



MINISTÈRE
DES SOLIDARITÉS
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*Liberté
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2022-2025 NATIONAL STRATEGY FOR PREVENTING INFECTIONS AND ANTIBIOTIC RESISTANCE



ILS SONT
PRÉCIEUX,
UTILISONS-LES
MIEUX.



EDITORIAL



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Preventing infections and antibiotic resistance is one of many global public health issues and has long been a priority for the French public authorities. It is vital to prevent the most common infections, namely through vaccination and simple everyday protective measures, to reduce healthcare-associated infections as much as possible, and to protect the effectiveness of our antibiotics. We have been combating this for more than 20 years in France and have made significant progress, such as the reduction in the use of antibiotics. However, we must continue and ramp up our efforts.

This 2022-2025 National Strategy for Preventing Infections and Antibiotic Resistance is the first national plan to so closely link infection prevention and control measures with those promoting antibiotic stewardship. This is because we will reduce the incidence of community-acquired and healthcare-associated infections, in addition to the risk of antibiotic resistance, by preventing infections and reducing the transmission of infectious agents and resistance genes.

This new strategy, led by the Ministry for Solidarity and Health in collaboration with numerous partners, was developed through a rigorous consultation process. It replaces the 2015 Prevention of Healthcare-Associated Infections National Programme (PROPIAS) and represents the sector-specific operational deployment in human health of the 2016 “One Health” interministerial roadmap for controlling antibiotic resistance, which links human, animal and ecosystem health.

This national strategy concerns all of us, whether we are healthcare professionals, patients or citizens. The COVID-19 pandemic has demonstrated that together we can influence the momentum of an infection. Thus, we already know that controlling the risk of infections, especially those caused by antibiotic-resistant bacteria, is possible if we change our behaviour accordingly. To gain this control, we have set ourselves ambitious targets for 2025, starting with reducing the use of antibiotics in community care across France by 25% compared to 2019, opting for unit dose dispensing and drastically ramping up hand hygiene measures. I am confident that together we can achieve these objectives. Everyone has a role to play, everyone can take action at their level, and I know I can count on your involvement.

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INTRODUCTION

The two pillars of the 2022-2025 National Strategy for the Prevention of Infections and Antibiotic Resistance in Human Health are measures for infection prevention and control and measures that promote antibiotic stewardship. The available literature indicates that Infection Prevention and Control (IPC) measures, targeting both community-acquired and healthcare-associated infections (HCAIs), and measures promoting antibiotic stewardship (ABS) have mutually beneficial, interdependent and complementary effects¹, with the following objectives:

- To prevent antibiotic-resistant and multidrug-resistant infections and limit the transmission of antibiotic-resistant bacteria and resistance genes (ABS), in particular through hygiene measures.
- To limit and rationalise the use of antibiotics by:
 - preventing infections with antibiotic-susceptible (the vast majority of bacterial infections being treated with antibiotics) and antibiotic-resistant bacteria (IPC). It should be noted that healthcare-associated infections (HCAIs) regularly require broad-spectrum antibiotic treatment.
 - preventing viral infections (infections that are a frequent cause of unnecessary antibiotic treatment and those that are complicated by bacterial superinfections [e.g. flu] (IPC)).
 - only using antibiotics when absolutely necessary (ABS).
- To prescribe antibiotic treatment appropriately when a bacterial infection requires antibiotics (ABS), in particular by favouring the narrowest possible spectrum and shortest possible treatment duration.

Infections that were thought to have been largely eradicated by hygiene measures, antibiotics and vaccination in the early 1980s have come back to the fore in terms of both morbidity and mortality. Healthcare-associated infections affect 5% of patients hospitalised on a given day² and are a major cause of adverse events. However, some of these HCAIs are considered avoidable through simple prevention measures.

The burden of HCAIs is also evident from the attributed mortality levels (approx. 10% to 15% of hospital deaths are associated with an HCAI, making it the 4th most frequent cause of death in hospital), from the additional costs incurred by extended hospital stays (approximately 6 additional days), from heavier reliance on additional tests and treatments (including antibiotic treatments), and from a total average additional cost estimated at more than 10,000 euros per HCAI in France.² In the medicosocial sector, HCAIs also affect morbidity and mortality; the 2016 Prév'EHPAD survey estimated the prevalence of HCAIs on a given day among residents in nursing homes at 3%.³

¹ Antibiotiques et résistance bactérienne : pistes d'actions pour ancrer les progrès de 2020. (Antibiotic and bacterial resistance: proposed measures to sustain the progress made in 2020.) (santepubliquefrance.fr)
² http://beh.santepubliquefrance.fr/beh/2020/15/2020_15_2.html

³ National prevalence survey of healthcare-associated infections and antibiotic treatments in nursing homes (EHPAD). National results 2016. Saint-Maurice: Santé publique France, 2017. 67 p.- <https://www.santepubliquefrance.fr/les-actualites/2017/prev-ehpad-infections-associees-aux-soins-et-traitements-antibiotiques-en-etablissements-d-hebergement-pour-personnes-agees-dependantes-resultat>

Infections, both community-acquired and, even more significantly, healthcare-associated ones, increasingly involve bacteria that have become resistant to antibiotics. It is estimated that 63.5% of multidrug-resistant bacteria infections are healthcare-associated infections (2015 data⁴). France holds an unenviable position in Europe in terms of methicillin-resistant *Staphylococcus aureus* (11.6% in the EARS-Net 2019⁵ report, i.e. in descending order of performance, 16th place out of 31 countries) and to 3rd-generation cephalosporins for *Klebsiella pneumoniae* (30.2%, i.e. 16th place). For extensively drug-resistant bacteria, the situation is more contrasting: for *glycopeptide-resistant Enterococcus faecium*, France is in fact among the countries in Europe with a low prevalence (4th place), whereas for carbapenemase-producing Enterobacterales, specifically for *K. pneumoniae*, its prevalence of 1% puts it in 14th place.

Bacterial resistance to antibiotics is a natural phenomenon, which is accelerated considerably by the use of antibiotics. 5,500 deaths⁴ were attributed to multidrug-resistant infections in 2015 in France, making antibiotic resistance a major public health issue. Antibiotics becoming ineffective has multiple consequences that pose a threat to the success of modern medicine, as complex surgeries, cancer chemotherapy, organ transplants and intensive care, for example, are often complicated by bacterial infections and therefore require effective antibiotics. If the situation continues to worsen, antibiotic resistance could thus call into question the highly technical modern medical care that we benefit from.

Infection prevention and control has a scope of action that goes beyond preventing the spread of multidrug-resistant bacteria, as we have noticed and continue to observe during the COVID-19 pandemic. Preventing infections and antibiotic resistance involves a global “One Health” approach, bridging measures that aim to control antibiotic resistance in human health, but also in animal health and ecosystems, an approach that is now essential to be effective.⁶ However, the 2022-2025 National Strategy for Preventing Infections and Antibiotic Resistance only relates to human health. The 2016 Interministerial Roadmap for Controlling Antibiotic Resistance remains the reference for interministerial and One Health measures.

Preventing infections and antibiotic resistance is a major public health issue that has been identified as a priority by the French public authorities since the 1990s; the prevention of HCAs and the fight against antibiotic resistance are also priorities in Europe and internationally. In France, various national plans for preventing HCAs (including nosocomial infections) have been implemented, such as the 2009-2013 National Strategy for Preventing Healthcare-associated Infections or the 2013-2017 National Patient Safety Programme. In hospitals, IPC measures have proven their effectiveness in practice, particularly with the drop in the incidence of methicillin-resistant *Staphylococcus aureus* infections (-75% between 2003 and 2019).⁷ To promote the coordination and pooling of resources, and the consistency and continuity of preventive measures throughout the healthcare pathway, the French National Preventive Action Plan Against Healthcare-associated Infections (Propias) was launched in 2015. In terms of ABS, three national plans have been implemented since 2001, the last one being the 2011-2016 National Antibiotic Plan. The development of the interministerial roadmap for controlling antibiotic resistance in 2016

⁴ Cassini A. et al. Lancet. 2019;19:1.

⁵ <https://www.ecdc.europa.eu/sites/default/files/documents/surveillance-antimicrobial-resistance-Europe-2019.pdf>

⁶ The World Health Organization (WHO), the Food and Agriculture Organization of the United Nations (FAO) and the World Organisation for Animal Health (OIE) came together in 2010 in a three-way alliance to strengthen their working relations in view of the close links between human, animal and broader ecosystem health, thus leading to the “One Health” approach. <https://www.who.int/fr/news-room/q-a-detail/one-health>

⁷ SPARES National Mission. Available at <https://www.santepubliquefrance.fr/maladies-et-traumatismes/infections-associees-aux-soins-et-resistance-aux-antibiotiques/resistance-aux-antibiotiques/donnees/>

marked a ramping up of the policy for controlling antibiotic resistance. For the first time, the policy was shaped from a One Health perspective.

The 2019 report by the Court of Auditors on the policy for preventing healthcare-associated infections indicates that there is still progress to be made in the policy to be implemented in this area and the recommendations made in this report were considered when drafting this national strategy.⁸

Building on these actions, this 2022-2025 National Strategy for Preventing Infections and Antibiotic Resistance represents the operational-sectoral plan in human health of the 2016 Interministerial Roadmap for Controlling Antibiotic Resistance (and of the future roadmap) with an even clearer focus on the prevention of infections. It is intended to replace the Propias within the overall scope of "Prevention of infections and antibiotic resistance". It will also take into account the recommendations of the interdisciplinary inspection mission of the 2016 interministerial roadmap, which occurred between 2021 and 2022.

This national strategy is consistent with:

- the French National Health Strategy 2018-2022 (SNS), which makes promoting health and preventing high-risk behaviours a priority. Thus, combatting antibiotic resistance and preventing HCAs have understandably been made a priority: "implementing a policy of lifelong health promotion, including prevention, in all settings";
- The French National Public Health Plan (PNSP) – 2018-2022, "Priority Prevention";
- The EU's *European One Health Action Plan against Antimicrobial Resistance* (2017) and the WHO's *Global Action Plan on Antimicrobial Resistance* (2015).

This strategy is supplementary to other existing strategies on the subject, such as the 4th National Environmental Health Plan (PNSE 4) (including, for example, an incentive to favour biocides with profiles that are more favourable to environmental health or to reinforce the proper use of biocides by the general public), the national programme for improving vaccination policy and all the national strategies that aim to prevent infections, such as the tuberculosis roadmap and the National Sexual Health Strategy.

This strategy is aimed at professionals in the healthcare sector, the medicosocial sector and the general public and is based on two main components: infection prevention and control (IPC) and antibiotic stewardship (ABS). Both concern the three sectors of healthcare: hospitals (ES), medico-social institutions and services (ESMS) and the community care, taking into account the entire patient pathway, but also the general population.

It focuses on the prevention of the most common community-acquired infections, but relates to all HCAs.

This 2022-2025 National Strategy for Preventing Infections and Antibiotic Resistance is led by the Ministry for Solidarity and Health in conjunction with French national and regional health agencies.

⁸ <https://www.ccomptes.fr/system/files/2019-02/04-politique-prevention-infections-associees-soins-Tome-1.pdf>

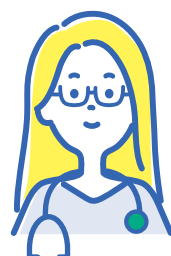
KEY FIGURES

PREVENTION OF INFECTIONS

VACCINATION



52%
of people over
65 years old were vaccinated
against influenza in 2019¹



35%
of healthcare
professionals were vaccinated
against influenza in 2019 in
hospitals²

HAND HYGIENE

43% of
patients in hospitals
reported that they
received information
about their own hand
hygiene in 2020³

These patients reported
seeing healthcare
professionals sanitising
their hands before
touching them to
provide care in **76%** of
cases³



The median number of times that a healthcare professional rubbed their hands with alcohol-based hand sanitiser per day for a nursing home resident (EHPAD) was **1.6 in 2019**⁴

¹ <https://www.santepubliquefrance.fr/determinants-de-sante/vaccination/articles/donnees-de-couverture-vaccinale-grippe-par-groupe-d-age>

² https://www.santepubliquefrance.fr/content/download/198638/document_file/BSP_Nat_Vaccination_211019.pdf

³ https://www.preventioninfection.fr/wp-content/uploads/2021/10/PULPE_janv_sept_2021.pdf

⁴ <https://www.santepubliquefrance.fr/content/download/330278/2967335>

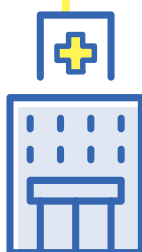
HEALTHCARE-ASSOCIATED INFECTIONS

ON A GIVEN DAY IN FRANCE,

1 hospitalised patient / **20** has at least one nosocomial infection⁵



3% of residents in EHPADs have at least one healthcare-associated infection⁶



Healthcare-associated infections are the

4th

most common cause of death in hospital²

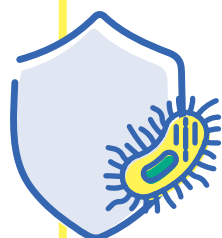
ANTIBIOTIC STEWARDSHIP

France is the **4th** biggest consumer of antibiotics in Europe⁷

Approximately half of all antibiotic treatments are either unnecessary or inappropriate across all three sectors of care^{8,9}



ANTIBIOTIC RESISTANCE



Approximately **125,000** cases of multidrug-resistant bacteria infections with **5,500** deaths in France in 2015¹⁰

⁵ <https://www.santepubliquefrance.fr/maladies-et-traumatismes>

⁶ <https://www.santepubliquefrance.fr>

⁷ Antimicrobial consumption in the EU/EEA (ESAC-Net) - Annual Epidemiological Report for 2020 (europa.eu)

⁸ Simon M. et al. Clin Microbiol Infect 2021;S1198-743X(21)00488-2.

⁹ Simon M. et al. Clin Infect Dis 2021;72(10):e493-e500.

¹⁰ Cassini A. et al, 2019. Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis, The Lancet 19:1.

METHODOLOGY

This national strategy is the framework that defines the main national guidance for the prevention of infections and antibiotic resistance in human health.

The strategy was co-authored with the help of two working groups: the first on IPC was coordinated by the French Society of Hospital Hygiene (SF2H) and the second on ABS by the National Professional Council of Infectious and Tropical Diseases (CNP-MIT)(composition of the working groups in Appendix 1).

To include all actors in a health democracy approach, members of the Propias monitoring committee (Cosu) were included in the two working groups so they could participate in the consultations and development of the strategy.

The strategy was also submitted for iterative review to the entire Propias monitoring committee and to the Human Health Steering Committee of the Interministerial Roadmap for Controlling Antibiotic Resistance (bringing together representatives of public authorities).

GOVERNANCE AND IMPLEMENTATION AT DIFFERENT LEVELS (NATIONAL, REGIONAL AND LOCAL)

The strategy is coordinated nationally by the Ministry for Solidarity and Health, in close synergy and collaboration with health agencies (e.g. Santé publique France, in particular in the context of coordinating the national missions for preventing and monitoring healthcare-associated infections and antibiotic resistance) and other national authorities (e.g. the French National Authority for Health). Close interaction with expert healthcare organisations (e.g. the French High Council for Public Health) and professional organisations with subject-relevant expertise (e.g. SF2H, CNP-MIT, SFM) is essential.

This coordination relies on:

- Operational oversight by the Head of the Ministerial Mission “Preventing Infections and Antibiotic Resistance” of the Ministry for Solidarity and Health (MSS), mainly in conjunction with all the central administrations directorates of the MSS and relevant agencies.
- A national steering committee for preventing infections and antibiotic resistance (COPIL PIA), a decision-making and monitoring body for the implementation and evaluation of the various measures for human health. This committee is made up of the central directorates of the Ministry for Solidarity and Health, the Regional Health Agencies, the National Health Insurance Fund (Cnam), Santé publique France (SpF), the French National Agency for the Safety of Medicines and Health Products (ANSM) and the National Authority for Health (HAS). This COPIL meets three to four times a year.
- A monitoring committee (Cosu), made up of stakeholders and organisations with expertise in the field of the strategy (in particular representatives of users, professionals from hospitals [ES], medicosocial services and community care). Drawing on the expertise of its members, it

will be proactive and involved in monitoring the implementation of all the measures of the plan and their evaluation. An interprofessional approach is crucial. This committee meets two to three times a year. The members of the COPIL attend the meetings of this monitoring committee.

- It is implemented at **regional level** by the Regional Health Agencies (ARS), which oversee regional and local health policy, implement this strategy and engage all regional actors involved in the prevention of infections and antibiotic resistance. The ARS are supported by two main regional actors with expert and supporting roles: the support centres for preventing healthcare-associated infections (CPias) and regional centres for antibiotic stewardship (CRAtb), both of which have a strategic purpose, as well as coordination and leadership roles. The CPias lead and coordinate networks of IPC professionals (in particular the operational hygiene teams [EOH] and the mobile or local hygiene teams [EMH]). The CRAtb lead and coordinate the networks of healthcare professionals responsible for ABS programmes (in particular the multidisciplinary antibiotic stewardship teams [EMA], the antibiotic stewardship referents and the network of general practitioners trained in antibiotic stewardship).

- It applies **at the local level**:

- for hospitals, under the authority of the Chairs of the Medical Committee and the hospital management, with the support of operational hygiene teams (EOH) and the people responsible for the infection risk prevention programme, the referents or multidisciplinary teams in antibiotic stewardship, together with the quality managers, the risk management and vigilance coordinators.
- for ABS, the multidisciplinary antibiotic stewardship teams (EMAs) are based at the geographical level of the Territorial Hospital Group (GHT) and operate in the three care sectors (public and private hospitals, medicosocial institutions and services and community care). Antibiotic stewardship referents are present in all hospitals.
- the EMAs and referents must have a sufficient number of staff trained in antibiotic stewardship (doctors, pharmacists, nurses) and have the operational resources required in practice (IT tools, access to data, etc.). Their work is promoted in each department/sector by antibiotic stewardship correspondents as part of a network led by the EMA/referents.
- for IPC, the EOHs must also have sufficient staff (doctors, pharmacists, nurses, secretaries) to provide the best possible support to the healthcare professionals in each hospital (and affiliated medicosocial organisations, where applicable) in the Territorial Hospital Group, and must also be trained according to the professional guidelines proposed by the SF2H⁹ and have access to the operational resources required for their work (IT tools, access to data, etc.). Their work is promoted in each department/sector by hygiene correspondents as part of a network led by the EOHs.
- for medicosocial institutions and services, particularly in ESMSs that provide medical care, under the responsibility of the organisation's management, with the care team (particularly the coordinating physician and coordinating nurse) with the support of a mobile hygiene team and the CPias. The EMAs also play this organising and supporting role for measures promoting ABS.

⁹ <https://www.sf2h.net/publications/referentiel-metier-specialistes-en-hygiene-prevention-controle-de-linfection-en-milieu-de-soins-mars-2018>

- for healthcare professionals based in the community (private healthcare professionals, community health centres, etc.) within the framework of measures coordinated by the ARS in conjunction with the regional unions of private practitioners (URPS) and with the support of the CPiAs and CRAtb (supported by the EMAs). This includes primary care organisations and home care organisations, as well as new organisations for coordinating care (e.g. territorial professional healthcare communities – CPTS, primary care teams – ESP, multiprofessional community health centres – MSP, etc.).

Although this national strategy sets out measures to be managed on a national level, they must be supported, promoted and deployed regionally (and locally) in order to achieve, in the long term, the most homogeneous national coverage possible and a genuine, lasting impact. The ARS is responsible for the regional implementation of the national strategy. The regional organisations in charge of developing measures for preventing infection and antibiotic resistance in the regions work under and are steered and coordinated by the ARS. With the support of the regional centres and engagement of all actors from every sector involved and user representatives, the ARS steers and coordinates the implementation, monitoring and evaluation of a large number of measures specified in this document. If necessary, the ARS can develop specific measures for the region.

EVALUATION OF THE 2022-2025 NATIONAL STRATEGY FOR PREVENTING INFECTIONS AND ANTIBIOTIC RESISTANCE

At the request of the Ministry for Solidarity and Health, this 2022-2025 national strategy will be evaluated by the **High Council for Public Health** (HCSP).

This evaluation has two objectives:

1. Firstly, the HCSP has provided an evaluability assessment of this strategy¹⁰; this is performed prior to the implementation of the strategy (ex-ante evaluation), focusing on the feasibility and usefulness of its evaluation.
2. Secondly, the HCSP will conduct an *in itinere* evaluation throughout the operational rollout of the national strategy. The Cosu and COPIL will be made aware of the results of the HCSP evaluation.

In addition to the evaluation performed by the HCSP, an annual report¹¹ on the implemented measures will be published by the MSS, including the monitoring and impact indicators included in this document.

¹⁰ HCSP opinions and reports: <https://www.hcsp.fr/Explore.cgi/avisrapportsdomaine?clefr=1128>

¹¹ <https://solidarites-sante.gouv.fr/prevention-en-sante/les-antibiotiques-des-medicaments-essentiels-a-preserver/des-politiques-publiques-pour-preserver-l-efficacite-des-antibiotiques/documents-de-synthese-presentant-la-strategie-nationale-de-lutte-contre-l/>

TARGET OUTCOMES FOR 2025

The following summarises the ideal target outcomes for the next 4 years for preventing infections and antibiotic resistance:

1. The general public has acquired and maintains a knowledge base on the main principles of infection prevention (in particular for hand hygiene, respiratory hygiene and vaccination) and contributes to the evaluation of practices during and after their care. Similarly, people are informed of the main concepts of prevention of antibiotic resistance, particularly in terms of ABS.
2. All staff, particularly healthcare and medicosocial professionals, have acquired and maintain a knowledge base on infections and means to prevent them: general knowledge, preventing cross-transmission including standard and complementary precautions, preventing infections linked to invasive procedures and vaccination, as well as the causes of infections and their transmission and how antibiotic resistance develops and the main principles of antibiotic stewardship.
3. All healthcare staff and professionals must improve their practices for preventing and controlling infection and antibiotic stewardship, whether through the use of different tools or through the implementation of action plans throughout the patient healthcare pathway.
4. The regional organisations (CRA**t**b and CPI**a**s) in charge of developing ABS and IPC work under and are coordinated by the Regional Health Agencies (ARS).
5. Monitoring data on antibiotic treatment (volume and appropriateness), community-acquired infections and healthcare-associated infections are available, are interpreted and accessible to the relevant professionals and the general public; they guide prevention, information and training measures. The evaluation of the impact of these measures focuses on the cross-transmission of microorganisms (particularly multi-drug and extensively drug-resistant bacteria), the prevalence and incidence of healthcare-associated infections (particularly those related to invasive procedures) and the volume and appropriateness of antibiotic treatment.
6. Innovative research is conducted on IPC and ABS.
7. The environmental impact of measures is taken into account in the prevention of infections and antibiotic resistance.
8. Older antibiotics remain available and bringing new products to market to combat antibiotic resistance will be made easier.
9. France's international influence and visibility in the fight against antibiotic resistance is consolidated.

STRATEGIC DIRECTIONS

To align with the above-mentioned target outcomes, the strategic directions of the 2022-2025 National Strategy for Preventing Infections and Antibiotic Resistance are organised into nine priority areas:

Priority 1: Adoption by the general public of the principles of preventing infections and antibiotic resistance

Priority 2: From public users of the healthcare system to health sector professionals: providing the required continuity for preventing infections and antibiotic resistance

Priority 3: Improving the prevention of infections and antibiotic resistance among healthcare professionals throughout the patient healthcare pathway

Priority 4: Development of the regional network for infection prevention and control and antibiotic stewardship

Priority 5: Shared use of health and monitoring data for taking action

Priority 6: Promoting innovative research

Priority 7: Developing a sense of “environmental protection” in infection and antibiotic resistance prevention measures

Priority 8: Developing and maintaining products that contribute to preventing infections and controlling antibiotic resistance

Priority 9: Contributing to France’s international influence and visibility



OVERVIEW OF MEASURES

Note:

Each measure of the strategy set out in this document must be supported and promoted nationally, regionally and locally by all entities mentioned in this strategic plan in order to achieve a genuine, sustainable and homogenous rollout of the measures in practice.

Colour code showing the timeframe for measures

Measure X: to be launched in 2022-2023

Measure Y: to be launched in 2023-2024

PRIORITY 1

ADOPTION BY THE GENERAL PUBLIC OF THE PRINCIPLES OF PREVENTING INFECTIONS AND ANTIBIOTIC RESISTANCE



OBJECTIVE 1: Improve learning about infection prevention and antibiotic resistance from as early as possible

MEASURE 1: Improving education on the prevention of infections and antibiotic resistance from an early age.

Leader: MSS Ministerial Mission for Prevention of Infections and Antibiotic Resistance (MSS/MMPIA)

MEASURE 2: Integrating the prevention of infections and antibiotic resistance into the milestones of the future citizen's pathway.

Leaders: MSS/MMPIA and MSS/DGS/SP in collaboration with MSS/SGMAS



OBJECTIVE 2: Raising public awareness of the prevention of community-acquired and healthcare-associated infections and antibiotic stewardship

MEASURE 3: Implementing a national and regional health promotion campaign (using social marketing techniques), as part of a multi-year communication programme focusing on antibiotic stewardship and the determining factors and consequences of antibiotic resistance.

Leader: Santé publique France (French National Public Health Agency)

MEASURE 4: Sharing available resources with the general public.

Leaders: MSS/MMPIA in collaboration with Santé publique France

MEASURE 5: Raising awareness of the general public on how to prevent the most common community-acquired infections in order to reduce the incidence of infections and prevent seasonal epidemics, as well as antibiotic resistance and emerging risks.

Leaders: Cnam in collaboration with SpF

MEASURE 6: Raising awareness among the general public to optimise treatment of benign infections.

Leaders: MSS/MMPIA in collaboration with Cnam and SpF

MEASURE 7: Raising awareness about the prevention of infections and antibiotic resistance among parents and early childhood professionals.

Leaders: MSS/MMPIA and MSS/DGCS/SD2C in collaboration with SpF



OBJECTIVE 3: Consolidating the role of national/regional organisations and user representatives in national and regional schemes

MEASURE 8: Involving user representatives at all levels (national, regional and local) in infection and antibiotic resistance prevention steering bodies.

Leaders: MSS/MMPIA in collaboration with ARS

MEASURE 9: Engaging national and regional organisations interested in the prevention of infections and antibiotic resistance in order to involve them in the promotion of the various measures.

Leaders: MSS/MMPIA in collaboration with ARS

PRIORITY 2

FROM PUBLIC USERS OF THE HEALTHCARE SYSTEM TO HEALTH SECTOR PROFESSIONALS: PROVIDING THE REQUIRED CONTINUITY FOR PREVENTING INFECTIONS AND ANTIBIOTIC RESISTANCE



OBJECTIVE 1: Developing the patient partnership for the prevention of infections and antibiotic resistance

MEASURE 10: Examining the relevance of information and training tools for users (patients, carers) in the areas of prevention and detection of healthcare-associated infections and antibiotic stewardship.

tions and antibiotic stewardship.

Leader: Santé publique France (French National Public Health Agency)



OBJECTIVE 2: Improving training for health and medicosocial professionals/administrators in the prevention of infections and antibiotic resistance

MEASURE 11: Consolidating the role of preventing infection and antibiotic resistance in the initial training of healthcare professionals.

Leaders: MSS/MMPIA and MSS/DGOS/RH1, in collaboration with MESRI/DGESIP

MEASURE 13: Improving the specific training for IPC and ABS professionals.

Leaders: MSS/MMPIA and MSS/DGOS/RH1-RH2

MEASURE 12: Improving the knowledge and skills of healthcare professionals with regard to preventing infection and antibiotic resistance.

Leaders: MSS/MMPIA and MSS/DGOS/RH2-RH4

MEASURE 14: Improving the training for health and medicosocial administrators on the prevention of infections and antibiotic resistance in collaboration with EHESP.

Leader: MSS/MMPIA

PRIORITY 3

IMPROVING THE PREVENTION OF INFECTIONS AND ANTIBIOTIC RESISTANCE AMONG HEALTHCARE PROFESSIONALS THROUGHOUT THE PATIENT HEALTHCARE PATHWAY



OBJECTIVE 1: Encouraging healthcare professionals to implement and promote preventive measures against infections and antibiotic resistance

MEASURE 15: Intensifying, diversifying and innovating in the promotion of standard hygiene precautions (especially hand hygiene) in the three sectors of care.

Leaders: MSS/MMPIA, MSS/DGOS/PF, MSS/DGCS/SD3 in collaboration with SpF (relevant national mission) and HAS

MEASURE 16: Adapting and improving measures for the prevention of infections and antibiotic resistance in ESMs.

Leaders: MSS/DGCS/SD3 together with SpF, MSS/MMPIA and the ARS

MEASURE 17: Improving vaccination uptake among target populations and healthcare and medicosocial professionals by means of information and awareness-raising cam-

paigns in line with the national vaccination strategy.

Leaders: MSS/DGS/SP together with MSS/MMPIA

MEASURE 18: Encouraging all professionals involved in the patient healthcare pathway to implement an action plan for IPC and ABS with evaluation of the measures, including the use and promotion of tools developed by the national missions.

Leaders: SpF in collaboration with MSS/MMPIA and the ARS

MEASURE 19: Exploring new avenues for implementing concrete IPC and ABS measures, from an interprofessional perspective.

Leader: MSS/MMPIA



OBJECTIVE 2: Encouraging antibiotic stewardship among professionals

MEASURE 20: Having professional recommendations and tools to guide practices and share them widely.

Leaders: MSS/MMPIA in collaboration with HAS

MEASURE 21: Improving the use of existing tools by healthcare professionals to promote good practices.

Leaders: MSS/MMPIA, MSS/DGS/PP, MSS/DREES, SpF, Cnam and HAS

MEASURE 22: Developing new interventions promoting antibiotic stewardship.

Leaders: MSS/MMPIA, MSS/DGS/PP, MSS/DSS/1C and Cnam

MEASURE 23: Establishing specifications for a clinical decision-making support system to optimise practices and promote its use, to develop digital tools encouraging antibiotic stewardship and to promote the use of these tools.

Leaders: MSS/DSS/1C in collaboration with MSS/MMPIA, MSS/DNS and HAS

PRIORITY 4

DEVELOPMENT OF THE REGIONAL NETWORKS FOR INFECTION PREVENTION AND CONTROL AND ANTIBIOTIC STEWARDSHIP



OBJECTIVE 1: Developing territorial networks for the prevention of infections and antibiotic resistance

MEASURE 24: Continuing and improving the implementation of CPias and CRAtb support centre measures.

Leaders: MSS/MMPIA in collaboration with MSS/DGOS/PF and the ARS

MEASURE 25: Continuing the work of the national CPias network, implementing the national CRAtb network and fostering synergy and sharing of experiences.

Leaders: MSS/MMPIA in collaboration with SpF

MEASURE 26: Setting up new national missions for the prevention and monitoring of healthcare-associated infections and antibiotic resistance to support the work by CPias and CRAtb centres and also determining the objectives associated with these missions.

Leader: Santé publique France (French National Public Health Agency)

MEASURE 27: Increasing human resources for regional and local IPC and ABS teams.

Leaders: MSS/MMPIA in collaboration with MSS/DGOS/PF, MSS/DGCS/SD3 and the ARS



OBJECTIVE 2: Improving the synergy between IPC and ABS measures

MEASURE 28: Implementing a system for monitoring the synergy of actions of the CPias and CRAtb centres (regionally), as well as of the EMAs/referents/EMHs/EOHs (locally), in particular by the future national missions led by Santé publique France, via the

indicators included in the annual reports of the CPias and CRAtb centres.

Leaders: MSS/MMPIA and SpF, in collaboration with the ARS

PRIORITY 5

SHARED USE OF HEALTH AND MONITORING DATA FOR TAKING ACTION



OBJECTIVE 1: Making available useful indicators for the different actors (health authorities, health professionals) to guide the national, regional and local strategy

MEASURE 29: Having an indicator dashboard with targets to guide the national/regional/local strategy for infection prevention and control and antibiotic stewardship and to improve the national and regional sharing of available data and indicators to promote their use for taking action.

Leaders: MSS/MMPIA, SpF in collaboration with Cnam, MSS/DREES and HAS

MEASURE 30: Developing new indicators related to the prevention of infections and antibiotic resistance and engaging existing incentives.

Leaders: MSS/MMPIA, in collaboration with ATIH, Cnam, MSS/DREES, HAS, MSS/DGOS/PF-R and SpF



OBJECTIVE 2: Improving monitoring and sharing best practices

MEASURE 31: Improving national coverage of antibiotic resistance data collection.

Leaders: Santé publique France with MSS/DGS/PP

MEASURE 32: Improve awareness of tracking tools (e.g. reporting portal) through an awareness-raising campaign for professionals and the general public.

Leaders: MSS/DGS/VSS-MICOM in collaboration with SpF

MEASURE 33: Sharing experiences in the prevention of infections and antibiotic resistance to improve practices.

Leaders: HAS with SpF and the ARS

PRIORITY 6

PROMOTING INNOVATIVE RESEARCH

MEASURE 34: Encouraging cross-cutting, collaborative and interdisciplinary research in the field of preventing infections and antibiotic resistance.

Leaders: Inserm in collaboration with MESRI and MSS

MEASURE 35: Developing and supporting specific research areas.

Leaders: Inserm in collaboration with MESRI and MSS

PRIORITY 7

DEVELOPING A SENSE OF “ENVIRONMENTAL PROTECTION” IN INFECTION AND ANTIBIOTIC RESISTANCE PREVENTION MEASURES

MEASURE 36: Limiting environmental pollution during the production of antibiotics.

Leaders: MSS/DGS/SP together with MSS/MMPIA

MEASURE 37: Limiting environmental pollution when using antibiotics.

Leaders: MSS/DGS/SP together with MSS/MMPIA

MEASURE 38: Controlling the production of liquid or solid waste during care, in particular infectious waste (ICW) arising from care activities.

Leaders: MSS/DGS/EA1 with MSS/DGOS/PF2

PRIORITY 8

DEVELOPING AND MAINTAINING PRODUCTS THAT CONTRIBUTE TO PREVENTING INFECTIONS AND CONTROLLING ANTIBIOTIC RESISTANCE

MEASURE 39: Protecting the existing therapeutic arsenal by adopting incentives to ensure the availability of off-patent antibiotics.

Leaders: MSS/DGS/PP in collaboration with MSS/DSS/1C, MSS/MMPIA and ANSM

MEASURE 40: Exploring incentive schemes that facilitate innovative products and technologies being brought to penetrate and remain on the market.

Leaders: MSS/DGS/PP, with MSS/MMPIA, MSS/DSS/SD1, ANSM, HAS and MEFR/DGE

PRIORITY 9

CONTRIBUTING TO FRANCE'S INTERNATIONAL INFLUENCE AND VISIBILITY

MEASURE 41: Driving further involvement of the MSS in key events and initiatives on the topic.

Leaders: MSS/DAEI, MSS/MMPIA, MSS/DGS/MAEI

MEASURE 42: Continuing to explore the possibility of funding international bodies, such as the WHO or OECD, for measures preventing infections and antibiotic resistance.

Leaders: MSS/DAEI in collaboration with MSS/MMPIA

IMPACT INDICATORS OF THE 2022-2025 NATIONAL STRATEGY

Data from the impact indicators of the National Strategy for Preventing Infections and Antibiotic Resistance will be used to determine whether the objectives have been achieved and to evaluate the impact of the measures implemented. They will be available on antibiotiques.gouv.fr info page of the Ministry for Solidarity and Health, as well as in the annual MSS report on preventing infections and antibiotic resistance.

A selection of 18 key indicators with the associated targets for 2025 and examples of messages are presented below; in particular, these indicators could be used for targeted communications with decision makers, health professionals and the general public.

A more detailed table in Appendix 2 presents *all* the indicators that can be used to monitor the national, regional and local plans and strategic measures. The following are mentioned for each of the indicators: the sector concerned (ES/ESMS/community care), the frequency of data collection, the possible availability of data at regional level, the reference value in 2019, how the value changed from 2015 to 2019, the target by 2025 and the body in charge of gathering data for the indicator with the link allowing easy access to the data.

| Indicators | Targets for 2025 |
|--|---|
| Prevention of infections | |
| Influenza vaccination coverage of healthcare professionals working in community care | > 80% by 2025, at national level |
| Influenza vaccination coverage of healthcare professionals working in hospitals | > 70% by 2025, at national level |
| Influenza vaccination coverage of healthcare professionals working in medicosocial institutions and services | > 70% by 2025, at national level |
| ●(Example of a message) More than 80% of healthcare professionals in community care are vaccinated against influenza; the national target has been met. | |
| Number of hand sanitising rubs in EHPADs, carried out by healthcare professionals | > 4 sanitising rubs / resident / day by 2025, nationally and in all regions |
| ●Hand rubbing with hand sanitising solutions by healthcare professionals who are responsible for residents in EHPADs has met the national target in our region. | |
| Hand rubs with alcohol-based sanitising product reported by health professionals in healthcare and medicosocial institutions after touching a patient | > 90% by 2025, at national level and in all regions |
| Average frequency of hand sanitising rubs by healthcare professionals, observed by patients before a treatment procedure | > 90% by 2025, at national level and in all regions |

- **More than 90% of healthcare professionals rub their hands with a hand sanitiser when hand hygiene is required; the national target has therefore been met in our region.**

| | |
|---|---|
| Proportion of inpatients/residents having received hand hygiene information | > 80% by 2025, at national level and in all regions |
|---|---|

- **More than 80% of inpatients/residents have received information about hand hygiene; the national target has therefore been met in our region.**

| | |
|---|---|
| Proportion of observations complying with the critical points of peripheral venous catheter placement | > 80% by 2025, at national level and in all regions |
|---|---|

- **The placement of a perfusion in hospital patients complies with good infection prevention practices in more than 80% of cases; the national target has been met in our region.**

| | |
|--|---|
| Proportion of pre-operative antibiotic prophylaxis complying with national recommendations | > 90% by 2025, at national level and in all regions |
|--|---|

- **Some surgical procedures require the use of antibiotics to reduce the risk of infection following the operation. Practices in relation to these antibiotic treatments were optimal in more than 90% of cases in the hospitals of our region, allowing us to meet the national target.**

| | |
|--|----------------------------------|
| Proportion of proper surgical site skin preparations (<i>awaiting indicator</i>) | > 80% by 2025, at national level |
|--|----------------------------------|

- **Surgical site skin preparation complies with good infection prevention practices in more than 80% of cases in hospitals; the national target has been met.**

| Indicators | Targets for 2025 |
|--|---|
| Healthcare-associated infections | |
| Incidence of bacteraemia on central venous catheters in intensive care units in hospitals | <1 case of bacteraemia per 1,000 catheter days, annually, nationally and in all regions |
| <ul style="list-style-type: none"> ● Nosocomial bloodstream infections due to perfusions remains rare in the intensive care units of our region; the national target has been met. | |
| Incidence of some surgical site infections (<i>indicator currently being developed</i>) | <i>TO be defined</i> |
| <ul style="list-style-type: none"> ● Preventable nosocomial infections following surgery remain rare in our region; the national target has been met. | |

| Indicators | Targets for 2025 |
|--|---|
| Antibiotic stewardship | |
| Number of antibiotic prescriptions dispensed in community care (per 1,000 inhabitants and per year) | <650 by 2025, at national level and in all regions |
| ●The number of antibiotic treatments prescribed to outpatients has decreased by xx% in our region since 2019; the national target has been met. | |
| Use of antibiotics in hospitals (in number of defined daily doses/1,000 hospitalisation days) | Reduction of at least 10% between 2019 and 2025, at national level and in all regions |
| ●The amount of antibiotics prescribed to hospital patients has decreased by xx% in our region in 2019; the national target has been met. | |

| Indicators | Targets for 2025 |
|---|---|
| Bacterial resistance to antibiotics or antibiotic resistance | |
| <i>NB: Infection prevention/control measures and antibiotic stewardship measures often take several years to reduce the incidence of antibiotic resistance.</i> | |
| Proportion of <i>Escherichia coli</i> resistant to 3 rd -generation cephalosporins (C3G) in urine in community care | ≤ 3%, every year, at national level and in all regions |
| ●Urinary tract infections due to multidrug-resistant <i>E. coli</i>, which are more difficult to treat, remain rare in our region among non-hospitalised patients; the national target has been met. | |
| Proportion of <i>Escherichia coli</i> resistant to 3 rd -generation cephalosporins (C3G) in urine in nursing homes | ≤ 8%, every year, at national level and in all regions |
| ●Urinary tract infections due to multidrug-resistant <i>E. coli</i>, which are more difficult to treat, remain uncommon in our region among residents in nursing homes; the national target has been met. | |
| Proportion of MRSA in <i>Staphylococcus aureus</i> isolated from blood cultures in hospitals | < 10%, every year, at national level and in all regions |
| ●Cases of bloodstream infections due to multidrug-resistant <i>Staphylococcus aureus</i>, which is more difficult to treat, remain uncommon in our region among hospitalised patients; the national target has been met. | |
| Proportion of carbapenem-resistant strains of <i>K. pneumoniae</i> isolated from blood cultures in hospitals | < 1%, every year, at national level |
| ●Cases of bloodstream infections due to certain bacteria that are resistant to almost all antibiotics, which are very difficult to treat, remain rare among hospitalised patients; the national target has been met. | |



DESCRIPTIVE OVERVIEWS OF MEASURES

Note:

Each priority is broken down into several objectives, which consist of measures with one or more indicators for monitoring the implementation of the measures*.

** Monitoring indicators are collected at a national level. If this data is also available at a regional level, it will also be sent annually by the body in charge of collection to the MSS Mission for Prevention of Infections and Antibiotic Resistance, which will be responsible for sending this regional data to the ARS.*

PRIORITY 1

ADOPTION BY THE GENERAL PUBLIC OF THE PRINCIPLES OF PREVENTING INFECTIONS AND ANTIBIOTIC RESISTANCE



OBJECTIVE 1: Improve learning about infection prevention and antibiotic resistance from as early as possible

MEASURE 1: Improving education on the prevention of infections and antibiotic resistance from an early age.

Leader: MSS Ministerial Mission for Prevention of Infections and Antibiotic Resistance (MSS/MMPIA)

Timescale: to be launched in 2022-2023

Challenges: Improving health education on the prevention of infections and antibiotic resistance among children and teenagers so that they can gain the minimum necessary knowledge and know how to apply good everyday practices.

Supporting measures:

1.1. Working with the Ministry of National Education, Youth and Sports to explore the possibility of improving the inclusion of infection prevention and antibiotic resistance concepts in primary and secondary school curricula.

● **Description:** This action is part of a measure by the National Public Health Plan (PNSP): "Health-promoting schools: standardising the educational health pathway" ("L'école promotrice de santé : généraliser le parcours éducatif de santé") (*leader: MENJS/DGESCO, in collaboration with MSS/MMPIA*).

● **Monitoring indicator:** Programmes related to this topic set up by the academies as part of Academic Committees on Education for Health, Citizenship and the Environment (CAESCE) (*responsible for collecting and sending the indicator to the MSS/MMPIA each year: MENJS/DGESCO in collaboration with CAESCE*).

1.2. Continuing to develop and promote the use of the e-Bug tool, which is an educational resource available online [here](#) that offers free and interactive tools to facilitate teaching about prevention of infection and antibiotic resistance to students from primary to secondary school (middle and high school) as part of the One Health approach.

● **Description:** Continuation of DGS financing of the e-Bug France tool, participation in the discussions regarding the development of the tool during the annual meetings organised by the e-Bug France team at CHU Nice, continuation of national and regional promotion of the tool (in particular with support from the ARS, in collaboration with CPIas and CRAtb centres, as well as the SSSES, Cf. measure 1.3) (*leader: MSS/MMPIA*). Adapting the content of e-Bug educational resources to the under-6 age group, in connection with measure 7 (*leader: e-Bug France team*).

- **Monitoring indicator:** Number of annual visits to the e-Bug website for all of France (*responsible for collecting and sending the indicator: information shared by the e-Bug France team to the MSS/MMPIA*).

1.3. Supporting the regional rollout of the prevention of infections and antibiotic resistance as the fifth national priority of the Health Service for Healthcare Students (SSES), making it possible in particular to improve prevention in relation to this topic in primary, secondary and higher education.

- **Description:** Annual meetings to implement the measure in the run up to 2023 (*leader: MSS/MMPIA*) and improving the dissemination of the tools developed (*leader: SpF/ relevant national mission*) under the order of 22 December 2020 amending the order of 12 June 2018 on the health service for healthcare students.
- **Monitoring Indicator:** Share of prevention and health promotion measures dealing with this topic as part of the SSES (*source: annual survey of health service students, responsible for collecting and sending the indicator: MSS/SGMAS*).

MEASURE 2: Integrating the prevention of infections and antibiotic resistance into the milestones of the future citizen's pathway.

Leaders: MSS/MMPIA and MSS/DGS/SP, in collaboration with MSS/SGMAS

Timescale: to be launched in 2022-2023

Challenges: The key milestones of the future citizen's pathway are an opportunity to raise young people's awareness of their own health and to promote healthy behaviours for all, especially regarding the prevention of infections and antibiotic resistance.

- **Description:** French Universal National Service (SNU), which was introduced in 2019, is centred around 6 compulsory modules, including a health-related module, thus providing the MSS an excellent opportunity to include the prevention of infections and antibiotic resistance in the new module. Continued promotion of educational resources (5 educational kits on hand hygiene, respiratory hygiene, oral hygiene, food hygiene and treatment of infections) suitable for use in SNU. These materials were created in collaboration with the e-Bug team and the national MATIS mission.
- **Monitoring indicator:** To be determined during the course of the overall evaluation of SNU (*to define*).



OBJECTIVE 2: Raising public awareness of the prevention of community-acquired and healthcare-associated infections and antibiotic stewardship

MEASURE 3: Implementing a national and regional health promotion campaign (using social marketing techniques), as part of a multi-year communication programme focusing on antibiotic stewardship and the determining factors and consequences of antibiotic resistance.

Leader: Santé publique France (French National Public Health Agency)

Timescale: to be launched in 2022-2023

● **Description:** Following the preparation work that has been in progress since 2019, the campaign will be structured into several stages with the aim of increasing the level of knowledge before focusing communication on encouraging behavioural changes:

- for the general public, the aim is to improve understanding of antibiotics (indications, benefits, limits, etc.) and antibiotic resistance.
- for healthcare professionals, it is a question of increasing awareness of the various recommendations and tools for better practices.

From 2022, measures to be launched include:

- an educational campaign (press, digital) targeting healthcare professionals For example: distributing videos of experts on the new recommendations, editorials/publications on antibiotic resistance in the professional press, organising symposiums, developing Antibioclic.
- the educational campaign (digital, press relations) aimed at the general public and referring to Antibio'Malin. Examples of content that can be produced: infographics, quizzes, digital videos, audio or video press kits. Media partnerships (with content producers or influencers). Press contacts to promote the editorial on the subject. These educational campaigns will prime the population for the awareness-raising campaign.

The objective of this social marketing strategy is to increase the level of knowledge and awareness of the population and healthcare professionals about antibiotic stewardship and antibiotic resistance, adopting a One Health perspective when relevant (e.g. by promoting measures limiting environmental pollution by antibiotics).

● **Monitoring indicator:** New surveys on knowledge, attitudes, beliefs, and behaviours in 2024-2025 (SpF).

MEASURE 4: Sharing available resources with the general public.

Leaders: MSS/MMPIA primarily in collaboration with Santé publique France

Timescale: to be launched in 2022-2023

Challenges: Distributing the prevention and communication tools developed is essential in order to raise awareness among the general public about the prevention of infections and antibiotic resistance (in a One Health perspective when relevant), by making the information easily accessible, in particular by linking it to the digital health platform developed by Assurance Maladie. This measure supports measures 5, 6 and 16. These awareness-raising tools will be promoted through the network of each body mentioned in this strategy (particularly those represented in the monitoring committee).

Supporting measures:

4.1. Improving the coordinated communication between ministries and health agencies and preparing a press kit to mark the occasion of European Antibiotic Awareness Day (18 November) and World Antimicrobial Awareness Week (18-24 November).

● **Description:** Inclusion of the press kit in the SpF work programme (MSS/MMPIA).

● **Monitoring indicator:** Annual publication of the press kit in November (SpF).

4.2. Continuing to publish communication materials for the general public.

- Publication of an annual [information brochure](#) by the MSS in French and English that highlights innovative measures taken by the public authorities.
- Publication by the MSS of the [annual report](#) summarising the main measures taken related to human health by the public authorities in partnership with the relevant stakeholders.
- Drafting and publication of an [annual report](#) using a “One Health” perspective coordinated by Santé publique France, in partnership with Anses, ANSM, Inserm, Cnam, HAS and the Ministries.
- Regular updating of the digital health platform by Assurance Maladie with resources on preventing infections and antibiotic resistance.

● **Description:** Inclusion in SpF (MSS/MMPIA) and Cnam (Cnam) work programmes.

● **Monitoring indicator:** Publication of these communication documents.

4.3. Regularly updating the MSS [antibiotiques.gouv.fr](#) platform and continuing to optimise and promote [Antibio'Malin](#), the e-health user resource on the Santé.fr website for information on antibiotics available in outpatient settings and the most common community-acquired infections (MSS/MMPIA in collaboration with MSS/DGS/MICOM, MSS/SPIS and SpF).

● **Description:** [Antibiotiques.gouv.fr](#) refers to the websites of other Ministries and health agencies (which will also be updated regularly). [Antibio'Malin](#) is an e-health resource on the Santé.fr website for information on antibiotics available in outpatient settings and the most common community-acquired infections.

● **Monitoring indicator:** Annual number of visits to the [antibiotiques.gouv.fr](#) and the [Antibio'Malin](#) e-health information resources (MSS/DGS/MICOM and MSS/SPIS, respectively).

MEASURE 5: Raising awareness of the general public on how to prevent the most common community-acquired infections in order to reduce the incidence of infections and prevent seasonal epidemics, as well as antibiotic resistance and emerging risks.

Leaders: Cnam in collaboration with SpF

Timescale: to be launched in 2022-2023

Challenges: Enforcing protective measures in response to the COVID-19 health crisis led to a drastic reduction in the incidence of common community-acquired infections (respiratory infections and acute gastroenteritis, in particular). While the general public has now incorporated certain hygiene measures into their daily lives, this represents an opportunity to maintain good infection prevention and control behaviours, including vaccination (see measure 18).

Supporting measures:

5.1. Having recommendations that define preventive measures for common community-acquired infections that should be followed by all.

- **Description:** HCSP referral (*MSS/MMPIA*) in order to capitalise on the health crisis and maintain the IPC behaviours of the general public.
- **Monitoring indicator:** SUBmission of the referral (*HCSP*).

5.2. Defining a multi-year and sustainable communication strategy to promote these measures to prevent common community-acquired infections.

- **Description:** Inclusion in the Cnam work programme (*Cnam*). As indicated in measure 4, the awareness-raising tools will be shared widely, particularly at national level by national missions led by SpF and at regional level by the ARS, with the support of the CPias and CRAtb centres. Effort will be made to harness synergies with existing tools, especially Antibio'Malin.
- **Monitoring indicator:** Communication strategy defined and approved (*Cnam*).

5.3. Exploring the feasibility of setting up long-term monitoring of these prevention practices in the general population.

- **Description:** This will be carried out by Cnam with SpF.

MEASURE 6: Raising awareness among the general public to optimise treatment of benign infections.

Leaders: MSS/MMPIA, Cnam and SpF

Timescale: to be launched in 2022-2023

Challenges: It is estimated that about one in three antibiotic prescriptions is unnecessary, which significantly contributes to the development of antibiotic resistance. Raising awareness among the general public is important:

- in order for them to be actively involved in their own health with regard to these common, benign infections, which do not always require seeing a doctor
- to avoid the use of antibiotics for these infections *via* educational tools (e.g. Antibio'Malin and non-prescription pads).

Supporting measures:

6.1. Being actively involved in your health for dealing with common benign infections.

- **Description:** Integrate into Antibio'Malin practical advice that allows everyone to take appropriate action (e.g. warning signs, when to consult, not to self-medicate) (*MSS/MMPIA with CRAtb AntibioEst, MSS/SPIS, SpF and Cnam*).
- **Monitoring indicator:** Making these additional resources available online (CRAtb AntibioEst).

6.2. Informing patients about avoiding the use of antibiotics where possible by continuing to promote Antibio'Malin (measure 4.3) and encouraging general practitioners and paediatricians not to prescribe antibiotics where possible, and by exploring additional developments in this non-prescription pad (e.g. poster, card, desk display formats, targeting patients; adaptation to other professionals such as dentists and pharmacists).

- **Description:** Inclusion in the Cnam (*Cnam*) and SpF work programme (*MSS/MMPIA*).
- **Indicateur de suivi:** Integration of these tools into Cnam's medical control measures with healthcare professionals (*Cnam*).

MEASURE 7: Raising awareness about the prevention of infections and antibiotic resistance among parents and early childhood professionals.

Leaders: MSS/MMPIA and MSS/DGCS/SD2C, in collaboration with SpF

Timescale: to be launched in 2022-2023

Challenges: facilitating the production/distribution of educational content for parents and early childhood professionals on infections, infection prevention and control (including hygiene practices), antibiotics commonly prescribed in paediatrics and pregnancy, and antibiotic resistance.

Supporting measures:

7.1. Adapting the content of the e-Bug educational resources to the under-six age group (for teachers, children and their parents).

- **Description:** The e-Bug tool is a digital platform for schools, teachers and parents. Educational resources will be available for parents of children under six years of age in nursery and their teachers (*e-Bug France team*).
- **Monitoring indicator:** Effective production of these resources (*e-Bug France team*) and making them available on the e-Bug France website.

7.2. Raising awareness of the topic among health specialists and inclusive childcare experts (decree of 30 August 2021) and all early childhood professionals.

- **Description:** engaging relevant professional organisations, together with representatives of early childhood professionals and families, to produce and distribute practical content for early childhood professionals. This content would be shared with initial and continuing training organisations and, in addition, could be used to populate the “1000 premiers jours” website/application (*MSS/MMPIA and MSS/DGCS/SD2C*). This information will also be referenced on the [Antibio'Malin platform on Santé.fr](#) and any other relevant tool mentioned in this strategy.
- **Monitoring indicator:** Effective production of content.

7.3. Raising awareness among, informing and supporting parents about the prevention of infections and antibiotic resistance from before children are conceived, during pregnancy and until the child attends nursery.

- **Description:** Mobilising relevant professional organisations, alongside families, to produce and distribute practical preconception, pregnancy and early childhood content for parents that could populate, among other resources, the “1000 premiers jours” website/application (*MSS/MMPIA, MSS/DGCS/SD2C and SpF*). This information will also be referenced on the Antibio'Malin platform on Santé.fr and any other relevant tool mentioned in this strategy.
- **Monitoring indicator:** Effective production of content.



OBJECTIVE 3: Consolidating the role of national/regional organisations and user representatives in national and regional schemes

MEASURE 8: Involving user representatives at all levels (national, regional and local) in infection and antibiotic resistance prevention steering bodies.

Leader: MSS/MMPIA in collaboration with ARS

Timescale: to be launched in 2022-2023

Challenges: In the context of improving democracy in healthcare, the Ministry for Solidarity and Health involves user representatives in decision-making bodies with a view to encouraging dialogue and interaction.

- **Description:** the integration of user representative associations must be improved within the national and regional steering bodies. The MSS will ensure that this happens in the future monitoring committee for this strategy. The MSS will liaise with the ARS to achieve this, the integration of users' representatives in the regional steering committee has already been included in the directive of 15 May 2020 on regional health agencies implementing preventive measures against antibiotic resistance. Institutions are also asked to consider if user representatives will be involved in their committees (quality and safety of care subcommittee, anti-infective subcommittee).
- **Indicators de suivi:** The MSS will indicate in its annual report the number of meetings of the Strategy Monitoring Committee to which user representatives have been invited. For regions, the ARS will indicate to the MSS whether their regional interdisciplinary steering committee includes user representatives.

MEASURE 9: Engaging national and regional organisations interested in the prevention of infections and antibiotic resistance in order to involve them in the promotion of the various measures.

Leader: MSS/MMPIA in collaboration with ARS

Timescale: to be launched in 2022-2023

Challenges: preventing infections and antibiotic resistance is a shared responsibility. Implementing and adopting public policies for preventing infections and antibiotic resistance also requires the involvement of many national (e.g. national professional councils, academies, student associations) and regional (e.g. departmental councils, URPS, local elected officials) organisations that are not part of the national and regional steering bodies mentioned in measure 8. These organisations have a pivotal role to play in preventing infections and antibiotic resistance.

Supporting measures:

9.1. Engaging national organisations with an interest in preventing infection and antibiotic resistance.

- **Description:** The MSS will continue to interact regularly (by e-mail, teleconferences, annual webinar) with the group of national organisations who have an interest in the topic, set up in 2020.
- **Monitoring indicator:** Number of organisations present at the annual webinar “Preventing infections and antibiotic resistance” organised by the MSS to share policy updates and organisations’ initiatives on the topic.

9.2. Engaging regional organisations with an interest in infection prevention and antibiotic resistance.

- **Description:** The involvement of regional organisations will be linked to the regional steering committee set up by the ARS, together with the CPias and the CRAtb centres.
- **Monitoring indicator:** Average number of regional organisations involved per region (ARS).

PRIORITY 2

FROM PUBLIC USERS OF THE HEALTHCARE SYSTEM TO HEALTH SECTOR PROFESSIONALS: PROVIDING THE REQUIRED CONTINUITY FOR PREVENTING INFECTIONS AND ANTIBIOTIC RESISTANCE



OBJECTIVE 1: Developing the patient partnership for the prevention of infections and antibiotic resistance

MEASURE 10: Examining the relevance of information and training tools for users (patients, carers) in the areas of prevention and detection of healthcare-associated infections and antibiotic stewardship.

Leader: Santé publique France (French National Public Health Agency)

Timescale: to be launched in 2023-2024

Challenges: providing users with information and training tools that let them be actively involved in the prevention of healthcare-associated infections and antibiotic resistance.

● **Description:** The national missions (current and future, see measure 26) led by Santé publique France are responsible for creating and distributing information and training tools for users, in particular about:

- healthcare-associated infections (HCAIs): surgical site infections, infections associated with invasive devices (venous catheter, urinary catheter, etc.)
- cross-transmission of infectious agents, including the transmission of BMR and BHRe
- risks associated with invasive procedures
- antibiotic stewardship
- vaccination
- the missions should be able to monitor and evaluate the use of these tools.

● **Monitoring indicators:** Making these tools available and evaluating their use in the 3 care sectors and in the different regions (*SpF - national missions*).



OBJECTIVE 2: Improving training for health and medicosocial professionals/administrators in the prevention of infections and antibiotic resistance

MEASURE 11: Consolidating the role of preventing infection and antibiotic resistance in the initial training of healthcare professionals.

Leaders: MSS/MMPIA and MSS/DGOS/RH1, in collaboration with MESRI/DGESIP

Timescale: to be launched in 2022-2023

- **Description:** as all healthcare professionals have a role to play in the prevention of infections and antibiotic resistance, including this topic in the initial training of healthcare professionals is essential. Although these issues are already included into the initial training programmes of healthcare professionals, national and European studies, as well as dialogue with professionals in the field, suggest that there is room for improvement. Therefore, we must ensure that during their initial training, all healthcare professionals (first and foremost in medicine, dentistry, midwifery, pharmacy and nursing) have and will have access to teaching programmes that allow them to master generic skills in every aspect of preventing antibiotic resistance, including IPC and ABS.

Supporting measures:

11.1. Developing core competencies for “Preventing infections and antibiotic resistance” and encouraging its use as a benchmark for optimising the initial training of healthcare professionals (doctors, pharmacists, dentists, midwives and nurses).

- **Description:** An initial proposal for a minimum core competencies for “Preventing infections and antibiotic resistance” was created by the SF2H and the National Professional Council of Infectious and Tropical Diseases (CNP-MIT) at the request of the MSS, and this document is currently being reviewed by the various organisations concerned to determine a minimum set of competencies relevant to the five professions. Set up working groups in order to identify levers for promoting the widespread use of these core competencies (in particular including MESRI/DGESIP, Conference of Deans [medicine, pharmacy, odontology], CNEMa [National Conference of Midwifery Educators], CEFIEC [Joint Committee for Nursing and Management Training], ANDEP [French National Association of Paramedical College Directors], mission leaders for reforming 1st, 2nd and 3rd cycle medical programmes, CNCCEM [National Committee of Schools of Medical Educators], student associations) (*MSS/MMPIA in collaboration with MSS/DGOS/RH1*). Subsequently, taking similar action for the initial training of nursing assistants, by adapting the core competencies to this profession (*MSS/DGOS/RH1 in collaboration with MSS/MMPIA*).
- **Monitoring indicator:** (*MSS/DGOS/RH1*)
 - creation of the core competencies for “Preventing infections and antibiotic resistance” and number of meetings for discussions with the organisations involved in the initial training.
 - creation of additional competencies modules by profession if necessary and of a specific set for nursing assistants.
 - in addition:
 - if this supporting measure requires changes to the curricula:
 - Publication of the regulations modifying the curricula of initial training.
 - if this supporting measure does not require regulatory changes :
 - Proposal to evaluate the system via the CNCCEM (medicine), Conference of Deans of Pharmacy and Dentistry, CNEMa (midwifery) CEFIEC (nurses).

11.2. Encouraging universities and training institutes, in collaboration with the relevant academic actors, to periodically assess the level of preparation of final-year students (medicine, midwifery, odontology, pharmacy, nursing) in relation to this set of core competencies and to adapt teaching based on these results.

- **Description:** Formation of the working group mentioned in measure 11.1.
- **Monitoring indicator:** (*MSS/DGOS/RH1 et MESRI/DGESIP*) creation of a monitoring and evaluation mission responsible for ensuring that teachers implement evaluation methods for each healthcare field :
 - survey students every 5 to 10 years via academic actors (teachers and UFR) to determine the level of preparation of students by field.

11.3. Promoting innovative and interdisciplinary teaching approaches, including simulation, by enabling access to platforms.

- **Description #:** Issue a call for projects to encourage the development of health simulation programmes that include objectives for preventing infections and antibiotic resistance and facilitate access to simulation platforms (*MSS/DGOS/RH1 in collaboration with MESRI/DGESIP*).
- **Monitoring indicator:** Call for projects on these topics for simulation platforms (*MSS/DGOS/RH1 in collaboration with MESRI/DGESIP*).

MEASURE 12: Improving the knowledge and skills of healthcare professionals with regard to preventing infection and antibiotic resistance.

Leaders: MSS/MMPIA and MSS/DGOS/RH2-RH4

Timescale: to be launched in 2022-2023

Challenges: improving the practices of healthcare professionals in the health and medicosocial sectors is a way of preventing infections and antibiotic resistance. There is a continuing need to update and, if necessary, deepen the knowledge and skills of all healthcare professionals (particularly in medicine, dentistry, midwifery, pharmacy and nursing) on this topic. Improving training in this area allows professionals to update and enhance their knowledge and practices.

Supporting measures:

12.1. Make use of Continuing Professional Development (CPD) to support the prevention of infections and antibiotic resistance.

- **Description:** (*MSS/MMPIA, MSS/DGOS/RH2-RH4 and ANDPC*)
 - publication at the end of 2021-start of 2022 by the ANDPC of a three-year call for tenders on IPC and ABS
 - plan an evaluation of the impact of this call for tenders with the ANDPC and IRDES
 - continue to seek the inclusion of the topic “Preventing infections and antibiotic resistance” in the national priority CPD guidelines for the next three-year period 2023-2025.
- **Monitoring indicators:** Inclusion of the topic as a national CPD priority for 2023-2025, number of CPD measures published and number of professionals registered for the call for proposals (*MSS/DGOS/RH2-RH4 and ANDPC*).

12.2. Annual evaluation of the percentage of professionals in the healthcare and medicosocial sectors trained in the prevention of infections and antibiotic resistance.

- **Description:** CPD and, more broadly, development of skills for professionals in healthcare, social and medicosocial institutions (*MSS/DGOS/RH2-RH4*).
- **Monitoring indicator:** Number of healthcare professionals eligible for ANDPC funding (i.e. healthcare professionals working under the national healthcare insurance scheme or employees of health centres in the same position) enrolled in CPD initiatives on this topic and number of salaried healthcare professionals enrolled in training initiatives on this topic (national and regional participation data by profession/speciality - *MSS/DGOS/RH2-RH4*, with data collected from ANDPC, ANFH and operators).

Measure 13: Improving the specific training for IPC and ABS for professionals.

Leaders: MSS/MMPIA and MSS/DGOS/RH1-RH2

Timescale: to be launched in 2022-2023

Challenges: The current arrangement of teams responsible for infection prevention/control and antibiotic stewardship relies both on trained professionals (for ABS, in accordance with the professional guidelines published in 2018 by the SF2H) *via* additional training as part of continuous development and on professionals trained *via* initial training (e.g. FST Hygiene - Infection Prevention, Resistance [HPIR] and postgraduate qualification in Infectious and Tropical Diseases).

Supporting measures:

13.1. Defining the training recommended for medical and paramedical roles in IPC and ABS teams dedicated to preventing infections and antibiotic resistance (EOH, EMH, EMA, antibiotic stewardship referents).

- **Description:** Referral to professional organisations to draft these professional recommendations, then exploration of the incentives that could be used to enhance the value of the recommended training (*MSS/MMPIA and MSS/DGOS/RH1-RH2*).
- **Monitoring indicator:** publication of these professional recommendations.

13.2 Assessing the initial training needs of specialists in IPC and ABS.

- **Description:** Referral to the ONDPS, giving consideration to professional recommendations (DGOS-DGCS-DGS referral from the CNP-MIT and SF2H in March 2021 and the referral mentioned in 13.1). The aim is to anticipate initial training requirements (in annual number of trainees) (DES MIT and FST HPIR) (*MSS/MMPIA and MSS/DGOS/RH1*).
- **Monitoring indicator:** submission of referrals.

13.3 Enhancing and encouraging the training of nurses who have acquired specific skills in the prevention of infections and antibiotic resistance (e.g. creation of an expert or specialised status, advanced practice nurse, etc.) and making their position in this area of expertise appealing.

- **Description:** Consultation with professional nursing representatives and employers to explore ways of encouraging the creation of dedicated posts within healthcare organisations, as well as a new salary bonus for specifically for nurses recruited to these posts (*MSS/DGOS/RH2 together with MSS/MMPIA*).
- **Monitoring indicator:** Annual monitoring of the number of trained registered nurses and posts created (*MSS/DGOS/RH2*).

13.4. Establishing a set of core competencies for IPC specialists by defining, on the basis of standardised guidelines, the minimum content of an academic qualification (DU) in IPC with some essential teaching methods.

- **Description:** Referral of the SF2H by the MSS (*MSS/MMPIA*) to create professional recommendations including the definition of the basic set of core competencies for IPC specialists and the content of the IPC academic qualification. Building on two reports commissioned by the MSS^{12,13} and the SF2H professional guidelines available since 2018.
- **Monitoring indicator:** publication of this professional recommendation.

MEASURE 14: Improving the training for health and medicosocial administrators on the prevention of infections and antibiotic resistance in collaboration with EHESP.

Leader: MSS/MMPIA and EHESP

Timescale: to be launched in 2022-2023

Challenges: It is essential that health and medicosocial administrators (especially directors of institutions) are made aware of the issue as they play a key role in the rollout of actions in practice.

- **Description:** Integrate the topic “Preventing infections and antibiotic resistance” (adopting a One Health perspective) in the training courses offered by EHESP.
- **Monitoring indicator:** Inclusion of this topic in the EHESP training modules considered relevant (*EHESP*).

¹² https://solidarites-sante.gouv.fr/IMG/pdf/Cemka-eval_impact_diplome_universite.pdf

¹³ https://solidarites-sante.gouv.fr/IMG/pdf/Etat_des_lieux_des_formationes_specifiques_pour_les_praticiens_hospitaliers_en_hygiene_les_infirmiers_et_cadres_hygienistes.pdf

PRIORITY 3.

IMPROVING THE PREVENTION OF INFECTIONS AND ANTIBIOTIC RESISTANCE AMONG HEALTHCARE PROFESSIONALS THROUGHOUT THE PATIENT HEALTHCARE PATHWAY



OBJECTIVE 1: Encouraging healthcare professionals to implement and promote preventive measures against infections and antibiotic resistance

MEASURE 15: Intensifying, diversifying and innovating in the promotion of standard hygiene precautions (especially hand hygiene) in the three sectors of care.

Leaders: MSS/MMPIA, MSS/DGOS/PF and MSS/DGCS/SD3 together with SpF (relevant national mission) and HAS

Timescale: to be launched in 2022-2023

Challenges: Preventing and controlling infections, one of the key pillars for combatting antibiotic resistance, primarily relies on standard IPC precautions, in particular hand hygiene, the promotion and use of which should be supported.

Supporting measures:

15.1. Prioritising the prevention of infections and antibiotic resistance (particularly hand hygiene) including the prevention of accidental exposure to blood (AEB) in the various annual promotion and awareness-raising campaigns among health system stakeholders (including World Hand Hygiene Day promoted by the WHO on 5 May, Global Handwashing Day promoted by Unicef and WHO aimed at children on 15 October, and Patient Safety Week organised by the MSS/DGOS during November).

● **Description:** Prioritisation of the topic as far as possible in the campaigns conducted (MSS/DGOS/PF and MSS/DGCS/SD3), production of innovative educational resources (SpF - national mission involved) and distribution of these resources to regional and local actors (SpF - relevant national mission, MSS/MMPIA and MSS/DGCS/SD3).

● **Monitoring indicator:** Number of downloads of tools produced by the relevant national mission (SpF - relevant national mission).

15.2. Implementing a consolidated version of the indicator on the use of hand sanitising solutions in hospitals.

● **Description:** Continue to collect the indicator on the use of hand sanitising solutions until it is replaced by an indicator currently under development (HAS).

● **Monitoring indicator:** Finalisation and collection of the indicator (HAS).

15.3. Developing an indicator to assess how patients perceive hand hygiene.

- **Description:** Development by the HAS with the SF2H of an indicator evaluating how patients perceive hand hygiene and exploring the levers for routine collection (HAS).
- **Monitoring indicator:** Implementation and routine collection of this indicator (HAS).

15.4. Encouraging the improvement of hand hygiene practices through regulatory means by involving users.

- **Description:** Explore existing regulatory levers (MSS/DGOS/PF, MSS/DGCS/SD3 and MSS/MMPIA).
- **Monitoring indicator:** implementation of this regulatory lever if relevant.

MEASURE 16: Adapting and improving measures for the prevention of infections and antibiotic resistance in ESMs.

Leaders: MSS/DGCS/SD3 together with SpF, MSS/MMPIA and the ARS

Timescale: to be launched in 2022-2023

Challenges: Improving the promotion of IPC and ABS measures through specific arrangements for ESMs in line with measures 11, 12, 14, 15, 18 and 19.

Supporting measures:

16.1. Improving the promotion of hand hygiene and standard precautions, including the prevention of accidental exposure to blood (AEB) in ESMs.

- **Description:** Improving the promotion and monitoring of hand hygiene, including the prevention of AEB, in EHPADs, and in future in homes that provide medical care (particularly in the field of disability), in line with measures 11, 12, 14, 15 and 18 (MSS/DGCS/SD3 in connection with SpF, national missions and ARS).
- **Monitoring indicator:** Extend use of alcohol-based hand sanitiser in EHPAD (SpF - relevant national mission) to the rest of the medicosocial sector (2023: work to be carried out under new national missions).

16.2. Promoting infectious risk assessment and risk analysis in ESMs.

- **Description:** On the basis of the evaluation of existing infectious risk diagnostic tools, work on developing and adapting them to the medicosocial sector outside of EHPAD settings (MSS/DGCS/SD3, together with the ARS, SpF and national missions).
- **Monitoring indicator:** Proportion of ESMs that have implemented an infectious risk diagnostic tool including hand hygiene and standard precautions (2023: work to be carried out as part of the new national missions).

16.3. Encouraging the implementation of ABS core elements in medicosocial settings, giving priority to EHPADs, as put forward by the National Professional Council of Infectious and Tropical Diseases (CNP-MIT)

●Description:

- identifying the levers for promoting antibiotic stewardship in EHPADs, then in homes that provide medical care for people with disabilities (MSS/DGCS/SD3, mainly together with MSS/MMPIA, the ARS and Cnam).
- examples of avenues to be explored: re-run the Cnam awareness-raising campaigns in EHPADs (mainly targeting EHPAD care teams in synergy with other measures targeting referring physicians); promote the digital transition for prescribing antibiotics alongside the development of e-prescription in ESMSs and integrate tools into the IT systems of ESMS for assisting with antibiotic prescriptions envisaged in measure 20.

●Monitoring indicator: Reduction of antibiotic use in EHPADs (*SpF* - relevant national mission).

MEASURE 17: Improving vaccination uptake among target populations and healthcare and medicosocial professionals by means of information and awareness-raising campaigns in line with the national vaccination strategy.

Leaders: MSS/DGS/SP together with MSS/MMPIA

Timescale: to be launched in 2022-2023

Challenges: Achieving optimal vaccination coverage in line with national recommendations is essential. This measure refers to the national immunisation policy, including the future re-formed immunisation policy strategy.

●Description: Continue and improve the communication measures already implemented, update the information resources on vaccination both for healthcare professionals and the general public (e.g. *SpF* vaccination info service website, distribution of targeted information to insured persons by Cnam depending on latest vaccine developments) (MSS/DGS/SP). The MSS/MMPIA, and all the bodies mentioned in this strategy will ensure that information is shared.

●Monitoring indicator: Results of surveys on vaccination uptake by the general public and vaccination coverage of infants and teenagers (*SpF*); vaccination coverage of healthcare professionals against seasonal influenza (*SpF* surveys for professionals in healthcare and medicosocial establishments; Cnam surveys for private practice professionals); website traffic of vaccination info service website (*SpF*).

MEASURE 18: Encouraging all professionals involved in the patient healthcare pathway to implement an action plan for IPC and ABS with evaluation of the measures, including the use and promotion of tools developed by the national missions.

Leader: SpF in collaboration with MSS/MMPIA and the ARS

Timescale: to be launched in 2022-2023

Challenges: National tools have been put forward by the current national “healthcare-associated infections” (HCAIs) missions led by Santé publique France to help teams in hospitals, medico-social institutions and services and in community care to promote the basics of infection prevention and control, in particular:

- Hand hygiene and standard precautions, including those for the prevention of AEB
- Additional IPC precautions (particularly for the management of BMR, BHRé and specific infections)
- Infections associated with invasive procedures

They are based on international and national recommendations, thus providing substantiated and approved messages. CPias are also developing tools¹⁴ that are being shared through their networks. These tools are developed to be known and used by everyone.

The same approach will be implemented from 2023 onwards for ABS, with support from future national missions (measure 26), and in regions from the CRAtb.

Supporting measures:

18.1. Mapping the tools for promoting good practice in these different areas for healthcare professionals and the medico-social sector.

- **Description:** Identification and mapping of tools to promote good practice in these different areas, included in the work programme of the relevant national mission (*SpF*).
- **Monitoring indicator:** Mapping of these tools carried out and updated at least once a year (*SpF - relevant national mission*).

18.2. Promoting the distribution and use of these tools by professionals to roll out an action plan.

- **Description:** Inclusion of a campaign to promote these various tools in the work programme of the national missions with SpF. The campaign will be relayed under the coordination of the ARS by the CPias and the SF2H to the EOH/EMH, and by the CRAtb and the CNP-MIT to the EMAs/ABS referents (*SpF*).
- **Monitoring indicator:** Annual number of promotional activities conducted by national missions on these tools (*SpF - national missions*).

¹⁴ Pulpe friction (Mission MATIS), I.control (Mission MATIS), Zéro bijou pour tous (CPias Auvergne-Rhône Alpes), Gex-simulator (Mission MATIS), campagne fluo (MATIS), e-learning MATIS, DPC e-PREVENTImage (Missions MATIS & PRIMO), prevention of infections associated with invasive devices (Mission SPIADI), Cap Breizh Mains campaign (CPias Brittany), prevention of AEB (CPias Bourgogne – Franche Comté)

18.3. Promoting the use of these tools by healthcare professionals.

- **Description:** Inclusion in the specifications of the national missions to introduce a certification mark for promoting the use of the tools by the CPias/CRAtb and other actors (*SpF*).
- **Monitoring indicator:** Number of certifications issued by care sector and/or professional categories, with the aim of increasing this number between 2022 and 2025 (*SpF - national missions*).

MEASURE 19: Exploring new avenues for implementing concrete IPC and ABS measures from an interprofessional perspective.

Leader: MSS/MMPIA

Timescale: to be launched in 2023-2024

Challenges: Encouraging exchanges between healthcare professionals is essential to bring out new avenues for tangible action.

Supporting measures:

19.1. Elaborating on exchanges between dentists and other healthcare professionals on oral hygiene and proper use of antibiotics for dental infections.

- **Description:** Leading a working group including NPC Dentists, College of General Medicine, NPC Paediatrics, NPC Midwives and NPC Pharmacists (*MSS/MMPIA*).
- **Monitoring indicator:** establishment of the working group.

19.2. Developing specific measures to implement for IPC and ABS in ESMS and in community care.

- **Description:** Leading a working group involving all stakeholders, including the national organisations representing multidisciplinary community health centres (MSPs) and the Territorial professional healthcare communities (*MSS/MMPIA*).
- **Monitoring indicator:** establishment of the working group.



OBJECTIVE 2: Encouraging antibiotic stewardship among professionals

MEASURE 20: Having professional recommendations and tools to guide practices and share them widely.

Leaders: MSS/MMPIA in collaboration with the ARS and the HAS

Timescale: to be launched in 2022-2023

Challenges: Good practice and professional recommendations are essential for guiding practice in all three sectors of care. The use of the certification process for recommendations by the HAS will be encouraged. The ARS will promote sharing of and compliance with these recommendations among professionals in the regions. These recommendations will be integrated into the tools used on a daily basis by professionals.

Supporting measures:

20.1. Promoting the shortest possible duration of antibiotic treatment.

- **Description:** Continue to develop (*HAS*) and promote the use of *HAS* information reminders promoting short durations of antibiotic treatment (*HAS in collaboration with MSS/MMPIA, ARS, SpF and Cnam*). Assist with the routine collection (particularly in the *SNDS*) of treatment durations (number of days of antibiotic treatment) in all sectors, in line with the roll out of e-prescription (*MSS/MMPIA together with Cnam*).
- **Monitoring indicator:** Reduction of average antibiotic treatment duration (*entity responsible for collecting data to be defined, when collection of this indicator will be possible in routine practice*).

20.2. Updating the 2015 ANSM list of critical antibiotics,¹⁵ providing guidance on antibiotic stewardship.

- **Description:** Referral to the *SPLF* to create professional recommendations updating the ANSM 2015 list of critical antibiotics, in order to guide *ABS* measures (*MSS/MMPIA*).
- **Monitoring indicator:** publication of professional recommendations.

20.3. Facilitating the distribution of existing guidelines in a summary format adapted to dentists and midwives.

- **Description:** Referrals to professional organisations of dentists and midwives to present and distribute existing recommendations in a summary format (*MSS/MMPIA*).
- **Monitoring indicator:** publication of these professional recommendations on the websites of these professional organisations.

20.4. Having specific recommendations and tools to guide professional practices.

- **Description:** Several referrals from professional organisations have been made and wide distribution of these recommendations and future tools will be planned (*MSS/MMPIA*):
 - referral to the *NPC* of Allergology for professional recommendations on patients declaring themselves allergic to antibiotics for the three care sectors, planned for 2023.
 - referral to the *NPC* of Dentists to develop a toolkit on “oral hygiene, healthcare-associated infections and antibiotic stewardship” for dentists, centralised on a single site.
 - have an *IPC* and *ABS* toolkit for GPs, developed by the *CMG* with several professional organisations as part of the collaborative partnership.
- **Monitoring indicator:** publication of these professional recommendations and tools on the websites of these professional organisations.

¹⁵ ANSM list of critical antibiotics updated in 2015: <https://archiveansm.integra.fr/afssaps/S-informer/Points-d-information-Points-d-information/Les-antibiotiques-considerees-comme-critiques-premieres-reflexions-sur-leur-caracterisation-Point-d-information>

MEASURE 21: Improving the use of existing tools by healthcare professionals to promote good practices.

Leaders: MSS/MMPIA, MSS/DGS/PP, MSS/DREES, SpF, Cnam, HAS

Timescale: to be launched in 2022-2023

Challenges: Ensuring various tools are available for professionals to improve antibiotic stewardship, including *through* optimising the diagnostic process.

Supporting measures:

21.1. Encouraging and promoting the use of selective reporting of antibiotic susceptibility testing by integrating best practice recommendations into software used in practice.

● **Description :** Promote HAS good practice recommendations on the subject (*HAS with MSS/MMPIA and ARS*) and facilitate the integration of these recommendations into laboratory software (*MSS/DGS/PP*). Explore with professional organisations other possible uses of selective reporting of antibiotic susceptibility testing, based on data from the scientific literature (e.g. samples other than urine culture, no reporting in cases of suspected colonisation) (*MSS/MMPIA*).

● **Monitoring indicator:** Proportion of laboratories incorporating selective reporting for antibiotic susceptibility testing for urine cultures (*collecting entity to be defined, when collection of this indicator will be possible in routine practice*).

21.2. Encouraging the use of throat swab rapid diagnostic tests (RDTs).

● **Description:** Continue to promote the use of throat swab streptococcal RDTs for tonsillitis cases by physicians and retail pharmacists, in accordance with professional recommendations (*nationally: MSS/MMPIA with Cnam, regionally: the ARS with the DCGDRs*). Evaluate the implementation and impact of the roll out of throat swab RDTs in pharmacies (*MSS/DREES with Cnam*).

● **Monitoring indicators** (*Cnam*):

- number of RDT procedures carried out in pharmacies;
- proportion of pharmacies performing RDTs;
- number of boxes of RDTs ordered by physicians (GPs/paediatricians);
- number of physicians (GPs/paediatricians) who ordered at least one box of RDTs throughout the year.

MEASURE 22: Developing new interventions promoting antibiotic stewardship.

Leaders: MSS/MMPIA, MSS/DGS/PP, MSS/DSS/1C, Cnam, ARS

Timescale: to be launched in 2022-2023

Challenges: supporting prescribers in implementing good ABS practices through new innovative interventions is essential. Regionally, the ARS support and monitor health innovation projects relevant to Article 51, for example.

Supporting measures:**22.1. Streamlining and integrating the use of new “point-of-care” rapid microbiological diagnostic tests (multiplex PCR, rapid resistance detection systems, etc.) available on the market.**

- **Description:** Referral to professional organisations for professional recommendations (*MSS/MMPIA with MSS/DGS/PP*).
- **Monitoring indicator:** publication of professional recommendations.

22.2. Having professional recommendations identifying rapid “point-of-care” tests (results in less than 30 minutes), microbiological tests and biomarkers that help improve the use of antibiotics in community care, in EHPADs and in emergency departments.

- **Description:** Referral of the SPILF and the SFM (*MSS/MMPIA*). These recommendations may also encourage the exploration of levers or the implementation of interventional studies focusing on certain promising tests.
- **Monitoring indicator:** publication of professional recommendations.

22.3. Implementing a supporting incentive to encourage healthcare professionals to improve practices.

- **Description:** Consider optimised or new individual prescription profiles (GPs, paediatricians and dentists), including indicators assessing the appropriateness of prescriptions, with targets and a personalised action plan, in collaboration with the ARS and the regional ABS CRAtb centres. Peer visits could be organised by these centres, together with Assurance Maladie, for outlier prescribers (*Cnam*).
- **Monitoring indicators:** Number of individual prescription profiles sent (*Cnam*).

22.4. Depending on the results of a regional experiment with general practitioners, consider promoting the introduction of a prescription specifically for antibiotics combined with digital aids promoting antibiotic stewardship, together with e-prescription.

- **Description:** Carry out a one-year experiment, starting in 2022, with general practitioners in two regions (in collaboration with the ARS and CRAtb of these regions) that involves using a prescription specifically for prescribing antibiotics that would include new information (including the indication, compliance with guidelines, use of RDTs, public health messages, etc.) *instead* of a standard prescription. The new prescription (in digital format) would be linked to a prescription management software (PMS) enhanced with features inspired from the expert base in antibiotic treatment (in line with measure 23). Experimenting would make it possible to evaluate the use of these tools on prescribing practices and their impact in terms of efficiency and proper use. Depending on the results of the experiment, consider integrating this new type of prescription into business software and make it available for general practitioners by default (*MSS/DSS/1C in collaboration with MSS/MMPIA*).
- **Monitoring indicators:** satisfaction/acceptability study with physicians on the use of the new prescription type and the PMS enhanced with the expert base and evaluation of the impact on their medical practices and antibiotic stewardship. To be investigated: indicator of appropriateness of antibiotic prescriptions (*MSS/DSS/1C*).

MEASURE 23: Establishing specifications for a clinical decision-making support system to optimise practices and promote its use, to develop digital tools encouraging antibiotic stewardship and to promote the use of these tools.

Leaders: MSS/DSS/1C in collaboration with MSS/MMPIA, MSS/DNS and HAS

Timescale: to be launched in 2022-2023

Challenges: Improving the appropriateness of antibiotic prescriptions, including making it easier for prescribers to follow existing recommendations, is essential. Developing new digital tools to promote antibiotic stewardship among healthcare professionals (e.g. in software used in practice) and users is a key factor in improving practices. In addition, it is crucial to set up alert systems for high-risk situations (patient with a BHRe, BMR or specific infections) in order to implement the appropriate measures immediately and inform the treatment decision.

Supporting measures:

23.1. Having digital tools that promote antibiotic stewardship among professionals (from the three care sectors) and users, in software used in practice and the digital health platform (ENS), in line with the National e-Health Strategy.

● **Description:** Establish a working group with the relevant stakeholders to define the needs, establish specifications (including the regular updating of these tools) approved by the HAS and explore the levers for software publishers (*MSS/DSS/1C*).

● **Monitoring indicator:** establishment of the working group.

23.2. Establishing a requirements specification for a clinical decision-making support system.

● **Description:** Establish a set of minimal medical features of a clinical decision-making support system in antibiotic treatment, including for example alerts on prescriptions, lists of drugs with prescription restrictions and treatment durations (*MSS/DSS/1C*). The bacteriological details will be included (e.g. identification of any patient with a BHRe, BMR or specific infections; identification on admission of a patient returning from an institution abroad). The medical prescription support system will also have to comply with the quality criteria for medical content developed by the HAS in its June 2021 guidelines for getting listed on Mon espace santé.

● **Monitoring indicator:** Publication of the specifications for a clinical decision-making support system (*HAS*).

23.3. Promoting the use of clinical decision-making support systems via prescription management software (PMS) in outpatient care.

● **Description:** Identify database and PMS software publishers likely to develop the prescription management system and/or ensure it is rolled out/integrated via PMS for use by general practitioners in the first instance, and monitor the use of the system in real practice (*MSS/DSS/1C*).

● **Monitoring indicator:** Roll out and effective use of clinical decision-making support system via existing digital tools used in practice (*MSS/DSS/1C*).

23.4. Encouraging the use of all these tools by professionals and users in the three care sectors.

● **Description:** Explore possible levers in addition to the usual distribution channels (*MSS/DSS/1C*).

● **Monitoring indicator:** Making information available on how to use these tools (*MSS/DSS/1C*).

PRIORITY 4

DEVELOPMENT OF THE REGIONAL NETWORKS FOR INFECTION PREVENTION AND CONTROL AND ANTIBIOTIC STEWARDSHIP



OBJECTIVE 1: Developing territorial networks for the prevention of infections and antibiotic resistance

MEASURE 24: Continuing and improving the implementation of CPias and CRAtb support centre measures.

Leader: MSS/MMPIA, in collaboration with MSS/DGOS/PF and the ARS

Timescale: to be launched in 2022-2023

Challenges: Ensuring the CPias, established in every region since 2017, are operational. Following the instruction of 15 May 2020 on implementing antibiotic resistance preventive measures¹⁶, the CRAtb are being set up in each region under the responsibility of the regional health agencies. Supporting and sustaining their respective measures are paramount.

Supporting measures:

24.1. Continuing the action taken by the CPias, raise awareness of them and build on their actions in the community care sector.

- **Description:** Action already included in decree no. 2017-129 of 3 February 2017 on the prevention of healthcare-associated infections, the order of 7 March 2017, and the instruction of 3 March 2017 on the regional structuring of health monitoring and support.
- **Monitoring indicator:** Number of measures implemented annually targeting the community sector (annual activity report, MSS/DGOS/PF).

24.2. Monitoring the implementation of regional ABS treatment centres by the ARS.

- **Description:** Monitoring the instruction of 15 May 2020 on implementing antibiotic resistance preventive measures under the responsibility of regional health agencies (MSS/MMPIA) via:
 - the biannual national meetings organised by the MSS/MMPIA bringing together the antibiotic resistance experts of the ARS (see measure 25.1);
 - national renewal of regional interventional funding (FIR);
 - [creation of a topical info page](#) on the antibiotiques.gouv.fr website that shows the status of the implementation of the CRAtb and the location of the CPias with an interactive map that updates.
- **Monitoring indicator:** Annual proportion of regions with an operational CRAtb (ARS).

¹⁶ https://solidarites-sante.gouv.fr/IMG/pdf/instruction_du_15_mai_2020_.pdf

24.3. Evaluating the impact of establishing and funding regional ABS CRA**t**b centres.

- **Description:** External evaluation to be planned by 2025 to realign, if necessary, the measures implemented by these regional CRA**t**b centres and thus adapt their actual funding in the region. This evaluation will include a section on the synergy of work carried out by the CRA**t**b and the CPias (*MSS/MMPIA*).
- **Monitoring indicator:** Results of the evaluation.

MEASURE 25: Continuing the work of the national CPias network, implementing the national CRA**t**b network and fostering synergy and sharing of experiences.

Leader MSS/MMPIA in collaboration with SpF

Timescale: to be launched in 2023-2024

Challenges: This is one of the major issues of the organisation and regional network in the fight against antibiotic resistance. Ensure there is synergy of actions and avoid redundancies between CRA**t**b and CPias, as well as between EMA/ABS referents and EOH/EMH. The regional fight against antibiotic resistance relies on the support of strong CRA**t**b/CPias and EMA referents/EOH-EMH teams, with simple, fluid and frequent communication processes.

Supporting measures:

25.1. Organising biannual meetings with the ARS to support the management of the regional initiatives and encouraging the sharing of experiences.

- **Description:** Organisation of these biannual meetings (*MSS/MMPIA*) to monitor the implementation of initiatives for preventing infections and antibiotic resistance in the region. Invite professional representatives (CRA**t**b, CPias, SF2H and CNP-MIT representatives) to attend these meetings to promote coherence, coordination and sharing of data and experiences.
- **Monitoring indicators:** Number of meetings organised (target of two per year) and number of ARS invited actually present for each meeting (*MSS/MMPIA*).

25.2. Implementing a national network structure for CRA**t**b and CPias.

- **Description:** The MSS strongly encourages the organisation of meetings (twice a year minimum) between the CPias and CRA**t**b, joint meetings if possible, in order to establish regular interaction. SF2H and the CNP-MIT should also be invited to attend. These meetings could also facilitate the sharing of experiences to promote synergy between EMA-referents/EOH-EMH teams in practice. The MSS, SpF and the ARS could also be invited to some of these meetings. The CRA**t**b and CPias regularly report to the MSS/MMPIA and the ARS on the national structure of their network and when these meetings are held.
- **Monitoring indicators:** Number of meetings per year (including number of joint CRA**t**b-CPias meetings) and proportion of invited bodies actually present per meeting (*CPias and CRA**t**b respectively in charge of the national coordination networks of CPias and CRA**t**b*).

MEASURE 26: Setting up new national missions for the prevention and monitoring of healthcare-associated infections and antibiotic resistance to support the work by CPias and CRAtb centres and also determining the objectives associated with these missions.

Leader: Santé publique France (French National Public Health Agency)

Timescale: to be launched in 2023-2024

Challenges: In order to encourage effective collaboration between the stakeholders involved in infection prevention and control (IPC) and antibiotic stewardship (ABS), as recommended in the instruction to the ARS of 15 May 2020, a synergistic approach to certain national missions led by SpF is crucial. In addition to the national missions of the CPias targeting IPC, future national missions of the CRAtb will provide prevention and monitoring tools relating to ABS. These tools will be useful for the regional CRAtb actions, with these centres falling under the supervision of the ARS. The national missions of the CRAtb will be linked to some of the national missions of the CPias, and these missions will be referred to as “CRAtb and CPias national missions” in this document. For ABS, these future CRAtb and CPias national missions could, for example, target the following issues in particular (in addition to the other relevant measures specified in this strategy):

- Monitoring the appropriateness of antibiotic treatment in the three care sectors (ES, ESMS and community care), in particular using point-prevalence surveys and automated data collection from existing databases;
- ABS measures for preventing antibiotic resistance: creating or consolidating, then national distribution of tools (information documents, training, guides, etc.) promoting ABS, intended for users, patients and healthcare professionals, which can be used by healthcare professionals, including ABS multidisciplinary teams and ABS referents.

Supporting measures:

26.1. Setting up these CRAtb and CPias national missions.

● **Description:** The current scope of certain national missions led by SpF would thus be broadened to include ABS. Inclusion in SpF’s work programme and its multi-year budget would be required to achieve this (*MSS/MMPIA*).

● **Monitoring indicator:** Number of national CRAtb and CPias missions set up in 2023 (*SpF*).

26.2. Determining the objectives of the CRAtb and CPias national missions for the focus on ABS.

● **Description:** These objectives will be defined by the “National Infection and Antibiotic Resistance Prevention Missions” expert committee, which will follow on from the current “National Healthcare-Associated Infections Missions” expert committee. In particular, these objectives will be based on the recommendations issued by the SF2H and the CNP-MIT (measure 271) and the measures listed in this strategy (*SpF*).

● **Monitoring indicator:** Definition of the specifications of the CRAtb and CPias missions (*SpF*).

26.3. Including representatives of the CNP-MIT and SF2H in the scientific committees of national missions.

● **Description:** Inclusion in the statutes of the national CPias and CRAtb missions (*SpF*).

● **Monitoring indicator:** Number of national missions with representatives of the CNP MIT and SF2H in their scientific committee (*SpF, via the national missions’ annual activity reports indicating who is on the scientific committees*).

MEASURE 27: Increasing human resources for regional and local IPC and ABS teams.

Leaders: MSS/MMPIA in collaboration with MSS/DGOS/PF, MSS/DGCS/SD3 and the ARS

Timescale: to be launched in 2022-2023

Challenges: In order to effectively combat antibiotic resistance, it is necessary to have sufficient human resources in terms of number of staff and ensuring they are adequately trained, in part for the operational hygiene teams (EOHs) and mobile hygiene teams (EMHs), and also for the ABS referents and multidisciplinary teams (EMAs); these structures implement the two strategies for IPC and ABS in the three healthcare sectors.

Supporting measures:

27.1. Having recommendations regarding existing full-time equivalents (FTEs) of EMH/EOH/EMAs/referents, defining the FTEs required, core elements of IPC and ABS programmes in the three care sectors, including monitoring and impact indicators. Subsequently exploring the possibility of integrating these recommendations into existing incentives or regulatory systems.

● **Description:** DGOS-DGCS-DGS referral from CNP MIT and SF2H of March 2021 (*MSS/MMPIA*). Exploration of potential levers (e.g. regulations) (*MSS/MMPIA*, *MSS/DGOS/PF*, *MSS/DGCS/SD3*). Future national missions led by SpF (measure 26) could coordinate the collection and distribution of some of these core elements and indicators to help roll out regional preventive measures, based on the data provided by each CPias and CRAtb (*SpF – national missions*).

● **Monitoring indicator:** publication of professional recommendations.

27.2. Continuing to set up mobile hygiene teams (EMHs) in all regions to work in medicosocial institutions and services, on the basis of the aforementioned recommendations, while ensuring that these arrangements are aligned in each region.

● **Description:** The arrangement for mobile hygiene teams working in EHPADs is currently only up and running in certain regions. As such, the EMHs must be deployed in all regions under the guidance of the ARS, with alignment of their measures and the allocated resources. Reflect on the possibility of integrating EMHs into incentives or regulatory systems (*MSS/DGCS/SD3*, together with *MSS/MMPIA*).

● **Monitoring indicator:** The ARS are responsible for collecting and reporting at the biannual ARS meetings organised by the MSS/MMPIA (measure 25.1) the proportion of EHPADs with access to an EMH in their region. The reported figures will be based on data provided by each CPias.

27.3. Monitor the setting up of multidisciplinary ABS teams (EMA) in all regions for the three care sectors.

● **Description:** Monitor the setting up of the EMAs, within the Territorial Hospital Group (GHT), under the guidance of the ARS in accordance with the instruction of 15 May 2020 on implementing antibiotic resistance preventive measures under the responsibility of regional health agencies (*MSS/MMPIA with ARS*).

● **Monitoring indicator:** At the biannual ARS meetings organised by the MSS/MMPIA (measure 25.1), the ARS are responsible for collecting and reporting the proportion of the GHT with access to a least one EMA in their region. The reported figures will be based on data provided by each CRAtb.



OBJECTIVE 2: Improving the synergy between IPC and ABS measures

MEASURE 28: Implementing a system for monitoring the synergy of actions of the CPias and CRAtb centres (regionally), as well as of the EMAs/referents/EMHs/EOHs (locally), in particular by the future national missions led by Santé publique France, via the indicators included in the annual reports of the CPias and CRAtb centres.

Leader: MSS/MMPIA and SpF, with the ARS

Timescale: to be launched in 2023-2024

Challenges: It is critical to ensure effective regional and local synergy between measures recommended in the instruction to the ARS of 15 May 2020 on the implementation of antibiotic resistance prevention measures under the responsibility of the regional health agencies.

Supporting measures:

28.1. Encouraging the ARS to implement the national strategy by fostering regional and local synergies.

● **Description:** In accordance with the instruction of 15 May 2020 on implementing antibiotic resistance prevention measures under the responsibility of the ARS, the regional rollout of this national strategy for preventing infections and antibiotic resistance must be carried out by the ARS. This subject will therefore be routinely addressed at the biannual meetings with the ARS (measure 25.1) (MSS/MMPIA).

28.2. Ensuring traceability and visibility of the implementation of the synergy of actions of the CPias and CRAtb in regions and locally for EMAs/referents/EOHs/EMHs.

● **Description:** The new national missions led by SpF must coordinate the collection of new indicator data by the CPias and CRAtb (with EMA, EOHs and EMHs) that focuses on this synergy of actions (in line with measure 27.1). In particular, these indicators will be made available to the MSS, ARS, CPias and CRAtb, using methods that are still to be defined; the results (presented in aggregate form) will be published regularly. These actions will be included in the 2023 specifications of the national missions led by SpF (SpF).

● **Monitoring indicator:** Published as aggregate indicators defined by national missions (SpF).

PRIORITY 5

SHARED USE OF HEALTH AND MONITORING DATA FOR TAKING ACTION



OBJECTIVE 1: Making available useful indicators for the different actors (health authorities, health professionals) to guide the national, regional and local strategy

MEASURE 29: Having an indicator dashboard with targets to guide the national/regional/local strategy for infection prevention and control and antibiotic stewardship and to improve the national and regional sharing of available data and indicators to promote their use for taking action.

Leaders: MSS/MMPIA, SpF, in collaboration with Cnam, MSS/DREES and HAS

Timescale: to be launched in 2022-2023

Challenges: It is vital that we have indicators available with targets (national and, if possible, regional aggregate data) on the prevention of community-acquired and healthcare-associated infections, antibiotic stewardship and antibiotic resistance in order to monitor work on the ground and to guide the decision-making of the different stakeholders (health authorities, health professionals) in order to steer the national/regional/local strategy for infection prevention and control and antibiotic stewardship.

Existing indicators (those with targets and those without defined targets) and the data produced (by Santé publique France in particular, including those related to national missions) must be regionally and locally distributed to guide the implementation of measures.

Supporting measures:

29.1. Having a dashboard of indicators with their associated targets for the benefit of the different stakeholders (health authorities, health professionals) to guide the IPC and ABS strategy at national, regional and local levels.

● **Description:** Development of this dashboard of indicators with targets (national and, if possible, regional aggregate data) by a dedicated working group, including stakeholders (MSS/MMPIA). This dashboard will integrate the impact indicators of this strategy (Appendix 2).

● **Monitoring indicator:** Making the dashboard of indicators available online to all, on a website to be defined.

29.2. Improving the national and regional distribution of available indicators (with and without targets) and data.

● **Description:** Regularly release updated indicators (infection prevention and control, healthcare-associated infections [including reports of nosocomial infections], antibiotic treatments, bacterial resistance to antibiotics) and data generated by all the national missions and SpF,

supported by the provision of these indicators and data on the RéPias, SpF and Géodes websites (*SpF*). These indicators/data should, where possible, be available at national/regional/departmental and GHT level. Support should be provided by the national missions to the CRAtb and CPias in interpreting these indicators/data and defining appropriate action plans with the ARS.

● **Monitoring indicator:** Number of visits to the listed sites (*SpF*).

29.3. Communicating with decision makers, healthcare professionals and the general public about IPC and ABS indicators, with a strong focus on the impact indicators of this strategy.

● **Description:** Highlight these indicators (including the 18 indicators specifically focused on communication measures) on the RéPias and SpF websites. Also include these indicators in communication materials, including the One Health summary report and the annual press kit. At the same time, facilitate the relay of information to stakeholders in practice, such as general practitioners, institutions and other healthcare stakeholders involved at local level, in particular by relying on the CPias and CRAtb *via* the relevant national missions (*SpF*).

● **Monitoring indicators:** Integration of these indicators in the annual report and the press kit (*SpF*).

MEASURE 30: Developing new indicators related to the prevention of infections and antibiotic resistance and engaging existing incentives.

Leaders: MSS/MMPIA, in collaboration with ATIH, Cnam, MSS/DREES, HAS, MSS/DGOS/PF-R and SpF

Timescale: to be launched in 2022-2023

Challenges: In order to improve the prevention of infections and antibiotic resistance and the quality of care, a panel of indicators is required (quantitative, proxy and quality indicators). If possible, the necessary data should be automatically collected from routine data in the three care sectors. It is essential to focus on monitoring the quality of care throughout the healthcare pathway and to consider preventing infections and antibiotic resistance as an integral part of the quality of care. Incentives (e.g. IFAQ, certification) are essential levers to help improve practices.

Supporting measures:

30.1. Developing indirect proxy indicators of the appropriateness of antibiotic prescriptions to be compiled routinely in the three care sectors and accompanied by an aggregate presentation of the results and feedback to prescribers.

● **Description:** Implementing indicators on the appropriateness of antibiotic prescriptions constitutes a significant lever for improving practices and involving healthcare professionals.

- in community care, general practitioners, paediatricians and dentists will be targeted *via* a technical working group (*SpF*) to approve indirect indicators on the appropriateness of antibiotic treatments (proxy indicators). An aggregate presentation of targets for these indicators will be created and published (*MSS/DREES and SpF*) and feedback to the prescriber will be provided (*Cnam, in line with measure 21.3*). Secondly, considerations will be made on how to integrate these proxy indicators into the ROSP (*Cnam*);

- in EHPADs, indicators will be approved *via* an existing working group (*SpF*) and published in aggregate form (*SpF*) before feedback is provided to each EHPAD (*SpF - relevant national mission*). Secondly, consider how to integrate these proxy indicators into certifications or share them with the public (*MSS/MMPIA and MSS/DGCS*);
- in hospitals, coordination of a technical working group to approve these indicators (*SpF - national mission involved*), then publication of the aggregate presentation of the indicators (*SpF*) and preparation of feedback for each ES (*SpF - relevant national mission*). Secondly, consider how to integrate these proxy indicators into incentives (*MSS/MMPIA and MSS/DGOS*).

● **Monitoring indicator:** Aggregate view of proxy indicators for the community care, EHPAD and hospitals on GEODES (*SpF*).

30.2. Defining quality indicators for antibiotic prescriptions for community care, EHPADs and hospitals.

● **Description:** The MSS, mainly in collaboration with the Cnam, *SpF* and HAS, will set up a working group involving professional organisations to define a panel of quality indicators focusing on the most common infections, based on the available literature. The DSS will then explore the possibility of collecting these quality indicators automatically from existing databases, which will have to include the diagnosis that led to the prescription of antibiotics.

● **Monitoring indicator:** Defining quality indicators for antibiotic prescriptions (*MSS/MMPIA*).

30.3. Reflecting on the development of indicators for the dispensing of antibiotics.

● **Description:** In the interests of promoting interprofessional cooperation (measure 24), particularly between prescribers and retail pharmacists in community care and EHPADs, a working group including the relevant stakeholders will discuss this issue (*MSS/MMPIA*).

● **Monitoring indicator:** Defining dispensing indicators for antibiotics (*MSS/MMPIA*).

30.4. Developing new indicators for assessing the quality of care that prioritises preventing infections and antibiotic resistance.

● **Description:** It is essential to consider the prevention of infections and antibiotic resistance in the indicators that help maintain the quality of care in the patient pathway in the three care sectors. A working group bringing together all the relevant stakeholders will be set up to define new indicators (in addition to those mentioned in measures 30.1, 30.2 and 30.3), to reflect on their development and implementation by taking the following steps (*MSS/DGOS/PF*):

- identify gaps in the monitoring of the quality and safety of care, particularly for care at the interfaces between the three care sectors;
- use the available literature to identify a panel of indicators for assessing and monitoring the inclusion of IPC and ABS in the quality of the healthcare pathway, with a focus on innovative indicators from macrodata and new available data sources.

These indicators should be monitored to ensure that they are adopted by healthcare professionals and that corrective measures for improving the quality of care are actually implemented.

● **Monitoring indicator:** Defining indicators for taking into account prevention of infections and

antibiotic resistance in the quality of care (*MSS/DGOS/PF*).

30.5. Planning to include IPC and ABS indicators in the IFAQ incentives scheme.

- **Description:** Working group set up to select and define indicators to prevent infection and antibiotic resistance for hospitals, based on the previous supporting measures (*MSS/MMPIA together with ATIH, Cnam, HAS, MSS/DGOS and SpF*) then integration into the IFAQ scheme if the indicators are approved (*MSS/DGOS in collaboration with ATIH and HAS*).
- **Monitoring indicator:** Integration of indicators to prevent infection and antibiotic resistance into the IFAQ system (*MSS/DGOS/R5*).

30.6. Planning to include IPC and ABS indicators in the CAQES scheme for improving quality of care.

- **Description:** CAQES is based on a quality-driven incentive for healthcare institutions that takes into account discrepancies established against benchmarks in terms of volume or health insurance expenditure. Part of the savings made are paid back to institutions that have improved their performance. It is suggested that an indicator be developed to improve the appropriateness of antibiotic prescriptions issued on discharge from hospital (PHEV) by setting up a working group (*Cnam/DDGOS/DOS/Hospitalisation Department, MSS/MMPIA, MSS/DSS/1C and MSS/DGOS/PF*).
- **Monitoring indicator:** Inclusion of an indicator for preventing infections and antibiotic resistance in the CAQES scheme (*MSS/DSS/1C*).

30.7. Improving the coordination of healthcare professionals on infection and antibiotic resistance prevention measures for targeted care pathways (e.g. surgical patients, chronic kidney disease, diabetics, obstetrics).

- **Description:** Based on patient pathways present in different care sectors, ensure the integration of infection and antibiotic resistance prevention measures, which are an integral part of the quality of care, by healthcare professionals in the three care sectors and particularly where these sectors overlap. Monitor the adoption of quality of care indicators (measure 30.4) by healthcare professionals and take stock of the corrective measures implemented (*MSS/DGOS/PF*).



OBJECTIVE 2: Improving monitoring and sharing best practices

MEASURE 31: Improving national coverage of antibiotic resistance data collection.

Leaders: Santé publique France with MSS/DGS/PP

Timescale: to be launched in 2022-2023

Challenges: Broad national coverage is essential for ensuring the quality and representativeness of the surveillance data on bacterial resistance to antibiotics coordinated by the relevant national missions in the three healthcare sectors. Extracting structured data from laboratory information systems is crucial for infectious disease surveillance and this effort should be made part of a comprehensive project.

Supporting measure:

31.1. Integrating microbiological data as a priority (in particular bacteriological data, including antibiotic susceptibility testing) that is useful for surveilling antibiotic resistance in the National Biological Data Repository (ENDB), which is currently being developed, in order to facilitate the work of national missions and research work in the field of antibiotic resistance.

● **Description:** Microbiological data (particularly bacteriological data: type of sample, bacterial strains isolated and their phenotype/resistance genotype, etc.) are already listed in the information systems of labs and are meant to be integrated into the ENDB currently being developed, thus facilitating the work of national missions involved, led by SpF, and research projects in the field of antibiotic resistance. Including this data in the future ENDB should be considered a priority, given the challenges involved in this national strategy. The national missions led by SpF could then focus their resources on making better use of this data, creating indicators with automatically collected data and making them available to national, regional and local stakeholders, by providing assistance in understanding and developing personalised action plans (in line with measure 29).

● **Monitoring indicator:** Actual integration of antibiotic resistance data into the ENDB (SpF).

31.2. Encouraging biology laboratories to actively participate in the collection of data on antibiotic resistance.

● **Description:** Explore the levers that would encourage biology laboratories to participate in the structured monitoring networks set up by the national missions led by SpF while waiting for the establishment of the ENDB and confirmation that antibiotic resistance data will be integrated into the system as a priority. Establishment of a working group with the relevant stakeholders (MSS/DGS/PP).

● **Monitoring indicator:** Implementation of working group (MSS/DGS/PP).

MEASURE 32: Improve awareness of tracking tools (e.g. reporting portal) through an awareness-raising campaign for professionals and the general public.

Leader: MSS/DGS/VSS-MICOM in collaboration with SpF

Timescale: to be launched in 2022-2023

Challenges: Improving patient safety by facilitating the collection, reporting and consideration of any adverse event affecting them, in particular related to healthcare-associated infections.

● **Description:** Lead communication measures to increase awareness and use of alert tools (e.g. e-SIN, reporting portal) through an awareness-raising campaign for professionals and the general public (*MSS/DGS/VSS in collaboration with MSS/MMPIA, Cnam, SpF and MSS/DGS/MICOM*).

- for healthcare professionals: implementation of training course specifically for trainers at CPias level for e-SIN users (*SpF*);
- for the general public: communication on reporting tools on the MSS website (*MSS/DGS/VSS*).

● **Monitoring indicators:** (*MSS/DGS/VSS*)

- change in the number of reports in the reporting portal and in e-SIN;
- updating of the information page on the reporting portal on the MSS website;
- number of site visits;
- number of e-SIN training sessions (*SpF*)

MEASURE 33: Sharing experiences in the prevention of infections and antibiotic resistance to improve practices.

Leader: HAS with SpF and the ARS

Timescale: to be launched in 2023-2024

Challenges: The sharing of exemplary/significant experiences in developing a culture of safety and quality of care enables professionals to improve their infection and antibiotic resistance prevention practices. It also encourages “feedback”-focused approaches with root cause analysis.

Supporting measures:

33.1. Sharing how infectious adverse events are managed to contribute to the culture of quality care.

● **Description:** Work with the ARS (which receive and confirm the severe healthcare -associated adverse event) to develop (using the e-SIN tool as an example) ways of sharing online of the management of infectious adverse events resulting from the reporting of HCAs under this system. These experiences could involve ABS, IPC or interrelated cases (e.g. original experiences in management of BHRé). These could be short creations with a strong impact on these subjects, such as the new creations “Flash sécurité patient”, which aim to provide feedback (*HAS*).¹⁷

● **Monitoring indicator:** Number of “Flash sécurité patient” feedback documents on ABS and IPC topics (*HAS*).

¹⁷ https://www.has-sante.fr/jcms/c_2787338/fr/comprendre-les-evenements-indesirables-graves-eigs#toc_1_2_4

33.2. Encouraging stakeholders to populate and consult the SpF evidence-based intervention portal, which should be expanded to have a dedicated section for the prevention of infections and antibiotic resistance.

- **Description:** Creation of this type of section in the SpF evidence-based intervention portal. Communication to professionals, in particular, through the ARS and national missions led by SpF, together with the MSS/MMPIA.
- **Monitoring indicator:** Annual number of evidence-based measures on preventing infections and antibiotic resistance examined/retained (*SpF*).

PRIORITY 6

PROMOTING INNOVATIVE RESEARCH

MEASURE 34: Encouraging cross-cutting, collaborative and interdisciplinary research in the field of preventing infections and antibiotic resistance.

Leader: Inserm in collaboration with MESRI and MSS

Timescale: to be launched in 2022-2023

Challenges: Implementation of measures in practice and public policies informed by research results.

Supporting measures:

34.1. Distributing the results of projects funded under the Priority Research Programme (PPR) on antibiotic resistance.

- **Description:** Each project funded by the PPR should present its key results in the form of a short summary for the attention of stakeholders in practice and policy makers (*Inserm*). *Inserm*, working with the ANR, Alliance Athéna and MSS, will ensure that these summaries are distributed.
- **Monitoring indicator:** Proportion of funded projects that actually produced this type of summary (*Inserm*).

34.2. Improving and sustaining the work of the Antibiotic Resistance PPR by developing a Priority Research Programme and Equipment (PEPR) on antibiotic resistance including the IPC and ABS focuses, adopting a One Health perspective where relevant.

- **Description:** *Inserm* and MESRI, alongside the MSS, will explore the possibility of launching this antibiotic resistance PEPR with suitable funding over five years. In particular, it is essential to improve the development of research in the field of human and social sciences.
- **Monitoring indicator:** Initial steps taken to establish the Antibiotic Resistance PEPR (*Inserm*).

34.3. Continuing to coordinate the French National Antibiotic Resistance portal.

- **Description:** Continue to develop the platform so that it becomes the reference site in the fields of research and innovation, giving access to all the research and information carried out by all the academic and private scientific communities (*Inserm in collaboration with the MESRI and the MSS*).
- **Monitoring indicator:** Number of site visits and collaborative projects that have been carried out using information from the interface (*Inserm*).

MEASURE 35: Developing and supporting specific research areas.**Leader:** Inserm in collaboration with MESRI and MSS**Timescale:** to be launched in 2022-2023**Challenges:** Certain research areas, in particular the human and social sciences, warrant additional attention in addition to the four areas of research already defined in the PPR on Antibiotic resistance. The National Antibiotic Resistance research portal and the three structuring projects coordinated by Inserm to develop platforms, networks and observatories could facilitate the management of such projects.**Supporting measures:****35.1. Encouraging research into alternatives to antibiotic treatment (new products to combat infections and antibiotic resistance).**

● **Description:** Issue of calls for projects to encourage research into alternatives to antibiotic treatments and thus research into new products to combat infections and antibiotic resistance. These calls for projects will be part of a future Antibiotic Resistance PEPR led by Inserm, the French National Research Agency (ANR) and the French Health Industry Alliance for Research and Innovation in Health (ARIIS).

● **Monitoring indicator:** Number of projects funded in this area (*Inserm*).

35.2. Developing research in primary care with and for community care stakeholders (IPC and ABS).

● **Description:** There are many research needs that have yet to be addressed, for example (non-exhaustive list): research in the human and social sciences (which could be facilitated by the project aiming at monitoring discourse, practices and uses funded under the PPR on Antibiotic Resistance), use of health and mobile health databases, decision-making tools (e.g. software, artificial intelligence), causes of variations in practices and uses, etc. Inserm, together with AVIESAN, MESRI and MSS, will give priority to these un-met needs and include them in planned PEPR or any other appropriate existing or future research programme. The MSS will also explore the possibility of prioritising these areas in certain calls for projects (*MSS/DGOS/PF4, DGS/MSR in collaboration with IReSP*).

● **Monitoring indicator:** Number of funded projects focusing on the community care sector (*Inserm*).

35.3. Promoting funding for interventional studies on the prevention and control of healthcare-associated infections and antibiotic stewardship.

● **Description:** Inserm, together with AVIESAN, MESRI and MSS, will give priority to this un-met need in the upcoming PEPR or any other appropriate existing or future research programme. The MSS will also explore the possibility of prioritising these areas in certain calls for projects (*MSS/DGOS/PF4, DGS/MSR in collaboration with IReSP*).

● **Monitoring indicator:** Number of funded IPC and ABS interventional studies (*Inserm*).

35.4. Supporting collaboration related to animal health and the environment.

● **Description:** Where the One Health approach is relevant, it is important to encourage the development of joint research projects between human, animal and environmental health (*Inserm in collaboration with Aviesan, AllEnvi, Athena, ANR and relevant ministries*).

● **Monitoring indicator:** Proportion of projects involving at least two sectors from funded projects (*Inserm*).

PRIORITY 7

DEVELOPING A SENSE OF “ENVIRONMENTAL PROTECTION” IN INFECTION AND ANTIBIOTIC RESISTANCE PREVENTION MEASURES

NB: The measures led by the Ministry of Ecological Transition are part of the future interministerial roadmap and not this national human health strategy.

MEASURE 36: Limiting environmental pollution during the production of antibiotics.

Leaders: MSS/DGS/PP in collaboration with MTE

Timescale: to be launched in 2023-2024

Challenges: Pharmaceutical production in France and innovation in this field must be in line with the objectives of the Green Deal coordinated by the European Commission.

- **Description:** Apply at national level the measures of the European Pharmaceutical Strategy. In order to produce quality, safe and environmentally responsible medicines, it is planned to revise the manufacturing and procurement provisions in pharmaceutical legislation to improve transparency, improve the monitoring of the supply chain, clarify responsibilities to ensure overall environmental sustainability, safeguard the quality of medicines and pave the way for new technologies. In addition, the environmental criterion of MA applications is specified in the pharmaceutical strategy.
- **Monitoring indicator:** Setting up of the ANSM, MTE and MSS/DGS/PP working group: impact of European measures on manufacturing (inspections) and MA applications (MSS/DGS/PP).

MEASURE 37: Limiting environmental pollution when using antibiotics.

Leaders: MSS/DGS/PP in collaboration with MTE

Timescale: to be launched in 2022-2023

Challenges: The presence of antibiotics in soil, water, groundwater and animal products is the cause of ecosystem toxicity and selection pressure, which favour the emergence and spread of bacterial resistance.

Unit dose dispensing of antibiotics will allow community pharmacists, from the beginning of 2022, to only dispense the exact quantity required. However, the pharmacist will not be required to dispense these medicines in unit doses. They will be allowed to continue dispensing them as whole packages. Monitoring the implementation of this practice therefore seems necessary to assess how effective the measure is. Promoting this new practice will also provide a better understanding of the objectives and improve adoption by all stakeholders (patients and healthcare professionals).

The sorting of medical waste materials must also be improved, with the support of the environmentally responsible company Cyclamed, which is responsible for collecting unused medicines for human use that are returned to pharmacies by patients. Its accreditation will be renewed on 1 January 2022, with new targets to be met (collection, communication) set by an order of the

Ministry of Ecological Transition. Planned monitoring indicators: the information will be sent by Cyclamed to ADEME, the agency responsible for monitoring and observing extended producer responsibility channels.

Supporting measures:

37.1. Monitoring implementation and promoting the process for dispensing antibiotics in community pharmacies.

● **Description:** Monitoring the implementation of unit dose dispensing should be developed with Cnam. Promotion and/or distribution will take place in collaboration with the relevant stakeholders (*MSS/DGS/PP*).

● **Monitoring indicator:** Indicator under consideration (*Cnam*).

37.2. Encouraging individuals to return unused medicines to the dispensing pharmacy.

● **Description (*MSS/DGS/PP*):** the eco-friendly waste sorting company arranges national and local information and awareness-raising campaigns at least once a year to encourage individuals to return their unused human medicines to pharmacies.

The eco-friendly waste sorting company develops communication materials to raise public awareness on:

- the need to return unused or expired medicines to prevent:
 - the risks of domestic accidents and accidents related to self-medication;
 - the risks for the environment and to public health when unused medicines are disposed of, for example, in residual household waste or down sanitary systems.
- the recycling rules set out in Article L. 541-9-3 of the French Environment Code, and products that are not in the scope of this area;
- the cost-free return by pharmacies of unused medicines under Article L. 4211-2 of the French Public Health Code.

Every year, the eco-friendly medical waste sorting company allocates at least 10% of the total amount of the financial contributions it receives to implement these information and awareness-raising measures.

● **Monitoring indicators:** Number of information campaigns organised per year by the eco-friendly medical waste sorting company; percentage of the organisation's budget allocated to these measures (*MSS/DGS/PP*).

MEASURE 38: Controlling the production of liquid or solid waste during care, in particular infectious clinical waste (ICW) arising from care activities.

Leaders: *MSS/DGS/EA1* with *MSS/DGOS/PF2*

Timescale: to be launched in 2022-2023

Challenges: Risk assessment for the disposal of liquid effluents produced by hospitals. Articles R.1335-1 to 8 of the French Public Health Code indicate that liquid or solid hazardous waste must be incinerated or decontaminated by waste pretreatment equipment. Two good practice guides from the DGS indicate the specific sorting channels for each type of infectious clinical waste. Infectious clinical waste, including non-treatable liquid effluents, should be handled by experts to ensure it is disposed of safely.

● **Description:** Revision in 2022 of the Afnor NFX 30s-503 standard for certifying equipment for the decontamination pretreatment of ICW and implementing a working group for specific evaluation of risks linked to the pre-treatment of liquid ICW (MSS/DGS/EA1).

● **Monitoring indicators:** (MSS/DGS/EA1)

- start of the revision of the Afnor standard;
- establishment of the specific WG for processing liquid ICW;
- performing tests on treatment equipment;
- consideration of the reference order of 20 April 2017 on pre-treatment by decontamination of infectious clinical waste arising from care activities or similar.

PRIORITY 8

DEVELOPING AND MAINTAINING PRODUCTS THAT CONTRIBUTE TO PREVENTING INFECTIONS AND CONTROLLING ANTIBIOTIC RESISTANCE

MEASURE 39: Protecting the existing therapeutic arsenal by adopting incentives to ensure the availability of off-patent antibiotics.

Leaders: MSS/DGS/PP with MSS/DSS/1C, MSS/MMPIA and ANSM

Timescale: to be launched in 2022-2023

Challenges: Having diverse treatment options is essential for treating the wide range of bacterial infections encountered in human health and for reducing the risk of antibiotic resistance. We must therefore combat antibiotic shortages and keep antibiotics that meet a public health need on the market, while also limiting environmental pollution during their production (see measure 36).

● **Description:** The MSS is leading the 2019-2022 roadmap on drug shortages “Fighting shortages and improving the availability of medicines in France” (“Lutter contre les pénuries et améliorer la disponibilité des médicaments en France”). One of the specific steps is to “assess the implementation of a public solution to organise supplies in case of a demonstrated shortage”. Steps are being taken to develop agile systems, which will be useful in the event of a major crisis or very serious shortages of medicines of major therapeutic use, including antibiotics. This is a “French CIVICA” model for mobilising healthcare institutions/private operators in the emergency production of critical medicines.

The MSS also coordinates the One Health 2020-2023 Antibiotic Shortages project co-funded by the European Commission (DG Reform – Technical Support Instrument). Specific measures are therefore being explored and will be rolled out over the 2022-2025 period, in line with European initiatives (in particular the pharmaceutical strategy and establishing the HERA authority).

● **Monitoring indicators:** Annual number of instances where antibiotics are out of stock; Annual number of instances where antibiotics are discontinued from the market (ANSM).

MEASURE 40: Exploring incentive schemes that facilitate innovative products and technologies being brought to penetrate and remain on the market.

Leaders: MSS/DGS/PP, with MSS/MMPIA, MSS/DSS/SD1, ANSM, HAS and MEFR/DGE

Timescale: to be launched in 2022-2023

Challenges: New innovative products and technologies are essential in order to meet public health needs in terms of preventing infections and combatting antibiotic resistance, including new antibiotics, alternatives to antibiotics and new diagnostic methods.

● **Description:** The MSS is jointly leading the Strategic Agreement for the Health Industries and

Technologies Sector on Antibiotic Resistance, which paves the way for structured dialogue on this subject of incentive schemes between public authorities, industry players and academics. Specific measures are therefore being explored and could be rolled out over the 2022-2025 period, in line with European initiatives (in particular the pharmaceutical strategy, with revision of the pharmaceutical legislation and the study of new types of incentives for antimicrobial drugs and establishing the HERA).

- nationally, the new LEEM/CEPS framework agreement signed on 05/03/2021 has introduced more opportunities for price increases: the new provisions make it possible to take into account increases in the active ingredient linked to relocations and there is an eligibility criteria that applies to antibiotics only, requiring it to be the only antibiotic listed under its international nonproprietary name (INN) on the French market;
- the new framework agreement has also extended the application of European pricing to certain high-value ASMR 5 products (including new antibiotics, orphan drugs, high-efficacy drugs) and how long this pricing stability lasts is dependent on the quality of the medico-economic evaluation, thus avoiding drawn-out negotiations on the face value of innovative products (Article 11 and Article 17).

● **Monitoring indicators:** *Annual number of antibiotics that have increased in price; Annual number of new antibiotic INNs accepted for reimbursement (MSS/DGS/PP).*

PRIORITY 9

CONTRIBUTING TO FRANCE'S INTERNATIONAL INFLUENCE AND VISIBILITY

NB: The French government carries out many other international activities. However, they are not listed here because they are interministerial and coordinated by the MEAE or the SGAE.

MEASURE 41: Driving further involvement of the MSS in key events and initiatives on the topic.

Leaders: MSS/DAEI, MSS/MMPIA, MSS/DGS/MAEI

Timescale: to be launched in 2022-2023

Challenges: Antibiotic resistance (addressed internationally from a broader perspective: Anti-microbial Resistance [AMR]) is a major topic in European and international multilateral bodies, in particular in the European Commission, WHO, OECD, G7 and G20. The various ministries concerned are working together to champion an ambitious French position from a One Health perspective.

● **Description:** The MSS will increase its involvement in key European and international events and initiatives, e.g. as part of the French Presidency of the Council of the European Union in the first half of 2022, in the EU Antimicrobial Resistance One Health Network coordinated by the European Commission or in initiatives led by the WHO. The MSS will also present to the EU4Health programme committees the measures for combatting antibiotic resistance in order to factor it into their multiannual funding, and will ensure that antibiotic resistance issues are properly addressed in the measures led by the new HERA authority.

● **Monitoring indicators:** Annual inventory of MSS participation in European and international key events and initiatives (*MSS/MMPIA*); annual amount of EU funding on AMR (*MSS/DGS/MAEI*).

MEASURE 42: Continuing to explore the possibility of funding international bodies, such as the WHO or OECD, for measures preventing infections and antibiotic resistance.

Leaders: MSS/DAEI, in collaboration with the MSS/MMPIA

Timescale: to be launched in 2022-2023

Challenges: Supporting the initiatives of international bodies to contribute to the global fight against antibiotic resistance.

● **Description:** The MSS will explore the option of financially supporting certain initiatives and continue to work with the MEAE and/or the AFD to strategically align the financial support provided by France to certain key measures in the plans to combat antibiotic resistance of international organisations such as the WHO or the OECD.

● **Monitoring indicator:** Annual amount of funding (*MSS/DAEI*).

APPENDIX 1

COMPOSITION OF THE IPC AND ABS WORKING GROUPS

| Composition of the IPC group | Composition of the ABS group |
|--|--|
| Bruno GRANDBASTIEN (SF2H) – IPC Group Coordinator | France CAZENAVE-ROBLOT (CNP MIT) – ABS Group Coordinator |
| Sandra FOURNIER (SF2H) – IPC Group Coordinator | David BOUTOILLE (CMIT, SPILF) – ABS Group Coordinator |
| Marie-Christine ARBOGAST (SF2H) | Serge ALFANDARI (Former Coordinator of PROPIAS Cosu) |
| Pascal ASTAGNEAU (AP-HP) | Antoine ASQUIER-KHATI (PRIMO TF) |
| Anne BERGER-CARBONNE (SpF) | Hugues AUMAITRE (SPILF ABS Study Group) |
| Gabriel BIRGAND (CPias Pays de la Loire) | Jérémy BAYETTE (Conseil national de l'Ordre des Pharmaciens) |
| Sophia BOUDJEMA (SF2H) | Philippe BENOIT (Conseil national de l'Ordre des pharmaciens) |
| Evelyne BOUDOT (SF2H) | Eric BONNET (SPILF ABS Study Group) |
| Didier LEPELLETIER (SF2H) | Willy BOUTFOL (CRAtb Pays de la Loire) |
| Jean-Christophe LUCET (AP-HP) | Bernard CASTAN (SPILF ABS Study Group) |
| Pierre PARNEIX (CPias Nouvelle Aquitaine) | Marie-Paule CHARLOT (Conférence nationale des présidents de CME de l'hospitalisation privée) |
| Emmanuel PIEDNOIR (CPias Brittany) | Alexandre CHARMILLON (SPILF ABS Study Group) |
| John PINTE (UNPS) | Hélène CORMIER (CRAtb Pays de la Loire) |
| Anne-Marie ROGUES (SF2H) | Colin DESCHANVRES (PRIMO TF) |
| Christophe ROMON (Ordre national des Infirmiers) | Serge DESCHAUX (UNPS) |
| Dominique ROULAND (UNPS) | Sylvain DIAMANTIS (SPILF ABS Study Group) |
| Anne SAVEY (SF2H) | Frédérique DREYFUS (Hospital Federation of France) |
| Nathalie VAN DER MEE-MARQUET (SPIADI National Mission) | Hélène FERRAND (SPILF ABS Study Group) |
| Eric VAN MELKEBEKE (URPS Brittany) | Jean-Marc GLEMOT (Conseil national de l'Ordre des Pharmaciens) |
| | Dominique GOEURY (Hospital Federation of France) |
| | Laurence GUET (CPias Normandy) |
| | Nahéma ISSA (SPILF ABS Study Group) |
| | Pauline JEANMOUGIN (Collège de la Médecine Générale) |
| | Raphaël LEPEULE (SPILF ABS Study Group) |
| | Rémi MAYAN (SPILF Proper Use Group) |
| | Vanina MEYSSONNIER (SPILF ABS Study Group) |
| | Véronique MONDAIN (SPILF ABS Study Group) |
| | David MORQUIN (SPILF ABS Study Group) |
| | Jean-Paul STAHL (SPILF ABS Study Group) |

APPENDIX 2

DETAILED TABLE OF IMPACT INDICATORS OF THE 2022-2025 NATIONAL STRATEGY FOR PREVENTING INFECTIONS AND ANTIBIOTIC RESISTANCE

All of these indicators are to be published, with aggregate data available on a national and sometimes regional geographic scale. The main purpose of these indicators is therefore to guide the implementation of national, regional and local measures. This 43-indicator table explores the different aspects of preventing infections and antibiotic resistance and includes the 18 indicators previously presented, selected specifically as communication measures; they are denoted by an asterisk*.

These indicators include the key indicators from the national surveillance of antibiotic consumption, antibiotic resistance, HCAIs and practices, performed by SpF and the national missions. They were discussed and put forward by a working group coordinated by SpF that brought together the national missions. Expert societies (SF2H, SPILF and SFM) were invited to comment on these indicators. The criteria taken into account for choosing these indicators were: their feasibility, reliability, reproducibility and representativeness. The targets were, as far as possible, defined on the basis of existing surveillance data. Some have been set arbitrarily on the basis of expert advice in relation to expected outcomes.

It was decided to use 2019 as the year for impact indicator reference values, as the COVID-19 pandemic had a significant impact on most of these indicators the year after.

| Indicator | Sector | Frequency of data collection | Data available by region | 2019 value | Change in indicator from 2015- 2019 | 2025 target | Body responsible for collecting the indicator Link to data |
|--|----------------|------------------------------|--------------------------|--|-------------------------------------|---|---|
| Prevention of infections (17 indicators) | | | | | | | |
| Vaccination coverage of infants for mandatory vaccines | Community care | Annual | X | Dependent on vaccines 90% MMR single dose | Increase | > 98% by 2025, nationally and in all regions | SpF Vaccination data |
| ¹⁸ Influenza vaccination coverage of healthcare professionals working in community care | Community care | Annual | | Not available | Not available | > 80% by 2025, nationally | Cnam |
| *Influenza vaccination coverage of professionals working in hospitals | ES | One-off | X | 35% | Not available | > 70% by 2025, on a national scale and in all regions | SpF Annual health barometer, Vaccination data |
| *Influenza vaccination coverage among professionals working in ESMSs | ESMS | Annual | | 55% | Increase | > 70% by 2025, on a national scale | SpF Annual health barometer, Vaccination data |
| Indicator for monitoring influenza vaccination of hospital staff | ES | Annual | | Not available | Not available | À defining | HAS with SpF https://qualhas.atih.sante.fr/ or the HAS website: https://www.has-sante.fr/ |
| *Number of rubs with alcohol-based hand sanitiser in EHPADs, performed by health professionals, per resident and per day Definition here | EHPAD | Annual | X | Median: 1.60 | Increase | > 4 sanitising rubs / resident / day by 2025, nationally and in all regions | SpF/relevant national mission Investigation |

¹⁸ 2019 chosen as the reference value before the COVID-19 health crisis

¹⁹ An asterisk indicates the 18 previously presented indicators selected specifically for communication measures

| | | | | | | | |
|--|-------------|-------------------------------|---|-------------------------------------|---------------|--|--|
| *Hand rubs with alcohol-based sanitising product declared by health professionals in hospitals and medico-social institutions after touching a patient Methodology available here | ES and ESMS | Annual | X | 84% | Increase | > 90% by 2025, on a national scale and in all regions | SpF/relevant national mission Detailed results here |
| *Average frequency of hand rubs with alcohol-based sanitiser by healthcare professionals, observed by patients before a healthcare procedure, in 100 situations Methodology here Detailed results here | ES and ESMS | Annual | X | 76% | Not available | > 90% by 2025, on a national scale and in all regions | SpF/relevant national mission Results here |
| Use indicator of alcohol-based hand sanitiser Definition | ES | Annual | X | 32% of ESs achieved their objective | Increase | > 100% of hospitals having reached their target, with evolving targets for hand rubs per procedure/day/patient (to be increased by 2025), on a national scale and in all regions | HAS QualHAS: https://qualhas.atih.sante.fr/ Or the HAS website: https://www.has-sante.fr/ |
| *Proportion of patients/residents reporting having received information about hand hygiene Methodology here | ES and ESMS | Annual | X | 36% | Not available | > 80% by 2025, on a national scale and in all regions | SpF/relevant national mission Detailed results here |
| Good practice indicator for additional contact precautions Rate: number of compliant records out of total records in question. Details here PCC | ES | Every year or every two years | X | Average: 21% | Not available | 100% of ESs having reached the target rate of $\geq 80\%$, on a national scale and in all regions | HAS https://qualhas.atih.sante.fr/ Or the HAS website: https://www.has-sante.fr/ |

| Indicator | Sector | Frequency of data collection | Data available by region | 2019 value | Change in indicator from 2015- 2019 | 2025 target | Body responsible for collecting the indicator Link to data |
|---|--------|------------------------------|--------------------------|----------------------|-------------------------------------|---|---|
| *Number of observations complying with the critical points of peripheral venous catheter placement/100 observations performed Definition here | ES | Annual | X | Not available | Not available | > 80% by 2025, on a national scale and in all regions | SpF/relevant national mission Results here |
| Number of observations complying with the critical points of central venous catheter placement/100 observations performed Definition here | ES | Annual | | Not available | Not available | > 80% by 2025, nationally | SpF/relevant national mission Results here |
| *Proportion of preoperative antibiotic prophylaxis in accordance with SFAR recommendations | ES | Annual | X | Not available | Not available | > 90% by 2025, on a national scale and in all regions | SpF/relevant national mission |
| *Proportion of correct surgical skin preparations (indicator being developed) | ES | Annual | To define | Not available | Not available | > 80% by 2025, nationally | SpF/relevant national mission |
| Proportion of secondary cases out of all BHRe cases (EPC and ERG) reported via e-SIN More info here (annual report) | ES | Annual | | CPE: 21% GRE: 32% | Increase Decrease | ≤ 20%, every year, on a national scale | SpF/reporting notice BHRe overview |
| Proportion of episodes of BHRe with secondary cases reported via e-SIN More info here (annual report) | ES | Annual | | CPE: 12% GRE: 18% | Stable vs 2018 for EPC and ERG | <10%, every year, on a national scale | SpF/reporting notice BHRe overview |

20 2019 chosen as the reference value before the COVID-19 health crisis

| Healthcare-associated infections (5 indicators) | | | | | | | |
|---|-------------|--------|---|---|---------------|---|--|
| Standardised SSI ratio in THR (total hip replacement) and Standardised SSI ratio in TKR (total knee replacement) Observed vs expected ratio of SSIs on THR (SSI_THR) and SSIs on TKR (SSI_TKR) events. SSI_ORTHO | ES | Annual | X | 13 ES with poorer results than expected | Not available | No institution with more than 3 standard deviations, on a national scale and in all regions | HAS https://qualhas.atih.sante.fr/ Or the HAS website: https://www.has-sante.fr/ |
| *Surgical site infection indicator (indicator currently being developed) | ES | Annual | | Not available | Not available | To define | SpF/relevant national mission |
| *Incidence of central venous catheter bacteraemia in intensive care/1,000 catheter days Definition here | ES | Annual | X | Median <1 | Stable | <1, every year, on a national scale and in all regions | SpF/relevant national mission Annual report on website |
| Incidence of bacteraemia on central venous catheters outside intensive care, in oncology and haematology/1,000 hospital days Definition here | ES | Annual | X | Cf. Website | Not available | <1, every year, on a national scale and in all regions | SpF/relevant national mission Annual report on website |
| Incidence of bacteraemia on central venous catheters outside intensive care, in medical departments (excluding oncology and haematology)/1,000 hospital days Definition here | ES | Annual | X | Median <01 | Not available | <01, every year, on a national scale and in all regions | SpF/relevant national mission Annual report on website |
| Antibiotic stewardship (8 indicators) | | | | | | | |
| Total consumption in number of defined daily doses (DDD) of all antibiotics (WHO ATC class J01) per 1,000 inhabitants per day | All sectors | Annual | | 25.1 | Stable | <20 on a national scale by 2025 | ANSM ECDC, here |

| Indicator | Sector | Frequency of data collection | Data available by region | 2019 value | Change in indicator from 2015- 2019 | 2025 target | Body responsible for collecting the indicator Link to data |
|--|----------------|-------------------------------|--------------------------|--------------|-------------------------------------|--|---|
| Antibiotic prescriptions of 7 days or less for lower respiratory tract infections Rate: number of compliant records out of total records in question. Details available here: ATBIR | ES | Every year or every two years | X | Average: 73% | Not available | 100% of ES having reached the target of $\geq 80\%$, on a national scale and in all regions | HAS QualHAS: Collection platform for quality indicators https://qualhas.atih.sante.fr/ Or the HAS website: https://www.has-sante.fr/ |
| Number of antibiotic treatments per 100 patients (attending physician) aged 16 to 65 years old and with no long-term illness Definition here | Community care | Annual | | 32.9% | Decrease | Target objective <20 , on a national scale | Cnam here |
| *Number of antibiotics prescribed and dispensed in community care per 1,000 inhabitants per year Definition here | Community care | Annual | X | 851 | Decrease | <650 by 2025, on a national scale and in all regions | SpF GEODES, here |
| NB: For the following 4 indicators, the reference year used is 2019, as antibiotic prescribing practices were heavily affected by the COVID-19 pandemic in 2020-2021. | | | | | | | |
| *Antibiotic consumption in ESs, in number of DDD/1,000 hospital days (systemic antibiotics of WHO ATC class J01 + rifampicin (J04AB02) + oral imidazoles (P01AB) + fidaxomicin (A07AA12)) Antibiotics dispensed in ESs to hospitalised patients Definition here. More info here | ES | Annual | X | 285 | Decrease | Reduction of at least 10% between 2019 and 2025, on a national scale and in all regions | SpF/relevant national mission GEODES, here |

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| | | | | | | | |
|---|----------------|-----------|---|--------------------------------------|---------------|---|--|
| Consumption of all critical antibiotics for systemic use in community care, in DDD per 1,000 inhabitants per day, dispensed in community pharmacies Definition here | Community care | TO define | X | Not available | Not available | Reduction of at least 20% between 2019 and 2025, on a national scale and in all regions | SpF (from 2022) |
| Consumption of all critical antibiotics for systemic use in EHPAD (with and without in-house pharmacies), in DDD per 1,000 residents or per 1,000 days of hospitalisation and per year. Antibiotics dispensed by community pharmacies and in-house pharmacies for residents in EHPADs Definition here | EHPAD | Annual | | 37 (EHPADs with in-house pharmacies) | Not available | Reduction of at least 20% between 2019 and 2025, on a national scale | SpF/relevant national mission Here |
| ECDC indicator in ES: proportion of broad-spectrum antibiotics (C3G-C4G, piperacillin-tazobactam, aztreonam, carbapenems, fluoroquinolones, glycopeptides, linezolid, tedizolid, daptomycin and colistin) within ATC class J01 Antibiotics dispensed by hospital pharmacies to hospital patients Definition here | ES | Annual | | 33.5% | Stable | Relative reduction of at least 10% between 2019 and 2025, on a national scale | SpF/relevant national mission Annual report on website |
| Bacterial resistance to antibiotics or antibiotic resistance (13 indicators) | | | | | | | |
| *Proportion of <i>Escherichia coli</i> resistant to 3 rd -generation cephalosporins (C3G) in urine in community care Definition here C3G-resistant <i>E. coli</i> isolated from urine/ <i>E. coli</i> strains isolated from urine More info here | Community care | Annual | X | 34% | Decrease | ≤ 3%, every year, on a national scale and in all regions | SpF/relevant national mission GEODES, here |

| Indicator | Sector | Frequency of data collection | Data available by region | 2019 value | Change in indicator from 2015- 2019 | 2025 target | Body responsible for collecting the indicator Link to data |
|--|----------------|------------------------------|--------------------------|------------|-------------------------------------|---|---|
| Proportion of fluoroquinolone-resistant (FQ) <i>Escherichia coli</i> in urine in community care. Definition here FQ-resistant <i>E. coli</i> strains isolated from urine/ <i>E. coli</i> strains isolated from urine. More info here | Community care | Annual | X | 11.4% | Decrease | ≤ 10%, every year, on a national scale and in all regions | SpF/relevant national mission GEODES, here |
| Proportion of carbapenem-resistant <i>Escherichia coli</i> , <i>Klebsiella pneumoniae</i> and <i>Enterobacter cloacae</i> in urine in community care Definition here Carbapenem-resistant <i>E. coli</i> , <i>K. pneumoniae</i> and <i>E. cloacae</i> strains isolated from urine/ <i>E. coli</i> , <i>K. pneumoniae</i> and <i>E. cloacae</i> strains isolated from urine. More info here | Community care | Annual | | < 0.5% | Stable | <0.5%, every year, on a national scale | SpF/relevant national mission Annual report on website |
| *Proportion of <i>Escherichia coli</i> resistant to 3 rd -generation cephalosporins (C3G) in urine in EHPADs (with and without in-house pharmacies) Definition here C3G-resistant <i>E. coli</i> strains isolated from urine/ <i>E. coli</i> strains isolated from urine. More info here | EHPAD | Annual | X | 9.9% | Stable | ≤ 8%, every year, on a national scale and in all regions | SpF/relevant national mission GEODES, here |
| Proportion of fluoroquinolone-resistant (FQ) <i>Escherichia coli</i> in urine in EHPADs (with and without in-house pharmacies) Definition here FQ-resistant <i>E. coli</i> strains isolated from urine/ <i>E. coli</i> strains isolated from urine, all in EHPADs. More info here | EHPAD | Annual | X | 19.1% | Decrease | ≤ 18%, every year, on a national scale and in all regions | SpF/relevant national mission GEODES, here |

| | | | | | | | |
|--|-------|--------|---|--------|----------|---|---|
| Proportion of carbapenem-resistant <i>Escherichia coli</i> , <i>Klebsiella pneumoniae</i> and <i>Enterobacter cloacae</i> in urine in EHPADs (with and without in-house pharmacies) Definition here Carbapenem-resistant <i>E. coli</i> , <i>K. pneumoniae</i> and <i>E. cloacae</i> strains isolated from urine/ <i>E. coli</i> , <i>K. pneumoniae</i> and <i>E. cloacae</i> strains isolated from urine, all in EHPADs More info here | EHPAD | Annual | | < 0.5% | Stable | <0.5%, every year, on a national scale | SpF/relevant national mission Annual report on website |
| *Proportion of MRSA in <i>Staphylococcus aureus</i> isolated from blood cultures in ESs Definition here <i>S. aureus</i> oxa-resistant strains isolated from blood cultures/ <i>S. aureus</i> strains isolated from blood cultures, all in ESs More info here | ES | Annual | X | 13.9% | Decrease | ≤ 10%, every year, on a national scale and in all regions | SpF/relevant national mission Annual report on website |
| MRSA incidence density/1,000 hospital days (HD) in ESs Definition here and here. All MRSA positive samples / 1,000 hospital days in ESs. More info here | ES | Annual | X | 0.17 | Stable | Reduction of at least 10% between 2019 and 2025, on a national scale and in all regions | SpF/relevant national mission GEODES, here |
| Proportion of vancomycin-resistant strains in <i>Enterococcus faecium</i> isolated from blood cultures in ESs Definition here <i>E. faecium</i> vancomycin-resistant strains isolated from blood cultures/ <i>E. faecium</i> isolated from blood cultures, all in ESs More info here | ES | Annual | | 0.6% | Stable | <1%, every year, on a national scale | SpF/relevant national mission Annual report on website |

| Indicator | Sector | Frequency of data collection | Data available by region | 2019 value | Change in indicator from 2015- 2019 | 2025 target | Body responsible for collecting the indicator Link to data |
|--|--------|------------------------------|--------------------------|------------|-------------------------------------|---|---|
| Incidence density of C3G-resistant <i>K. pneumoniae</i> (ESBL)/1,000 hospital days in ES Definition here and here . All diagnostic samples positive for C3G-resistant <i>K. pneumoniae</i> /1 000 hospital days, all in ESs. More info here | ES | Annual | X | 0.17 | Stable | Reduction of at least 10% between 2019 and 2025, on a national scale and in all regions | SpF/relevant national mission Annual report on website |
| *Proportion of carbapenem-resistant strains of <i>K. pneumoniae</i> isolated from blood cultures in ESs Definition here Carbapenem-resistant <i>K. pneumoniae</i> strains isolated from blood cultures/ <i>E. faecium</i> strains isolated from blood cultures More info here | ES | Annual | | < 1% | Stable | <1%, every year, on a national scale | SpF/relevant national mission Annual report on website |
| Incidence density of all carbapenem-resistant Enterobacterales / 000 hospital days in ESs Definition here All diagnostic samples positive for carbapenem-resistant Enterobacterales/ 1,000 hospital days, all in ESs More info here | ES | Annual | | 0.01 | Not available | <1, every year, on a national scale | SpF/relevant national mission Annual report on website |

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APPENDIX 3

GLOSSARY

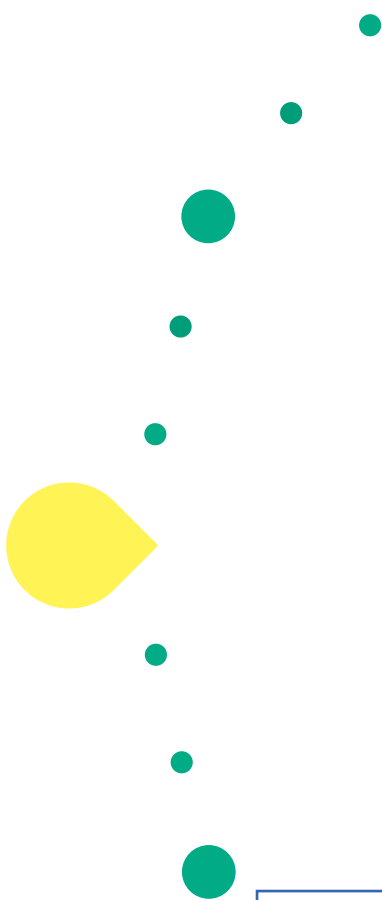
| Abbreviation | Definition |
|----------------|--|
| ABS | Antibiotic Stewardship |
| ADEME | French Agency for Environment and Energy Management |
| AEB | Accidental exposure to blood |
| AFD | Agence française de développement (French Development Agency) |
| AMR | Antimicrobial resistance |
| ANDEP | Association nationale des directeurs d'écoles paramédicales (French National Association of Paramedic College Directors) |
| ANDPC | Agence nationale du développement professionnel continu (French National Agency for Continuing Professional Development) |
| ANFH | Association nationale pour la formation permanente du personnel hospitalier (French National Association for the Continuing Education of Hospital Staff) |
| ANR | Agence nationale de la recherche (French National Research Agency) |
| ANSES | Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (French National Agency for Food, Environmental and Occupational Health & Safety) |
| ANSM | Agence Nationale de Sécurité du Médicament et des produits de santé (French National Agency for Medicines and Health Products Safety) |
| ARIIS | Alliance pour la recherche et l'innovation des industries de santé (French Health Industry Alliance for Research and Innovation) |
| ARS | Agence régionale de santé (Regional Health Agency) |
| ATIH | Agence technique de l'information sur l'hospitalisation (Technical Agency for Information on Hospitalisation) |
| Aviesan | Alliance pour les sciences de la vie et de la santé (French National Alliance for Life Sciences and Health) |
| BHRe | Emerging extensively resistant bacteria |
| BMR | Multidrug-resistant bacteria) |
| C3G | Third-generation cephalosporin |
| CAESCE | Comité d'éducation à la santé et à la citoyenneté (Committee for Education in Health and Citizenship) |
| CEPS | Comité économique des produits de santé (Economic Committee for Health Products) |
| CMG | Collège de la médecine générale (College of General Medical Practice) |
| Cnam | Caisse nationale d'assurance maladie (French National Health Insurance Fund) |
| CNCEM | Coordination Nationale des Collèges d'Enseignants en Médecine (National Committee of Schools of Medical Educators) |
| CNEMa | Conférence nationale des enseignants en maïeutique (National Conference of Midwifery Educators) |
| CPD | Continuing professional development |
| CPias | Centre d'appui pour la prévention des infections associées aux soins (Support Centre for the Prevention of Healthcare-associated Infections) |

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| CPTS | Communauté professionnelle territoriale de santé (Territorial Professional Healthcare Community) |
| CRAtb | Centre régional en antibiothérapie (Regional Antibiotic Stewardship Centre) |
| DAEI | Délégation aux affaires européennes et internationales (European and International Affairs Delegation) |
| DCGDR | Direction de la coordination de la gestion du risque (Directorate for Coordinating Risk Management) |
| DDD | Defined daily dose |
| DES | Diplôme d'Études Spécialisées (Postgraduate diploma in medicine) |
| DGCS | Directorate General for Social Cohesion (MSS) |
| DGE | Directorate General for Enterprise (MEFR) |
| DGESCO | Directorate General for Education (MENJS) |
| DGESIP | Directorate General for Higher Education and Professional Integration (MESRI) |
| DGOS | Directorate General of Healthcare Provision (MSS) |
| DGS | Directorate General for Health (MSS) |
| DH | Day of hospitalisation |
| DICOM | Delegation for Information and Communication (MSS) |
| DJEPVA | Department for Youth, Popular Education and Community Work (MENJS) |
| DNS | Ministerial Delegation for Digital Health (MSS) |
| DREES | Directorate for Research, Studies, Evaluation and Statistics (MSS) |
| DSS | Directorate for Social Security (MSS) |
| EA | Sous-direction de la DGS prévention des risques liés à l'environnement et à l'alimentation (Sub-directorate of the Directorate General for Health for Prevention of Environmental and Food Safety) |
| ECDC | European Centre for Disease Prevention and Control |
| EHESP | École des hautes études en santé publique (EHESP School of Public Health) |
| EHPAD | Établissement d'hébergement pour personnes âgées dépendantes (Nursing homes) |
| EMA | Équipe multidisciplinaire en antibiothérapie (Multidisciplinary Antibiotic Stewardship Team) |
| EMH | Équipe mobile d'hygiène (Mobile Hygiene Teams) |
| ENS | Espace numérique de santé (Digital Health Platform) |
| EOH | Équipe opérationnelle d'hygiène (Operational Hygiene Teams) |
| ES | Hospital |
| ESMS | Medicosocial services and institutions |
| FIR | Fonds d'intervention régional (Regional intervention fund) |
| FPH | Fonction publique hospitalière (Hospital public service) |
| FQ | Fluoroquinolone |
| FST | Formation Spécialisée Transversale (Specialised training) |
| FTE | Full-time equivalent |
| GHT | Groupe hospitalier de territoire (Territorial Hospital Group) |
| GRE | Glycopeptide-resistant enterococci |

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| HAS | Haute Autorité de Santé (French National Authority for Health) |
| HCAI | Healthcare-associated infection |
| HCRAE | Healthcare-related serious adverse event |
| HCSP | Haut Conseil de la santé publique (French High Council for Public Health) |
| HERA | European Health Emergency Preparedness and Response Authority |
| HPIR | Hygiène, Prévention de l'Infection, Résistance (Hygiene, Infection Prevention, Resistance) |
| ICW | Infectious clinical waste |
| IDE | Nurse with a French state diploma in nursing |
| IPC | Infection Prevention and Control |
| IFAQ | Incitation financière à l'amélioration de la qualité (Financial incentive for quality improvement) |
| INN | International nonproprietary name |
| Inserm | Institut national de la santé et de la recherche médicale (French National Institute of Health and Medical Research) |
| MA | Marketing authorisation |
| MAA | Ministère de l'agriculture et de l'alimentation (Ministry of Food and Agriculture) |
| MAEI | Mission affaires européennes et internationales (European and International Affairs Mission) |
| MATIS | Mission nationale d'appui transversal à la prévention des infections associées aux soins (National Mission for Interdisciplinary Support for the Prevention of Healthcare-associated Infections) |
| MC | Monitoring Committee |
| MEFR | Ministère de l'Économie, des Finances et de la Relance (Ministry of Economy, Finance and Recovery) |
| MENJS | Ministère de l'Éducation Nationale, de la Jeunesse et des Sports (Ministry for National Education, Youth and Sports) |
| MESRI | Ministère de l'Enseignement Supérieur, de la Recherche et de l'Innovation (Ministry of Higher Education, Research and Innovation) |
| MICOM | Mission information et communication (Information and Communication Mission) |
| MIT | Infectious and Tropical Diseases |
| MRSA | Methicillin-resistant <i>Staphylococcus aureus</i> |
| MSP | Maison de santé pluriprofessionnelle (multiprofessional community health centres) |
| MSS | Ministère des Solidarités et de la Santé (Ministry for Solidarity and Health) |
| MSS/MMPIA | MSS Ministerial Mission for Prevention of Infections and Antibiotic Resistance (MSS/MMPIA) |
| NCP | National professional council |
| OECD | Organisation for Economic Cooperation and Development |
| ONDPS | Observatoire national de la démographie des professions de santé (French National Observatory for Health Care Professions) |
| PCT | Primary care team |
| PEPR | Programme et équipement prioritaire de recherche (Priority research programme and equipment) |

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| PF | Sous-direction du pilotage de la performance des acteurs de l'offre de soins de la DGOS (Subdirectorate of the Directorate General of Health Care Provision for Performance Monitoring of Healthcare Stakeholders) (MSS) |
| PNSP | Plan national de santé publique (National Public Health Plan) |
| PPR | Programme prioritaire de recherche (Priority research programme) |
| PRIMO | Mission nationale de surveillance et Prévention de la Résistance aux antibiotiques et des Infections associées aux soins en soins de ville et secteur médico-social (National Mission for the Monitoring and Prevention of Antibiotic Resistance and Healthcare-associated Infections in Community care and the Medicosocial Sector) |
| Propias | Programme national d'actions de prévention des infections associées aux soins (French National Preventive Action Plan Against Healthcare-associated Infections) |
| R5 | Sous-direction de la régulation de l'offre de soins de la DGOS, évaluation, modèles et méthodes (Subdirectorate of the Directorate General of Healthcare Provision for the Regulation of Healthcare Provision, Evaluation, Models and Methods) (MSS) |
| RDT | Rapid diagnostic test |
| RéPias | Réseau de Prévention des infections associées aux soins (Prevention Network for Healthcare-associated Infections) |
| RH1, RH2, RH4 | Sous-direction des ressources humaines du système de santé de la DGOS (Subdirectorate of Human Resources for the Directorate General of Healthcare Provision for Healthcare System) (MSS) RH1: demography and initial training, RH2: practice and ethics of health professions, RH4: hospital public service staff |
| ROSP | <i>Rémunération sur objectifs de santé publique (Remuneration for attainment of public health objectives)</i> |
| SC | Steering Committee |
| SD2C | Service des politiques sociales et médico-sociales de la DGCS, familles et parentalité (Social and Medicosocial Policies Department of the DGCS, Families and Parenthood) (MSS) |
| SD3 | Service des politiques sociales et médico-sociales de la DGCS, autonomie des personnes handicapées et des personnes âgées (Social and Medicosocial Policies Department of the DGCS, Autonomy of People with Disabilities and Elderly People) (MSS) |
| SF2H | Société française d'hygiène hospitalière (French Society of Hospital Hygiene) |
| SFAR | Société française d'anesthésie et de réanimation (French Society of Anaesthesia and Intensive Care) |
| SFM | Société française de microbiologie (French Society of Microbiology) |
| SGMAS | Secrétariat général des ministères chargés des affaires sociales (Secretariat of Ministries Responsible for Social Affairs) |
| SNDS | Système national des données de santé (French national health data system) |
| SNS | Stratégie nationale de santé (French National Health Strategy) |
| SNU | Service national universel (French Universal National Service) |
| SP | Sous-direction santé des populations et prévention des maladies chroniques de la DGS (Subdirectorate of the Directorate General for Health for Population Health and Chronic Disease Prevention) (MSS) |
| SPARES | Mission nationale de surveillance et prévention de l'antibiorésistance en établissement de santé (National Mission for Monitoring and Prevention of Antibiotic Resistance in Hospitals) |

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| SpF | Santé publique France (French National Public Health Agency) |
| SPILF | Société de pathologie infectieuse de langue française (French Society of Infectious Disease) |
| SSES | Service sanitaire des étudiants en santé (Health service for healthcare students) |
| SSI | Surgical site infection |
| UD | University degree |
| UFR | Unité de Formation et de Recherche (University department) |
| URPS | <u>Union régionale de professionnels de santé libéraux (Regional Union of Private Healthcare Practitioners)</u> |
| WHO | <u>World Health Organization</u> |



For more information
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