ÉCOANTIBIO

RÉDUIRE L'UTILISATION DES ANTIBIOTIQUES VÉTÉRINAIRES

# ECOANTIBIO²

# THE FRENCH NATIONAL PLAN FOR THE REDUCTION OF THE RISKS OF ANTIMICROBIAL RESISTANCE IN VETERINARY MEDICINE

2017-2021

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RÉPUBLIQUE FRANÇAISE

MINISTÈRE
DE L'AGRICULTURE
ET DE
L'ALIMENTATION

**Combating antimicrobial resistance (AMR) is a major global public health challenge.**

A decline in the effectiveness of antibiotics has an impact on human health, animal health and the health of ecosystems, all of which are intertwined, forming a coherent whole. Which explains why **the combat against antimicrobial resistance is a challenge to be met with a "*One Health*" approach.**

**Where animal health is concerned, France's commitment to addressing that challenge is embodied in the ECOANTIBIO Plan.** This plan is fully aligned with the spirit of the international recommendations of the World Organisation for Animal Health (OIE), the World Health Organization (WHO) and the United Nations Organization for Food and Agriculture (FAO). It is also part of the agroecology project of the French Ministry of Agriculture and Food (MAA).

**The goals to be achieved are a long-term change in antibiotic prescription practices, improved living conditions for animals and access to effective and affordable health products other than antibiotics.**

**The first ECOANTIBIO Plan was conducted over the period 2012-2016.** It comprised 40 actions grouped under 5 strategic focuses with a 25% reduction target over five years for the exposure of animals to antibiotics. The law on the future of agriculture, food and forestry (LAAAF) added a target for reduction of 25% over three years (2014-2016) in the exposure of animals to critically important antibiotics, i.e. new generation fluoroquinolones and cephalosporins.

**The first ECOANTIBIO Plan has been a success. The majority of the measures in the programme have been implemented:** wide-ranging national communication campaigns have been launched ("*Antibiotics are not automatic for us either*" aimed at pet owners; "*Fed, housed, vaccinated*" targeting breeders), modules for the initial and continuous training of veterinarians and breeders have been designed and dispensed, numerous applied research studies have been given €7 million in funding over the period, and a large number of events (regional and national seminars, international conferences, interviews, press articles, steering and monitoring meetings, etc.) have provided highlights and leadership over the five years of the ECOANTIBIO Plan.

**Alongside the above voluntary, incentive measures, other legislative and regulatory action has been taken:** a prohibition on price discounts, reductions or rebates on sales of antibiotics, controls on the prescription and dispensing of critically important antibiotics, publication of a guide to good practice in the use of antibiotics in veterinary medicine and emphasis on this issue in the code of veterinary professional ethics.

**The first ECOANTIBIO Plan was a collective success. The targets are in the process of being achieved** (the figures for 2016 will be available in the second half of 2017). Over the first four years of the plan (2012-2015), animals' exposure to antibiotics declined by 20% and their exposure to critical antibiotics fell by 21% in just two years (2014-2015). In France, animal exposure to antibiotics is below the European average. A trend has also been observed for the retreat of antimicrobial resistance for most antibiotics and livestock sectors.

**The good results achieved in the first ECOANTIBIO Plan can be put down to the efforts and commitment of all those involved in both private and public sectors**, and especially the farmer/veterinarian tandem. They are also directly linked to the fact that veterinarians and farmers had already adopted the objectives of the ECOANTIBIO Plan years before its launch. This meant that the Plan supported initiatives and gained the benefit of progressive approaches that were already under way.

**In order to ensure that this positive dynamic continues into the future, it is necessary to design and implement a new plan. That is the purpose of ECOANTIBIO², which is tightly structured around 20 actions grouped around 4 strategic focuses.**

**ECOANTIBIO² focuses more than the first version on incentivisation rather than regulatory measures.** Communication and training play a major role, as do useful alternatives to antibiotics, improvements in preventive measures for infectious diseases and provision of the best tools for diagnosis, monitoring sales of antibiotics and tracking resistance to them. Given that the challenge is worldwide, international affirmation and advocacy of French positions on the prudent and responsible use of antibiotics have been given particular emphasis.

**Lastly, ECOANTIBIO² interfaces with other public policies, supplementing them where animals are concerned.** Specifically, ECOANTIBIO² fits in with measures driven by the Health Ministry (interministerial roadmap for AMR control, national alert plan on antibiotics in human medicine), those driven (jointly) by the Ministry of the Environment (national environmental health plan, micropollutant plan, the ecological transition roadmap) and those of the agroecology project promoted by the Ministry of Agriculture and Food.

## Period covered

From 2017 to 2021 inclusive; five complete years.

## The overall objectives of the Ecoantibio² Plan

are to evaluate the impacts of the first plan, to make full use of its results and to maintain the same dynamic, consolidating its achievements and pursuing the measures already under way.

## Ecoantibio²

is also aimed at maintaining over time the trend towards declining exposure of animals to antibiotics.

## The specific objectives on antimicrobial resistance are:

- to communicate and educate;
- to provide veterinarians and farmers with straightforward tools for self-evaluation of antibiotic prescription and use, along with more precise nationwide monitoring of the sales of antibiotics;
- to support livestock farmers, owners of animals and prescribers in changing their sanitary practices;
- to pursue studies into improved biosafety and livestock farm conditions;
- to promote the prevention of infectious disease, along with improved biosafety and livestock farm conditions;
- to improve diagnostic tools and encourage their use;
- to pursue research into alternatives to antibiotics;
- to encourage use of authorised alternative forms of treatment;
- to strengthen synergies with other public policies on public health, the environment and the livestock farming industry;
- to affirm and argue for core French positions internationally.

## The plan takes into account:

- international recommendations on prudent and calculated use of antibiotics as issued by the World Organisation for Animal Health (OIE), the World Health Organization (WHO) and the United Nations Organization for Food and Agriculture (FAO);
- the measures in the European Commission AMR action plan and the "joint scientific opinion" document issued by the European Food Safety Agency and the European Medicines Agency on action to reduce the need for the use of antibiotics in animal production in the European Union and their impacts on food safety;
- France's positions as put forward in discussions on the draft EU regulation on veterinary medicines and the draft EU regulation on medicated feed;
- the interministerial roadmap for AMR control: http://social-sante.gouv.fr/actualites/presse/communiques-de-presse/article/maitrise-de-l-antibioresistance-lancement-d-un-programme-interministeriel (*cf. Annex 1: concordance table for roadmap and ECOANTIBIO² actions*). Specifically, development of research measures is limited under ECOANTIBIO² because the interministerial roadmap already provides for them;
- the agroecology project of the Ministry of Agriculture and Food;
- the results of action under the Ecoantibio Plan 2012-2016 (cf. the CGAAER report: *The Ecoantibio Plan 2012-2016: evaluation and recommendations for the next plan* [in French] http://agriculture.gouv.fr/le-plan-ecoantibio-2012-2016-evaluation-recommandations-pour-le-plan-suivant);
- the results obtained by those involved in terms of the responsible use of antibiotics.

# FOCUS 1

## Developing PREVENTIVE MEASURES against infectious diseases and facilitating the use of ALTERNATIVE TREATMENTS

**A reduction in treatment by antibiotics is the outcome of disease prevention. This is dependent on very many factors open to modification by adopting different approaches that form the basis for good livestock farming practice, i.e.:**

- **A REDUCTION IN ENTRY AND SPREAD of pathogens by implementing biosafety measures on and between farms, as well as in veterinary care facilities;**
- **Improvement of animals' capacity to cope with the infections caused by such pathogens. Prevention can be facilitated by animal welfare and optimum immunity, based in particular on selective breeding, farm operational procedures, feed, vaccination, and so on.**

### ACTION 1 : Continuation of research, studies and development of methods for DISEASE PREVENTION AND ANIMAL HUSBANDRY MEASURES (non-medicine based solutions)

**OBJECTIVES**

- To limit exposure to pathogens by attention to livestock farming conditions and practices, the design of livestock housing and tools for easier management of livestock health.
- To improve and strengthen animals' capacity to withstand infectious diseases, based in particular on farming methods, livestock nutrition, selective breeding, etc.

### ACTION 2 : Establishment of references for ALTERNATIVE TREATMENTS enabling antibiotic prescription to be limited

**OBJECTIVES**

- To support research into alternative forms of treatment to antibiotics (phytotherapy, aromatherapy, phage therapy, etc.).
- To establish and disseminate references for authorised alternatives to antibiotics.
- To improve knowledge of the practical and regulatory conditions for the use of alternatives to antibiotics by seeking out references for their use and establishing their risk/benefit ratio.

### ACTION 3 : Encouragement of the use of VACCINATION to prevent the appearance of infectious diseases

**OBJECTIVES**

- To identify the infectious diseases that generate high levels of antibiotic use for their treatment and for which vaccines exist (including viral diseases for which the prescription of antibiotics is necessary in treating associated conditions).
- To conduct technical/economic studies into the impact of vaccination on those diseases (including the impact of vaccines for viral conditions).

### ACTION 4 : REDUCTION IN ENTRY AND SPREAD of pathogens

**OBJECTIVES**

- To organise mandatory sanitary inspections on farms, focused on infectious disease prevention, biosafety and combating antimicrobial resistance and used as a specific

opportunity for communicating, raising awareness and informing farmers.

- To place particular emphasis on knowledge and know-how in the area of infectious disease prevention, hygiene and biosafety in veterinary care facilities, on livestock farms and in the homes of pet owners, as well as highlighting farm conditions in conjunction with the other plans covered by the agroecology project.

- To reinforce support for livestock farmers based on synergy-based action by livestock farming experts and veterinarians, especially with regard to issues of livestock housing, farm operations, feed, husbandry and man management.

- To promote vaccination as a measure for infectious disease prevention, notably extending the “Vaccin’actor” communication campaign to other sectors.

# FOCUS 2

## COMMUNICATING AND EDUCATING **on the goals and issues of AMR control, rational antibiotic prescription and other ways of controlling infectious diseases**

### ACTION 5 : SHARED KNOWLEDGE Implementation of the "animal health" component of the national and interministerial COMMUNICATION CAMPAIGN to raise awareness of the need to counter antimicrobial resistance

**OBJECTIVES**

- To organise national communication campaigns to match each target audience and to hold Ecoantibio seminars in the French regions. There is a particular need to take societal expectations into account in communication.
- To pursue and reinforce AMR prevention and understanding of the risks of AMR.
- To send out a message on the need to preserve the effectiveness of antibiotics, to restore the positive image of the calculated use of antibiotics in treatment and to remind audiences of the importance of veterinarians' clinical approach.
- To make full use of voluntary initiatives by sector professionals for combating antimicrobial resistance. To provide communication kits/toolboxes to match the target audiences.
- To provide communication kits/toolboxes to match the target audiences.

**TARGET AUDIENCES**

Practising and future veterinarians, practising and future veterinary health auxiliaries, practising and future pharmacists, present and future livestock farmers, practising and future animal husbandry technicians, current and future pet owners (including schools, schoolchildren and high school students), representatives of agrifood companies, food distribution outlets (supermarkets) and consumers (in conjunction with the French national committee on food (CNA)).

### ACTION 6 : Enrichment of the INTERMINISTERIAL WEB PORTAL for public and industry AMR information and awareness by including information specific to animals and Ecoantibio

**OBJECTIVES**

- To provide animal health data to build a comprehensive website aligned with the "One Health" approach.
- To make use of the results of research to raise the level of knowledge.
- To disseminate that knowledge and the basics of AMR surveillance.

**CONTENT**

Communication materials, overview reports and summaries of Ecoantibio measures will be provided in French to the website administrator for inclusion. Reference documents and executive summaries will be available in English.
Reports from scientific studies, teaching and training materials, good practice guides, industry charters and lists of recommendations may be provided for inclusion on the website.
Links will also be provided to other institutional and industry websites: ANSES (reports by the national agency for veterinary medicines and reports from the Résapath network), OIE, WHO, FAO and the European Union, the websites of the network of agricultural technical institutes (ACTA) and individual agricultural technical institutes, and websites run by veterinarians' and farmers' organisations.

## ACTION 7 : Greater emphasis on antimicrobial resistance, rational prescription of antibiotics and promotion of other methods for controlling infectious diseases in INITIAL AND CONTINUOUS TRAINING for present and future sector professionals

**OBJECTIVES**

- Performance of studies to improve knowledge of evolving antimicrobial resistance.
- Ensuring and maintaining a high level of knowledge of the risks of AMR and the levers for reduction of the risks of AMR emergence in veterinary medicine, in addition to taking the environmental aspect into account.
- Roll-out of existing modules for face-to-face training, designing new modules and development of others suitable for distance learning.

**TARGET AUDIENCES**

Practising and future veterinarians, practising and future veterinary health auxiliaries, practising and future pharmacists, present and future livestock farmers or present and future livestock farming technicians/advisers. Training for farmers and farm employees will notably make use of the fund for the continuous training of non-salaried agricultural workers (Vivea fund) and the fund for vocational education of agricultural employees (FAFSEA fund).

## ACTION 8 : EVALUATION of the measures implemented under Ecoantibio, leading to wide-ranging communication to stakeholders

**OBJECTIVES**

- To perform sanitary, social, environmental and economic/financial impact studies for the measures applied under Ecoantibio 1 & 2. In particular, it will be necessary to carry out impact studies for the regulatory measures and technical/economic impact studies on livestock farms.
- To obtain comparative studies of AMR control measures in other livestock farming countries.
- To ensure widespread dissemination of the Ecoantibio Plan to stakeholders: impact studies, the aforementioned comparative studies and reports on the results of official controls relating to the application of regulations enforced under Ecoantibio 1, in addition to AMR surveillance measures (Action 14).
- To carry out a study of the value chain for the pricing of antibiotics in France and other countries.
- To make use of the experience acquired under the first Ecoantibio Plan, highlighting the action undertaken and the results obtained.

# AXE 3

## SHARED TOOLS. **Providing tools for the evaluation and monitoring of antibiotic use and tools for prescribing and administering antibiotics responsibly**

### ACTION 9 : Building, maintaining and disseminating SELF-EVALUATION TOOLS for veterinarians and livestock farmers

**OBJECTIVES**

- To allow veterinarians to evaluate their prescription of antibiotics on a voluntary basis and to enable farmers to assess how they are administering prescribed antibiotics and identify areas where they have room for improvement, encouraging them to make changes to their practices.

- To allow farmers to evaluate, along with livestock farming technicians and veterinarians, the farming and economic impact of reduced antibiotic use and adoption of other ways of preventing and controlling infectious diseases (application of biosafety measures, changes in farming methods, etc.).

- To define reference indicators for antibiotic prescription and administration.
  To set up representative panels of veterinarians, pharmacists and farmers to identify possible biases and deviations affecting the scheme for mandatory declaration of antibiotic sales with a view to improving data collection and analysis.

### ACTION 10 : Building DATABASES OF DECLARATIONS of antibiotic sales and systems for making use of the data

**OBJECTIVES**

- To finalise the regulatory system for the declaration of antibiotic sales.

- To finalise the operational arrangements for collecting declarations.

- To finalise the operational arrangements for the analysis, exploitation and use of declarations..

### ACTION 11 : Drafting, updating and circulating GUIDES TO GOOD PRACTICE

**OBJECTIVES**

- To pursue the approach adopted for drafting, updating and circulating guides/datasheets on antibiotic treatment practices aimed at veterinarians and designed to match the various sectors and priority diseases. Specifically, these guides/datasheets will refer to the importance of reducing preventive use of antibiotics and define particular circumstances in which antibiotic prophylaxis may be justified (detailed by animal species, production stage and disease).

- To draft and circulate guides/datasheets on good sampling practice.

- To draft and circulate guides/datasheets on good analytical practice in veterinary care facilities.

## ACTION 12 : Controlling the use of COLISTIN in veterinary medicine; developing tools for its rational use

**OBJECTIVES**

- To reduce exposure to colistin by 50% over 5 years on cattle, pig and poultry farms (indicator: ALEA, year of reference: average ALEA for 2014/2015).
- To step up control and surveillance of the use of colistin and evolving resistance to it, defining relevant tracking indicators and using monitoring methods and indicators shared with human medicine.
- To pursue scientific research for understanding the mechanisms and transmission of resistance associated with colistin.
- To develop rapid, reliable diagnostic tests, defining relevant indicators for tracking this effort.

## ACTION 13 : Development of the network of REGIONAL REFERENT VETERINARIANS for antibiotic treatment

**OBJECTIVE**

- Based on an evaluation of the pilot scheme for a network of regional referent veterinarians set up in only four regions, to extend this resource to all French regions, putting all necessary conditions in place for its long-term viability.

## ACTION 14 : Surveillance of evolving ANTIMICROBIAL RESISTANCE

**OBJECTIVES**

- To provide the means for the development of the *Résapath* network for wider-ranging surveillance of antimicrobial resistance (other laboratories, other techniques).
- To intensify distribution of resistance data to stakeholders.
- To pursue the development, improvement and validation of relevant AMR markers (bacteriological or molecular) in terrestrial and aquatic environments.
- To use the above markers to assess the impact of practices and changes in practices on the spread and persistence of AMR via the food chain, contact with animals or the environment.
- To implement the official national surveillance plan for resistance in zoonotic and indicator bacteria in the animal health sphere. EU legislation provides for this plan (Decision 2013/652/EU – see details in Annex 2).

**TARGET FIGURE FOR AMR SURVEILLANCE PLANS**

Observation of a downward trend for all AMR markers and, specifically, a reduction of 50% over 5 years in *E. Coli* ESBL in poultry samples (broilers) at distribution stage.

## ACTION 15 : Improvement of biological TOOLS for veterinary DIAGNOSTICS

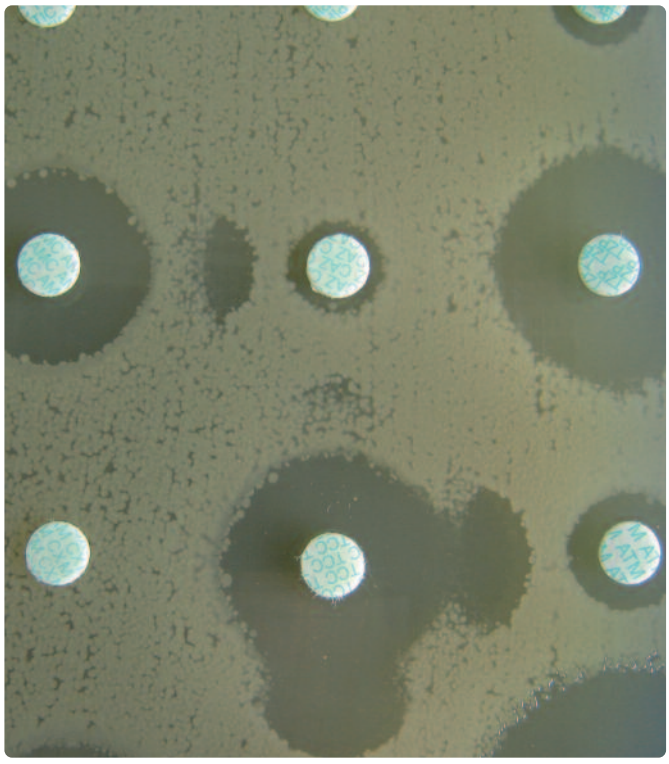
**OBJECTIVES**

- To establish a list of rapid diagnostic orientation tests on the respective markets (detailing their specific features, sensitivity and predictive value). To support the development of a broader range of effective tests.

- To support the development of a wide range of tests for microbial sensitivity to antibiotics. To evaluate available tests to add to the list laid down by regulatory limitations on the use of critically important antibiotics and, where necessary, to encourage development of new techniques.

- To develop measures to encourage veterinarians to make more use of the above tests (rapid tests for diagnostic identification and orientation, validated sensitivity tests).

- To advocate to EU institutions the need for a regulatory framework applicable to biological diagnostic systems and to add to national legislation in this area.



## ACTION 16 : Maintenance of the THERAPEUTIC OFFERING OF ANTIBIOTICS

**OBJECTIVES**

- To carry out field studies in individual sectors to measure differentials between quantities of injectable antibiotics dispensed and the quantities required for the treatment prescribed. Based on these studies, to put forward measures such as pricing policies and packaging changes to make it possible to reduce observed differentials where applicable.

- To raise manufacturers' awareness of the need to develop suitable packaging.

- To examine the regulatory framework in favour of fractional dispensing of antibiotics in coherence with future EU regulations on veterinary medicines. To authorise fractional dispensing (which requires a regulatory basis).

## ACTION 17 : Evaluation of the use of antibiotics when they are PRESCRIBED WITHOUT A SYSTEMATIC CLINICAL EXAMINATION

**OBJECTIVES**

- To assess the current situation with regard to the use of antibiotics in the absence of a systematic clinical examination.

- To perform an impact study for the recommendations put forward in the CGAAER/IGAS report: http://agriculture.gouv.fr/la-prescription-veterinaire-de-medicaments-hors-examen-clinique [in French].

- Based on a stakeholder consultation phase, to examine whether it is appropriate and desirable to make changes to the conditions governing the prescription of antibiotics in treatment protocols. The impact study and the consultation phase will take into account the specific features of individual sectors.

- Where applicable, to make changes to the regulatory framework.

# FOCUS 4

## SHARING THE EFFORT. **Ensuring satisfactory application of the rules for correct use at national level and encouraging their adoption across the EU and internationally.**

**France must foster wider awareness of the efforts made and the results obtained. Combating AMR is a major global public health challenge, and France therefore expects that all concerned will make comparable efforts. Ecoantibio must not be perceived as a cause of distortion of competition in relation to countries less committed than France. This European and international focus is part of a more broadly-based transverse effort driven by the interministerial roadmap for AMR control supported by all the government ministries involved (including the Ministry of Foreign Affairs and International Development).**
**In addition, there is also a need to ensure that the rules are known and applied in France.**

### ACTION 18 : VERIFICATION of adherence to the rules for prescribing, dispensing and administering antibiotics - COMBATING fraud and trafficking

**OBJECTIVES**

- To remind veterinarians of the rules for prescribing, dispensing and administering antibiotics.
- To remind pharmacists of the rules for dispensing antibiotics.
- To remind livestock farmers of the regulatory conditions governing access to antibiotics.
- To carry out inspections to ensure that the above rules are properly applied.
- To intensify vigilance on the uses of antibiotics for protection of imported plants.

### ACTION 19 : AFFIRMATION AND ADVOCACY OF THE POSITIONS of the French authorities at EUROPEAN level for their inclusion in EU legislation

The aim is to affirm and advocate actively to EU bodies French policy on combating AMR in animal health and, specifically, the following core positions:

- The need to include in EU legislation the principle whereby imported animals and foodstuffs derived from animals must be governed by the same restrictions as those imposed in the European Union for the control of AMR.
- The need to include in EU legislation the ban on prescription of antibiotics for preventive purposes irrespective of the route of administration or the species, other than in special cases.
- Support for provisions that foster/protect innovation (including data protection for existing market authorisations (AMM) and development of older market authorisations), specifically using a regulatory framework suited to antibiotics, vaccines, diagnostic tools and alternative treatments (plant-based medicine in particular) and the harmonisation of the use of autovaccines.
- The need to ban under EU legislation Internet sales of veterinary medicines requiring prescription in the Member State of the purchaser.
- The need to include in EU legislation a set of provisions to control the fractional dispensing of veterinary antibiotics (not including injectables).
- The need to include in EU legislation a provision for the specific labelling of veterinary antibiotics.

## ACTION 20 : AFFIRMATION AND ADVOCACY OF THE POSITIONS OF THE FRENCH AUTHORITIES AT INTERNATIONAL LEVEL for their inclusion in international recommendations

The aim is to affirm and advocate actively in international forums French policy on combating AMR in animal health and, specifically, the following core positions:

- The need for each country to put in place a national action plan for the control of AMR along the lines of WHO, OIE and FAO recommendations.

- The need for a universal ban on the prescription of antibiotics as growth promoters (banned in the European Union since 2006).

To achieve these goals, France will adopt a position enabling it to contribute its experience and technical support to cooperation programmes with major countries or regions and provide its expertise to the OIE, FAO and WHO.

# ANNEXE 1
# CONCORDANCE TABLE FOR INTERMINISTERIAL AMR CONTROL ROADMAP ACTIONS AND ECOANTIBIO² ACTIONS

| **Interministerial roadmap for the control of antimicrobial resistance** http://social-sante.gouv.fr/IMG/pdf/feuille_de_route_antibioresistance_nov_2016.pdf | **ECOANTIBIO²** |
|---|---|
| **1.** Implementation of the first major intersectoral communication campaign as part of a multiyear programme of communication centred on antimicrobial resistance, its determinants and its consequences. | **A5.** Implementation of the "animal health" component of the national and interministerial communication campaign to raise awareness of the need to counter antimicrobial resistance. |
| **2.** More effective health education for the general public, and in particular young people and owners of animals, using educational programmes and the media. | **A5.** Implementation of the "animal health" component of the national and interministerial communication campaign to raise awareness of the need to counter antimicrobial resistance. |
| **3.** Creation of a unified interministerial web portal – or a web space on *social-sante.gouv.fr* – for public and industry AMR information and awareness, enabling all concerned to take action to control AMR. | **A6.** Enrichment of the interministerial web portal for public and industry AMR information and awareness by including information specific to animals and Ecoantibio. |
| **4.** Greater emphasis on antimicrobial resistance in initial training for health professionals, especially pharmacists, midwives, nurses, dentists and veterinarians. Implementation and prioritisation of the monitoring of continuous vocational training courses dedicated to the correct use of antibiotics in human healthcare. Reinforcement of continuous vocational education in animal health for veterinarians and livestock farming professionals. | **A7.** Greater emphasis on antimicrobial resistance, rational prescription of antibiotics and promotion of other methods for controlling infectious diseases in initial and continuous training for present and future sector professionals. |
| **5.** Roll-out of regional support organisations for antibiotic treatment serving health professionals in independent practice, hospitals and medico-social facilities in each region, making use of the regional networks of referents for antibiotic treatment and organisations for vigilance and support, most notably the regional centres for the prevention of healthcare-related infections (CPIAS). In animal health, a broadening of the network of regional referents in veterinary medicine with guarantees for its funding. | **A13.** Development of the network of regional referent veterinarians for antibiotic treatment. |
| **6.** Ensuring the distribution, promotion and availability for all prescribers of tools for the correct use of antibiotics. | **A11.** Drafting, updating and circulating guides to good practice. |
| **7.** Encouragement of the use of rapid diagnostic tests that help control AMR in both independent medical practice and hospitals. In the veterinary context, development of, and access to diagnostic kits and rapid diagnostic tests to determine bacterial sensitivity to antibiotics. | **A15.** Improvement of biological tools for veterinary diagnostics. |

| Interministerial roadmap for the control of antimicrobial resistance | ECOANTIBIO[2] |
|---|---|
| **8.** In human medicine, use of regulations to restrict prescription duration to a maximum of seven days for common infections. | |
| **9.** In human medicine, creation of a prescription dedicated to antibiotics, linked to the use of RDTs for infections of the upper respiratory tract, in prescription assistance software or via remote services developed by CNAMTS (national sickness insurance for salaried workers). | |
| **10.** Restriction of the list of tested antibiotics provided to prescribers for antibiograms performed in cases of urinary infection in order to limit prescription of so-called "critical" antibiotics in human healthcare. | |
| **11.** Tracking developments with regard to the target set in the medical agreement on limiting levels of prescription of "critical" antibiotics associated with the scheme for remuneration linked to meeting public health targets (ROSP) plus action taken with regard to "off-target" prescribers in order to reduce unjustified prescription.<br>In veterinary medicine, efforts to ensure satisfactory application of the decree and official order of April 2016 controlling the prescribing and dispensing of "critical" antibiotics. | **A18.** Verification of adherence to the rules for prescribing, dispensing and administering antibiotics – combating fraud and trafficking. |
| **12.** In human medicine, modification of packaging for orally administered and injectable medicines to match recommended minimum treatment periods; extension of trials of the dispensing of antibiotics in discrete units.<br>In veterinary medicine, prioritisation of the development of packaging modifications by manufacturers and proposal of a regulatory framework to encourage the fractional dispensing of antibiotics. | **A16.** Maintenance of the therapeutic offering of antibiotics. |
| **13.** Addition of a warning notice for patients and livestock farmers on the packaging of antibiotics. | **A19.** Affirmation and advocacy of the positions of the French authorities at European level for their inclusion in EU legislation. |
| **14.** In veterinary medicine, promotion of biosafety measures on livestock farms with reinforcement and development of programmes to improve farm conditions. | **A1.** Continuation of research, studies and development of methods for disease prevention and animal husbandry measures (non-medicine based solutions).<br>**A4.** Reduction in entry and spread of pathogens.<br>**A7.** Greater emphasis on antimicrobial resistance, rational prescription of antibiotics and promotion of other methods for controlling infectious diseases in initial and continuous training for present and future sector professionals. |
| **15.** In human medicine, use of the monitoring performed by the body coordinating the interministerial intersectoral plan (cf. Action 36) to verify observance of recommendations and achievement of the objectives defined under Focus 2 of the programme for prevention of healthcare-related infections (Propias 2015). | |

| Interministerial roadmap for the control of antimicrobial resistance | ECOANTIBIO[2] |
|---|---|
| **16.** Promotion of preventive vaccination for infections notably based on the communication campaign (cf. Action 1) and national consultation process currently under way. | **A3.** Encouragement of the use of vaccination to prevent the appearance of infectious diseases.<br>**A4.** Reduction in entry and spread of pathogens.<br>**A5.** Implementation of the "animal health" component of the national and interministerial communication campaign to raise awareness of the need to counter antimicrobial resistance. |
| **17.** Implementation of a system of strategic guidance for AMR research. | |
| **18.** Creation of a common intersectoral and interactive web portal identifying public and private sector actors, networks and observatories and research projects connected with AMR. | |
| **19.** Reinforcement and interconnection of research and surveillance networks and observatories. | **A14.** Surveillance of evolving antimicrobial resistance. |
| **20.** Stepped-up research and innovation efforts with the implementation of a national strategic plan for AMR research, coordinated scientific programming and funding, in line with European initiatives. | |
| **21.** Support for, and acceleration of transfers from the academic world to industry in the AMR domain. | |
| **22.** Joint implementation (academics/manufacturers) of regular exchange programmes with the organisation of "academia/enterprise encounters" extended from the human and animal health domains to include agriculture, food and the environment. | |
| **23.** Formation of a technical committee on antimicrobial resistance (CTA) tasked with issuing judgements on the usefulness of products capable of contributing to AMR control. | |
| **24.** Protection of the effectiveness of the therapeutic arsenal by adopting incentive measures aimed at keeping older antibiotics on the market. | **A16.** Maintenance of the therapeutic offering of antibiotics.<br>**A19.** Affirmation and advocacy of the positions of the French authorities at European level for their inclusion in EU legislation. |
| **25.** Ensuring that innovative products and technologies for AMR control benefit from a series of regulatory and economic incentive mechanisms. | **A19.** Affirmation and advocacy of the positions of the French authorities at European level for their inclusion in EU legislation. |
| **26.** Improvements in the use of in vitro diagnostic tools for AMR control based on improved funding for the relevant technologies. | |

| Interministerial roadmap for the control of antimicrobial resistance | ECOANTIBIO[2] |
|---|---|
| **27.** Annual communication to the general public on consumption and resistance data, adopting a "*One Health*" approach and prioritising shared indicators. | **A5.** Implementation of the "animal health" component of the national and interministerial communication campaign to raise awareness of the need to counter antimicrobial resistance.<br>**A6.** Enrichment of the interministerial web portal for public and industry AMR information and awareness by including information specific to animals and Ecoantibio. |
| **28.** Making the surveillance map of antimicrobial resistance and consumption in human healthcare clearer and more effective in addition to using vigilance and support networks to generate local indicators for consumption and resistance data directed at human healthcare professionals.<br>*(NB: although animal health is not mentioned in the heading, this action does in fact incorporate a veterinary component).* | **A9.** Building, maintaining and disseminating self-evaluation tools for veterinarians and livestock farmers.<br>**A14.** Surveillance of evolving antimicrobial resistance. |
| **29.** Standardisation and opening up of laboratory data on antimicrobial resistance. | |
| **30.** Development of new indicators (general and specific) at European and national levels with a view to measuring antimicrobial resistance and human, animal and environmental exposure to antibiotics. | |
| **31.** Examination of the cost of bacterial resistance to antibiotics in human and veterinary medicine in order to design appropriate economic indicators. | **A8.** Evaluation of the measures implemented under Ecoantibio, leading to wide-ranging communication to stakeholders. |
| **32.**Organisation of a "Hackathon" dedicated to the use of human healthcare antibiotic consumption databases. | |
| **33.** Merging overviews of the various plans in order to define themes common to the various sectors, and bringing them together to form a holistic, coordinated interministerial action plan for the control of antimicrobial resistance. | |
| **34.** Roll-out of the coordinated AMR control programme in the form of a set of measures suited to the issues specific to each sector (human or animal health, environment), grouped together under their individual sector identities and tracked by the ministerial departments concerned. | |
| **35.** Creation of a high-level interministeral body dedicated to intersectoral coordination for AMR control and tracking the measures implemented by each of the ministerial departments concerned, seeking to ensure their consistency with European and international measures. | |

| Interministerial roadmap for the control of antimicrobial resistance | ECOANTIBIO[2] |
|---|---|
| **36.** Maintenance of an updated shared diary of European and international events relating to AMR control in order to strengthen France's role in the most important initiatives; merging core interministerial positions on AMR control and advocating them at EU level and internationally. | |
| **37.** Advocacy at EU level of a proposal for the creation of a specific framework dedicated to the development of products capable of contributing to AMR control. | |
| **38.** Promotion at international level, with the help of the European Union, of the adoption of measures to control correct use of antibiotics, and in particular a ban on the use of antibiotics as livestock growth promoters. | **A20.** Affirmation and advocacy of the positions of the French authorities at international level to ensure their inclusion in international recommendations. |
| **39.** Promotion at EU level of the development of coordinated surveillance of the main pathogens encountered in veterinary medicine. | **A19.** Affirmation and advocacy of the positions of the French authorities at European level for their inclusion in EU legislation. |
| **40.** Development of surveillance of the emergence and spread of anti microbial resistance (human, animal and environmental) in low-income countries, in collaboration with the WHO and OIE and making use of existing networks. | **A20.** Affirmation and advocacy of the positions of the French authorities at international level to ensure their inclusion in international recommendations. |
| | **A2.** Establishment of references for alternative treatments enabling antibiotic prescription to be limited. |
| | **A10.** Building databases of declarations of antibiotic sales and systems for making use of the data. |
| | **A12.** Controlling the use of colistin in veterinary medicine; development of tools for its rational use. |
| | **A17.** Evaluation of the use of antibiotics when they are prescribed without a systematic clinical examination. |

# ANNEXE 2

# OFFICIAL NATIONAL PLAN FOR SURVEILLANCE OF THE RESISTANCE OF ZOONOTIC OR INDICATOR BACTERIA IN ANIMAL HEALTH

This plan, for which EU legislation provides (cf. decision 2013/652/EU), comprises the following:

## AMR surveillance plans (years 2017 and 2019)

Surveillance plan for detection of indicator *E.coli* and ESBL, AmpC or carbapenemase-producing *E.coli* resistant to antimicrobials in the caecal contents of fattening pigs (target: 300 samples/year) and bovine animals under one year old (target: 300 samples/year).

Surveillance plan for detection of contamination of the carcasses of fattening pigs and the carcasses of bovine animals under one year old by *Salmonella spp* at slaughter and antimicrobial resistance in the strains isolated (target: isolation of 170 *Salmonella* strains from fattening pig carcasses and 170 *Salmonella* strains from carcasses of bovine animals under one year old for characterisation of their sensitivity to antibiotics).

Surveillance plan for detection at distribution stage of contamination of fresh **pigmeat** by *Escherichia coli* producing extended-spectrum ß-lactamases, AmpC cephalosporinases or carbapenemases (target: 330 samples/year of fresh pigmeat in distribution).

Surveillance plan for detection at distribution stage of contamination of fresh **bovine meat** by *Escherichia coli* producing extended-spectrum ß-lactamases, AmpC cephalosporinases or carbapenemases (target: 330 samples/year of fresh bovine meat in distribution).

## AMR surveillance plans (years 2018 and 2020)

Surveillance plan for detection of indicator *E.coli, Campylobacter* and ESBL, AmpC or carbapenemase-producing *E.coli* in the caecal contents of meat chicken and turkeys (target: 650 caeca/year for meat chicken and 650 caeca/year for meat turkeys).

Surveillance plan for detection at slaughter of contamination of fresh **poultry** meat by *Salmonella spp.* and antimicrobial resistance in the strains isolated (target: isolation of 170 *Salmonella* strains from fresh poultry meat for characterisation of their sensitivity to antibiotics).

Surveillance plan for detection at distribution stage of contamination of fresh **broiler chicken** meat by *Escherichia coli* producing extended-spectrum ß-lactamases, AmpC cephalosporinases or carbapenemases (target: 330 samples/year of fresh broiler chicken meat taken at distribution stage).

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MAY 2017