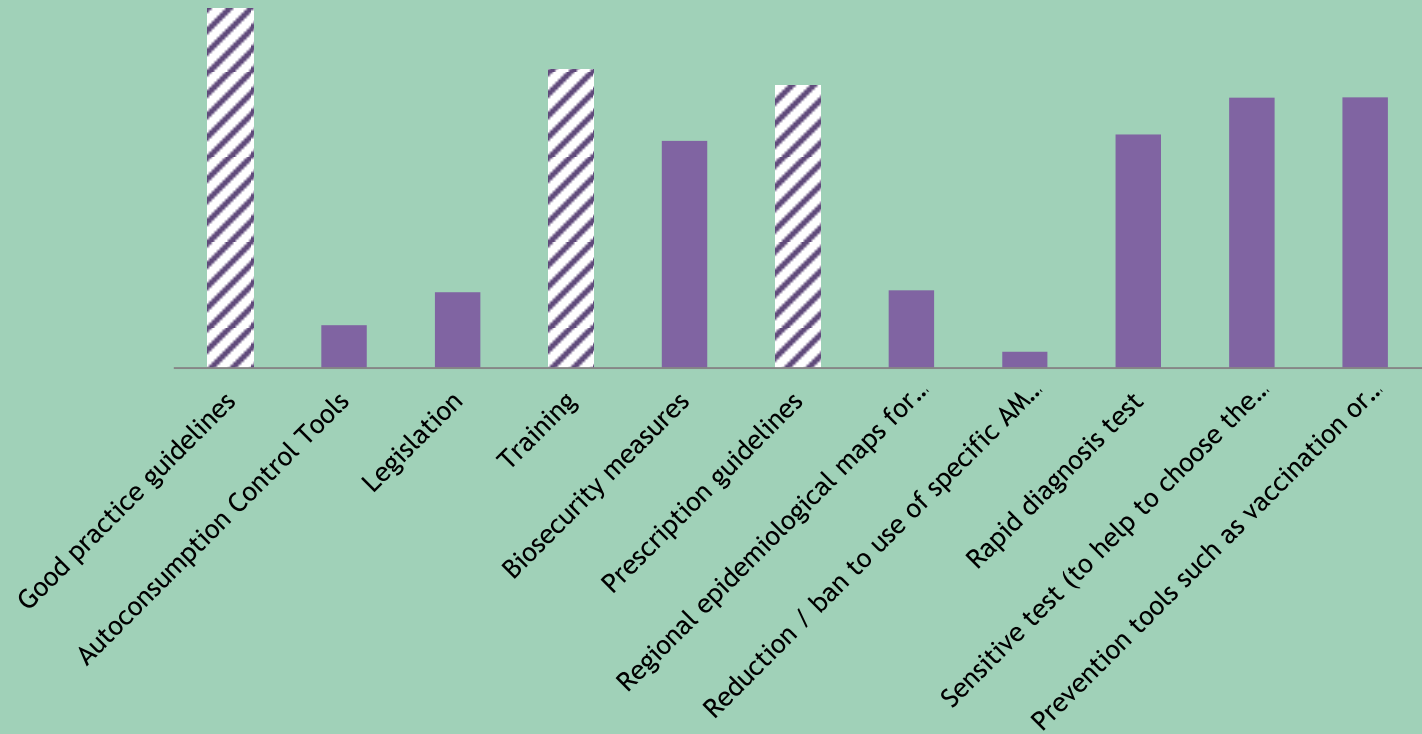
## Tools that have been useful to decrease AB consumption



\* 7. Specific measures needed to help to decrease antimicrobials consumption and to increase the prudent use. Indicate from 0 (strongly disagree) to 10 (strongly agree).

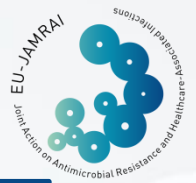
	1	2	3	4	5	6	7	8	9	10
Good practice guidelines	<input type="radio"/>	<input type="radio"/>								
Autoconsumption Control Tools	<input type="radio"/>	<input type="radio"/>								
Legislation	<input type="radio"/>	<input type="radio"/>								
Training	<input type="radio"/>	<input type="radio"/>								
Biosecurity measures	<input type="radio"/>	<input type="radio"/>								
Prescription guidelines	<input type="radio"/>	<input type="radio"/>								
Regional epidemiological maps for resistance of clinical pathogens	<input type="radio"/>	<input type="radio"/>								
Reduction / ban to use of specific AM on voluntary basis (for eg. Spanish Voluntary agreement to reduce colistin consumption to 5 mg/PCU)	<input type="radio"/>	<input type="radio"/>								
Rapid diagnosis test	<input type="radio"/>	<input type="radio"/>								
Sensitive test (to help to choose the best antimicrobial and avoid the use of CIAs)	<input type="radio"/>	<input type="radio"/>								
Prevention tools such as vaccination or optimised nutrition	<input type="radio"/>	<input type="radio"/>								

## Measures needed



## 7.2- Workshop involving all the registered partners to discuss models of implementation

## 7.2- Workshop involving all the registered partners to discuss models of implementation



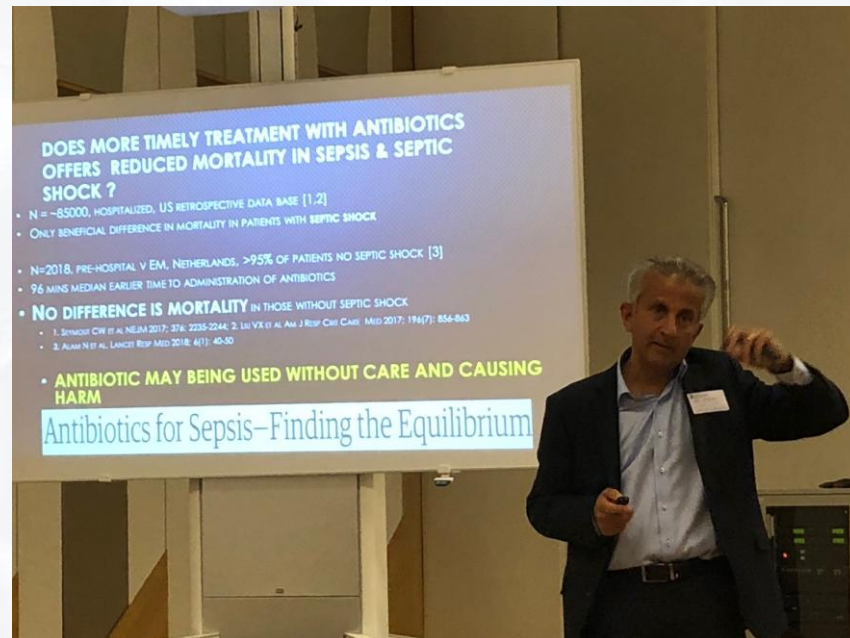
- Human health WS in Vienna, 7 Nov 2018
- Animal health WS was cancelled due to lack of participants.

### Aims

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- Discuss the findings of the JA survey on AS implementation
- Identify success factors in different settings
- Identify barriers to implementation
- Compile a report from the meeting to guide further interviews (task 7.3)
- Aid implementation of effective stewardship in Europe at all levels of health care

## 7.2- Workshop involving all the registered partners to discuss models of implementation



# 7.2- Workshop involving all the registered partners to discuss models of implementation



## Primary care - Barriers

- Motivation
- Public vs private sector tension /incentives
- LTCF under variable control
- LTCF many different doctors
- Poor sharing of information and data
- Very few with electronic prescribing
- Diagnostic uncertainty
- Lack of diagnosis
- Lack of education of university students (AMR and HCAIs)
- No role of the nurse in some countries
- Little of no role for community pharmacists
- Lack of regional perspective
- Ease of access to information
- Guidelines have no legal clout
- Over the counter prescribing
- Expectations from patients

## Primary care - Success factors

- Leadership
- Central institutional support – coordination HR, funding, expertise, skills sets
- Better awareness / education
- Uniform cross-systems guidelines / SOP / Software / Guidelines
- Education / Peer to peer programmes
- Indicators linked to incentive
- Good communication across primary care, LTCF and inter-professional groups
- Access to hospital expertise (microbiologist etc.)
- Small integrated systems
- Good quality data systems
- Public slogans and campaigns
- Electronic alert system

## Hospital care - Barriers

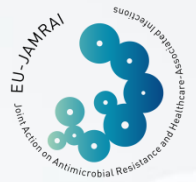
- AMS team looked as a threat
- Fatigue, time and finance / HR
- Changing / Flow of staff / continuity of care / 24 hours availability
- Lack of priority by leadership
- Access to ATBs and communication
- None-medical professionals
- Lack of accountability to targets
- AMR training across all healthcare professionals and public
- Involvement of different professional societies
- Integrating clinical informatics into clinical decision making process
- Dedicated resources for quality audit and feedback
- IT and connectivity

## Hospital care - Success factors

- Leadership
- AMS leader position of authority
- Broad clinical engagement
- Agreed guidelines / SOP and vision
- Training on stewardship on clinical meetings
- Joining a EU mentor programme
- Reputation / Senior leadership
- Accountability and responsibility
- Regular audit and feedback
- IT and connectivity
- Multidisciplinary
- Set and short-term and long term goals
- Accreditation
- Giving the pharmacist a review role
- Integration of the AMS and IPCT Team
- Good lab and epidemiology
- Clinically meaningful epidemiology data

**7.3. Qualitative evaluation of the level of implementation and acceptance of antibiotic stewardship at different levels of healthcare and in animals. Identify success factors and barriers**

## 7.3. Qualitative evaluation of the level of implementation and acceptance of antibiotic stewardship at different levels of healthcare and in animals. Identify success factors and barriers

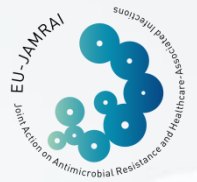


### Contributors

- Norwegian Directorate of Health;
- Austrian Public Health Institute;
- The National Institute of Public Health (Czech Republic)
- Statens Serum Institut (Denmark)
- Robert Koch-Institute (Germany)
- The Hospital of Lithuanian University of Health Sciences Kauno Klinikos;
- The National Medicines Institute(Poland)
- Servicio Andaluz de Salud (Spain)
- Dirección General de Ordenación Profesional y Regulación Sanitaria. Departamento de Salud de la Generalitat de Cataluña (Spain)
- Agence Nationale de la Sécurité Sanitaire de l'alimentation de l'Environnement et du travail (France)
- Folkhälsomyndigheten - Public Health Agency of Sweden
- Conselleria de Salut del Govern de les Illes Balears (Spain)
- National Center of Infectious and Parasitic Diseases(Bulgaria)
- Federal Public Service Health, Food Chain Safety and Environment (Belgium)



## 7.3. Qualitative evaluation of the level of implementation and acceptance of antibiotic stewardship at different levels of healthcare and in animals. Identify success factors and barriers



### Aims

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- To evaluate level of implementation of antimicrobial stewardship
  - To identify barriers and success factors for implementation of antimicrobial stewardship
  - to deliver a report of compliance of indicators of antibiotic use and resistance
- 

In animal health need to contact with  
**WP5**  
**(WP5.3 on supervision)**

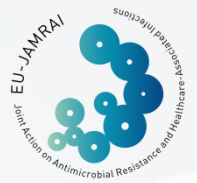
## 7.4. Develop and test near real time surveillance of antimicrobials and multidrug resistant bacteria



**7.4.1**  
Surveillance of  
AMC and AMR in  
humans

**7.4.2**  
Surveillance of AMR  
in clinical pathogens  
of animals

## 7.4.1- Surveillance of AMC and AMR in humans



### Aims

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- To develop a simple surveillance system of antibiotic use and resistance including feedback mechanisms for a **shorter time-lag**
- Select **basic indicators** for surveillance of antimicrobial **consumption**
- Select **basic indicators** for surveillance of **antimicrobial resistance**
- Reinforce participants surveillance systems to:
  - *provide data on a quarterly basis*
  - *from Hospitals and/or Primary Care*
  - *at Regional or National scope*

Task 7.4.1.Pilot Real time Surveillance in Humans

Elementos de esta carpeta    Personas en esta carpeta

Nombre ▲

- Data Collection Sheets
- Guideline



# Annex 1. How to calculate antibiotic pressure (consumption) indicators

## Task 7.4.1

March 2018  
v1

### Piloting Guideline v3

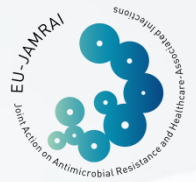
#### Task 7.4.1. Develop and test near real time surveillance of antimicrobials and multidrug resistant bacteria: surveillance

WP7 | Appropriate use of antimicrobials in humans and animals  
Leaders' acronym for Task 7.4.1 | SAS and AEMPS  
Editor(s) | SAS  
Reviewer(s) | AEMPS  
Dissemination level | All partners in this task  
Date | December 2017

v3 February 2018: definition of OBD included



## 7.4.1- Surveillance of AMC and AMR in humans



### Collaborators

#### 11 countries (19 institutions)

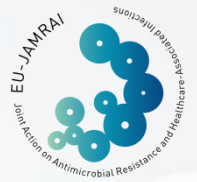
- Bulgaria (1)
- Croatia (1)
- Czech Republic (1)
- Denmark (1)
- Germany (1)
- Greece (2)
- Italy (2)
- Lithuania (2)
- Poland (1)
- Portugal (1)
- Spain (6)

Geo scope	n	Rate
National scope	7	37%
Regional scope	12	63%

Setting scope	n	Rate
Hospitals+Primary Care	7	37%
Hospitals only	8	42%
Primary Care only	4	21%

Indicators	n	Rate
Antibiotic use only	3	16%
Antimicrobial resistance only	1	5%
Both AMC+AMR	15	79%

## 7.4.1- Surveillance of AMC and AMR in humans



### Progress

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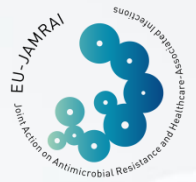
- Indicators for surveillance of AMC and AMR selected - Dec/2017
- Guidelines developed and disseminated - Dec/2017 (v.3 - Feb/2018)
- Database and website developed - Dec/2017
- Piloting 2018-2020 ongoing

### Preliminary results

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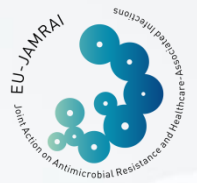
- 47% of the participants (9/19) have provided 1<sup>st</sup> and 2<sup>nd</sup> quarters 2018 data
  - 67% of the respondents (6/9) provided complete geographical scope data
  - 33% of the respondents (3/9) provided partial (a sample of) geographical scope data
- 53% of the participants (10/19) have not provided data yet

## 7.4.2 Surveillance of AMR in clinical pathogens of animals



- Start: April 2018
- General aim: Develop the surveillance of AMR in clinical bacterial pathogens of animals in a One Health approach.
- Contributors;
  - Sweden (SVA)
  - Norway (NVI)
  - Czech Republic (USKVBL)
  - Italy (ISS)
  - Spain (AEMPS & Ministry of Agriculture)
  - Greece (ESDY & Ministry of Agricultural development and Food)
  - France (ANSES)
  - Denmark (?)

## 7.4.2 Surveillance of AMR in clinical pathogens of animals

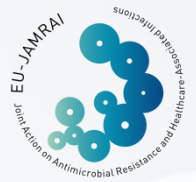


### Specific objectives

1. Assess the surveillance systems in place - if any - on AMR in animal pathogens in each country
  - Questionnaire to describe national systems and teleconference
  - Evaluation of the French system by the OASIS method
2. Identify the main gaps and appropriate strategies for AMR surveillance in diseased animals depending on the country specificities
  - Questionnaire and teleconferences

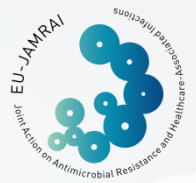


## 7.4.2 Surveillance of AMR in clinical pathogens of animals



3. Select appropriate AMR indicators in diseased animals in coherence with human. The choice of these indicators will allow correlating the animal data with the human data from subtask 7.4.1
  - Teleconference with human and veterinary partners
    - Adaptation of the preliminary list of target pathogens of public health relevance to monitor in the animal sector
    - Veterinary specific pathogens will also be included
    - Correlating animal and human data is not a priority
    - One health approach of clinical pathogen surveillance of animals:
      - « To decrease the public health impact of antimicrobial use in the veterinary sector, surveillance should be able to provide useful data for veterinarians to guide their prescriptions. »

## 7.4.2 Surveillance of AMR in clinical pathogens of animals

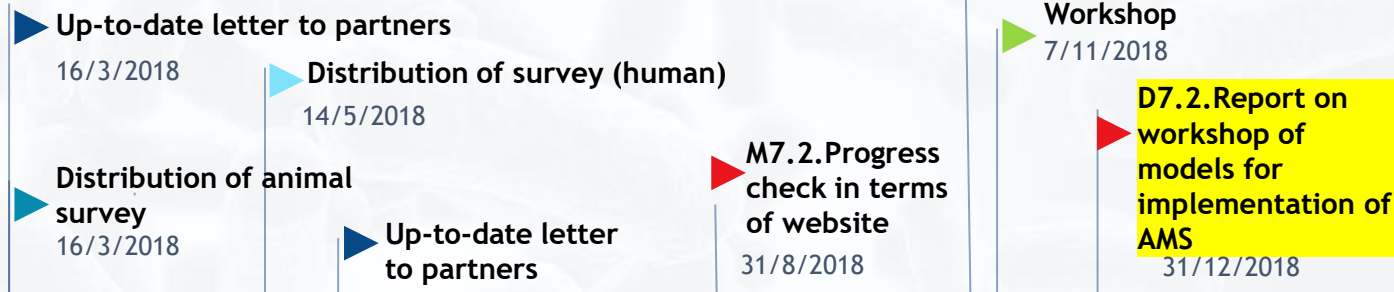


4. Identify laboratory and technical capacities in each country
5. Assess the opportunities to combine the national surveillance systems into a pilot EU network
6. Draw guidelines for uploading, validation and management of the data
7. Provide global and specific recommendations to EU to build a European network covering AMR surveillance in diseased animals, including interface with AMR surveillance in human medicine

Uncovered yet

# Timelines, stakeholder status and risk encountered

# Timeline: Tasks, Deliverables & Milestones status



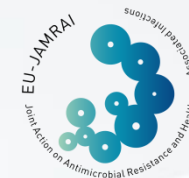
Today



## Meetings

N°	Meeting name	Type	Date	Aim	Expected attendees
1	ECDC-task 7.4.1	TELECONFERENCE	19/10/2017	Inform ECDC about the aim and development of real-time surveillance of AMR and AMC	ECDC, AEMPS, SAS,
2	WP7 - PGEU	TELECONFERENCE	28/02/2018	Present WP7 and discuss possible involvement of stakeholder	FHI, PGEU (Jaime Wilconson), AEMPS
3	Vet+i	Face to Face. Vet+i headquarter	13/02/2018	Develop survey of task and strategy of distribution	Santiago DE ANDRÉS JUÁREZ, María JAUREGUÍZAR REDONDO , Patricia FERNANDEZ MARTINEZ, Pablo Hervás Calle (VET+I) and Paloma Crespo and Sara Sacristan (AEMPS)
3	EPRUMA	TELECONFERENCE	27/02/2018	Organize distribution of the survey. Task 7.1 in animal health	Myriam Alcain(EPRUMA) and Paloma Crespo (AEMPS)
4	Beam Alliance	TELECONFERENCE	23/03/2018	Information about WP7	Live Storehagen (NIPH, WP7), Marie Petit, Christine Årdal (NIPH, WP9) and Marie-Cecilie Ploy (INSERM, WP9)

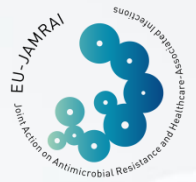
# Status of the Stakeholders



## Contact by email

Organisation	Acronym	Contribution
European Centre for Disease Prevention and Control	ECDC	Tasks 7.1 and 7.4.1
The Standing Committee of European Doctors	CPME	Human
DG Health and Food Safety - DG SANTE (former Food and Veterinary Office)	FVO	Animal
Union of European Veterinary Practitioners	EVPO	Animal. Task 7.1
European Platform for the Responsible Use of Medicines in Animals	EPRUMA	Animal. Task 7.1
European Union of General Practitioners	UEMO	Task 7.1
Pharmaceutical Group of the European Union (PGEU)	PGEU	Task 7.1 and 7.2
European Pharmaceutical Students Association	EPSA	Human
European Food Safety Agency	EFSA	Animal
Vet+i Foundation, Spanish Technology Platform for Animal Health	VET+I	Animal
Federation of European Microbiological Societies	FEMS	General
Federation of Veterinarians of Europe	FEV	Animal
MedTech Europe, the European trade association for the medical technology industries	MedTech Europe,	Human
BEAM Alliance	BEAM Alliance	-

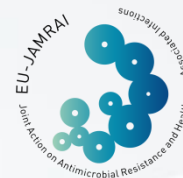
# Risks encountered



- Foreseen

Risk n°	Description of risk	Proposed risk mitigation measures	Comments/updates
1	Lack of acceptance and cooperation from ECDC	Early dialogue with ECDC	Communication with ECDC has been successful
2	Lack of infrastructure	Pilot only in countries that can deliver data	A lot of heterogeneous data. Difficult to analyse

# Risks encountered



## • Unforeseen

Risk n°	Description of risk	Proposed risk mitigation measures	Comments/updates
1	Exhaustion from receiving too many surveys	<p>Ask the ECDC Survey Committee to approve it.</p> <p>Make animal survey as short as possible and easy to access</p>	In the end, this was not a problem. Good sample of responders for each survey
2	Partners' commitment declines (when leaders request information or collaboration in contents approval)	<p>Identification of communication focal points for each partner.</p> <p>Fix deadlines</p> <p>WP7 leaders close follow-up.</p> <p>Coordinator support.</p>	<p>A <b><u>document with up-to-date information</u></b> about the tasks and deadlines was developed and sent to partners (also shared in Sharefile) 2 times during this year.</p> <p>Informal meeting at the ECCMID conference in Madrid.</p> <p>Videoconference for task 7.1 in June, all contributors</p>
3	The evaluation of Resapath was highly time-consuming (around 3 months)	Another methodology should be used for assessing other surveillance	



# Next steps

## Next steps for year 2

- *Analyse more in detail findings from animal survey.*
- *Develop task 7.3: first interviews in human health and contact with WP5 for animal health*
- *Task 7.4.1: first report of situation of the pilot study published in Website + first Milestone*
- *Task 7.4.2: the design of a preliminary European surveillance system should be finalized and under review from other European countries and relevant European institutions + first milestone*

THANK  
YOU  
Antonio López Navas  
(AEMPS)

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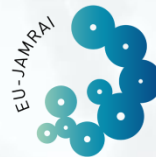
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Joint Action  
Antimicrobial Resistance and  
Healthcare-Associated Infections



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