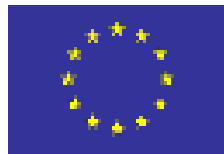




TRANSLATING POLITICAL COMMITMENTS INTO ACTION

*The development and implementation
of National Action Plans on
antimicrobial resistance in Europe*

*Country Files
December 2018*



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Executive Summary

The last two decades have witnessed several global, European and national initiatives to combat antimicrobial resistance (AMR). At the World Health Assembly in 2015, all UN Member States endorsed the Global Action Plan on AMR and adopted a Resolution, recognising the importance of tackling AMR through a “One Health” approach, involving different actors and sectors, and committing to **develop by 2017, national action plans (NAPs) on AMR aligned with the Global Action Plan**. Council Conclusions on a One Health approach to combat AMR, adopted in June 2016, reiterated this commitment and elaborated on some aspects which NAPs on AMR, adapted to national contexts, could include.

In spite of the recent momentum, enhanced political will and strengthened policy commitment towards a more coordinated and multisectoral approach to addressing AMR, progress on the development and more importantly, the implementation of national plans at local level has not been optimal.

Although the **ambitious target of adopting NAPs worldwide by 2017 has not been reached**, at a global level, the tripartite organisations (the World Health Organization, Food and Agriculture Organization of the United Nations and the World Organization for Animal Health) recognise that there has been **sustained progress in the development of NAPs to address AMR since 2016**. The tripartite global database for AMR includes a recent overview of country progress on AMR based on country self-assessment. To date, 60.4% of reporting countries worldwide have developed NAPs on AMR and among those countries that have not yet developed a NAP, 33 % of countries reported that a plan is currently under development.

Despite the fact that all EU and EFTA Member States surveyed reported the implementation, publication or development of a NAP, the database demonstrates significant variation in the stages of development of NAPs in these countries. This is also the case across the WHO European region, where 22% of countries reported having developed a NAP on AMR, 30% reported having an operational NAP, approved by government and aligned with the Global Action Plan and 16% of countries reported developing and implementing a NAP across various sectors with the identification of funding sources and the inclusion of evaluation mechanisms.

Coherent and robust policies are crucial to effectively combat AMR. **A national action plan serves as a guiding policy framework in the fight against AMR, whereby different multi-sectoral actions are aligned and coordinated**. A complete overview of which countries have developed an action plan is necessary to compare actions and measures, learn from best-practice examples and overcome common challenges.

Therefore, **this paper aims to provide an overview of the development and implementation of NAPs on AMR or similar initiatives (policy paper, strategy, programme, roadmap) in the 28 EU Member**



States and Iceland, Norway, and Switzerland.

Through the scrutiny of different data sources which record the development and/or implementation of a NAP in the countries in question, based on country self-reporting, a disparity in the number of countries which reportedly have developed or implemented a NAP was identified. Therefore, **the European Public Health Alliance (EPHA) has undertaken a thorough independent mapping exercise of NAPs and similar initiatives in 31 European countries.** The country analysis seeks to shed light on the current European situation, focusing on actions taken to combat AMR by governments and which aspects of AMR are given the most importance in policy-making. Based on the analysis, some examples of NAPs have been evaluated according to **four thematic areas:**

- encompassing a One Health approach;
- including financing estimates and identification of funding sources;
- integrating implementation and evaluation mechanisms;
- identifying clear measurable goals.

Across the 31 European countries studied in this paper, good practice examples co-exist alongside poor practices and inaction. Most countries do have a NAP in place or have initiated the process for its development. In fact, of the 31 countries analysed in this paper, **74% have developed and/or implemented a NAP or a similar initiative to tackle AMR.**

However, **Member States are at very different stages in terms of developing and implementing NAPs or similar initiatives to combat AMR.** It is striking that most One Health NAPs are found in Northern and Central Europe, where AMR prevalence is generally lower than the rates observed in Eastern and Southern European countries, which often face considerable healthcare systems challenges and lack of sustained financing.

There are also considerable variations with regard to the comprehensiveness and the One Health approach reflected in the NAPs in place. In fact, at the time of this analysis, **only 51% of the countries analysed could be considered as having action plans or national programmes or strategies that follow a One Health approach.** In fact, whilst acknowledging the One Health concept, some NAPs do not appear to follow a truly One Health approach and still address AMR in different fields separately. It is often unclear whether certain national policies would qualify as formal national plans. Indeed, some plans appear to be rather fragmented comprising of a main strategy accompanied by other secondary documentation or separate strategies targeting one sector in particular. Therefore, there remains considerable scope to **streamline the multiple strategies on AMR present in some countries and to incorporate them into a single, coordinated One Health NAP.** This may require better coordination and communication among different government Ministries and agencies, ensuring that all relevant actors understand the importance of adopting a multisectoral approach.



Interestingly, irrespective of whether NAPs were released recently, certain elements laid out in the 2016 Council Conclusions on AMR, such as infection prevention, promoting prudent use of antimicrobials, surveillance and monitoring of consumption and resistance of antimicrobials; awareness-raising and education feature predominantly as common overarching goals or priorities in most NAPs which are currently in place.

However, the identification of measurable targets covering both the human and the veterinary sector, the integration of monitoring and evaluation mechanisms as well as the inclusion of estimates of required financial resources or a delineation of dedicated funds available for NAP implementation, is not a common occurrence in the plans and strategies of most of the countries analysed, which may hamper effective implementation of the proposed actions.

Effective implementation of actions in the spirit of a One Health approach may be cumbersome, particularly if the national structures in place, such as coordination committees, do not ensure true representation of stakeholders from all sectors. Moreover, if funding is not clearly indicated and provided, responsible actors may face difficulties in accessing funds in order to realise projects set out in the plans. In fact, resource mobilisation and integrating sustainable financing mechanisms into NAPs is also essential for the implementation of wider AMR stewardship.

The analysis carried out in **this paper also sheds light on possible initiation and implementation challenges Member States could be facing in the process of developing or executing their NAPs.** The good news is that policy solutions exist and the paper discusses a number of opportunities that could provide support to MS in their endeavours.

What role can the EU and other actors play to counter the challenges faced by Member States? How can countries which are struggling to meet their commitments benefit from both technical and financial support?

As Member States do not seem to possess sufficient resources to develop and implement comprehensive national AMR strategies, **dedicated European funding could be made available to assist Member States.** They should also continue to benefit from expert assistance and any supporting tools at their disposal in the further development and implementation of their national policies for tackling AMR.

In this spirit, the paper puts forward the following **recommendations directed towards both national governments and the EU institutions.**



EPHA Recommendations

Towards the European Commission:

- Identify specific barriers hampering the development and implementation of NAPs in some countries and provide sustained technical assistance
- Allocate adequate EU funding (possibly a dedicated European AMR fund) to support countries' implementation of AMR policies, especially those currently struggling to meet their NAP commitments
- Facilitate and strengthen civil society engagement within the EU AMR One Health Network, involving the AMR stakeholder network of the EU Health Policy Platform and giving it a more formalised role in order to be able to better contribute to policy-making at EU level
- Enhance the work of the AMR One Health Network to better address the environmental dimension, as this will encourage a similar approach nationally
- Adopt an EU strategic approach to pharmaceuticals in the environment as soon as possible
- Set minimum criteria to be included in NAPs, aligned with the Global Action Plan, which could be adapted to national contexts and needs
- Propose a regulatory framework to harmonise antibiotic prescription practices, limiting the sale and consumption of antibiotics across the EU
- Leverage country-to-country learning, coordination and best practice exchange which is valuable for informing future national actions, beyond what is already being done through the EU Joint Action (EU-JAMRAI)
- Strengthen EU engagement on addressing AMR, leading by example in the promotion of antibiotic stewardship and working to provide technical assistance to Member States
- Mainstream funding (which is often fragmented, disease-specific and research-focused) for AMR at European level
- Communicate the importance of AMR stewardship in the EU's interaction with major global trading partners, ensuring that bilateral agreements are aligned with a One Health approach to fight AMR.

Towards EU Member States:

- Implement national policies and actions on AMR following a One Health approach; bringing together policy-makers and experts from different sectors (human health, animal health, environment, food safety, agriculture) as well as ensuring the involvement of all relevant bodies throughout the development, implementation and evaluation of NAPs
- Incorporate measurable targets in NAPs, following the harmonised outcome indicators proposed by ECDC, EFSA and EMA, to facilitate the monitoring of progress in reducing the use of antimicrobials and AMR in both humans and food-producing animals
- Identify funding sources and budget estimates for the execution of proposed actions and activities



- Mobilise appropriate human and financial resources to ensure effective implementation of NAPs
- Incorporate evaluation mechanisms and reporting arrangements in NAPs to monitor progress in the reduction of antibiotic use and AMR, adjusted accordingly to take account of national requirements and emerging priorities
- Ensure that national antibiotic councils and coordinating committees reflect a diversity of stakeholders, from multiple sectors
- Introduce and enforce policies aimed at regulating antibiotic prescriptions for humans and animals, to tackle high consumption rates at source.
- Scale up and mainstream multiple strategic plans and activities on AMR into one, single, coordinated One Health NAP which includes actions in different sectors
- Ensure that professionals and aspiring physicians, nurses, veterinarians, pharmacists and the entire health workforce are adequately trained to manage AMR challenges
- Invest in adequate healthcare infrastructure which is conducive to the delivery of quality and safe care alongside infection prevention and control measures
- Improve surveillance and data collection methods and undertake research to better study the effects of foodborne AMR and environmental antimicrobial pollution
- Allow for better engagement of Member States experiencing difficulties in developing their NAPs in the EU-JAMRAI
- Involve countries facing considerable healthcare and AMR challenges in research and development programmes in order to develop innovative and affordable tools or alternatives, while at the same time, meeting the needs of countries with high AMR prevalence.

READ THE STUDY AT <http://bit.ly/NAPamr>



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ABBREVIATIONS

AMR Antimicrobial Resistance	IACG Interagency Coordination Group of UN agencies and individual experts
CIA Critically Important Antimicrobial	IPC Infection Prevention and Control
DDD Defined Daily Dose	MS Member States
ECDC European Centre for Disease Prevention and Control	NAP National Action Plan
EC European Commission	OIE World Organisation for Animal Health
EEA European Economic Area	OECD Organisation for Economic Co-operation and Development
EFTA European Free Trade Association	OJ Official Journal of the European Union
EMA European Medicines Agency	SDGs Sustainable Development Goals
EU European Union	UN United Nations
EU- European Union Joint Action on Antimicrobial Resistance and Healthcare- Associated Infections	WHO World Health Organization
JAMRAI Antimicrobial Resistance and Healthcare- Associated Infections	
FAO Food and Agriculture Organization of the United Nations	WHA World Health Assembly
HCAI Healthcare- Associated Infection	

AUSTRIA

National Action Plan on Antimicrobial resistance NAP-AMR (2018) (German)

The Austrian National Action Plan on AMR (NAP-AMR) was released in 2018 by the newly established Ministry for Labour, Social Affairs, Health and Consumer Protection. The action plan comprises of a human medicine, veterinary medicine and an environmental component, making it a clear One Health plan. The EU One Health Action Plan against AMR is also annexed to the plan. Within the human dimension, surveillance and antimicrobial stewardship are covered and expert groups from various institutions and organisations provided input.

Although funding sources and specific targets do not seem to be identified in the plan, some indications of available funds for research purposes are provided. A detailed account of the different national scientific projects Austria is funding within the area of antibiotics and AMR R&D as well as EU funded projects in which Austria is participating, such as the EU-JAMRAI and other Horizon2020 initiatives, is also included (Ministry for Labour, Social Affairs, Health and Consumer Protection, 2018).



BELGIUM

[Guidelines for anti-infective treatment in hospitals](#) (2017) (Dutch)

[Policy Paper for the 2014-2019 term](#) (2014) (Dutch)

[AMCRA Vision 2020 plan](#) (2014) (French/Dutch)

Belgium has undertaken several actions to contain the threat of AMR. The Belgian Antibiotic Policy Coordination Committee (BAPCOC) published a policy paper for the 2014-2019 term and clinical guidelines for anti-infective treatment in hospitals, drawn up by the Belgian Society for Infectiology and Clinical Microbiology (BVIKM) in 2017. Based on the initiative of BAPCOC and the Federal Public Service for Public Health, Food Chain Safety and the Environment, with the support of the National Institute for Health and Disability Insurance (RIZIV), a public awareness campaign was also launched aiming to address appropriate use of antibiotics.

The detailed strategic policy paper sets out specific objectives, indicators and targets concerning human and animal health and acknowledges the One Health concept (Balligand et al., 2004) but puts little emphasis on environmental aspects of AMR.

With the publication of the AMCRA 2020 Strategy Plan in 2014, three clear reduction targets for the veterinary sector to be achieved by 2017 and 2020 were identified to address the veterinary dimension of AMR. The plan promotes rational use of antibiotics in animals to prevent the increase and spread of AMR (AMCRA, 2014). Although funding sources have not been identified, according to a June 2018 progress report, two out of three reduction targets were met in 2017. These are significant and encouraging results demonstrating the efficacy of actions taken (AMCRA and FASFC, 2018).

Whilst the long-established BAPCOC provides an extensive inter-sectoral coordinating mechanism for national AMR policies and national surveillance of healthcare-associated infections (HAIs), Belgium does not appear to have a truly One Health AMR NAP and still addresses AMR in different fields separately. This has been confirmed by an ECDC country visit to Belgium which aimed to assist Belgium in the implementation of its national policies and strategies based on a One Health approach. In fact, one of the recommendations presented in the country visit report is the development of a comprehensive and multi-disciplinary NAP, elaborating on the BAPCOC policy paper and ensuring collaboration among relevant sectors by increasing the executive role of the relevant ministries. There is considerable potential for the current BAPCOC policy paper to be transformed into a comprehensive NAP following the One Health approach and incorporating tailored and sector-specific activities, namely, a core compulsory set of AMR and HAI indicators and IPC targets, which are currently missing. Moreover, once approved, it is recommended that the NAP is provided with the necessary resources for its implementation, preferably earmarked for each activity (ECDC, 2018a).



BULGARIA

National Action Plan against AMR – veterinary and food sector (2018) (Bulgarian)

In October 2018, the Bulgarian Ministry of Agriculture, Food and Forestry and the Bulgarian Food Safety Agency released a National Action Plan against AMR for the food and veterinary sector. A Working Group developed the NAP, ensuring its complementarity with other foreseen measures and actions on AMR.

The plan makes reference to the WHO Global Action Plan and EU policies including the European Action Plan against AMR, and identifies six objectives including education, training and raising public awareness on AMR; strengthening research and data collection; reducing the incidence of infections through hygiene and IPC practices; establishing a monitoring and reporting system for AMR, and ensuring sustainable investments in order to achieve the objectives set out in the NAP. Each objective includes a series of actions and specific targeted activities to be undertaken. Moreover, an operational plan is presented including a delineation of the budget and the exact funding required for the implementation of the proposed activities.

The national plan also proposes a monitoring and evaluation mechanism that will assess the activities of the strategic plan and measure impact through performance indicators. In fact, the setting up of an AMR multi-sectoral Coordination Group and an expert Council on AMR are envisaged in order to coordinate the implementation of the NAP in the veterinary field and assess the effect and effectiveness of measures and actions undertaken under the plan (Ministry of Agriculture, Food and Forestry; Bulgarian Food Safety Agency, 2018).



CROATIA

National programme for the control of antibiotic-resistant bacteria 2017–2021 (2017) (Croatian)

Following the release of [national clinical practice guidelines](#) on the use of antimicrobials in human medicine, issued by the Croatian Intersectoral Coordination Mechanism for the Control of Antimicrobial Resistance (ISKRA), in 2017, the Ministry of Health published a national programme for the control of antibiotic-resistant bacteria covering the period 2017–2021.

The implementation of the programme is clearly delineated, covering an array of action areas including surveillance and monitoring of antimicrobial consumption and the prevalence of AMR in the field of human medicine, veterinary medicine as well as in foods of animal origin. It also covers infection prevention and control; supporting research in the field; enhancing the uptake of new innovative drugs and rapid microbiocidal diagnostics; awareness raising and education on the rational use of antimicrobials for aspiring professionals; and activities to promote responsible and prudent use of antimicrobials (Ministry of Health of Croatia, 2017).

Each priority action area identified includes goals, adapted to the national context and needs, and in accordance with the five main objectives defined in the Global Action Plan on AMR. It is also stated that goals are aligned with EU and OIE guidelines.

The programme outlines the anticipated development of planned concrete activities and the amount of government funds needed for its implementation, including the involvement of responsible and collaborating bodies in the realisation of each objective. The implementation plan goes as far as including implementation indicators in some cases, namely, an external quality control report or an annual report as well as performance indicators such as a reduction in antibiotic consumption (Ministry of Health of Croatia, 2017).



CZECH REPUBLIC

Action Plan of the National Antibiotic Programme for the period 2011-2013 (2011) (Czech)

The current National Antibiotic Programme Action Plan, drawn up by the Central Coordination Group NAP in cooperation with the Ministry of Health, builds on the principles declared in the EU Council Recommendation on Prudent Use Antimicrobial Agents in Medicine (2002/77/EC) and the EU Council Recommendation on Patient Safety, including the prevention and control of healthcare associated infections (2009/C151/01).

The plan identifies 11 priority areas, including surveillance of antibiotic consumption and AMR in both the human and veterinary field; relevant training for the healthcare workforce on prudent use of antibiotics and AMR; improving rational antibiotic prescribing practices; and enhancing awareness and co-responsibility among the general public to maintain antibiotic efficacy and reduce the spread of AMR. Specific objectives are also listed per priority area and actions to achieve these objectives are outlined. A brief indication of timelines and funding options is also provided. In some cases, co-funding from the European Regional Development Fund (ERDF) was envisaged (Ministry of Health of Czech Republic, 2011).

Building on the new EU Action Plan and Global Action Plan on AMR, the Czech Ministry of Health, in cooperation with the Ministry of Agriculture, have begun to jointly prepare a new National Antibiotic Programme covering 2018-2030, which will be aligned to the One Health concept. The action plan will be submitted to the Government upon completion (Ministry of Health of Czech Republic, 2018).



CYPRUS

National Strategy for the treatment of Antimicrobial Resistance (2012) (Greek)

Cyprus published a National Strategy to tackle Antimicrobial Resistance in 2012. The strategy aims to preserve the availability of effective antimicrobial therapy for humans and animals and makes reference to international and EU policy initiatives, including the 2011 EU Action Plan against the rising threats from AMR and the 2012 Council Conclusions. It notes that cross-sectoral cooperation is necessary to tackle AMR across the fields of human medicine, veterinary, livestock and agriculture (Ministry of Health of Cyprus, 2012).

Its primary objective is the development and implementation of actions to reduce AMR in Cyprus and covers aspects of surveillance, antibiotic consumption, the use of antibiotics in animal husbandry and the prevalence of hospital-acquired infections. It provides a detailed overview of available data to highlight the situation in Cyprus and the areas on which work needs to be done (Ministry of Health of Cyprus, 2012).

In addition, following the setting up of a national system of surveillance of AMR in 2012, the Cypriot National Antibiotics Committee has produced a number of annual reports analysing surveillance data (National Antibiotics Committee, 2014).



DENMARK

[One Health Strategy against Antibiotic Resistance](#) (2017) (English)

[National Action Plan on Antibiotics in Human Healthcare](#) (2017) (English)

[National Action Plan for the control of livestock-associated MRSA](#) (2015) (Danish)

[Joint Antibiotics and Resistance Action Plan](#) (2010) (English)

Following the 2010 Joint Antibiotics and Resistance Action Plan developed by the Ministry of Health and the Ministry of Food, the Ministry of Health and the Ministry of Environment and Food published a One Health Strategy Against Antibiotic Resistance in 2017. The Strategy provides a framework, and briefly outlines five main goals, for the reduction of antibiotic use and the prevention of AMR in humans and animals: namely prudent use of antibiotics; infection prevention and facilitating the use of antibiotic alternatives; enhanced knowledge, awareness and information provision on resistance and transmission; as well as strong international cooperation to minimise development of AMR (Ministry of Health, Ministry of Environment and Food of Denmark, 2017).

In the same year, the Ministry of Health released a more detailed NAP on Antibiotics in Human Healthcare, which included three measurable goals to reduce antibiotic consumption by 2020, to be financed within the current national financial framework. Each goal is defined and examples of national and local initiatives that can facilitate the achievement of the goal are delineated. In some cases, a focus on specific target groups is also included. The plan appears to have considerable focus on current achievements and supports a continuation of ongoing initiatives and measures to reduce antibiotic use, AMR and to prevent hospital-acquired infections (Ministry of Health of Denmark, 2017).

The mandate and structure of the One Health National Antibiotic Council was also strengthened in 2017. It now contributes to improved knowledge-sharing and the implementation of national goals. Several Council members are also part of a working group tasked to follow-up and monitor progress in the achievement of the goals set out in the NAP (Ministry of Health of Denmark, 2017).

Regarding the animal health dimension of AMR, the Ministry of Environment and Food released a national action plan for controlling livestock-associated Methicillin resistant *Staphylococcus aureus* (MRSA) for the period 2015 – 2018, based on recommendations from an interdisciplinary expert group. The plan contains several initiatives and measures to prevent the contamination and spread of livestock-associated MRSA and is evaluated annually (Ministry of Food, Agriculture and Fisheries, 2015).



FINLAND

[National Action Plan on Antimicrobial resistance 2017 – 2021 \(2017\) \(English\)](#)

[National Action Plan on Antimicrobial resistance 2017 – 2021 \(2017\) \(Finnish\)](#)

The National Action Plan on Antimicrobial Resistance for the period 2017-2021 was published by the Ministry of Social Affairs and Health in 2017. Various inter-sectoral experts were involved in its development and the Action Plan features a clear One Health approach. It acknowledges that action should be taken in human and veterinary medicine, infection prevention, the detection and control of the spread of AMR and on antimicrobial stewardship. The plan also notes that antimicrobial use in plant production is also an issue of global concern and since AMR is a global cross-border health threat, continuous preparedness is essential. The plan takes the recommendations of various global and European initiatives into account in the identification of its strategic objectives and actions, including the WHO Global Action Plan, the FAO Action Plan on AMR 2016-2020, Codex Alimentarius texts on foodborne AMR, the EU Action Plan against AMR 2011-2016, the OIE Strategy on AMR and the Prudent Use of Antimicrobials 2016, and the Nordic Council initiatives (Hakanen et al., 2017).

The Action Plan comprises of six operative areas, crucial for the control of AMR, including: training of professionals and public education; coordinated One Health surveillance of antimicrobials use and AMR; infection prevention and control; guidance for the use of antimicrobials; and research. The Action Plan describes the current situation and measures taken in all the areas of operation, sets objectives and outlines concrete actions to be undertaken to achieve the objectives. Additionally, responsible parties are assigned to each proposed action and a model for the follow-up and implementation of actions is presented (Hakanen et al., 2017). However, despite a comprehensive plan, funding sources and specific targets are not identified.



FRANCE

[ECOANTIBIO2 - National plan for the reduction of antimicrobial resistance risks in veterinary medicine 2017-2021 \(2017\) \(French\)](#)

[Interministerial Roadmap for Controlling Antimicrobial Resistance – 13 overarching Interministerial measures, 40 actions \(2016\) \(English\)](#)

[National Antibiotic Alert Plan 2011-2016 \(2011\) \(French\)](#)

In 2011, the French Ministry of Health adopted a National Antibiotic Alert Plan covering the period 2011- 2016, which was based on three strategic objectives of improving patient care efficiency, preserving antibiotics' effectiveness and promoting research. It outlined 21 operational actions to be undertaken, listing concrete activities for each action, the bodies involved in their implementation as well as performance indicators (Ministry of Health of France, 2011).

However, in 2016, an Inter-ministerial Roadmap for Controlling Antimicrobial Resistance was released. As the name suggests, numerous ministries and agencies were involved in its development and its One Health approach is evident. The roadmap is structured around five cross-cutting pillars, covering public and health professionals' awareness-raising, research and innovation, surveillance and the development of new indicators and inter-sectoral governance within an international context (Interministerial Committee on Health, 2016).

It proposes 13 overarching measures in line with the five main pillars identified and lists concrete actions for each measure, including the strategic and operational bodies concerned, the anticipated budget, indicators and the provisional implementation timetable.

Additionally, in 2017, the Ministry of Agriculture and Food published the second national plan for the reduction of Antimicrobial Resistance risks in veterinary medicine for the period 2017-2021. The veterinary action plan includes targets and should be considered as complementary to the inter-ministerial roadmap for the control of AMR (Ministry of Agriculture, Agri-food and Forestry, 2017).



GERMANY

[DART 2020 - fighting antibiotic resistance for the good of both humans and animals](#) (2015) (English)

In 2015, the German Federal Government published the second German Antimicrobial Resistance Strategy 2020 (DART 2020), outlining six main goals to be achieved by 2020. DART is a joint initiative of the Federal Ministry of Health (BMG), the Federal Ministry of Food and Agriculture (BMEL) and the Federal Ministry of Education and Research (BMBF) and was developed by several interested bodies, building on the outcomes and evaluation of the previous 2008 DART Strategy.

The new Strategy adopts a One Health approach and covers human and animal health, as well as the environmental aspects of AMR. However, despite separate measures being proposed for human and veterinary medicine, the previous Strategy had already highlighted the importance of adopting a One Health approach. In fact, an inter-ministerial working group on AMR (IMAG AMR) was set up in 2008 (German Federal Government, 2015).

DART 2020 covers awareness-raising of AMR; supporting research and development; infection prevention and early detection; improving antimicrobial therapies; as well as strengthening One Health coordination at a national and international level, in line with the WHO Global Action Plan. While it refers to achievements in several sectors to date, it does not indicate concrete activities or measurable targets in order to achieve the proposed goals (German Federal Government, 2015).



GREECE

[National Action Plan “Procrustes” \(2010\) \(Greek\)](#)

[National Action Plan to Address Microbial Resistance to Antibiotics and Infections in Healthcare Facilities 2008 – 2012 \(2008\) \(Greek\)](#)

Greece is one of the EU countries whose AMR plan pre-dates the adoption of the Global Action Plan on AMR. In 2008, the Hellenic Center for Disease Control and Prevention (HCDCP) issued a NAP to address AMR and healthcare-associated infections, covering the period 2008 – 2012 (HCDCP, 2008).

In 2010, the “Procrustes” National Action Plan was also published with the aim of combating significant healthcare associated infections (HAIs) following multi-drug resistant Gram-negative pathogens present in Greek hospitals (Kontopidou, 2016). The initiative sought to focus on enhancing surveillance and monitoring, ensuring that surveillance data on the extent of the spread of certain strains is adequately collected and processed. The plan was implemented in three phases, 2010-2012, 2012-2014 and post-2014 (HCDCP, 2010).



ICELAND

Report of a working group on measures to reduce the spread of antibiotic-resistant bacteria in Iceland (2017) (Icelandic)

In 2017, a working group, made up of experts from both human and veterinary medicine, released a report on measures to reduce the spread of antibiotic-resistant bacteria in Iceland. Set up in 2016, the working group's role, is to put forward proposals for measures aimed at reducing AMR, especially foodborne AMR.

The report outlines the measures that have been undertaken in Iceland to evaluate and control antibiotic antibodies and the spread of AMR in humans, animals and foodstuffs. A set of recommendations to address AMR are also proposed, including aspects concerning prevention, monitoring and response, to be undertaken by the Ministry of Welfare, the Ministry of Employment and Innovation, and the Environment and the Ministry of Natural Resources, working together in a multidisciplinary fashion. Moreover, some surveillance measures particularly on foodborne AMR as well as research on the presence of AMR in the environment are also proposed (Daðadóttir, Fridriksdóttir and Guðnason, 2017).



IRELAND

[Ireland's National Action Plan on Antimicrobial Resistance 2017-2020 \(iNAP\)](#) (2017) (English)

Ireland's National Action Plan on Antimicrobial Resistance for the period 2017-2020 was published in 2017 by the Department of Health. As members of the high-level National Interdepartmental AMR Consultative Committee, set up in 2014, the Department of Health and the Department of Agriculture, Food and the Marine, provided guidance in relation to the development of the NAP in line with a One Health approach and the five strategic objectives established in the Global Action Plan on AMR.

The NAP outlines five overarching objectives, namely, improving awareness and knowledge of AMR; enhancing AMR surveillance; infection prevention and control measures; optimising the use of antibiotics in human and animal health through the development and implementation of antimicrobial stewardship programmes; and promoting research and sustainable investment in new medicines, diagnostic tools, and vaccines (Department of Health of Ireland, 2017).

Situational analyses and assessment in the human, animal and environmental sector are followed by a detailed presentation of strategic and sector-specific interventions and concrete activities, to be undertaken to achieve each strategic objective. Timelines and the prioritisation of activities are also included in the NAP as well as the bodies and parties responsible for the implementation of each activity (Department of Health of Ireland, 2017).



ITALY

[National Plan against Antimicrobial Resistance \(PNCAR\) 2017-2020](#) (2017) (Italian)

[National Plan against Antimicrobial Resistance \(PNCAR\) 2017-2020 leaflet](#) (2017) (English)

The Ministry of Health published the Italian National Action Plan on Antimicrobial Resistance 2017-2020 (PNCAR) in October 2017. The plan outlines the current situation in Italy regarding AMR in the human, veterinary and food safety sectors and the Italian commitment and participation in several projects and activities to combat AMR. It also makes detailed reference to the One Health approach and global and European initiatives on tackling AMR such as the WHO Global Action Plan, FAO and OIE strategies, Codex Alimentarius texts in relation to foodborne AMR and the EU One Health Action Plan on AMR.

The plan starts from the premise that in order to combat AMR effectively, coordinated multi-sectoral action is required at different levels (national, regional and local). Therefore, interventions listed throughout the plan are to be implemented with the contribution of all relevant actions, through a One Health approach. However, despite an inter-disciplinary focus encompassing the human and veterinary sectors, the plan does not address the environmental aspects of AMR (Ministry of Health of Italy, 2017).

The plan comprises of a general overarching goal of reducing the frequency of HCAI infections and AMR and identifies specific objectives related to surveillance of antibiotic consumption and AMR in humans and animals; infection prevention and control including the prevention of zoonoses; appropriate use of antimicrobials in the human and veterinary field; research and innovation as well as training and education of professionals and the public, including antimicrobial stewardship programmes. The plan also contains several measurable targets in the human and veterinary sector (Ministry of Health of Italy, 2017).

To achieve these objectives, specific short-term and more long-term actions are defined for implementation at national and regional/local level and a number of responsible institutions and bodies are identified. Moreover, in order to allow for timely monitoring of progress in achieving the strategic objectives, a number of indicators are listed, notably, in the field of surveillance of antibiotic consumption and infections in the human and veterinary sectors.



LITHUANIA

Action Plan for the prevention and control of the spread of micro-organisms resistant to antimicrobial agents for the period 2017-2021 (2017) (Lithuanian)

The Action Plan for the prevention and control of the spread of micro-organisms resistant to antimicrobial agents for the period 2017-2020, approved by the Ministry of Health, entered into force on 14 July 2017.

The Action Plan notes that its objectives and tasks are in line with several international and EU actions and initiatives, namely, the European Action Plan on the fight against AMR Threats 2011-2016, Council Conclusions on the Follow-up to the Joint Health Framework to combat Antimicrobial Resistance and the EU Council Recommendation on Patient Safety and on the Prevention and Control of Healthcare-Associated Infections.

The plan aims to develop and implement cross-sectoral cooperation; expand and improve monitoring systems on the use of antimicrobials, hospital infections and AMR; ensure proper use of antimicrobials in human and veterinary medicine; reduce the incidence of hospital infections through hygiene and infection prevention measures; increase public awareness and understanding of AMR including effective training and development of professionals as well as conduct research on the use of antimicrobials and AMR and evaluate effective measures proven to reduce antibiotics use and AMR (Ministry of Health of Lithuania, 2017).

An implementation action plan is annexed to the plan, identifying concrete measures and actions for each objective, specifying the year(s) of implementation and the actors responsible. Implementation and evaluation criteria are also listed and annexed and implementing authorities are expected to submit an annual report on the implementation of measures provided in the plan to the Ministry of Health.

The Action Plan also identifies funding sources and is expected to be financed from the national budget as well as budgets of municipalities and institutions responsible for implementation of measures, EU and other structural funds, international programmes and other relevant funds (Ministry of Health of Lithuania, 2017).

The NAP is in the form of a legal text and although it features a One Health concept, it remains unclear whether stakeholders from sectors other than the Ministry of Health were involved in its development. Nonetheless, prior to the adoption of the plan, regional AMR management groups with representatives from different sectors, were established.



LUXEMBOURG

National Antibiotics Plan 2018- 2022 (2018) (French)

In February 2018, the first National Antibiotics Plan (NAP) 2018-2022 was approved by the Luxembourgish government. A joint effort of the Ministry of Health and the Ministry of Agriculture, Viticulture and Consumer Protection, the plan follows a One Health approach by including all three sectors, with the main aim of reducing the emergence, development and transmission of AMR in Luxembourg.

The NAP is centred around five goals comprising of governance; treatment and diagnostics including prudent use of antibiotics in human and animal health; awareness-raising through effective communication, education and training; AMR surveillance and monitoring of HCAI, and research. Although measurable targets are not defined, strategic objectives and specific measures and activities targeted for the human and veterinary sector are identified for each overarching goal. Moreover, timelines, performance indicators and methods for the presentation of outcomes and evaluations are identified for each proposed intervention (Ministry of Health and Ministry of Agriculture, Viticulture and Consumer Protection, 2018).

The plan notes that the National Antibiotics Committee will oversee the planned activities and annually develop or update the budgetary planning and allocation of required resources. Working groups will also be established to support the Committee's work and could make funding proposals for the establishment of long-term activities (Ministry of Health and Ministry of Agriculture, Viticulture and Consumer Protection, 2018).



MALTA

[A Strategy and Action Plan for the Prevention and Containment of Antimicrobial Resistance in Malta 2018 – 2025 – A One Health response to the threat of AMR \(2018\) \(English\)](#)

The Maltese Ministry for Health and the Ministry for the Environment, Sustainable Development and Climate Change have recently issued a Strategy and Action Plan for the Prevention and Containment of Antimicrobial Resistance in Malta for the period 2018 – 2025, following a One Health approach.

The Strategy was drawn up by an inter-sectoral team under the stewardship of the Superintendence of Public Health through the National Antibiotic Committee and was open for public consultation until 9 December 2018. It seeks to provide a framework to guide actions on AMR and the use of antibiotics, building on current strengths and addressing areas where deficits have been identified. Its implementation and evaluation will be supported by an Implementation Plan which details specific actions, targets, timeframes and indicators, yet to be developed in consultation with stakeholders. It is foreseen that the implementation and action plan will take a staged approach over the period 2018–2025 (Ministry for Health and the Ministry for the Environment, Sustainable Development and Climate Change, 2018).

The Strategy identifies a number of objectives and action areas, including: ensuring an adequate legislative framework as a basis for taking action on AMR; implementing effective antimicrobial stewardship practices across human and animal health that would ensure appropriate and prudent prescribing, dispensing, administering and disposal of antimicrobials; strengthening antibiotic use and AMR surveillance in the human, veterinary and environmental sectors; improving infection prevention and control measures; education and awareness-raising of AMR as well as continuous professional development of stakeholders and professionals; enhancing research initiatives; and strengthening partnerships and collaboration at international, European and regional level (Ministry for Health and the Ministry for the Environment, Sustainable Development and Climate Change, 2018).

A review and update of legislation relevant to antimicrobial use and AMR and its enforcement is foreseen including the development of a regulatory framework for a One Health Approach in implementing the Strategy.



NETHERLANDS

[Letter to parliament about the approach to antibiotic resistance](#) (2015) (English)

[Appendix 1 of the letter to parliament on the approach to antibiotic resistance](#) (2015) (English)

[Appendix 2 of the letter to parliament on the approach to antibiotic resistance](#) (2015) (English)

[Administrative arrangements on antibiotic resistance in healthcare](#) (2015) (English)

[Multi-annual agenda on antibiotic resistance in healthcare](#) (2015) (English)

[Factsheet: Tackling Antibiotic resistance – the Dutch approach](#) (2015) (English)

A letter to the Parliament concerning the approach to address antibiotic resistance issued by the Ministry of Public Health, Welfare and Sports in 2015, currently serves as the Dutch AMR NAP for the period 2015 – 2019. The letter addresses all domains in which human health is threatened by AMR, including the food system and the environment. The letter, co-signed by the Secretary for Economic Affairs and the Secretary for Infrastructure and the Environment, features a clear and integrated One Health approach. However, despite the identification of targets in the human and animal health sectors, there is little information on funding sources and required resources to achieve such goals (Ministry of Health, Welfare and Sport of Netherlands, 2015a).

The letter recognises that effective implementation of the WHO Global Action Plan on AMR is crucial and notes that the National Institute for Public Health and the Environment (RIVM) will be engaged in providing technical support to WHO States in creating and strengthening surveillance of resistant bacteria, following the Dutch model. In addition, specific initiatives undertaken at international, European and national level are outlined in Appendix 1 of the letter, under each of the following themes: healthcare; animals; food safety; environment and innovation (Ministry of Health, Welfare and Sport of Netherlands, 2015b).

The actions defined in the letter build on previous Council Conclusions on antibiotic resistance adopted under the Danish Council Presidency of 2012 and it is argued that a revised EU Antimicrobial Action Plan has clear EU added-value and may act as a starting point for debate towards reaching further agreements in the future.

It is worth noting that the letter was closely related to the work of the Dutch Presidency of the Council of the EU which took place in the first half of 2016, whereby the Ministries of Health, Welfare and Sport and Economic Affairs indicated that antibiotic resistance is a shared priority. In order to emphasise the importance of a One Health approach, the Dutch Presidency held a high-level conference on AMR and led subsequent Council Conclusions which called for a revised EU Action Plan on AMR and also urged the European Commission to initiate a Joint Action, whereby key policy developments in the AMR domain may be further exchanged and strengthened among EU MS (OJ, 2016).



Regarding the veterinary aspect of AMR and in the context of the European Regulation on veterinary medicines, the letter outlines the Dutch commitment to reduce the use of critical antibiotics in animals and pursue measures that will contribute towards achieving a general ban on the use of last line antibiotics in animals.

The letter is accompanied by administrative agreements on AMR in healthcare and a multi-annual agenda for AMR in healthcare, setting out activities to be initiated at national, regional and local level (Ministry of Health, Welfare and Sport of Netherlands, 2015c). A multi-annual communication strategy targeting both the public and professionals is also foreseen with the aim of increasing public awareness of the use of antibiotics and AMR.



NORWAY

[Action Plan Against Antibiotic Resistance in Healthcare](#) (2016) (Norwegian)

[National Strategy against Antibiotic Resistance 2015-2020](#) (2015) (English)

In 2015, the Norwegian Ministry of Health and Care Service published the National Strategy against Antibiotic Resistance 2015-2020, which was developed jointly with the Ministry of Fisheries and Coastal Affairs, Ministry of Agriculture and Food, and the Ministry of Climate and Environment. The Strategy has a strong One Health approach and includes 14 sector-specific goals identified in the areas of health, food-producing animals and household pets, fish, and climate and the environment, some of which could be considered as measurable targets (Ministry of Health and Care Services, 2015). Although, estimates of required financial resources are not included, it is stated that measures identified are able to be implemented within applicable budget frameworks.

The Strategy sets out overarching goals for the period 2015–2020, including the reduction in the total use of antibiotics; more appropriate use of antibiotics; improved knowledge of the drivers behind the development and spread of antibiotic resistance as well as leading work on improving access, responsible use, and development of new antibiotics, vaccines and better diagnostic tools. In addition, actions are defined with regard to surveillance and increased scientific understanding of antibiotics use and AMR in humans, food, animals and the environment, infection prevention and control including the potential value of vaccines, improving prescribing practices, and contributing to strengthened international collaboration on AMR for a long-lasting response, including through Norway's collaboration via the Nordic Council of Ministers (Ministry of Health and Care Services, 2015).

Additionally, an Action Plan Against Antibiotic Resistance in Healthcare was developed in 2016. The action plan illustrates the measures needed through raising public awareness, curbing misuse of antibiotics and reducing antibiotics prescriptions, aiming to achieve a 30% reduction of antibiotic consumption in the human health sector by the end of 2020 (Ministry of Health and Care Services, 2016).



POLAND

National Antibiotic Protection Programme 2016 – 2020 (2016) (Polish)

In 2016, the Ministry of Health published the National Antibiotic Protection Programme for the period 2016-2020. The detailed programme aims to reduce the abuse of antibiotics in human medicine, thus slowing the rise of drug resistance in Poland. It is a continuation of, among others, the National Antibiotic Protection Programme (2011-2015) and seeks to improve the safety of patients exposed to infections resistant to many types of antibiotics and difficult-to-treat community-acquired invasive bacterial infections (Ministry of Health of Poland, 2016).

The programme defines budget and funding sources but only covers the human medicine aspect of AMR.



PORTUGAL

[Programme for the Prevention and Control of Infections and Resistance to Antimicrobials](#) (2017) (Portuguese)

[National Action Plan for the Reduction of Antibiotic Use in Animals 2014-2019](#) (2013) (Portuguese)

Several programmes have been developed in Portugal to address AMR. However, it seems that a truly One Health plan is still lacking. In 2017, the Directorate-General for Health published a Programme for the Prevention and Control of Infections and Resistance to Antimicrobials which includes goals and targets on AMR to be achieved by 2020. It is assumed that the new programme follows on the previous programme on infection prevention and control and AMR, issued in 2013.

The current programme presents the situation regarding HCAI and antibiotics use in Portugal and outlines the activities performed in 2016 and 2017 on the surveillance of antibiotic consumption and AMR as well as planned activities until 2020. It sets out three overarching objectives, namely: improving the quality of antibiotic prescriptions; improving infection prevention and control in health facilities; and controlling resistance rates of *Klebsiella pneumoniae*, a pathogen commonly resistant to last-line antimicrobial drugs such as carbapenems. Indicators to be used for monitoring purposes are also listed (Ministry of Health of Portugal, 2017).

Moreover, in 2017, two more general health programmes were released, outlining a series of health goals to be achieved by 2020, covering several health matters and diseases, including AMR.

Regarding the veterinary sector, a National Action Plan for the Reduction of Antibiotic Use in Animals for the period 2014-2019 was published in 2013, which includes 33 operational objectives and corresponding measures to be undertaken. A number of objectives cover research and innovation; education and professional training; prudent use of antibiotics for animals, in sustainable livestock production as well as for household pets; improved prescribing practices; rapid diagnosis and research of alternative treatments proven to reduce the use of antibiotics; and research and development of vaccines including herd vaccines (Directorate-General for Food and Veterinary, Ministry of Agriculture and Maritime, 2013).



ROMANIA

National Veterinary and Food Safety Authority Strategy for Combating Antimicrobial Resistance in Veterinary Medicine (2016-2018) (2016) (Romanian)

The Romanian National Sanitary Veterinary and Food Safety Authority (ANSVSA) released a National Veterinary and Food Safety Authority Strategy for Combating Antimicrobial Resistance in Veterinary Medicine for the period 2016-2018. The brief Strategy is in table form and lists specific objectives to be achieved and corresponding targeted actions (ANSVSA, 2016) but does not identify funding sources.

The ECDC visited Romania to assess the situation regarding the prevention and control of AMR. The country visit report recommendeds that Romania designates AMR as a national public health threat and prioritises the issue accordingly. A One Health NAP to tackle AMR should also be developed, considering specific national needs to be addressed in relation to diagnosis, surveillance, prevention and control of multi-drug resistant organisms (ECDC, 2018b).

At the Employment, Social Policy, Health and Consumer Affairs (EPSCO) Council of 7 December 2018, the incoming Romanian Presidency of the Council (January-June 2019) presented its work programme in the area of health, including AMR as one of the Presidency's health priorities. A high-level conference on AMR is scheduled to be held on 1 March 2019, followed by the subsequent proposal of Council Conclusions on AMR, with a focus on infection prevention and control.

In addition, in a recent press release, the Ministry of Health welcomed the Government Decision to establish the National Committee for Limiting Resistance to Antimicrobials (CNLRA). The Committee aims to develop and monitor the implementation of a national strategy on the prudent use of antibiotics, preventing the spread and limiting the increase of AMR in humans and animals.

The inter-ministerial CNLRA will ensure collaboration among the human, veterinary, and animal husbandry sectors and will be responsible for developing and updating the current national strategy, as well as a holistic national action plan to combat AMR. CNLRA is also expected to issue recommendations on the training of human health and veterinary staff on the use of antibiotics, AMR testing and reporting as well as activities aimed at educating the general public.

Although the CNLRA will be coordinated by the Ministry of Health, it will be composed of representatives from 8 Ministries, national agencies, health professionals' representatives including dentists and pharmacists, human and veterinary medical professional organizations, NGOs and patient associations (Ministry of Health of Romania, 2018).



SPAIN

Strategic Action Plan to reduce the risk of selection and dissemination of antibiotic resistance (2014) (English)

The National Plan against Resistance to Antibiotics (PRAN) for the period 2014-2018, published in 2014 by the Spanish Agency of Medicines and Medical Devices (AEMPS), is a Strategic Action Plan to reduce the risk and spread of antibiotic resistance in humans and animals and sustainably preserve the effectiveness of existing antibiotics.

To achieve its overarching objective, the NAP proposes six strategic priority areas for human and animal health, namely: surveillance of antibiotic consumption and AMR; resistance control; identification and promotion of alternative, complementary measures for prevention and treatment; definition of research priorities; training of health professionals and awareness-raising and education for the general public. Each strategic area includes corresponding measures which are further subdivided into specific actions for human and animal health. However, measurable targets and funding sources or budget allocations are not identified (AEMPS, 2014).

The PRAN was drawn up in response to the 2011 European Commission Action Plan on AMR, as well as the 2012 Council Conclusions, which called for a joint approach to address AMR and developed jointly by a technical coordination group and other participating institutions and bodies including six ministries (Health, Agriculture, Economy, Education, Interior and Defence). Therefore, the plan's One Health approach is also reflected through the diversity of stakeholders involved. However, despite this inter-sectoral approach, the challenge may lie in the action plan's implementation which involves 17 different regional healthcare systems which comprise the Spanish National Healthcare System, each with different funding and management schemes.

More recently, on the occasion of the European Antibiotic Awareness Day, the Spanish Minister of Health, Consumer Affairs and Social Welfare presented the priority areas of the new PRAN for the period 2019-2021, which is currently in its approval phase. It was also noted that the current strategic action plan has resulted in considerable reductions in human consumption of antibiotics between 2016 and 2017, representing a change in the upward trend registered since 2012. Moreover, similar successes have also been registered in the veterinary sector (Ministry of Health, Consumer Affairs and Social Welfare of Spain, 2018).



SWEDEN

[Revised intersectoral action plan against antibiotic resistance 2018-2020 – basis for continued work of the collaborative group \(2017\) \(Swedish\)](#)

[Swedish Strategy to combat antibiotic resistance \(2016\) \(English\)](#)

The Swedish strategic programme against AMR has been in place for the past two decades and a number of action plans and initiatives to combat AMR have already been implemented. For instance, back in 1986, Sweden was the first country in the world to ban antibiotics in animal growth promotion.

An updated National Strategy to combat antibiotic resistance was released in 2016. It follows a clear One Health approach and has an overall goal of preserving effective treatment of bacterial infections in humans and animals. The Strategy comprises of several target areas, including: prevention; responsible use of antibiotics: knowledge and education on the prevention and control of bacterial infections and AMR with new methods: leadership within the EU and in an international context (Government Offices of Sweden, 2016).

Based on the Strategy, in 2017, the Public Health Agency of Sweden and the Swedish Board of Agriculture together with 20 national authorities and organisations, jointly developed a revised NAP against AMR with a renewed focus on cross-sectoral cooperation, highlighting an inter-sectoral approach (Public Health Agency of Sweden, Swedish Board of Agriculture, 2017).

The action plan addresses human and animal health, food, the environment and research at local, regional, national and international level covering the period until 2020. However, no specific targets or funding sources are included.



SWITZERLAND

[Strategy on Antibiotic Resistance Switzerland \(StAR\)](#) (2015) (English)

In 2015, the Swiss Federal Council published a Strategy on Antibiotic Resistance with the primary objective of ensuring the long-term efficacy of antibiotics in preserving human and animal health. The comprehensive strategy features a clear One Health focus and defines a number of inter-sectoral strategic objectives and corresponding targeted measures as well as identifying the parties responsible for reaching the goals and implementing the proposed measures.

The objectives were defined by a number of stakeholders in light of the areas which require action and cover surveillance of the use of antibiotics and the spread of AMR in humans, animals, agriculture and the environment; targeted infection prevention and encouraging effective alternatives; rules for appropriate use of antibiotics; control of AMR transmission and spread; research and development including development of cost-effective diagnostics; One Health multi-stakeholder cooperation at national and international level; and knowledge and education of AMR among experts and the general public (Federal Council, 2015).

The AMR strategy also provides an estimate of the required financial resources and delineates funding streams. Although specific timelines for the implementation of measures are not identified, the Federal Council commits to periodically monitor the efficacy, suitability and affordability of the proposed measures as well as evaluate the overall strategy. To this end, an interim report is foreseen within five years of the strategy's adoption which will allow any required changes to the implementation process and funding to be made (Federal Council, 2015).



UNITED KINGDOM

[Five-Year Antimicrobial Resistance Strategy 2013-2018 - Annual progress report \(2016\)](#)

[Government response to the Review on Antimicrobial Resistance by Lord O'Neill \(September 2016\)](#)

[Five-Year Antimicrobial Resistance Strategy 2013-2018 - Measuring success \(2014\)](#)

[Five-Year Antimicrobial Resistance Strategy 2013-2018 \(2013\)](#)

[Strategy Impact Assessment](#)

In 2013, the Department of Health and the Department for Environment, Food and Rural Affairs jointly published a Five-Year Antimicrobial Resistance Strategy 2013-2018. The Strategy follows a One Health approach, covering human and animal health, agriculture and the wider environment. Its overarching goal is to reduce the development and spread of AMR and activities are centred around three strategic aims: improving the knowledge and understanding of AMR; conserving the effectiveness of existing treatments; and stimulating the development of new antibiotics, diagnostics and novel therapies (Department of Health, Department for Environment, Food and Rural Affairs, 2013).

The aims are underpinned by specific actions covering a number of key areas, in line with the 2011 European Commission's AMR Action Plan, namely, improving infection prevention and control practices in human and animal health; optimising prescribing practices through antimicrobial stewardship programmes and making better use of existing and new rapid diagnostics; improving professional education; training and public engagement; developing new drugs, treatments and diagnostics; ensuring better access to and use of surveillance data in human and animal sectors; better identification and prioritisation of AMR research focus; and strengthening international collaboration through working with governmental and non-governmental organisations, and international regulatory bodies to influence opinion, galvanise support, and mobilise action.

The Strategy provides a number of examples of actions which have already been taken in the UK, Scotland and Northern Ireland to improve prescribing practices and tackle AMR and includes an element of continuity of future actions. It also illustrates the UK's commitment in shaping action at an international level, including the UK's support to the WHO's global leadership role in addressing AMR. Although the Strategy lacks the identification of measurable targets, it sets out detailed outcome measurements and aspects ensuring inter-sectoral implementation of actions.

However, in the third annual progress report, which describes the 2016 activities and achievements, it is stated that for the remaining two years of the 5-year strategy, the UK AMR programme has been restructured around 4 core goals with a view to delivering the ambitions set out in the UK government's response to the O'Neill Review (Global and Public Health Group, 2017). 3 out of the 4



goals include measurable targets to be achieved by 2018 and 2020/2021:

- reducing healthcare associated Gram-negative bloodstream infections in England by 50% by the years 2020/21
- reducing inappropriate antibiotic prescribing by 50% with the aim of being a world leader in reducing antibiotic prescribing by the years 2020/21.
- reducing the use of antibiotics in livestock and fish farming to an average of 50mg/kg by 2018.

The strategy is accompanied by an Impact Assessment which includes a thorough economic assessment identifying cost estimates and cost-benefits of implementing actions specific to each of the key areas of action and the impact of the strategy in comparison to inaction (Department of Health, 2013).



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