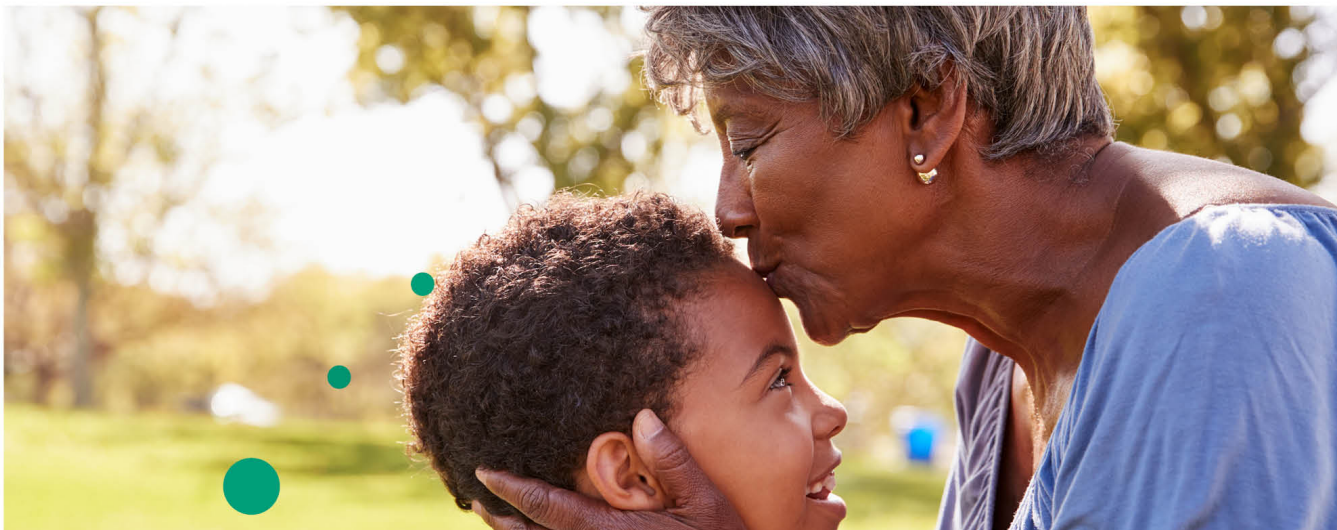




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**"ONE HEALTH" FRENCH
NATIONAL ACTION PLAN ON
ANTIMICROBIAL RESISTANCE:
AN OVERVIEW**



**ILS SONT
PRÉCIEUX,
UTILISONS-LES
MIEUX.**

"ONE HEALTH" FRENCH NATIONAL ACTION PLAN ON ANTIMICROBIAL RESISTANCE: AN OVERVIEW

The fight against antimicrobial resistance (AMR) is a global public health priority and is the subject of a strong commitment by France and the European Union. It is part of a "One Health" approach (human, animal and ecosystem health). This document aims to present an overview of some AMR measures implemented by France .

SUMMARY

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THE "ONE HEALTH" INTERMINISTERIAL NATIONAL ACTION PLAN TO TACKLE ANTIMICROBIAL RESISTANCE

The first Interministerial Committee for Health was specifically devoted AMR, and in particular to antibiotic resistance. In November 2016, the French government adopted the Antibiotic Resistance interministerial national action plan, using a One Health approach. This action plan is organized along five objectives: (i) raising awareness among the general public and healthcare professionals, (ii) education; (iii) research and innovation; (iv) monitoring and surveillance; and (v) interministerial and international actions governance.

Three sectoral plans for human, animal and environmental health

- The interministerial roadmap to tackle antibiotic resistance is implemented in each sector through three action plans:
- In human health, through the 2022-2025 National Infection and Antibiotic resistance Prevention Strategy. The annual report describing the main actions carried out in human health under this interministerial roadmap for the control of antibiotic resistance is available online ;
- In animal health, through the 2017-2022 Plan "Ecoantibio 2";
- In environmental health with the 2020-2024 "National Environmental Health Plan" (PNSE4).

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1ST STRATEGIC OBJECTIVE: RAISING AWARENESS ON ANTIMICROBIAL RESISTANCE



A communication campaign for healthcare professionals and the general public

Santé publique France (Public Health France) is developing a nationwide communication campaign that will start in 2022 for healthcare professionals and the general public. These actions will continue during the up-coming years. The aim of this campaign is to raise awareness among citizens and healthcare professionals about the importance of antibiotic stewardship and to empower them to take action. Several preliminary studies have been carried out to better define targets and key messages to change general public and healthcare professionals' behaviour. This campaign will be based in particular on the [Antibiocllic](#) platform, a therapeutic decision-making tool in antibiotic therapy for healthcare professionals, and [Antibio'Malin](#), a thematic online space containing practical information for everyone.



"Antibio'Malin": a digital resource to raise awareness on antibiotic resistance among the general public

Launched in November 2019 on the *Santé.fr* website of the Ministry of Solidarity and Health, the [Antibio'Malin](#) platform offers the general public short and simple thematic sheets describing all the antibiotics prescribed by healthcare professionals in the city, as well as the main infections. It aims to

inform users on the subject, giving them the means to act themselves to prevent antibiotic resistance. Healthcare professionals can also use this resource in their communication with patients. Antibio'Malin is regularly updated. Additional content will be developed and its design will be optimized ahead of the nationwide awareness campaign mentioned above.



Implement the "animal health" component of the national and interdepartmental communication campaign to raise awareness about the prevention of antimicrobial resistance

In 2021, during the World Antimicrobial Awareness Week, the Ministry of Agriculture and Food launched a communication campaign in the specialised press from November to December. Relayed by the different actors mobilised on antimicrobial resistance (veterinary practices, animal welfare associations, livestock sector associations, partners of the Ecoantibio Plan), it is based on the message "Antibiotics, the right way, the right time". Financed by the Ecoantibio Plan n°2, it is aimed at farmers, veterinarians and pet owners. It aims to maintain everyone's commitment to the proper use of veterinary antibiotics, with an emphasis on biosecurity, vaccination and animal

welfare to prevent diseases and thus the use of antibiotics.



implement a **policy of prevention and health promotion** in their interdisciplinary curriculum. In order to help students implement actions on the theme of infection and antimicrobial resistance prevention, dedicated resources are available on the [e-Bug](#), [RéPias](#) and [Santé publique France \(SpF\)](#) websites.



Contribute to the teaching of infections and antimicrobial resistance at an early age with

E-Bug

[E-Bug](#) is an online educational resource for students and teachers, initially developed as part of a European project. It details micro-organisms, common infections, hygiene, the use of antibiotics and vaccines. E-bug offers free and fun tools, regularly updated, to facilitate the teaching of infections and antimicrobial resistance to students from primary to secondary school (middle and high school) in a One Health approach. This platform is supported by several French Ministries and agencies and is available to teachers.



Strengthening the training of healthcare students and raising awareness of the public

The theme of "infection and antibiotic resistance prevention", from a One Health perspective, is now a **national priority of the Health Service for Health Students**. The introduction of a health service for all health students (medicine, pharmacy, odontology, maieutics, nursing and physiotherapy) is part of the **national health strategy**, whose first axis is to



Long-term reinforcement of the education of health professionals on infection and antimicrobial resistance prevention

resistance prevention

[The national agency for continuing professional development](#) (ANDPC) is structuring its professional and interprofessional development offer through the launch of calls for tender, in order to select and finance actions corresponding to **priority needs in terms of quality and safety of care**. In this context, a specific call for tenders dedicated to the **prevention of infections and of antimicrobial resistance** will be launched in 2022 for three years. This action is in addition to the inclusion of the topic in the national priority topics for continuing professional development of all healthcare professionals.



Agence nationale du Développement Professionnel Continu
Engagée pour un DPC de qualité



Strengthen knowledge of antibiotic resistance, the rational prescription of antibiotics and the promotion of other means of controlling infectious diseases in the education and continuous training of professionals and future professionals

As part of the continuous training of veterinarians, the Ministry of Agriculture and Food has

implemented numerous actions. Specific training modules, as part of the compulsory training program for health safety veterinarians and the training courses offered by veterinary associations, were implemented, as well as the integration of the issue of antibiotic resistance into training modules on therapeutics and drug prescription. The organization of conferences and the establishment of a network of veterinary referents in antibiotic therapy also helped reaching this objective. The regular training of the Ministry's veterinary officers and the creation of the State Diploma "One Health in Practice" at the National School of Veterinary Services, aimed at professionals in the environment sector, human health, animal health, administrations, agriculture, agencies and for elected representatives, also contribute to the reinforcement of knowledge on antibiotic resistance.



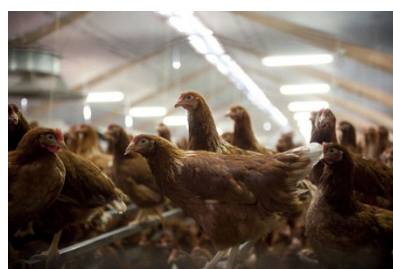
One Health initial training modules

Funded under the Priority Research Program on Antibiotic Resistance, the PROMISE project is a One Health professional meta-network to fight antibiotic resistance, bringing together 21 national networks and over 40 academic partners. One of the main lines of work consists in the creation of initial training modules involving veterinarians, medical students and pharmacists. These training modules have a One Health approach and aim to build bridges between the different scientific communities and to reinforce prevention practices by all health professionals.



Evaluate the measures implemented by Ecoantibio and ensure that they are widely communicated to stakeholders in order to raise awareness

Since the launch of Ecoantibio in 2012, antibiotic sales in the animal sector have fallen by 53%. The exposure of animals to antibiotics, all sectors combined, decreased by 45%. These results are recalled by the Ministry of Agriculture and Food during the national communication actions planned for the World Antimicrobial Awareness Week in November each year. Disseminating and highlighting the decrease in antibiotic use helps to raise awareness on antimicrobial resistance among stakeholders.



2ND STRATEGIC OBJECTIVE: SURVEILLANCE AND RESEARCH



Annual One Health summary

An [annual summary](#), coordinated by Santé publique France, on antibiotic resistance prevention measures, antibiotic use and bacterial resistance, is published every year in November, in partnership with the National Food Safety Agency (Anses), the French National Agency for the Safety of Medicines and Health Products (ANSM), the French National Institute for Health and Medical Research (Inserm), the French National Health Insurance Fund (CNAM), the French National Authority for Health (HAS) and the relevant Ministries. In a "One Health" perspective, it updates every year the available information on antibiotic resistance and its prevention in all three sectors: human health, animal health and environment. Each year, a specific focus is illustrated with an infographic that is largely shared through social networks. In 2021, this infographic focused on the impact of prevention measures implemented against COVID-19 on common seasonal infections and antibiotic use.



The RéPias and Santé publique France: key surveillance actors on human health

The French network for the prevention of healthcare-associated Infections and antibiotic resistance gathers five national missions, coordinated by Santé publique France. The objectives of these missions are to produce surveillance data on healthcare-associated infections, antibiotic use and resistance and to support infection prevention and control tools and media communication. The five missions are:

- The [PRIMO](#) mission, for the surveillance and prevention of antibiotic resistance and healthcare-associated infections in the community and in nursing homes;
- The [SPARES](#) mission, for the surveillance of antibiotic resistance and antibiotic use and prevention of antibiotic resistance in hospitals;
- The [SPICMI](#) mission, for the surveillance and prevention of healthcare-associated infections in surgery and interventional medicine;
- The [SPIADI](#) mission, for the surveillance and prevention of invasive devices' infections;
- The [MATIS](#) mission, providing support for prevention, training and communication tools to the other four missions.

Santé publique France produces local and national indicators annually about antibiotics prescribed in the community.

The main data produced by these missions and Santé publique France are accessible on the [GEODES](#) website, [other websites](#) and more detailed information is available on the [RéPias](#) website.

Santé publique France also coordinates [the external reporting system for healthcare-associated infections](#) (e-SIN) at national level.

Finally, every 5 years, Santé publique France implements national point-prevalence surveys on the prevalence of healthcare-associated infections and antibiotic use in hospitals (2022) or in nursing homes (2023), in accordance with the European protocol developed by the ECDC.



Monitor the evolution of antibiotic resistance and the use of antibiotics in animal health

Many actors are involved in monitoring the evolution of antibiotic resistance in food and animal sectors. In conjunction with the Ministry of Food and Agriculture, the French Agency for Food, Environmental and Occupational Health & Safety (Anses) relies on various structures:

- The RESAPATH: [Epidemiological surveillance network of antibiotic resistance in animal pathogenic bacteria](#);
- The National Reference Laboratory LNR-Anses, which monitors the antibiotic resistance of zoonotic and commensal bacteria isolated from food-producing animals and their foodstuffs (mandatory monitoring in application of European regulation), partly on the basis of samples taken in the framework of the official controls that the Ministry of Agriculture organizes every year;
- The Anses with the National Agency for Veterinary Medicines (ANMV), which [monitors](#)

[the volume of sales and use of antibiotics in animal health.](#)

These three structures produce an annual report on the data they process. On this basis, the indicators of the Ecoantibio plan are calculated and make it possible to monitor the evolution of the use of antibiotics in animal health, as well as surveilling antibiotic resistance nationwide.

Thus, the two objectives of the Ecoantibio2 plan have been achieved:

- Decrease in exposure to colistin by 50 % between 2017 and 2022: this objective has already been achieved with a decrease of 66% in 2021 for all sectors combined;
- Specific reduction of 50 % between 2017 and 2022 of the prevalence of ESBL *E. coli* in poultry samples (broilers) at the distribution stage: the percentage of ESBL/AmpC *E. coli* strains found in broiler meat was 26 % in 2018, i.e. a 58 % reduction between 2016 and 2018, this objective of the Ecoantibio 2 plan has already been achieved.



Build the databases for reporting antibiotics dispensed and the mechanisms for the exploitation of these data

Since 1999 in France, the Anses-ANMV has been monitoring sales of veterinary medicines containing

antibiotics based on declarations from marketing authorization holders. This monitoring allows an estimation of the exposure to antibiotics for the main animal species.

In order to provide a more accurate estimate of the exposure of animals to antibiotics, the law No. 2014-1170 of 13 October 2014 on the future of agriculture, food and forestry makes it compulsory for all professionals concerned to declare all transfers of antibiotics for veterinary use. Since 2018, the system is effective for manufacturers, importers and wholesalers of veterinary medicines as well as manufacturers and distributors of medicated feed.

In addition, the Ministry of Agriculture and Food has entrusted the National College of Veterinarians with the development of the "Calypso" information system linking veterinarians to the public authorities with the aim of improving their collaboration in the implementation of public policies on animal health and animal welfare. The first version of "Calypso", scheduled for the first quarter of 2023, will include a centralized database compiling all the transfers of medicines containing antibiotics by veterinary medicine stakeholders (veterinarians, pharmacists and manufacturers and distributors of medicated feed).

France is thus ahead of the European regulations that make it mandatory to collect this data for all animal species by 2030 (Regulation (EU) 2019/6 on veterinary medicinal products).

interest or interdisciplinary calls for projects and human resources, and (iii) coordinating a research network on antibiotic resistance for countries with limited resources.



Research Projects - Environment

Two specific calls for proposals (one French, the other Franco-German) have made it possible to fund research to better characterize the phenomena of antibiotic resistance in the environment. A [collective scientific expertise of ANSES](#) on the mechanisms and the state of contamination has highlighted important needs for knowledge, while a [systematic review](#) of the scientific literature has identified some avenues for solutions to limit the dissemination and emergence of environmental antibiotic resistance. Within the framework of the ANSES National Research Program on Environment, Health and Work, six research projects have been carried out that focus on the environmental dispersion of antibiotic resistance in different environments and the prediction of this phenomenon in areas subject to human action.



Priority Research Program on Antibiotic resistance

In 2020, the [Priority Research Program](#) on antibiotic resistance was launched, coordinated by Inserm. This program is part of a "One Health" approach combining human health, animal health, and environmental health. It details three main cross-cutting actions to be funded: (i) developing and creating platforms, networks, and observatories dedicated to antibiotic resistance, (ii) strengthening research teams through calls for expressions of



National interface for research and innovation in antibiotic resistance

Intended for the academic scientific community and industrial actors, the [National Antibiotic Resistance Interface](#) (part of the Priority Research program on antibiotic resistance) is intended to be a common, intersectoral and interactive entry point, identifying public and private actors, platforms and networks, coordination and animation activities, and listing research and innovation projects focused on antibiotic resistance.



Continue research, studies and development of methods for preventive health and zotechnical measures (non-medicinal solutions)

More than a dozen innovative research projects aimed at developing biosafety measures and zotechnical improvements have been financed within the framework of Ecoantibio, such as, for example, a project led by the Anses aimed at studying the interest of administering probiotics in pigs to reduce the use of last generation cephalosporins.

In addition, the France economic recovery plan following the economic crisis due to the COVID pandemic has made biosecurity in farms a priority. The "biosafety and welfare pact for livestock farming" thus makes it possible to support farmers in their biosafety investments, when they are aimed at improving animal welfare in livestock farms, by granting subsidies under certain conditions (such as, for example, the training of farmers in biosafety).

These investments will allow these farms to reduce the risk of infection and therefore the need for allopathic treatment.



Improve biological tools for veterinary diagnosis and build, maintain and disseminate self-assessment tools for vets and farmers

The development of rapid diagnostic tools appears to be an important lever in the fight against antibiotic resistance because it allows for an optimized use of antibiotics while preserving their effectiveness. The reliability of rapid antibiotic susceptibility tests, particularly for the antibiotics classified as critical for human health, for which their use is discouraged in veterinarian medicine, will be essential in the coming years if their use is to be authorized. Similarly, self-assessment tools that allow professionals to voluntarily assess their prescribing habits or use of prescribed antibiotics and thus identify the margins for progress and encourage them to modify their practices. These objectives are pursued by the Ecoantibio plan, with various projects underway on the subject.



3RD STRATEGIC OBJECTIVE: REDUCE THE INCIDENCE OF INFECTIONS



Recommendations on preventive actions for common infections and upcoming awareness

campaign

In August 2021, the High Council for Public Health (HCSP) was asked by the Ministry of Solidarity and Health to produce scientific recommendations on basic actions everybody could implement in everyday life to prevent common infections. These recommendations are expected in 2022. They will be used to guide future awareness activities.



RéPias and Santé publique France: key players in prevention

As mentioned previously, [RéPias](#) is made up of 5 national surveillance and prevention missions, coordinated by Santé publique France (PRIMO, SPARES, SPICMI, SPIADI and MATIS). Each national mission is carried out by Regional Centers for the Prevention of Healthcare-Associated Infections (CPias), designated following a call for candidates. The scope of these national missions covers the entire patient healthcare pathway: community, nursing homes and hospitals. These missions produce not only surveillance data, but also prevention, training and communication tools for professionals and the general public.



Reduce the introduction and spread of pathogens

The Ecoantibio plan also finances projects aimed at demonstrating the effectiveness of biosecurity measures on the occurrence of diseases and identifying margins for progress in the use of antibiotics. For example, the "PartAge" project led by the technical institute on poultry farming (ITAVI) aims to propose a method based on a participatory approach for a sustainable change in biosafety practices in poultry farming. Based on a sociological approach, this project seeks to understand the relationship of trust between farmers and veterinarians in order to improve compliance and biosecurity and thus reduce the use of antibiotics in poultry production. The project will deliver its conclusions in 2022.



4TH STRATEGIC OBJECTIVE: OPTIMIZE THE USE OF ANTIMICROBIAL AGENTS



Rapid diagnostic tests for sore throat

Since July 1, 2021, access to rapid diagnostic tests for sore throat is facilitated in community pharmacies. These tests have already been made freely available to medical doctors for many years. They make it possible to determine the viral or bacterial origin of a sore throat in a few minutes, thanks to a throat swab taken by a doctor or a pharmacist. More than 80% of sore throats are viral and do not require antibiotics. Rapid sore throat tests therefore allow antibiotics to be taken only when necessary and to preserve their effectiveness.

PRATIQUE DES TESTS RAPIDES D'ORIENTATION
DIAGNOSTIQUE (TROD) EN PHARMACIE



HAS recommendations promoting shortened antibiotic treatment durations

The HAS, in partnership with the French Society of infectious diseases (Spilf) and the relevant organisations, is helping to promote the shortest possible duration of antibiotic treatments. Memo cards with a summary table were finalized in 2021 and cover upper respiratory infections, urinary tract infections in women, skin infections, urethritis and cervicitis, and acute uncomplicated diverticulitis.



Antibiotic stewardship in general practice

In order to tackle antibiotic resistance, the Ministry of Solidarity and Health has requested the support of the Interministerial Directorate of Public Transformation (DITP) and specialists in behavioural sciences to improve the effectiveness of feedback to general practitioners on their antibiotic prescriptions. Concrete proposals for optimized individual profiles have been made; a regional interventional study is planned before considering national deployment by the national health insurance fund (Cnam). For several years now, the Cnam has also been carrying out actions to promote antibiotic stewardship in the community, in particular:

- ◆ The "Payment for Performance" system known in France as "Remuneration on Public Health Objectives" (ROSP), implemented in 2011, consisting of granting additional remuneration to general practitioners and pediatricians who modify their practice according to certain criteria, in order to achieve specific objectives. Antibiotic prescribing is one of these criteria, and the ROSP has led to a reduction in prescribing for situations covered by the ROSP indicators.
- ◆ General practitioners also receive regular visits from Health Insurance delegates, in order to promote good practices and provide information on existing resources and recommendations. The Cnam also shares with physicians their personal antibiotic prescription profiles.





Unit dispensing of antibiotics

The [law No. 2020-105 of February 10, 2020 on the fight against waste and the circular economy](#) introduced the possibility for pharmacists to dispense certain drugs by the unit. The unit dispensing of medicines as provided for by this law will come into force in 2022 for oral antibiotics in the community. Patients with a prescription for antibiotics will then be able to ask their pharmacist to obtain them by the unit rather than by the package.



LOIS

LOI n° 2020-105 du 10 février 2020 relative à la lutte contre le gaspillage et à l'économie circulaire (1)



Promoting the use of selective reporting of antibiotic susceptibility testing

The HAS and other institutions (French Society of Microbiology (SFM), Pediatric Infectious Diseases Group (GPIP) and Spilf) are currently developing good practice recommendations to guide the "[selective reporting of antibiotic susceptibility testing for Enterobacterales urinary tract infections](#)". These recommendations aim to improve professional practices by promoting the prescription of first-line antibiotics, and thus help reduce the prescription of broad-spectrum antibiotics.



Develop the network of regional veterinary referents in antibiotic therapy

The Ecoantibio plan has enabled the establishment of a pilot network of regional referents in antibiotic therapy. This is a network for veterinary practitioners and by veterinary practitioners. It aims to strengthen the continuing training and information of veterinarians on the prudent use of antibiotics, for example by advising veterinary practitioners on their diagnostic and treatment strategies. Based on the evaluation of the pilot scheme for regional veterinary referents, the Ecoantibio2 plan aims to extend this tool to all French regions.



Evaluate the framework for the use of antibiotics in the context of prescribing outside of a systematic clinical examination

Veterinary medicine, as practiced on food producing animals is largely a so-called population medicine. Decree No. 2007-596 of 24 April 2007 allows and regulates the prescription of medicines without prior clinical examination by the veterinarian responsible for the permanent health monitoring of the farm.

This framework could evolve with regard to antibiotic prescription methods to meet the challenges of antibiotic resistance.





Controlling compliance with the rules for prescribing, dispensing and administering antibiotics and combating fraud and trafficking

The Ministry of Agriculture and Food and the French agency for veterinary medicines carry out official controls throughout France in the field of veterinary medicines, from the manufacture to the use. Manufacturers, wholesalers, veterinarians, pharmacists and breeders are controlled.

Surveillance is also carried out by the customs services on imports into Europe of medicines and active pharmaceutical ingredients used in their manufacture. The Ministry's sanitary and phytosanitary border inspection service also carries out checks on animals, their products and by-products.

During these controls, the inspectors check compliance with the rules on the manufacture, storage, prescription, retail and administration of medicines, including antibiotics. In the event of infringements, appropriate action and sanctions are taken to control the risks to human and animal health and to ensure compliance with the regulations.



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Limit the prescription of critical antibiotics whose efficacy for humans must be preserved

The law No. 2014-1170 of 13 October 2014 on the future of agriculture, food and forestry, mentioned earlier, added an indicator to the Ecoantibio plan, aiming at reducing animal exposure to critically important antibiotics by 25% in 3 years. Representing three families (3rd and 4th generation cephalosporins and fluoroquinolones), they were chosen in order to preserve their effectiveness in human medicine. Between 2014 and 2016, a decrease of 75% for fluoroquinolones and 81% for last generation cephalosporins was observed, largely fulfilling the objective established by the law in 2014. To achieve these results, in parallel with incentive and voluntary measures, legislative and regulatory measures have been taken, in particular a decree regulating the prescription and prohibiting the prescription of critically important antibiotics for preventive purposes.



3RD AND 4TH STRATEGIC OBJECTIVES: ACTIONS TARGETING BOTH INFECTION PREVENTION AND CONTROL (IPC) AND ANTIMICROBIAL STEWARDSHIP (AMS)



Regional organisation of care promoting synergy between IPC and AMS

The 2022-2025 national strategy for the infection and antibiotic resistance prevention in human health is based on two pillars: infection prevention and control (IPC) and antibiotic stewardship. This synergistic approach is implemented at the regional level in the three healthcare sectors (hospitals, medico-social facilities and services, and the community) by the Regional Health Agencies (ARS), which are responsible for mobilizing all regional actors involved on the topic.

At the regional level, two main actors provide support to the ARS:

- The centers for the prevention of healthcare-associated infections (CPias), responsible for the prevention of healthcare-associated infections and the control of cross-transmission of infectious agents. They provide expertise and support and run networks of IPC professionals (IPC teams in hospitals and nursing homes).
- Regional centers for antibiotic stewardship (CRAtb). They carry out regional missions of expertise and support, including a strategic mission on antibiotic stewardship, and animation of networks of health professionals in charge of the antibiotic stewardship program (multidisciplinary teams and referents).

An [interactive map](#) shows the location of the CPias and CRAtb in the different French regions.

In order to optimize the fight against antibiotic resistance, the ARS ensure synergy between the CPias and the CRAtb, and encourage the formalization of their interactions. These two structures can thus carry out certain actions in common, in particular in the field of training or communication. This synergy is also reflected in the establishment of close collaboration between the IPC and antibiotic stewardship teams. National funding (total or partial) exists for the CPias, the CRAtb, the antibiotic stewardship teams and the IPC teams in nursing homes.



Professional recommendations regarding human resources and key elements of the IPC and antibiotic stewardship programs

The Ministry of Solidarity and Health has asked professional organizations (*Infectious Diseases and Infection Prevention and Control*) to produce professional recommendations for 2022 concerning:

- A definition of the core elements of IPC and antibiotic stewardship programs in the three sectors of the French healthcare system (for hospitals, medico-social facilities and services [initially nursing homes] and the community) as

well as the role and missions of specialized IPC/antibiotic stewardship teams, based on the literature and international recommendations;

- Recommendations concerning the human resources (in full-time equivalents, FTE) required for these teams, based on the literature and international recommendations;
- An inventory of existing FTEs for these teams throughout the country;
- Proposed indicators (with targets) for evaluating the implementation and impact of IPC and antibiotic stewardship programs.



IPC and antibiotic stewardship toolkit for dentists and general practitioners

The Ministry of Solidarity and Health has asked the College of General Medicine and the National Professional Council of Dentists to produce a toolbox for the prevention of infections and of antibiotic resistance for French general practitioners and dentists, by early 2022. This will provide these professionals with tools that can be used on a daily basis to improve their practices, whether in terms of prevention of community-acquired or healthcare-associated infections, or antibiotic stewardship.



Health - Environment actions

The 2016-2021 [Micropollutant Plan](#) identifies the knowledge and flow reduction actions carried out on micropollutants, including drug residues, to preserve water and biodiversity quality. It has been developed in consultation with various ministerial departments, operators such as water agencies and the French Office for Biodiversity (OFB), and public research and development organizations. Several actions of this plan, led by the *Direction générale de la santé* (DGS) of the Ministry for Solidarity and Health, concern antibiotic resistance:

- Implement the recommendations of the guide on the proper management of waste from medicines (action 2);
- Study the management of unused medicines in health and medico-social institutions and care centers (action 7);
- Draw conclusions from the experiment on unit dispensing of medicines (action 8);
- Work on the availability and sharing of data, allowing to know the hazard and exposure for human and veterinary drug residues in waters (action 31).

At this time, Action 2 is complete. The guide has been published and awareness-raising measures have been conducted. It is also the case for Action 8, with the report submitted to Parliament in October 2017. All these actions are now awaiting a boost at the European level. Similarly, the provision and sharing of data (action 31), which was already the subject of actions in the National Plan on Drug Residues (2010-

2015), has enabled an inventory of existing databases in different countries of the European Union and has revealed the lack of available data for human drugs.



5TH STRATEGIC OBJECTIVE: BOOST INNOVATION (NEW ANTIBIOTICS, DIAGNOSTICS, VACCINES AND OTHER INTERVENTIONS) AND MAINTAIN ACCESS TO EXISTING ANTIBIOTICS



Discussions with the private sector to encourage innovation and ensure availability of existing antibiotics

The Ministry of Solidarity and Health and the Ministry of the Economy, Finance and Recovery are co-leading, alongside industry representatives, the [Strategic Contract for the Health Industries and Technologies Sector](#) on antibiotic resistance. This allows a structured dialogue on incentive mechanisms between public authorities, industry representatives and academics. Concrete actions are being explored and could be implemented over the period 2022-2025, in line with European initiatives (in particular the [pharmaceutical strategy](#), with the revision of pharmaceutical legislation and the study of new types of incentive measures for antibiotics and the establishment of the [HERA](#)).



The French government is committed to ensuring the availability of antibiotics

[A three-year project, part of the Structural Reform Support Program](#) (now Technical Support Instrument), co-financed by the European Union and with a "One Health" approach started in November 2020. The aim of the project is to identify and implement pilot measures in France to tackle the root causes of lack of availability and shortages of off-patent antibiotics used in human and veterinary medicine. The program also aims to protect the environment and takes into account the European and national regulatory contexts. The [European Commission's](#) Directorate General for Structural Reform Support (DG REFORM) and the [WHO](#) provide technical assistance to the French Government with the participation of five ministries and two national agencies.



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Acquire references on alternative treatments to limit the prescription of antibiotics

Numerous projects have been carried out under the Ecoantibio plan on this subject. These projects concern the use of phytotherapy, essential oils, bacteriophage and probiotics, for instance:

- The *COLIPHAVI* project, focusing on the biocontrol of colibacillosis at start-up using phages in the poultry industry;
- The *STAFILMS* project, seeking to characterize and propose alternative treatments limiting the use of antibiotics in the presence of biofilms associated with *Staphylococcal pyoderma* in dogs;
- The *RESPEC* project, working on the value of probiotics administration in the event of resistance to the latest generation cephalosporins.



6TH STRATEGIC OBJECTIVE: AFFIRM AND DEFEND THE POSITIONS OF THE FRENCH AUTHORITIES AT EUROPEAN AND INTERNATIONAL LEVEL



Work on the implementation of "mirror measures" on the import of animals and animal products to the European Union, applying the rules in force in the European Union

Article 118 of Regulation (EU) No 2019/6 on veterinary medicinal products provides for restrictions on third country operators for certain EU environmental and sanitary production standards to be applied to products imported from third countries, in full compliance with the rules of the World Trade Organisation. This article prohibits the importation of products of animal origin derived from animals that have been treated with antimicrobial as growth promoters (administered for the purpose of promoting their growth or yield), as well as antimicrobials or groups of antimicrobials reserved for the treatment of certain infections in humans. The objective of these provisions is to preserve the efficacy of the antimicrobials concerned and to prevent the development or spread of microbial resistance.

The introduction of this mirror measures is particularly awaited by France, for which the reciprocity of environmental and sanitary norms and production standards is a priority.



The 2017-2021 European Joint Action on antimicrobial resistance and healthcare-associated infections

The [EU-JAMRAI](#) is a joint action of the European Union on antimicrobial resistance and healthcare-associated infections. It brought together 44 partners, 45 stakeholders (ECDC, OECD, among others) and ended in February 2021. Its mission was to encourage synergies between EU Member States in developing and implementing effective health policies to combat the growing threat of antimicrobial resistance and to reduce healthcare-associated infections. This joint European action has also facilitated the exchange of best practices and discussion among policy makers to improve the implementation of national action plans. A summary of the main actions taken and recommendations made is [available here](#).





Support low- and middle-income countries in the fight against the emergence and spread of antimicrobial resistance (human, animal and environment) in collaboration with the World Health Organization (WHO), the Food and Agriculture Organization (FAO), the World Organization for Animal Health (OIE) and the United Nations Environment Program (UNEP) in addition to building on existing surveillance and research networks

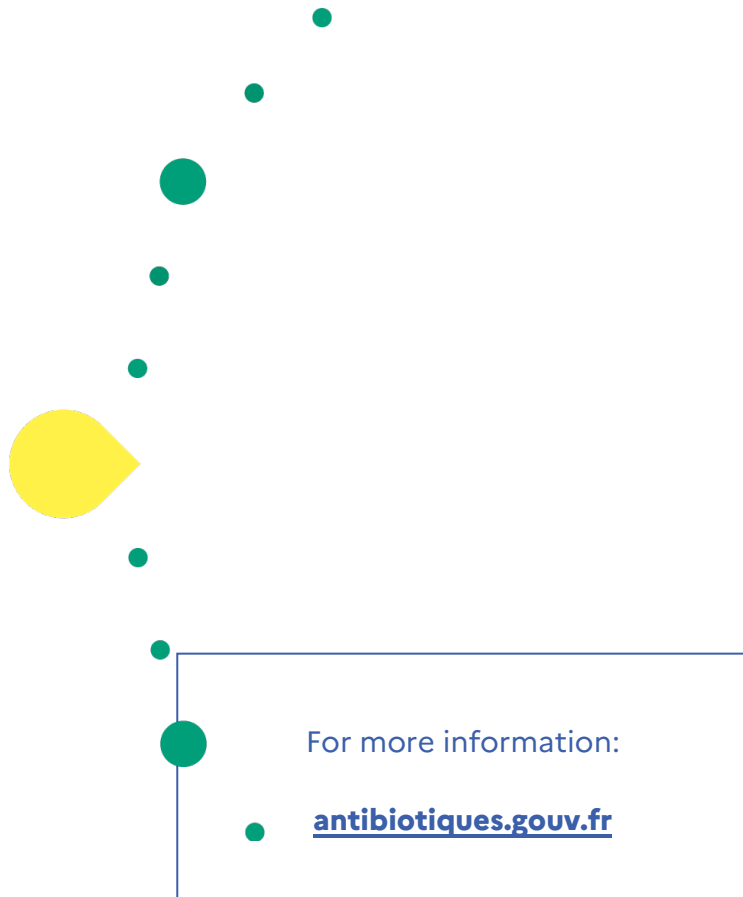
Antimicrobial resistance affects all countries in the world, and LMICs countries face specific challenges in the context of their increasing need for antibiotics in human and animal health: access to authentic, non-counterfeit drugs, control of the drug circuit, training of personnel, detection means...

Improving knowledge on the transmission and acquisition routes of resistance and the role of human-animal-environment interactions is crucial to strengthen public policies to control antibiotic resistance in developing countries. Research and cooperation projects have contributed to this.

France has also actively participated in the work of the Codex Alimentarius, which resulted in the adoption in November 2021 of a *Code of Practice to minimize and contain foodborne AMR* and *Guidelines on integrated monitoring of AMR*.

Several surveillance networks set up by the Tripartite Plus (e.g. GLASS network, Tricycle protocol, OIE database on antibiotic use in animals) and French research organizations (SARA project of the Pasteur Institute) have, for example, made it possible to strengthen antimicrobial resistance surveillance.





For more information:

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