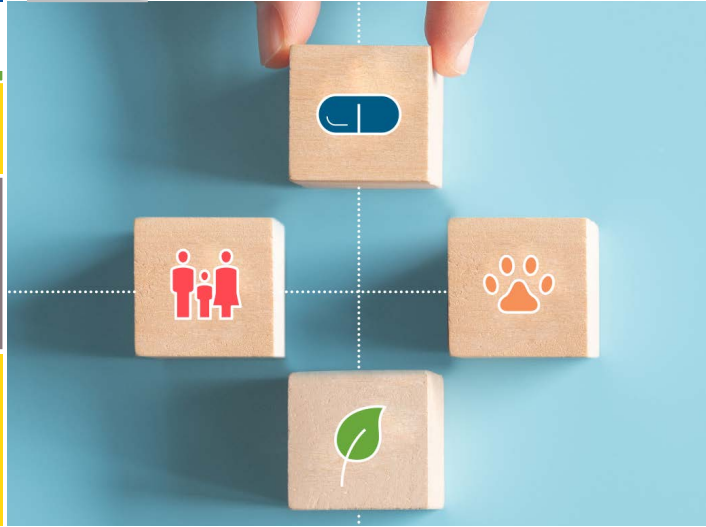
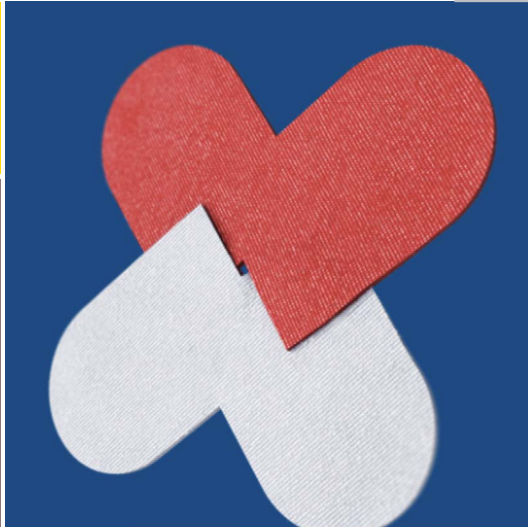




European
Commission



DG Health and
Food Safety

Overview report
**Member States' One Health
National Action Plans against
Antimicrobial Resistance**

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DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY

Health and food audits and analysis

DG(SANTE) 2022-7608

OVERVIEW REPORT
ON THE
REVIEW OF MEMBER STATES'
ONE HEALTH NATIONAL ACTION PLANS
AGAINST ANTIMICROBIAL RESISTANCE

Executive summary

This report summarises a review of European Union Member States' One Health antimicrobial resistance (AMR) national action plans (NAPs) as of 1 September 2021. It was conducted by the European Commission's Directorate-General for Health and Food Safety between 1 September 2021 and 31 May 2022. The report also lists the Commission's actions to assist Member States in their fight against AMR.

The general objective of this review was to determine the extent to which Member States have developed NAPs, including how the One Health dimension and governance mechanisms are reflected therein. The review maps the strategic approaches taken by Member States to tackle AMR and examines the policy objectives per area. It also identifies gaps and good practices in the existing NAPs, which may inform future Commission initiatives on AMR.

The Commission found that NAPs are in place in all Member States, with most based on a One Health approach, at least to some extent. The NAPs vary considerably in content and detail, which may reflect the stage at which each country is in their fight against AMR. Nevertheless, many Member States should work more on the One Health dimension, particularly regarding the environment, which is often missing or not well developed. The inclusion of the environment has been recognised internationally as being key to fully address health risks at the animal-human-ecosystems interfaces.

The review has found some good examples of the prioritisation process to determine the main areas, actions and indicators within the NAPs, based on a situational analysis. However, this is often not well described in the NAPs, which limits the transparency and understandability of the decision-making process as well as the rationale for excluding certain areas from the NAPs, such as plant health.

All NAPs contain a strategic part describing the Member States' visions to tackle AMR but other core components, such as the operational, monitoring and evaluation parts, are generally not well developed, nor available in other documents cross-linked to the NAPs. Furthermore, budgeting information is mostly absent from the NAPs. These issues raise concerns about the sustainable implementation of the NAPs and the arrangements in place in Member States to ensure that their strategic objectives are achieved effectively.

Governance aspects, including oversight, are more prominent in the more recent One Health NAPs. There are some good examples where the setting up of a governance structure has been given high priority by being included as a strategic objective of the NAP itself.

Intersectoral Coordination mechanisms (ICMs) are referred to in most One Health NAPs, and several Member States indicated that they are in the process of renewing their ICMs or similar structures. Greater clarity in the composition and mandate of the ICMs would be helpful since they are essential for the development and implementation of One Health NAPs.

The strategic objectives of the Global Action Plan are addressed in the NAPs, albeit in varying levels of detail. Overall, the emphasis is on actions in the human and animal health sectors with limited references to environmental aspects, which are not currently included in the scope of most NAPs. The report refers to how these GAP objectives (awareness and

training, strengthening knowledge through surveillance, infection prevention and control, optimisation of use of antimicrobials, research, collaborative work and innovation) are addressed in the NAPs and where further efforts could contribute to the optimisation of use of antimicrobials and thus lower AMR.

The Member States' progress in the fight against AMR has been negatively affected by the COVID-19 pandemic, which has diverted resources for the development and implementation of NAPs. Member States have an opportunity to apply the lessons learned from the pandemic in their One Health NAPs, since almost half are in the process of developing or updating them at present.

The findings of this report should help Member States identify and develop synergies in the context of the One Health dimension, as well as addressing gaps and strengthening their existing NAPs.

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Abbreviations and definitions used in this report

Abbreviation	Explanation
AMR	Antimicrobial resistance
AMU	Antimicrobial use
BTSF	Better Training for Safer Food
ECDC	European Centre for Disease Prevention and Control
EFSA	European Food Safety Authority
EMA	European Medicines Agency
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GAP	Global action plan on AMR
HERA	DG European Health Emergency Preparedness and Response Authority
ICM	Inter-sectoral Coordination Mechanism
IPC	Infection Prevention and Control
JAMRAI	Joint Action on Antimicrobial Resistance and Healthcare-Associated Infections
LTCF	Long-term care facilities
Manual	Tripartite's Manual for developing National Action Plans
NAP	National Action Plan
TrACSS	Tripartite AMR country self-assessment survey
Tripartite	WHO, FAO & World Organisation for Animal Health.
Quadripartite	Tripartite & UNEP
SWOT	Strengths, weaknesses, opportunities and threats
UNEP	United Nations Environment Programme
WHO	World Health Organization

Introduction

Background

Antimicrobial resistance (AMR) is a slow and silent pandemic that poses a major threat to health and the economy around the world, requiring urgent global action. The [2016 O'Neill report](#) estimated that, by 2050, as many as 10 million lives a year and a cumulative 100 trillion US dollars of economic output are at risk if we do not find proactive solutions to slow down the rise of AMR. More recently, the global burden attributable to AMR has been estimated at 1,27 million deaths per year¹. There is broad consensus that without decisive action, on a global scale, the world is heading towards a post-antibiotic era in which common infections could once again kill.

The 2015 [Global Action Plan on AMR](#) (GAP) provided the framework for the development of national action plans (NAPs), setting out key actions structured around 5 strategic objectives (see Figure 1).

In the European Union (EU), the 2016 Council Conclusions² called on Member States to have in place, by mid-2017, NAPs based on a One Health approach and in line with the GAP objectives. The Council Conclusions also called for a new and

comprehensive EU action plan on AMR based on the One Health approach. Effectively, the 2017 [One Health AMR EU action plan against AMR](#) has provided a framework for continued and more comprehensive actions to reduce the emergence and spread of AMR, and to support the development and availability of new effective antimicrobials.

The 2019 Council Conclusions³ further elaborated on the necessary features of the NAPs, to ensure that all relevant initiatives contributing to the fight against AMR are pursued within a coherent framework, that maximises the impact of each action.

The [2019 Strategic Approach to Pharmaceuticals in the Environment](#) states that the pollution caused by some pharmaceuticals is an emerging problem and, in particular, the risks posed by AMR to the environment and to human health.

In 2020 and as part of its [Farm to Fork strategy](#), the Commission has set the target to reduce, overall, by 50 % EU sales of antimicrobials for farmed animals and in aquaculture by 2030⁴.

¹ Global burden of bacterial antimicrobial resistance in 2019: a systematic analysis. [https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(21\)02724-0/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(21)02724-0/fulltext)

² [Council conclusions on the next steps under a One Health approach to combat antimicrobial resistance \(2016/C 269/05\). OJ C 296, 23.7.2016, p. 26.](#)

³ [Council conclusions on the next steps towards making the EU a best practice region in combatting antimicrobial resistance \(2019/C 214/01\). OJ C 214, 25.6.2019, p. 1.](#)

⁴ A 50% reduction would result in a target of an overall average EU value of 59.2 mg/PCU

State of play

The Commission has recently renewed its focus on the fight against AMR, with the adoption of a number of initiatives in this area, notably promoting cooperation among Member States.

The renewal of the efforts to tackle AMR was discussed with the Member States at the [EU AMR One Health Network meeting](#) of 25 March 2021. Among the initiatives agreed, it was decided to reinforce the EU AMR One Health Network by creating working groups and opening part of the meetings to stakeholders. It was also agreed that a sound knowledge, across the EU, of the state of play regarding AMR and antimicrobial use (AMU) is necessary in order to better target initiatives in this area.

This review of the Member States' One Health NAPs is one of the building blocks

necessary for drawing a comprehensive picture of the situation concerning AMR across the EU.

There have been global initiatives to review and summarise country progress in addressing AMR, notably the [Tripartite AMR country self-assessment survey \(TrACSS\)](#). However, the replies to TrACSS reflect how countries rate their own performance, and such replies are, by design, devoid of a third-party oversight which could provide them with a degree of harmonisation. Moreover, the replies to TrACSS do not necessarily reflect what is included in the One Health NAPs.

Given the above-mentioned limitations, the Commission decided to undertake the review of One Health NAPs presented in this report.

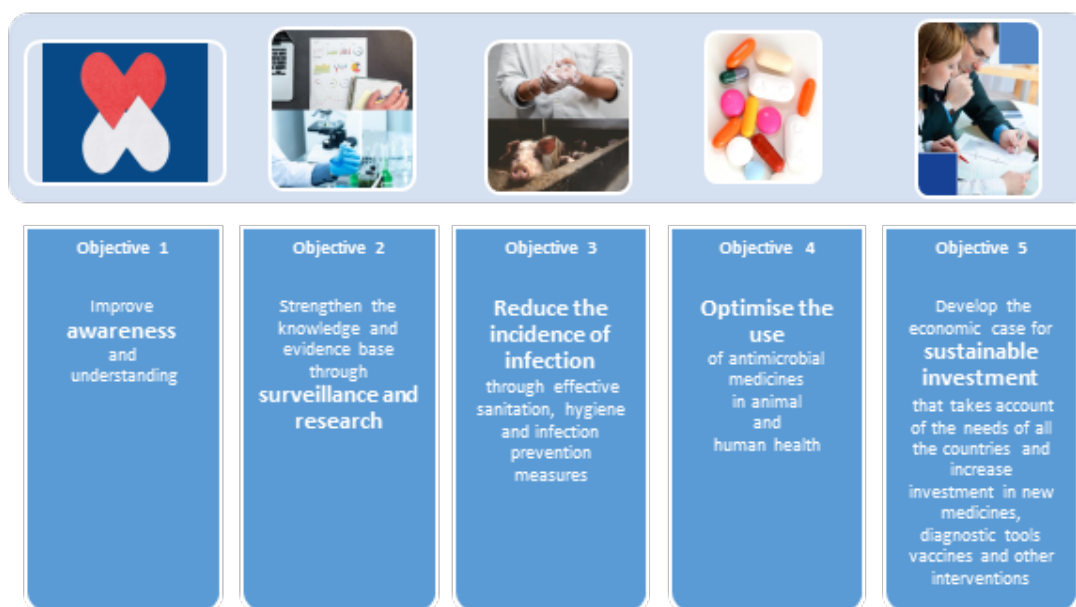


Figure 1. GAP strategic objectives

Scope and methodology of this review

The general objective of this review is to present a snapshot of the situation as of 1 September 2021 and to determine the extent to which Member States have developed their NAPs. In particular:

- a. Assessing the completeness of NAPs and the governance⁵ mechanisms in place to deliver on their One Health approach.
- b. Mapping the Member States' strategic approach to tackle AMR in terms of policy objectives per area, as well as identifying gaps and good practices⁶ that might inform future initiatives by the Commission.

This review was based on the information submitted by Member States, reflecting the situation of the NAPs as of 1 September 2021 (see Annex 1). It was carried out using a **review tool** (see Annex 2) which covered information on the status of the NAPs, their One Health dimension, the presence or absence of main elements (see section 1.2), and actions proposed for addressing the GAP strategic objectives (see Figure 1). In addition, other pieces of information from the Member States, namely their replies to [TrACSS \(2020-2021\)](#) and sectoral AMR plans, were also duly considered in the review. The preliminary reviews of individual NAPs were submitted to the Member States concerned for comments.

To facilitate the review process, the EU AMR One Health Network's sub-group on NAPs was created, chaired by the Commission services and with the participation of Member States

representatives of the human health, animal health and environmental sectors.

During the first meeting, which took place on [7 July 2021](#), the Commission presented the methodology for the review and invited Member States to update the information on their NAPs. In advance of the preparation of this overview report, the Commission presented the main aspects of the EU wide review at the second meeting of the AMR One Health Network's sub-group on NAPs that took place on [30 May and 1 June 2022](#) (see section 3).

We advise that the reader of this EU wide review takes account of its limitations when interpreting the data presented. Notably, because some of these limitations considerably complicate and limit the ability to draw comparisons between Member States when considering the details of specific actions proposed in the NAPs.

- Member States are at very different points in their efforts to tackle AMR, with some of them having undertaken relevant actions for 30 years, while others are just starting to develop their first One Health NAP.
- Different patterns of AMU in Member States legitimately lead to differences in objectives, priorities and actions to tackle AMR.
- The NAPs do not necessarily reflect all AMR work undertaken in the Member States.
- This review is based on the information available at the time it was carried out. Readers should bear in mind that the

⁵ WHO AMR documents define 'Governance' referring to structures and processes that are designed to ensure accountability, transparency, responsiveness,

rule of law, stability, equity and inclusiveness, empowerment, and broad-based participation.

⁶ Examples included in the text in blue boxes.

situation is evolving rapidly given that Member States continue to develop their One Health NAPs (see Section 3.1),

- Lastly, the review has not covered the implementation of the NAPs. Implementation of the NAPs is covered in other EU initiatives, in particular the AMR One Health joint country visits by

the Commission and the European Centre for Disease Prevention and Controls (ECDC) and the country-to-country visits which were carried out until 2021 in the framework of the Joint Action on Antimicrobial Resistance and Healthcare-Associated Infections (JAMRAI).



1. One Health AMR NAPs

1.1 Status as of 1 September 2021

Up-to-date and approved One Health NAPs are a key element in the fight against AMR, as they represent a commitment from decision-makers that this topic is receiving the appropriate level of priority which, in turn, should facilitate the mobilisation of resources and an impactful implementation of the corresponding actions.

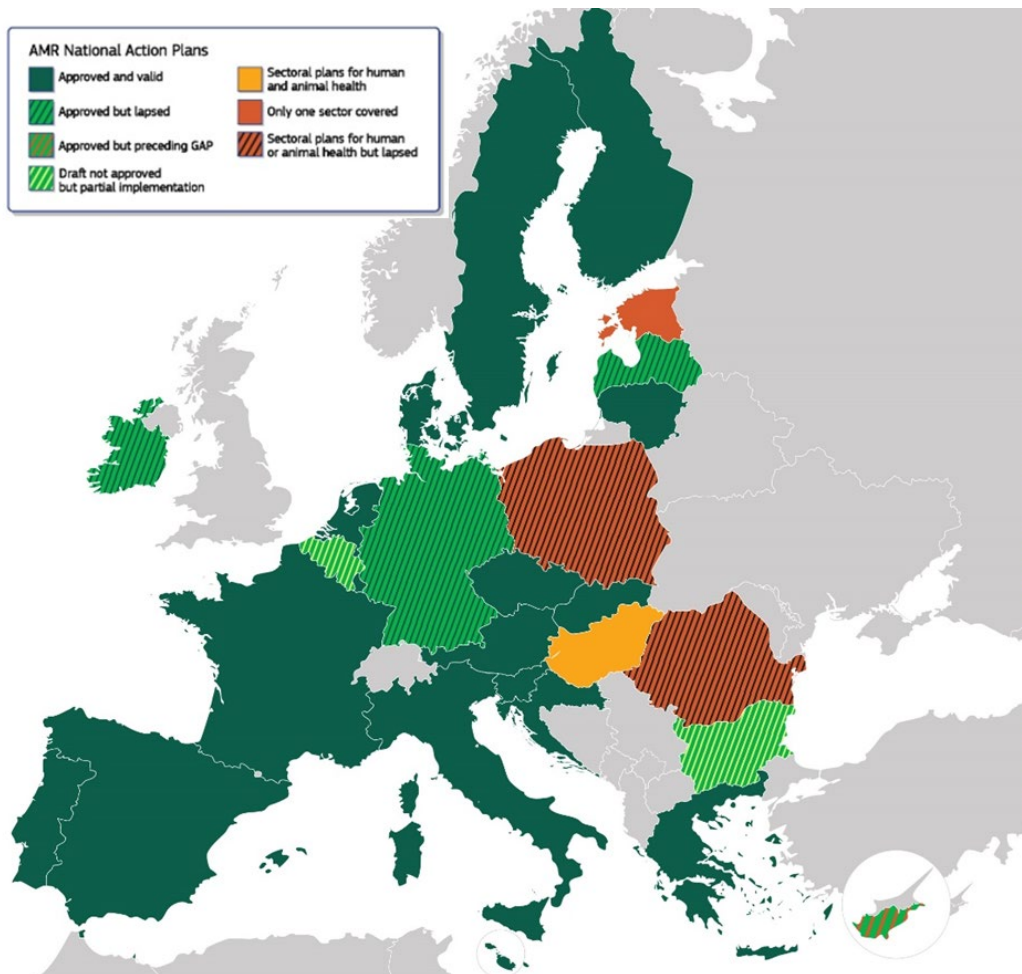


Figure 2. Status of AMR One Health NAPs – 1 September 2021

On 1 September 2021, **the majority** of the **Member States (23) had AMR NAPs in place**, which have a One Health dimension (see next section), although with a significantly variable status (see Figure 2).

Most of these One Health NAPs (18) were approved and valid. However, a few (3)

had lapsed without having been extended. On the other hand, a few Member States (2) had in place One Health NAPs that were being implemented (at least, partially), although they had not yet been formally approved.

A few Member States (4) only had sectoral plans in place; in particular, only one of these had separate NAPs covering both

the human and animal health sectors and also submitted a draft One Health plan for review.

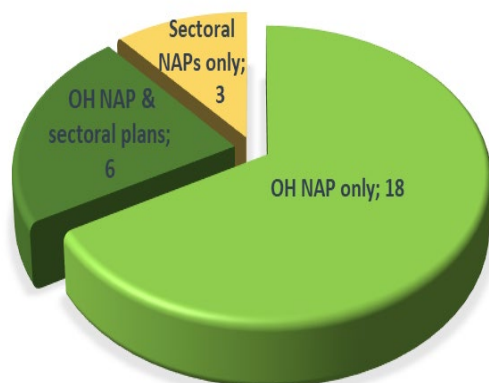


Figure 3. Types of plans reviewed

A few Member States (6) submitted for review both their One Health NAP and sectoral plans (see Figure 3).

Almost all Member States (23) have a start and end date in their One Health and/or sectoral NAPs, and one Member State only states the end date. Where an end date is not given the timeframe for implementation is not clear which could impact its review and update.

One Health NAPs are in place in the majority of Member States. However, a few Member States have not yet developed or approved such plans, despite the fact that the 2016 Council Recommendation had set a mid-2017 deadline for Member States to have them in place. In particular, only sectoral NAPs concerning either human or animal health are available in four MS. This highlights the additional work still needed by certain Member States in this regard.

1.2 Main elements of the NAPs

The Tripartite published in 2016 their [Manual for developing National Action Plans](#) (hereafter, the Manual) describing principles, core components and other elements of NAPs. Additional specific guidance has been issued over time to support this effort, such as templates ⁷ and several other documents, either on general aspects or on more sectoral / technical ones.

Despite the voluntary nature of the Manual and additional guidance, the NAPs submitted for review reflected these, albeit to varying degrees.

⁷ <https://www.who.int/activities/supporting-countries-with-national-action-plan-implementation> and [https://www.who.int/activities/supporting-countries-with-national-action-plan-implementation/docs/default-source/antimicrobial-resistance/amr-spc-npm/nap-support-tools/nap-amr-sample-template/word/NAP-AMR-Sample-Template-Word-\(English\)](https://www.who.int/activities/supporting-countries-with-national-action-plan-implementation/docs/default-source/antimicrobial-resistance/amr-spc-npm/nap-support-tools/nap-amr-sample-template/word/NAP-AMR-Sample-Template-Word-(English))

1.2.1 One Health dimension

One Health is an integrated, unifying approach that aims to sustainably balance and optimize the health of people, animals and ecosystems.

It recognizes the health of humans, domestic and wild animals, plants, and the wider environment (including ecosystems) are closely linked and inter-dependent.

The approach mobilizes multiple sectors, disciplines and communities at varying levels of society to work together to foster well-being and tackle threats to health and ecosystems, while addressing the collective need for clean water, energy and air, safe and nutritious food, taking action on climate change, and contributing to sustainable development.

Definition developed by the One Health High Level Expert Panel (OHHLEP), and [supported by the Quadripartite](#)

Working in a One Health perspective promotes the exchange of experience, as well as the identification of gaps, synergies and paths to success across different sectors.

All NAPs referred to by Member States as “One Health” do have a **One Health** perspective, insofar as they cover human health, animal health and, to some extent, food production and food safety (hereafter, food). Food is often not referred to as a standalone sector, as it tends to be included under the animal health/veterinary sector, for instance in relation to the monitoring of AMR in commensal bacteria.

However, **environment** is included in only half (13) of the NAPs and in these, most actions are on awareness and training. Some Member States reported either in their reply to TrACSS or in the context of this review, actions in relation to the environment, notably concerning research and monitoring. Nevertheless, neither these actions nor specific measures on soil and manure management⁸ are usually included in the NAPs.

Plant health is not explicitly mentioned in One Health NAPs although, most Member States report surveillance activities in this sector in their reply to TrACSS. The main reasons provided by Member States in the context of this review for not including plant health in their NAPs are that plant protection products are mostly covered under specific EU legislation⁹, that antibiotics are not authorised for this purpose, or that this sector was excluded from the NAPs following a prioritising exercise. However, these considerations are not explained in the NAPs (e.g. in the situational analysis part).

In relation to the structure of the NAPs, some Member States divide most actions by sector (human, animal and environment) under each strategic objective, with some actions encompassing all sectors, in a One Health approach. This architecture greatly helps the understanding of synergies and the identification of gaps.

Additionally, some One Health NAPs (8) include links to more specific sectoral plans. These sectoral plans seem to exist

⁸ Soil is identified in the Biodiversity and Farm to Fork Strategies, as well as in the Zero Pollution Action Plan, as a key driver for human, animal and plant health, not least via the food chain. Additionally, the role of manure management should not be forgotten in relation to AMR mitigation.

⁹ Member States must collect and submit to the Commission data on pesticides' sales.

in parallel with the One Health NAPs (which are of a more strategic nature), but it is not clear how both types of plans are interlinked or complement each other.

Member States that do not have a fully developed One Health NAP rely solely on

sectoral plans. In these cases, the sectoral plans cover the human health or animal health/food sectors, or both. There are no stand-alone plans covering only AMR in the environment.

1.2.2 Principles and components

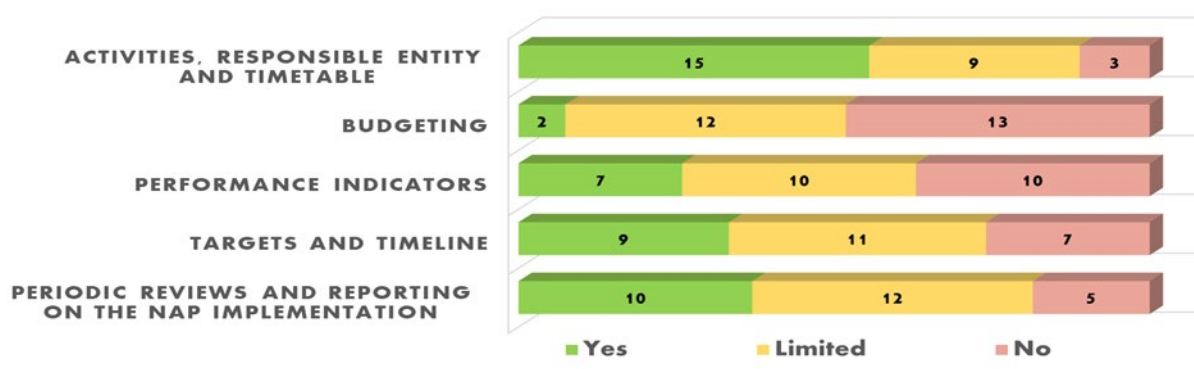


Figure 4. Elements for NAPs implementation and evaluation – coverage in NAPs

A **situational analysis** is the process of critically evaluating the conditions that affect the work on AMR. It describes the problem based on data (e.g. on AMU) and results of previous actions, reflects discussions with stakeholders, and involves a SWOT (strengths, weaknesses, opportunities and threats) analysis. Such a process contextualises the AMR problem and helps to define objectives and priorities, enabling robust decision-making. The majority of Member States (25) include information regarding the situational analysis on which the proposed actions in their NAPs are based, but the level of detail varies significantly.

(+) The inclusion of information on the actions already taken (in the previous NAP) helps to contextualise the actions proposed for the coming years and improves transparency.

The situational analysis carried out for the development of most One Health NAPs (15) includes comprehensive information on AMU and AMR, with an analysis of data, results and impact of previous actions, trends, and SWOT analysis. However, some NAPs (10) include only general information on AMR and AMU (see Figure 5).

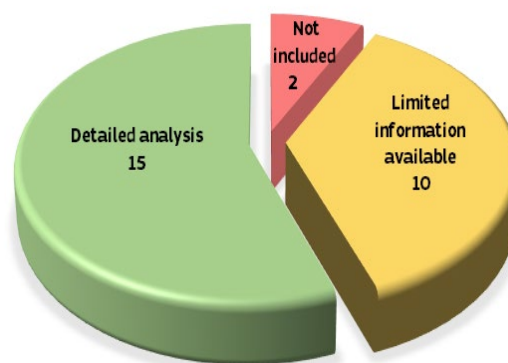


Figure 5. Inclusion of a situational analysis in the NAPs

While most NAPs (17) make some references to the **indicators** that will be

considered to measure progress towards objectives, these and corresponding targets and timelines are often not well developed or included (see Figure 4). Less than half of these (7) give more detailed information such as how the [AMR indicators proposed by the European Food Safety Agency \(EFSA\), the European Medicines Agency \(EMA\) and ECDC](#) are considered.

All One Health NAPs are closely **aligned with GAP objectives**.

The **high-level commitment** to the NAPs such as timely approval, resourcing, whether there is sound transparent governance and oversight, is not easy to ascertain in all cases. Most One Health NAPs (21) were approved and some included additional endorsements such as being prefaced by a Minister or a high-level coordinator. However, some NAPs have lapsed, been approved only internally (by the services concerned), or were approved quite late (in particular, a 2017 NAP was only formally approved in 2020) or not approved (internally or at a higher political level) and remain in draft form.

Some Member States (8) include information on the estimation of **resources** needed, notably the budget allocation in their NAPs. Some NAPs (12) only make very limited references to this matter, which are either quite general or only for certain concrete activities. It is not clear from some NAPs how the financial resources required for implementing each measure are considered, allocated and made timely available (see Figure 4). Although this does not have to mean that the necessary budget is unavailable, the mobilisation of funds is essential for implementation, and making it more visible could help to demonstrate a high degree of commitment in the fight against

AMR. In their replies, Member States often state that no ring-fenced budgets are in place and that, instead, actions are to be financed by the budgets of the entities responsible for their implementation or by other existing budgets. A few Member States have declared that new NAPs will be accompanied by specific budgets covering their implementation.

Most One Health NAPs (19) do not refer to plans for specific diseases (e.g., HIV, tuberculosis, animal diseases, etc.). Nonetheless, some Member States (8) include links to specific programmes or websites of entities responsible for implementing such actions. In some NAPs, there are references to other plans that complement their strategic part, but without these being publicly accessible.

In relation to the **core components** of One Health NAPs, as described in the Manual (see Figure 6), all NAPs contain a strategic part, describing the Member States' respective visions on combating AMR with a varying level of detail on operational arrangements and governance (see Figure 7).

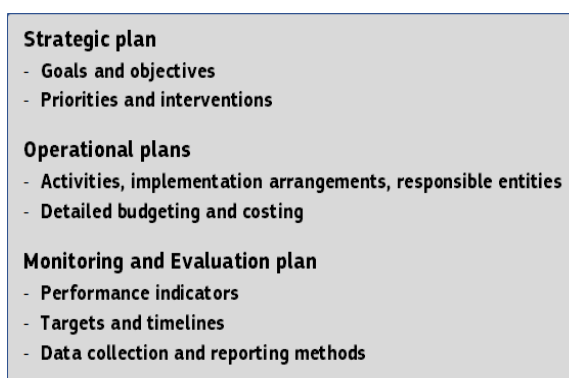


Figure 6. NAPs' core components

Most NAPs include clear strategic objectives and some prioritisation of actions. Nonetheless, in some cases (7), these objectives are vague, unclear or missing for some sectors. Some Member States have established generic targets in

their NAPs, both for the human and animal sectors (e.g., reduction of 50 % incorrectly prescribed antibiotics in the healthcare chain, during the NAP timeframe).

Some One Health NAPs have an easy-to-follow structure, outlining their overarching strategic objectives, further branched out into operational objectives covering the different sectors. These are described either in detail, in the operational part of the NAPs (e.g. as an annex to the strategic component) or, more often, in a limited manner (e.g. with only some operational arrangements such as activities and responsible entities included).

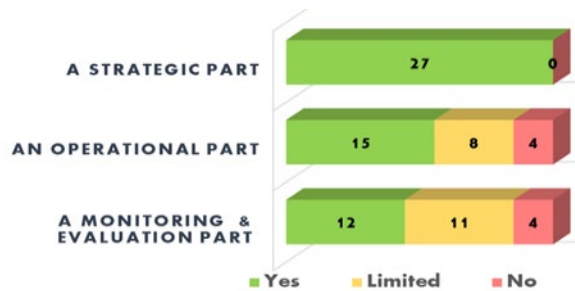


Figure 7. Presence of core components in the NAPs review

A monitoring and evaluation part is included in the majority of NAPs (23), but while this is well described in about half of these, the others (11) provide very limited information, often related only to individual actions or areas (see Figure 7). Recently developed One Health NAPs include actions on the development of **governance structures**, including oversight. There are NAPs with specific sections on governance, and others with a section dedicated to assessment of progress.

(+) One Health NAPs that identify governance as one of their strategic axis (at the same level as GAP objectives such as awareness or IPC) acknowledge the importance of the implementation of actions and of assessing their impact.

References to **progress reports** are made in most NAPs but these are not always in relation to the implementation of the NAP as a whole, but on specific actions. Details on frequency of periodic reviews of implementation of NAPs, how these are communicated and to whom vary considerably. Nevertheless, some NAPs refer to the existence of regular meetings that review progress.

(+) The progress in the implementation of One Health NAPs is reviewed annually and communicated to Parliament through progress reports. These ensure accountability and regular feedback on the actions developed, as well as the main achievements and obstacles in each of the areas of work. The reports also contextualise any priorities or adjustments needed for the following year, in what could be considered a stepwise approach. In addition, a comprehensive One Health report is prepared by the end of the first year of the implementation period (5 years), providing an integrated perspective of the actions taken in all sectors and recommendations for the following years.

One NAP states that it is composed of three separate plans: strategic, operational and monitoring. However, the latter two plans were not made available for the review.

In terms of **transparency**, all One Health NAPs were publicly available, but this is not always the case for sectoral plans. This review has come across references to some other documents in the NAPs (e.g., animal health sector plans, on monitoring and evaluation parts) and or coordination structures but it was not possible to retrieve more information. In relation to the architecture of the NAPs, while it is not

essential that all aspects are covered in a single document, the existence of some form of plan (or similar cross-referenced index) could assist in understanding all the work done on AMR and by what entities and could also serve to highlight the One Health dimension, or to identify possible synergies. No example of such a mapping exercise was seen in this review.

1.2.3 Inter-sectoral Coordination Mechanism

All One Health NAPs include references to ICM. Some Member States refer to an inter-sectoral structure responsible for developing the NAP and others to the structure coordinating implementation, but often the mandate of these structures is not clear. Some NAPs include, as an action to be implemented, the creation of such structures, be it in the form of an ICM or working groups.

Some Member States describe clearly the above-mentioned different structures, bringing together government agencies and other organisations to coordinate national efforts against AMR. However, NAPs often lack details on these structures or on coverage for all sectors.

References to the ICM composition vary considerably but information on this aspect is limited in most NAPs. Such information describes who chairs these committees, the representation of the different stakeholders (e.g. industry and patient associations) and experts' background (e.g. epidemiologists, pharmacists, communication specialists).

Half of the One Health NAPs refer to meetings of the ICM but rarely to their frequency. In general, the ICMs tend to be very different in structure and it is not

easy to find detailed information on the role of the different working groups in implementation, monitoring and evaluation.

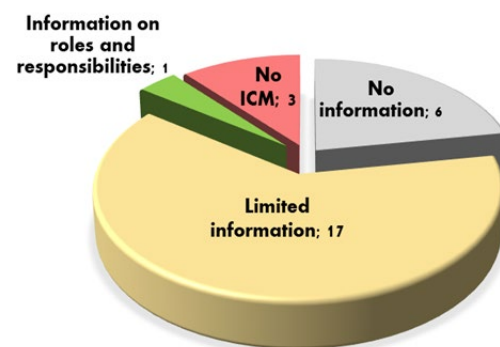


Figure 8. ICM roles and responsibilities - coverage in the NAPs

When further information was requested on the composition and mandate of the ICM, Member States often replied that these details are found outside the NAPs and, in a few instances, that the mandate for the group had not yet been established. Some Member States also referred to being in the process of establishing new coordination structures or inter-sectoral expert groups, or both.

The revamping of these structures and the approval of new groups have an impact not only on coordinating the implementation but also on the update of

NAPs. This is related to governance, which is becoming more robust in recent iterations of One Health NAPs and should be further promoted.

When the process of establishing new structures becomes a bottleneck for updating the NAPs, this is of particular concern, especially for NAPs which have lapsed or are still in draft.

All One Health NAPs are closely aligned with GAP objectives. Although the One Health concept is increasingly reflected in the Member States NAPs, the environmental aspects are only represented in approximately half of them.

The situational analysis in the NAPs is not always well described, although there are good examples in this respect, with comprehensive information that ensures a transparent and understandable decision-making process. There are also good examples of prioritisation as well as setting up targets and indicators, which are essential elements considering the pressure on resources.

In relation to the core components, all NAPs contain a strategic part describing the vision to fight against AMR. In general, the necessary operational, monitoring and evaluation parts are not well developed in the NAPs, nor do they exist as standalone documents cross-referenced to the strategic part. Budgeting information is mostly absent from the NAPs, which raises some concerns as to their sustainable implementation.

ICMs are referred to in most One Health NAPs, since they are essential for their development and implementation. However, the information on the composition and mandate of this mechanism was not clear in many cases, with several Member States being in the process of renewing ICMs or similar structures.

Governance aspects, including oversight, are becoming more prominent in recent One Health NAPs. There are some good examples where the setting up of a governance structure has been given high priority by being included as a strategic objective of the NAP itself.

1.3 Working areas

This section covers the work referred to in the NAPs in relation to the GAP objectives (see Figure 1).

1.3.1 Awareness and training

1.3.1.1 Awareness

Most NAPs include public awareness actions in the **human health** sector, but without offering specific details. Some actions in the NAPs refer to awareness campaigns for specific target groups (e.g.,

patients and professionals, primary and secondary schools' students).

In the **animal health** sector, the majority of NAPs (except two) refer to public

awareness activities. While only limited information on these actions is included in most of them, some NAPs describe the targeting of livestock farmers and veterinarians working with food producing or companion animals.

(+) One Health NAPs that evaluate the impact of awareness campaigns and other actions, in terms of behavioural changes in the various target audiences, help establish the effectiveness of these specific actions.

Food safety public awareness activities are seldom referred to in the NAPs. However, some NAPs include actions to improve consumer awareness (e.g. on good hygiene practices in the preparation of meat in order to prevent exposure to and reduce the spread of resistant bacteria). Other NAPs target veterinarians working in the food industry.

Of the 13 One Health NAPs which include **environment** in their scope, only 8 of them include awareness campaigns covering this sector. Very few NAPs include actions directed at the general public on environmental aspects (e.g. on the importance of returning unused medicines to pharmacies) ¹⁰.

Only half of the NAPs (One Health or sectoral) make explicit reference to collaborative **One Health** public awareness activities (see Figure 9). Intersectoral actions seen in some NAPs include optimising communication strategies.

Several NAPs refer to international events such as the European Antibiotic Awareness Day and the World Antimicrobial Awareness Week.

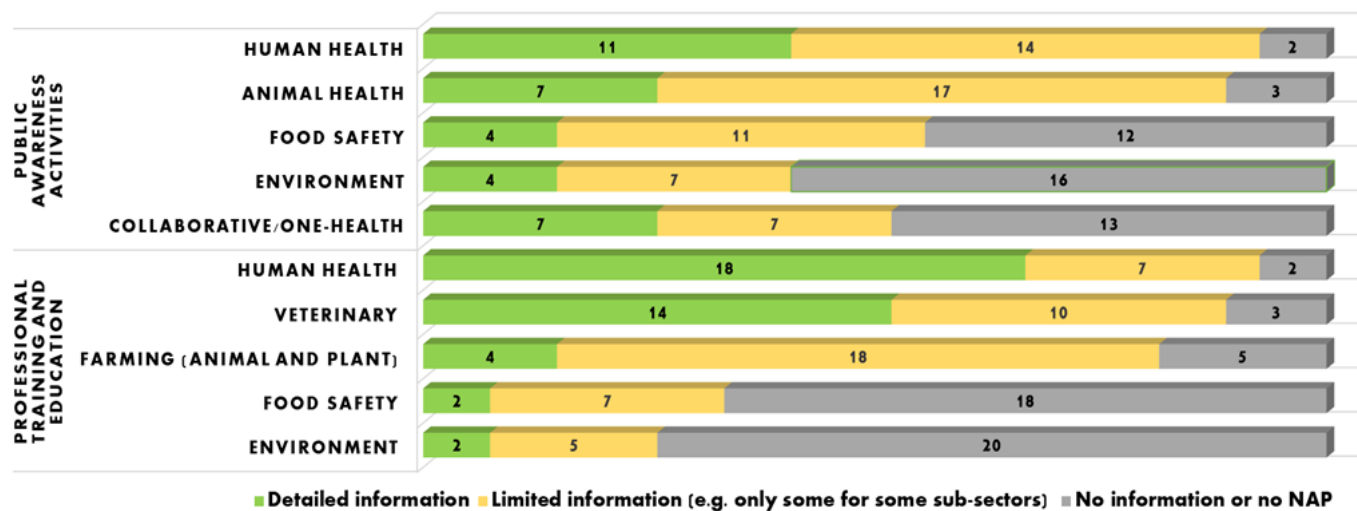


Figure 9. Awareness and training – coverage in the NAPs

¹⁰ In line with the 2019 Strategic Approach to Pharmaceuticals in the Environment, bespoke awareness campaigns for professionals should be

carried out, alongside wider campaigns for the public at large.

1.3.1.2 Training

Academic education and continuous professional development are contemplated in relation to the human and animal health sectors in all the One Health NAPs (see Figure 9).

In the **human health** sector, almost all NAPs include actions to expand or include AMR into university curricula, as appropriate (e.g. in medicine, nursing, dentistry and pharmacy and elderly care – the latter one being less often referred to).

Actions in relation to in-service training include hand hygiene campaigns, production of material and specific websites to disseminate information or more targeted training, such as programmes on stewardship and IPC, or on communication skills for general practitioners.

In the **animal health** sector, the majority of NAPs include actions on training and professional education for veterinarians, agronomists, and other related professions (e.g., veterinary nurses, dentists and animal husbandry). A few NAPs refer to the need to engage agricultural organisations and pharmaceutical companies in this regard.

Only a few Member States include explicit references to measures targeting the **food**

sector, mostly by including the topic in university studies' curricula.

One Health initiatives, seen in a small number of NAPs, are mostly linked to improving communication across sectors. Additionally, the inclusion of pharmacists is also seen as having a One Health impact, as they have a role, for example in informing the public, including pet owners, on prudent use of antimicrobials.

(+) Measures in One Health NAPs include the integration of training on prudent use, infection prevention and One Health in human health, animal health and environment university degrees, targeted professional development for health professionals and veterinarians, introducing training requirements for breeders, and promotion of the topic among dispensing pharmacists.

NAPs rarely include AMR related training for professionals working on the **environment**. Only half of the One Health NAPs with environment in their scope include some actions in this respect, such as training staff in bodies charged with management of water in the environment, including wastewater treatment.

Awareness campaigns are included in all NAPs as far as the human and animal health sectors are concerned, with a few good examples of collaborative awareness campaigns including the environment sector. The need to adjust the narrative to convey the urgency and importance of AMR has been identified and reflected in actions targeting communication strategies, with an assessment of the impact of the campaigns. Education and continuous professional development in a One Health approach, covering all the relevant professional groups is a reality in the human and animal health sectors, but less so in relation to the environment.

1.3.2 Strengthening knowledge through surveillance

1.3.2.1 Antimicrobial use

All Member States participate in EU level monitoring of sales of antimicrobials in the **human and animal health** sectors, namely through the [European Surveillance of Antimicrobial Consumption Network \(ESAC-Net\)](#) and the [European Surveillance of Veterinary Antimicrobial Consumption \(ESVAC\)](#).

Consequently, all NAPs refer to collection of data on AMU in humans and animals (see Figure 10).

In the **human health** sector, NAPs include actions on improving data coverage for most health care institutions at various levels (e.g. community pharmacies, primary care, private hospitals and long-term care facilities – LTCF).

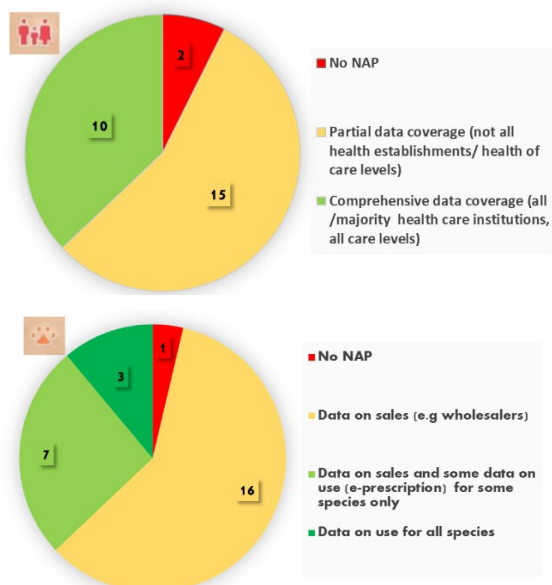


Figure 10. AMU data collection in human and animal health – coverage in the NAPs

Several Member States refer to monitoring strategies covering progressively new areas (e.g. private hospitals) or focused on also gathering data on use (e.g. at patient

level or community pharmacies – see Figure 11).

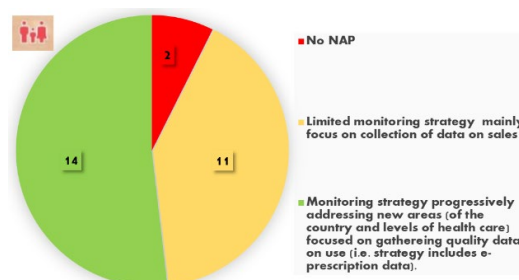


Figure 11. National monitoring strategy for antimicrobial sales– coverage in the NAPs

In the **animal health** sector, systems are in place to collect and analyse data on sales of antimicrobials in all Member States, as also reflected in the replies to TrACSS. However, the level of detail varies significantly among the NAPs. While most NAPs refer to monitoring based on sales, a few also refer to the collection of more specific data on:

- packages of antimicrobials,
- use, for some specific species (pigs, poultry, cattle and rabbits), based on annual prescription data.

Some NAPs explicitly refer to attempts at improving data collection using e-prescriptions, and a few (3) refer to measures to be implemented, over time, to collect data on use for all species (see Figure 12).

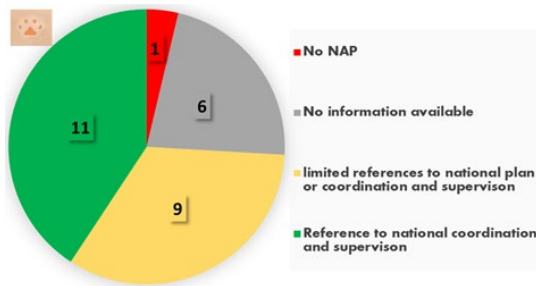


Figure 12. National approach for collection of data on use – coverage in the NAPs

The new Veterinary Medicinal Products Regulation sets the legal obligation for Member States not only to collect data on sales of veterinary antimicrobial medicinal products, but also on the use of antimicrobial medicinal products per animal species, following a stepwise approach.

Only a small number of One Health NAPs refer to data collection in the **plant health** sector, mostly on sales of plant protection products (see section 1.2.1).

Most NAPs refer to data analysis and reporting, as well as making data regularly available to stakeholders to a great or lesser degree of detail (see Figure 13), from general reporting obligations to explicit references to data analysis, identification of trends and communication of results. In some instances, there is also explicit reference that these reports may include recommendations to policy makers.

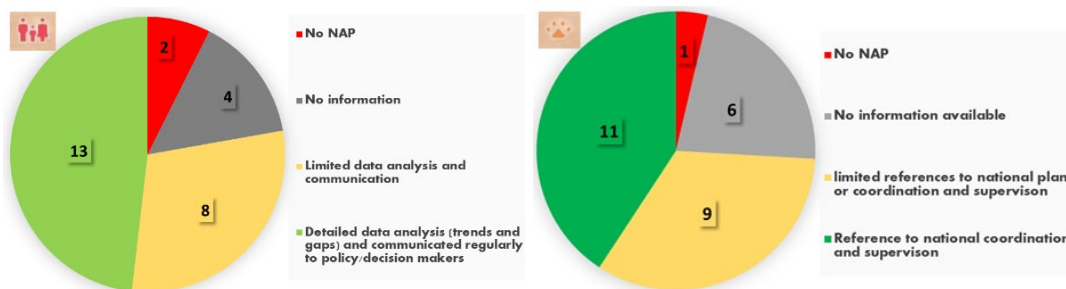


Figure 13. Data analysis and communication – coverage in the NAPs

1.3.2.2 AMR surveillance

All Member States participate in EU level AMR surveillance in the **human and animal health sectors**. Accordingly, except in one case, all NAPs include references to such surveillance in both sectors, but the level of detail varies significantly.

In the **human health** sector, some NAPs give information on measures to improve the collection of available antimicrobial susceptibility data (see Figure 14):

- routinely, from medical microbiology laboratories, general practitioners, hospitals and LTCF,
- from specific highly resistant pathogens, to confirm resistance mechanisms and to perform molecular typing.

(+) One NAP presented an early warning system that started in hospitals and has evolved to include LTCF, which received financial support in order to promote the reporting of AMR.

However, a significant number of NAPs refer to existing gaps in data collection, covering only some health-care levels (e.g. community, hospitals or LTCF) and, notably, the exclusion of information stemming from private hospitals.

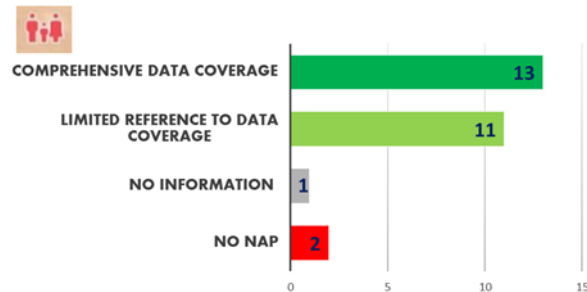


Figure 14. National AMR surveillance – coverage in the NAPs

Most NAPs include some information on the national reference laboratory or its role in AMR surveillance (see Figure 15). Some NAPs include actions such as improving the response from these laboratories in swiftly identifying the occurrence of new resistance patterns.

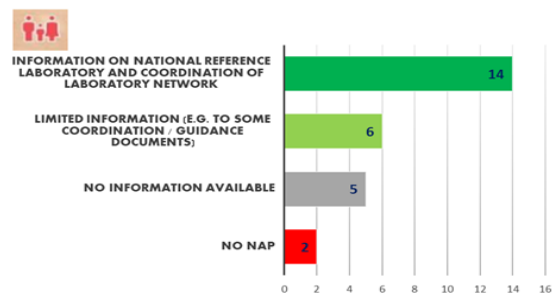


Figure 15. Coordination and national laboratory network – coverage in the NAPs

While all Member States participate in EU projects and therefore should communicate certain data to policy makers, from the information in their NAPs, a few of them (4) do not seem to do so. Almost half the NAPs refer in some detail to such communication activities, with some making explicit reference to the need to inform different stakeholders. The majority of NAPs refer to the identification

¹¹ [Commission Implementing Decision \(EU\) 2020/1729 on the monitoring and reporting of antimicrobial](#)

of knowledge gaps in AMR in humans (see Figure 16).

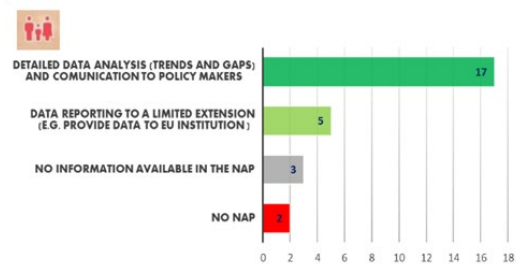


Figure 16. Data analysis and communication – coverage in the NAPs

All NAPs refer to the monitoring of AMR in commensal and zoonotic bacteria in **animals and food of animal origin**, in line with EU legislation¹¹. Most NAPs present additional voluntary AMR surveillance arrangements, notably on pets and diseased food producing animals (see Figure 17). In particular, one NAP refers specifically to the existence of surveillance in ready to eat food of plant origin (salads).

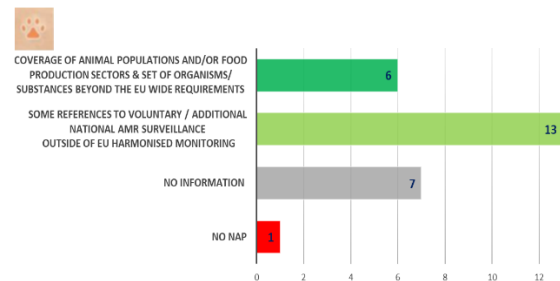


Figure 17 National AMR surveillance beyond EU requirements – coverage in the NAPs

All Member States participate in EU projects and therefore communicate certain data to the Commission. With few exceptions, all NAPs include references to the corresponding reporting requirements.

[resistance in zoonotic and commensal bacteria. OJ L 387, 19.11.2020, p. 8.](#)

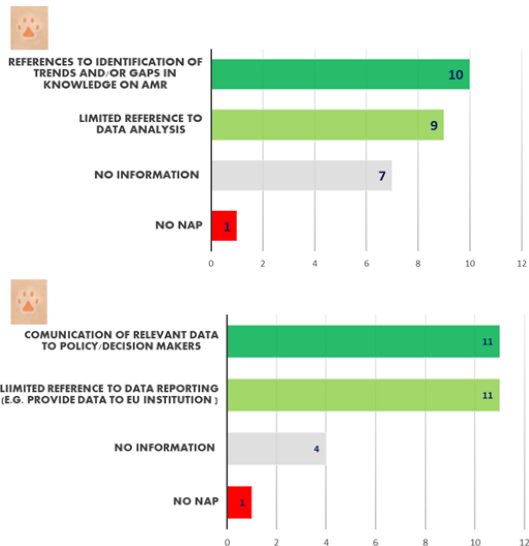


Figure 18. Communication of data – coverage in the NAPs

Almost half of the NAPs (11 out of 27) refer to this communication in some detail, with some making explicit reference to the liaison with stakeholders and including information on AMR knowledge gaps on animals and food of animal origin (see Figure 18).

As is the case for AMU, NAPs offer scarce information on AMR monitoring in **plants**.

Of the 13 Member States that include **environment** in the scope of their One

Health NAPs, only 9 refer to monitoring at this level, mainly concerning the presence of antimicrobials in the environment. However, this information mostly reflects segmented surveillance activities. Only a few NAPs refer to the existence of national surveillance systems.

A very small number of One Health NAPs refer to the communication of data and the identification of major gaps in the knowledge of AMR in the environment, for the most part in reference to reporting obligations to the Commission.

A One Health NAP refers to the existence of a national network of laboratories in this sector, another NAP includes an action to study the standardisation of monitoring tools methods and indicators on AMR, and another NAP refers to the lack of harmonised methodology as a barrier to surveillance in the environment

In their replies, several Member States refer to the intention to include food of plant origin and plant health in future NAPs, including actions related to AMR surveillance.

Actions in relation to the surveillance of AMU and AMR are a prominent part of all NAPs, mostly as regards the human and veterinary sectors, where the increase in coverage, digitalisation and integration in a One Health approach is a priority. However, most NAPs offer limited information in this respect on the plant health and environment sectors. Efforts to improve data collection and integration across sectors are key to strengthen knowledge and to set targets.

1.3.3 Infection prevention and control

In relation to IPC, all NAPs include strategic objectives in the **human health** sector, except in one older NAP, where the importance of IPC is mentioned, but no actions are foreseen (see Figure 19).

Whereas a few NAPs still refer to the development of IPC protocols as being the responsibility of individual medical facilities, most NAPs indicate a variety of IPC actions, although with a mixed level of

detail. Examples of such actions are as follows:

- Hand washing campaigns, which are presented either as success stories or as a priority topic.
- Actions targeting specifically Hospital Acquired Infections (HAI), such as improving surveillance and reporting, as well as reinforcing the protocols used during invasive procedures (e.g. catheterisation).
- Actions on the establishment of health networks, which should translate into platforms for promoting cooperation on IPC between health institutions and professionals.

In particular, the majority of NAPs (24) include IPC programmes or national policies to limit the spread of AMR in medical facilities, including the development or updating of national guidelines on IPC.

Education and training initiatives for IPC professionals are mentioned in most NAPs (19). Likewise, most (18) cover the monitoring and audit of IPC practices, although with limited information in some cases (10).

In the **animal health** sector, the majority of NAPs (22) make reference to policies and national legislation on IPC measures, although nearly half (10) of these only

include limited information for some farm animal species. A few NAPs (4) do not include any information on this topic (see Figure 17).

Most NAPs (16), include initiatives to encourage and incentivise livestock keepers to have a farm health plan as part of an integrated approach to improve animal health. In some cases, these initiatives include specific actions (e.g. mandatory health improvement plans and veterinary guidance) targeting livestock keepers with a higher use of antibiotics. Other measures are not so detailed, e.g. actions on biosecurity or to encourage preventive measures such as vaccination. In particular, a small number of NAPs go beyond livestock species and also specify guidance for companion animals (pets and horses).

A few NAPs (6) refer to national control and eradication programmes for specific animal diseases which are complementary to those covered by EU legislation (e.g. prevention and control of mastitis in dairy cows).

Some NAPs contain **One Health** aspects, including actions involving the environmental sector, such as the reduction of untreated hospital waste and the collection of unused antimicrobials from farms.

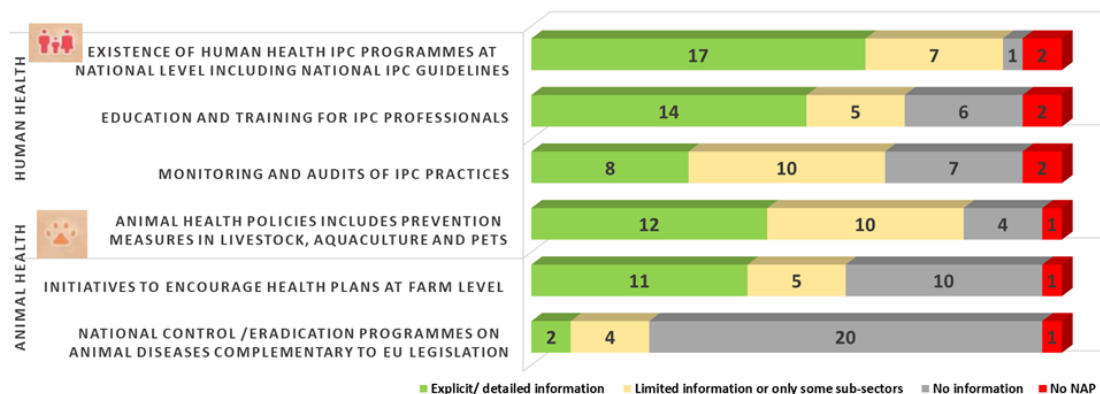


Figure 19. Infection Prevention and Control – coverage in the NAPs

IPC measures in the human health sector, aimed at limiting the spread of AMR in medical facilities, are included in most NAPs although to a varying degree. These are visible in several intrinsic elements, such as national guidelines as well as monitoring and audit. In the animal health sector, the NAPs contain a mixed emphasis on actions concerning biosecurity, including farm health plans. Some further developments would help realise the full benefits of IPC in this sector.

1.3.4 Optimisation of use

Stewardship programmes covering the **human health** sector are included in all but one NAP (see Figure 20).

The majority of NAPs (24) include references to measures to restrict the use of antimicrobials, e.g. by setting up antibiotic stewardship teams in hospitals and improving general practitioners' prescription of antibiotics.

Most NAPs (21) refer to measures restricting the use of antimicrobials crucial to humans with a different degree of detail. In particular, a few NAPs include susceptibility testing prior to determining patient treatment plans.

Only a few (6) NAPs refer to using the WHO's AWaRe¹² classification of

antibiotics in national essential medicines lists. According to their reply to TrACSS, some (8) Member States make use of this classification (for monitoring use or in stewardship strategies) while most (18) are considering using this classification in the future.

Animal health policy on antimicrobials in most Member States focuses on reducing their use in particular species (e.g. poultry and pigs) and on farms with a relatively high use of antimicrobials.

The majority of NAPs (24) include explicit references to measures to discourage the inappropriate use of antimicrobials in animals, but with varying degrees of detail. Some include specific measures to restrict the use of certain antimicrobials,

¹² The [AWaRe classification](#) is a tool to support antibiotic stewardship efforts. Antibiotics are classified into three groups, Access, Watch and

Reserve, taking into account their impact on AMR, to emphasise the importance of appropriate use.

critically important for human medicine, in the livestock sector (e.g. by means of treatment guidance). It is worth mentioning in this respect that the Commission recently adopted legislation designating antimicrobials to be reserved for treatment of certain infections in humans¹³; which shall not be used in veterinary medicine. Some refer to benchmarking systems aimed at providing insight into farmers' and veterinarians' usage and prescription patterns, respectively (e.g. by means of interventions when thresholds are exceeded).

Some NAPs include actions targeting companion animals, but actions on aquaculture are not explicitly mentioned in the NAPs examined, nor is the reason for its exclusion explained¹⁴.

Most NAPs refer to measures restricting the use of certain critically important antimicrobials in animals, but only a few

include antibiotic susceptibility testing requirements.

(+) Member States have introduced mandatory antimicrobial susceptibility testing prior to the use of colistin in animals, given its importance for human health.

NAPs (8) refer to the existence of national policies to discourage inappropriate prophylactic and metaphylactic use of antimicrobials. The new Veterinary Medicinal Products Regulation¹⁵ sets a ban on the prophylactic use of antibiotics in groups of animals and tight restrictions on metaphylactic use of antimicrobials.

Actions to address **counterfeit products/illegal online sales** (human and animal health) are included only in some NAPs (7), without details on the specific measures taken¹⁶.

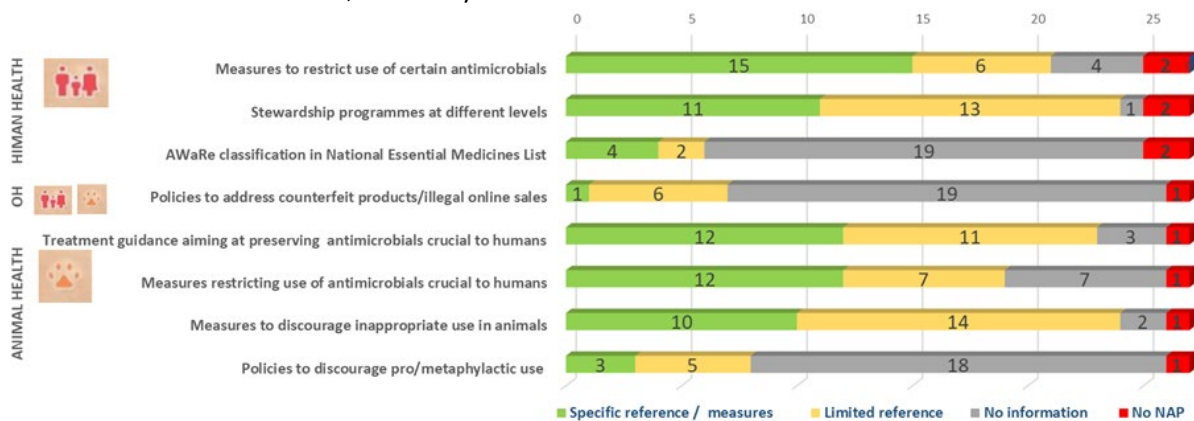


Figure 20. Prudent use of antimicrobials – coverage in the NAPs

¹³ [Commission Implementing Regulation \(EU\) 2022/1255 of 19 July 2022](#) designating antimicrobials or groups of antimicrobials reserved for treatment of certain infections in humans, in accordance with Regulation (EU) 2019/6 of the European Parliament and of the Council. OJ L 191, 20.7.2022, p. 58.

¹⁴ The Farm to Fork reduction target (see Background section) includes aquaculture, but it was only set in 2021.

¹⁵ [Regulation \(EU\) 2019/6](#) of the European Parliament and of the Council of 11 December 2018 on

veterinary medicinal products and repealing Directive 2001/82/EC. OJ L 4, 7.1.2019, p. 43.

¹⁶ The Commission recently adopted legislation setting in place the obligation for EU retailers which are permitted to sell veterinary medicines online, to display a common logo on their websites. However, it should be noted that, under the new Veterinary Medicinal Products Regulation, online sales of veterinary medicines subject to a veterinary prescription, such as antimicrobials, are not allowed.

The optimisation of AMU in humans is prioritised in all NAPs. Accordingly, the role of national guidance and stewardship programmes is reflected in them, together with the aim of increasing coverage both in terms of facilities targeted and the type of guidelines needed. In animals, the targeting of animal species or farms with the higher use of antimicrobials, through the involvement of veterinarians and farmers has been prioritised. Aquaculture is not specifically targeted in the NAPs, and further efforts in this area may be needed given that this sector is included in the Farm to Fork EU-wide target for the reduction of the sale of antimicrobials. Continued work in this area will contribute to reduced and more prudent use of antimicrobials. Such work may encompass setting targets in the human health sector and including them in Member States' NAPs, which will complement the target in the veterinary sector of reducing by 50% overall EU sales of antimicrobials for farmed animals and in aquaculture by 2030, as set under the Farm to Fork Strategy.

1.3.5 Research, collaborative work and innovation

1.3.5.1 Research and collaborative work

Most (21) NAPs include general references to supporting **research**, with almost half of these specifically referring to the development of new medicines, diagnostic tools and vaccines (see Figure 21). Most NAPs (17) include references to other relevant aspects, such as the identification of resistance mechanisms and therapy optimisation. A few NAPs include detailed information on the financial investment in different research programmes. However, a few NAPs (6) do not include research as a strategic objective

A few NAPs, focus research on environmental aspects, such as AMR

dynamics (transmission routes and pathways to the environment through wastewater and manure). When replying to the review, a few Member States indicated the existence of this type of research which was not reflected in their NAPs.

Most NAPs (20) refer to **international collaborative work**, notably at EU level (e.g. surveillance networks and Joint Actions).

Some NAPs spell out their clear objectives in terms of international actions in areas linked to AMR.

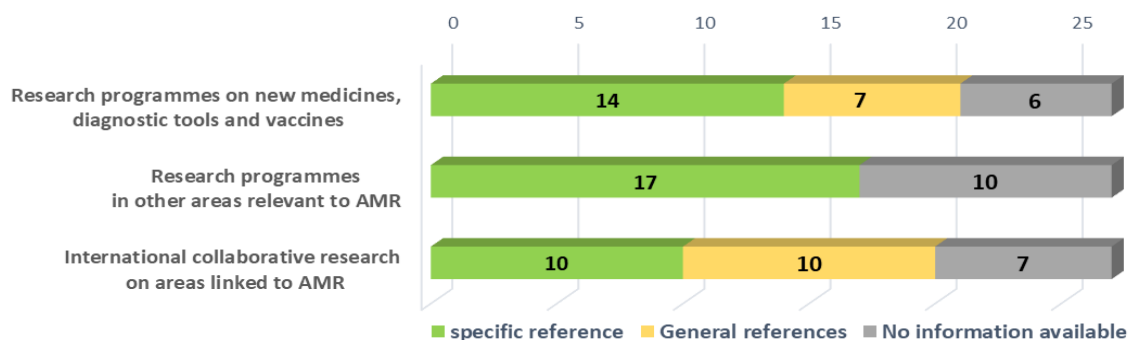


Figure 21. Research, innovation, and collaborative work – coverage in the NAPs

1.3.5.2 Innovation and preparedness

Innovation is partially covered in NAPs and relates mainly to human health. While most of them (15) include references to strategies for ensuring the availability of antimicrobials on the market, only some NAPs (10) include actions on national incentives in this respect, but mostly without details (see Figure 22)

Some examples of the strategies are:

- The development of new antibiotic business models (e.g. public-private partnerships to decouple profits from the volume of sales).
- Exploring the possibilities for registering medicinal products by mechanism of action.

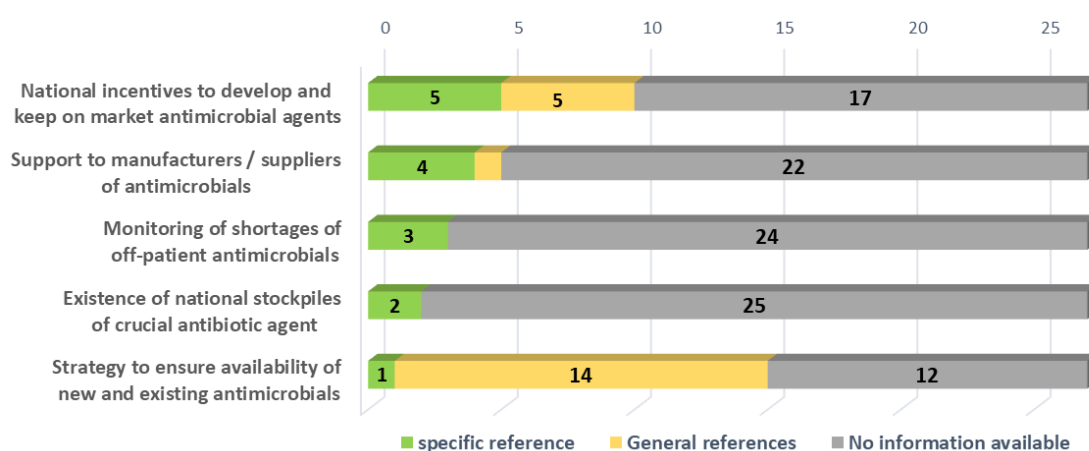


Figure 22. Innovation and preparedness – coverage in the NAPs

Preparedness¹⁷ and response planning are referred to in half of the NAPs (14), albeit with a varied degree of detail (see Figure 23). These NAPs refer to actions related to early detection systems for outbreaks of highly resistance pathogens. These may include early warning systems initiatives and setting up One Health transversal groups to carry out these tasks.

Only a few NAPs (3) refer to the monitoring of shortages of antimicrobials or, even less (2) to the existence of stockpiles of critically important

antimicrobials for human health (see Figure 22).

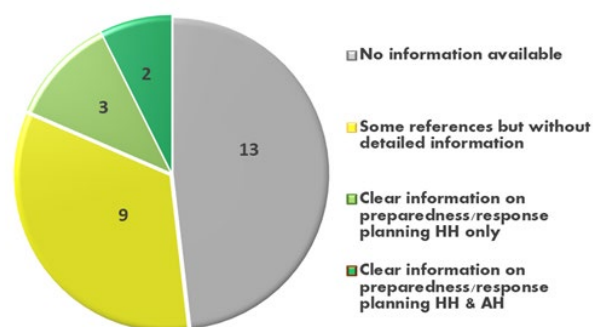


Figure 23. Preparedness and response planning for outbreaks of highly resistant pathogens – coverage in the NAPs

¹⁷ Although the GAP does not make explicit references to preparedness, it was also considered as part of

this review, given the increasing focus that this aspect is receiving in planning, notably following the COVID-19 pandemic.

Research on AMR and international collaborative work are covered by NAPs, but more could be done to raise the profile of work to improve the knowledge on AMR including the role of the environment.

Innovation, which is covered to a lesser extent in the NAPs, would benefit from bringing elements of sustainable investment to the forefront.

2 Overall conclusion

National action plans to tackle AMR are in place in all Member States, with most based on a One Health approach, at least to some extent. The NAPs vary considerably in content and detail, which may reflect the stage at which each country is in their fight against AMR. Nevertheless, many Member States should work more on the One Health dimension particularly regarding the environment, which is often missing or not well developed. The inclusion of the environment has been recognised internationally as being key to fully address health risks at the animal-human-ecosystems interfaces (see section 3).

The review found some good examples of the prioritisation process to determine the main areas, actions and indicators within the NAPs, based on a situational analysis. However, this is often not well described in the NAPs, which limits the transparency and understandability of the decision-making process, as well as the rationale for excluding certain areas from the NAPs, such as plant health.

All NAPs contain a strategic part describing the Member States' visions to tackle AMR, but other core components, such as the operational, monitoring and evaluation parts, are generally not well developed, nor available in other documents cross-linked to the NAPs. Furthermore, budgeting information is mostly absent from the NAPs. These issues raise concerns about the sustainable implementation of the NAPs and the arrangements in place in Member States to ensure that their strategic objectives are achieved effectively.

Governance aspects, including oversight, are more prominent in the more recent One Health NAPs. There are some good examples where the setting up of a governance structure has been given high priority by being included as a strategic objective of the NAP itself.

Intersectoral Coordination mechanisms (ICMs) are referred to in most One Health NAPs, and several Member States indicated that they are in the process of renewing their ICMs or similar structures. Greater clarity in the composition and mandate of the ICMs would be helpful since they are essential for the development and implementation of One Health NAPs.

Awareness campaigns are included in all NAPs and a few good examples of collaborative awareness campaigns including the environment sector were identified, but more needs to be done, in particular in relation to this sector. The need to adjust the narrative to convey the urgency and importance of AMR has been identified and is reflected in actions targeting communication strategies, with an assessment of the impact of the campaigns. Education and continuous professional development in a One Health approach, covering all the relevant professional groups is in place.

Actions in relation to the surveillance of AMU and AMR are a prominent part of all NAPs, where the increase in coverage, digitalisation and integration in a One Health approach is a priority. Efforts to improve data collection and integration across sectors are key to strengthen knowledge and to set targets.

IPC measures in the human health sector aiming at limiting the spread of AMR in medical facilities are included in most NAPs. These are visible in a number of intrinsic elements, such as national guidelines as well as monitoring and audit. In the animal health sector, where the NAPs contain a mixed emphasis on actions concerning biosecurity, including farm health plans, some further developments would help realise the full benefits of IPC in this sector.

The optimisation of AMU in humans is prioritised in all NAPs. Accordingly, the role of national guidance and stewardship programmes is reflected in them, together with the aim of increasing coverage both in terms of facilities targeted and type of guidelines needed. In animals, the targeting of animal species or farms with the higher use of antimicrobials, through the involvement of veterinarians and farmers has been prioritised. Aquaculture is not specifically targeted in the NAPs,

and further efforts in this area may be needed given that this sector is included in the Farm to Fork EU-wide target for the reduction of the sale of antimicrobials. Continued work in this area will contribute to reduced and more prudent use of antimicrobials. Such work may encompass setting targets in the human health sector and including them in Member States' NAPs, which will complement the target in the veterinary sector of reducing by 50% overall EU sales of antimicrobials for farmed animals and in aquaculture by 2030, as set under the Farm to Fork Strategy.

Research on AMR and international collaborative work are covered in NAPs, but more could be done to raise the profile of work to improve the knowledge on AMR including the role of the environment.

Innovation, which is covered to a lesser extent in the NAPs and would benefit from bringing elements of sustainable investment to the forefront.



3 Further development of NAPs

According to Member States' replies to TrACSS and to this review, the COVID-19 pandemic has affected their progress in the fight against AMR, by diverting resources both for the development of NAPs and the implementation of activities.

Nevertheless, the pandemic has also raised public awareness on health crises, and highlighted the importance of control measures, as well as the indispensable role of vaccines and diagnostic tools.

Between 1 September 2021 and 1 June 2022, the status of several NAPs has changed (see Figure 24). Three new NAPs have been approved and one had its validity extended. However, numerous NAPs had lapsed during the same period, without being extended or updated. Moreover, one Member State with only a sectoral plan did not extend it. In some cases, overdue NAPs are on hold, pending a new ICM being put in place.

Nonetheless, almost half of the Member States are currently in the process of developing or updating their One Health NAPs (see Figure 24). This constitutes an opportunity to take the lessons learned from the pandemic into account in the design of these plans. That should translate into robust governance structures, prioritisation of actions, inclusion of targets and indicators and, last but not least, ensuring oversight and transparency through linking the various NAPs components¹⁸ in order to reinforce their

One Health dimension, avoid gaps and identify synergies.

Although Member States have stated their intention to expand the One Health dimension of their NAPs, reinforce governance, including budgeting for outlined activities, the fact is that a few Member States are still not working in a One Health approach, in particular in relation to the environment.

The importance of the environment in the AMR work has been reinforced by the United Nations Environment Programme (UNEP) formally joining the Food and Agriculture Organisation (FAO) of the United Nations, the World Organisation for Animal Health (OIE) and WHO, to form the Quadripartite with the aim of strengthening cooperation to sustainably balance and optimise the health of humans, animals, plants and the environment¹⁹.

During the second and last meeting of the sub-group, that took place on 30 May and 1 June 2022, the Commission presented the main aspect of the EU wide review in advance of the preparation of this report.

During both meetings, Member States' participants shared their experiences on the development and implementation of NAPs including the drafting of plans, prioritisation approaches, inter-coordination structures and progress reports²⁰. Participants identified coordination and communication, as well as resources, as some of the main challenges for their One Health AMR work.

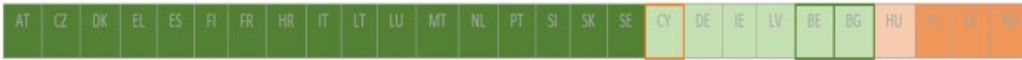
¹⁸ For instance, through the inclusion of a plan-of-plans or master index.

¹⁹ Quadripartite Memorandum of Understanding (MoU) signed for a new era of One Health collaboration. <https://www.fao.org/3/cb9403en/cb9403en.pdf>

²⁰ Minutes of the meetings and presentations available at: https://health.ec.europa.eu/antimicrobial-resistance/events_en#anchor0

One Health national action plans - status

September 2021



Now

- 3 plans approved since Sept 2021: **BE, FR, IE**
- more plans lapsed in 2022 ... *is this the case in June?*

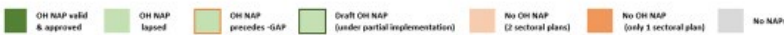
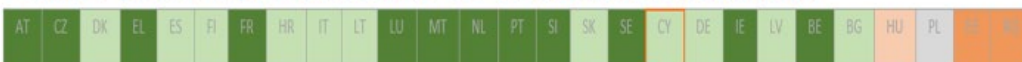


Figure 24. Status of One Health NAPs in May 2022
(Presented at the One Health network sub-group meeting of 1 June 2022)

During an interactive survey, participants identified several aspects that could

constitute barriers to the development of NAPs (see Figure 25).



Figure 25. - Barriers to the development of plans.
(Survey from the One Health network sub-group meeting of 1 June 2022)

4 Actions by the Commission services

The Commission services have already launched a number of actions, as part of its wider strategy on AMR, aimed at strengthening the regulatory framework, expanding the available knowledge-base and assisting Member States in the implementation of the policies.

Progress continues with the actions under the umbrella of the [2017 European One Health Action Plan against AMR](#). The Commission has commissioned an external study on the future proofing of EU's action on AMR, including this Action Plan. The study report is expected for the autumn 2022.

Regular meetings of the EU AMR One Health Network, chaired by the European Commission, continue to be organised. This network includes government experts on human health, animal health and environment sectors, as well as experts from the Commission, ECDC, EFSA and EMA. The Network has recently been formalised as a [Commission expert group](#), with updated Terms of Reference, and a call for application has been published to select representatives of civil society organisations, professional associations and independent experts as members of the Network. In addition, exchanges within the Network have been facilitated via the development of a digital tool.

In 2021, the [Expert Panel on effective ways of investing in health](#) was requested to deliver an opinion on managing antimicrobial resistance across the health

system. Its publication is expected in October 2022.

Joint One Health country visits, by the Commission and ECDC are being carried out since 2017. The overall objective of these visits is to assist the Member States in further developing and implementing their national strategies and policies to tackle AMR in a One Health approach. The visits are organised following an invitation from the Member State concerned.

The Commission continues to support Member States through EU funding opportunities. After the last joint action on AMR (JAMRAI) ended in 2021, a new joint action under EU4Health is in preparation, with a bigger available budget of EUR 50 million, to be operational in 2023. In addition, technical assistance is available from the Technical Support Instrument (formerly the Structural Reform Support Service), and the Member States are invited to apply for available financial support (e.g. EU Cohesion policy funds) to help in the further development and implementation of their national AMR strategies and action plans. Some countries have also opted to use funds from the Recovery and Resilience Facility, part of the next Generation EU, to invest in measures to tackle AMR.

The Commission has provided for the dissemination of information on AMR to the competent authorities through its Better Training for Safer Food (BTSF) initiative²¹, with the specific purpose of

²¹ BTSF initiative is both for Member States <https://btsf-aenor.com/amr> and third countries

<https://btsf-aenor.com/antimicrobial-resistance-non-eu-countries-new>

spreading the knowledge on the One Health approach, and on best practices for the design, implementation and management of actions against AMR.

AMR has been included in the list [of top 3 priority threats](#) of DG European Health Emergency Preparedness and Response Authority (HERA), which will implement actions to promote the development and availability of preventive, diagnostic and therapeutic medical countermeasures relevant to AMR. Based on an ongoing mapping of existing and upcoming AMR medical countermeasures, and of existing gaps, HERA will assess the best options for action, including the implementation of EU multi-country outcome-based pull incentives to improve access to newly authorised and old antimicrobials.

The Commission is also stressing the importance of AMR within the [EU Semester](#). A novelty of the 2022 country reports²² was the inclusion of a dedicated health annex (Annex 14). The antibiotics consumption per country was included as an indicator in this annex and it is further reflected in the text for several Member States.

The Commission has requested ECDC, EFSA and EMA to continue the joint analysis of data from the relevant surveillance systems on consumption of antimicrobials and AMR in humans,

animals and food in the EU, and provide updated reports (JIACRA).

The Veterinary Medicinal Products Regulation and the Medicated Feed Regulation²³ apply since January 2022. These Regulations establish a wide range of concrete measures to fight AMR and to promote a prudent and responsible use of antimicrobials, following a One Health approach. The Commission has adopted a number of delegated and implementing acts in this respect, notably on the requirements for the collection of data on the volume of sales and on the use of antimicrobial medicinal products in animals²⁴, on the format of such data to be collected and reported²⁵, and on the designation of antimicrobials reserved for the treatment of certain infections in humans²⁶.

The Commission has also secured funding of EUR 32.4 million over 6 years under the Single Market Programme, to support the Member States in recruiting staff to support the implementation of the data collection on sales and use of antimicrobials in animals.

A specific objective has been introduced for the new Common Agricultural Policy (2023-2027) to combat AMR and, in

²² Country reports can be found under each [Member State's European Semester documents](#).

²³ [Regulation \(EU\) 2019/4](#) of the European Parliament and of the Council on the manufacture, placing on the market and use of medicated feed, amending Regulation (EC) No 1831/2003 of the European Parliament and of the Council and repealing Council Directive 90/167/EEC. OJ L 4, 7.1.2019, p. 1.

²⁴ [Commission Delegated Regulation \(EU\) 2021/578](#) supplementing Regulation (EU) 2019/6 of the European Parliament and of the Council with regard to requirements for the collection of data on the volume of sales and on the use of antimicrobial

medicinal products in animals. OJ L 123, 9.4.2021, p. 7.

²⁵ [Commission Implementing Regulation \(EU\) 2022/209](#) establishing the format of the data to be collected and reported in order to determine the volume of sales and the use of antimicrobial medicinal products in animals in accordance with Regulation (EU) 2019/6 of the European Parliament and of the Council. OJ L 35, 17.2.2022, p. 7.

²⁶ [Commission Implementing Regulation \(EU\) 2022/1255](#) designating antimicrobials or groups of antimicrobials reserved for treatment of certain infections in humans, in accordance with Regulation (EU) 2019/6 of the European Parliament and of the Council. OJ L 191, 20.7.2022, p. 58.

particular, to limit antimicrobial use in farmed animals ²⁷.

The Commission is preparing a package of initiatives on AMR, including a proposal for a Council recommendation which will include new actions addressing the environmental dimension of AMR. The Council recommendation is planned for adoption early in 2023. To this end, [a call for evidence](#) was published in February 2022 and the Commission has received around 200 contributions.

As part of the European Health Union, the Commission adopted the [Pharmaceutical Strategy for Europe](#) under which the Commission is exploring new types of incentives for innovative antimicrobials. Moreover, within the review of the pharmaceutical legislation new measures to restrict and optimise the use of antimicrobial medicines are considered. The strategy is also complementary to the European Green Deal and, in particular, the Zero Pollution ambition for a toxic free environment.

Under the [Zero Pollution Action Plan](#) ²⁸, in particular the upcoming revision of the Urban Wastewater Treatment Directive, the list of water pollutants under the Water Framework Directive and the Integrated Nutrient Management Action Plan, some of the consequences of

increased AMR in the environment will be addressed.

Horizon Europe, through its planned partnerships on [One Health Antimicrobial Resistance](#) and on [Animal Health and Welfare](#), contributes to improvement of knowledge on AMR and the environment.

Under the European Health Union, the EU legislation on serious cross-border health threats has been revised to reinforce EU capacities for surveillance, preparedness and response to future pandemics, such as COVID-19. This legislation also covers AMR in human health and its implementation through subsequent Commission acts will strengthen EU action on AMR in the human health side too, through improving surveillance, detection and prevention of AMR, as well as coordination among Member States.

Combatting AMR will also feature prominently in the context of the One Health approach under the framework of the EU Global Health Strategy currently under development. At the same time, the Commission is supporting an ambitious AMR chapter in the future pandemic agreement and several other initiatives at global level such as the AMR Multi Stakeholder Partnership Platform and the AMR Multi Partner Trust Fund.

²⁷ [Regulation \(EU\) 2021/2115](#) of the European Parliament and of the Council of 2 December 2021 establishing rules on support for strategic plans to be drawn up by Member States under the common agricultural policy (CAP Strategic Plans) and financed by the European Agricultural Guarantee Fund (EAGF) and by the European Agricultural Fund for Rural Development (EAFRD) and repealing Regulations (EU)

No 1305/2013 and (EU) No 1307/2013. OJ L 435, 6.12.2021, p. 1.

²⁸ The Zero Pollution action plan also includes the target in the veterinary sector of reducing by 50% the overall EU sales of antimicrobials for farmed animals and in aquaculture by 2030 (set under the Farm to Fork Strategy).

Annex 1 - Summary of information available on NAPs

Summary of the publicly available information on the Member States' NAPs and/or other AMR national strategies and documents reviewed by the Commission.

Member State	Period	Status September 2021	National Action Plans reviewed
Austria	2018-	Valid	Nationaler Aktionsplan zur Antibiotikaresistenz NAP-AMR National Action Plan on Antimicrobial resistance NAP-AMR
Belgium	2020-2024	Not yet adopted partial implementation	Project de plan d'action national Belge « One Health » de lutte contre la résistance aux antimicrobiens (RAM) 2020-2024 Draft - Belgian 'One Health' National Action Plan against Antimicrobial Resistance (AMR) 2020-2024 Draft - Belgian 'One Health' National Action Plan against Antimicrobial Resistance (AMR) 2020-2024
Bulgaria	2017-2021	Draft not yet adopted partial implementation	Проект на национална програма за рационална употреба на антибиотиците и надзор на антибиотичната резистентност (2017 - 2021) Draft - national programme for rational use of antibiotics and supervision of the antibiotic resistance 2017-2021
	2022-2026 (draft)	Draft	Национален план за действие срещу антимикробната резистентност 2022-2026 Draft - national action plan against antimicrobial resistance - 2022-2026 - not publicly available
Croatia	2017-2021	Valid	Nacionalni program za kontrolu otpornosti bakterija na antibiotike 2017-2021 National Antibiotic Resistance Control Programme 2017-2021
Czechia	2019-2022	Valid	Akční plán Národního antibiotického programu České republiky (AP NAP) na období 2019-2022 Action Plan of the National Antibiotics Programme of the Czech Republic (AP NAP) 2019-2022
Cyprus	2012-	Valid	Εθνική Στρατηγική Κύπρου για την Αντιμετώπιση της Μικροβιακής Αντοχής στα Αντιβιοτικά Cyprus National Strategy for Countering Antibiotic Resistance
	2018	Valid	Κτηνιατρικες υπηρεσιες - Σχεδιο δρασης για την αντιμεωπιση της μικροβιακης αντοχης στις αντιμικροβιακες ουσιες Veterinary services - Action plan for the management of microbial resistance to antimicrobial substances
Denmark	2017	Valid (extended to 2021)	One health strategi mod antibiotikaresistens One health strategy against antibiotic resistance
	2021-2023	Valid	National Action Plan on antibiotic resistance in production animals and in food
Estonia	2021-2026	Valid	Veterinary Action Plan only: Mikroobide antibiootikumiresistentsuse vähendamise tegevuskava veterinaarmeditsiini valdkonnas aastateks 2021-2026 Antimicrobial resistance to antibiotics reduction Action Plan veterinary medicine 2021-2026
Finland	2017-2021	Valid	The National Action Plan on Antimicrobial Resistance 2017-2021
France	2016-	Valid	Une feuille de route interministérielle visant à maîtriser l'antibiorésistance Interministerial Roadmap for Controlling Antimicrobial Resistance [short version]
	2017-2022	Valid	Veterinary Action Plan only: Écoantibio 2 : plan national de réduction des risques d'antibiorésistance en médecine vétérinaire (2017 - 2022) Ecoantibio 2: national plan to reduce the risk of antibiotic resistance in veterinary medicine (2017-2022)
Germany	-2020	Lapsed	DART 2020 - Fighting antibiotic resistance for the good of both humans and animals
Greece	2019-2023	Valid	Εθνικό σχέδιο δράσης για την αντιμεωπιση της μικροβιακης αντοχης στην ελλαδα στο πλαίσιο της ενιαιας υγειας 2019-2023 National Action Plan for the Treatment of Antimicrobial Resistance in Greece in the context of One Health 2019-2023
Hungary	2019-	Draft (no OH plan)	Infekciókontroll és AMR szakpolitikai program, az „Egy Egészség” megközelítés alapján egységben az állatgyógyászati készítményekkel Draft National Action Plan on the infection control and antimicrobial resistance based on the “One Health” Approach, in unity with the veterinary medicinal products

Member State	Period	Status September 2021	National Action Plans reviewed
	2020-2022	Draft (HH)	Akcióterv az infekciókontroll megerősítésére és az antimikrobiális rezisztencia visszaszorítására a humán egészségügyben Magyarországon, 2020-2022 Draft Action Plan on strengthening infection control and reducing antimicrobial resistance in the human health sector in Hungary 2020-2022
	2018-	Draft (AH)	Az antimikrobiális rezisztencia csökkentésére irányuló állategészségügyi intézkedések National Animal Health AMR measures
Ireland	2017-2020	Lapsed	Ireland's National Action Plan on Antimicrobial Resistance 2017-2020 (iNAP)
	2021-2025	Not yet approved	Ireland's second One Health Action Plan on Antimicrobial Resistance 2021-2025 (iNAP2) HSE Antimicrobial Resistance Infection Control (AMRIC) Action Plan 2022-2025
Italy	2017-2020	Valid (extended to 2021)	Piano Nazionale di Contrasto dell'Antimicrobico-Resistenza (PNCAR) 2017-2020 National Action Plan to fight AMR
Latvia	2019-2020	Lapsed	Par Antimikrobiālās rezistences ierobežošanas un piesardzīgas antibiotiku lietošanas plānu "Viena veselība" 2019.-2020. gadam National plan for evaluation of AMR and prudent use of antibiotics "One health" for 2019-2020
Lithuania	2017-2021	Valid	Action plan for the prevention and control of the spread of micro-organisms resistant to antimicrobial agents for the period 2017-2021 (Ministry of Health, 2017)
Luxembourg	2018-2022	Valid	Plan National Antibiotiques 2018-2022 National Antibiotics Plan 2018-2022
Malta	2020-2028	Valid	A strategy and Action Plan for the Prevention and Containment of Antimicrobial Resistance in Malta (2020 – 2028)
The Netherlands	2015-2019	Valid (extended following review)	https://www.rijksoverheid.nl/onderwerpen/antibioticaresistentie/documenten/kamerstukken/2015/06/24/kamerbrief-over-aanpak-antibioticaresistentie
Poland	2016-2020	Lapsed	Human health side only: Narodowy program ochrony antybiotyków na lata 2016-2020 National Antibiotic Protection Programme 2016-2020
Portugal	2019-2023	Valid	Plano nacional de combate à resistência aos antimicrobianos 2019-2023 National Plan for combatting Antimicrobial Resistance 2019-2023
Romania	2016-2018 Animal Health only	Lapsed	Animal Health side only: Strategia Autorității Naționale Sanitare Veterinare și Pentru Siguranța Alimentelor privind Combaterea Rezistenței la Antimicrobiene (RAM) în Medicina Veterinară 2016-2018 National Veterinary Health and Food Safety Authority's Strategy to tackle AMR in the Veterinary Medicine 2016-2018
Slovakia	2019-2021	Valid	Národný akčný plán anti-mikrobiálnej rezistencie v Slovenskej Republike na obdobie rokov 2019-2021 National Action Plan on Antimicrobial Resistance in the Slovak Republic for the period 2019-2021
Slovenia	2019-2024	Valid	Državno strategija »eno zdravje« za obvladovanje odpornosti mikrobov (2019-2024) National "One Health" Strategy for managing Antimicrobial Resistance 2019-2024
Spain	2019-2021	Valid	https://www.resistenciaantibioticos.es/es/publicaciones/plan-nacional-frente-la-resistencia-los-antibioticos-pran-2019-2021 National action plan on antimicrobial resistance (PRAN) 2019-2021
Sweden	2020-2023	Valid	Swedish Strategy to Combat Antibiotic Resistance 2020-2023

Annex 2 - Review tool

This tool contains the elements looked at during the documentary review of NAPs. The tool takes into account the WHO/FAO/OIE manual for developing NAPs, Tripartite survey and ECDC assessment tool.

1. NATIONAL STRATEGY AND ACTION PLAN

1.1. Development of national action plan (NAP)

	<i>Development of national action plan (NAP)</i>
1.1.1	<i>Existence of national action plan (NAP)</i>
1.1.2	<i>NAP written from a 'One-Health' perspective and overarching all relevant sectors²⁹</i>
1.1.3	<i>NAP based on thorough situational analysis</i>
1.1.4	<i>Alignment with the overarching objectives³⁰ and consistency with the guiding principles of WHO's Global Action Plan on AMR³¹</i>
1.1.5	<i>High-level commitment including budget allocation</i>
1.1.6	<i>NAP publicly available</i>

1.2 Strategic Plan

	<i>Strategic Plan</i>
1.2.1	<i>Clearly-outlined goals, objectives, priorities</i>

1.3 Operational plan

	<i>Operational plan</i>
1.3.1	<i>Clearly-outlined activities and interventions</i>
1.3.2	<i>Linked to other national action plans on related topics (e.g., healthcare-associated infections/IPC, EU-harmonised AMR monitoring in certain animals and foodstuffs) or specific disease areas (e.g., tuberculosis, HIV, STIs)</i>

1.4 Monitoring and evaluation of NAP

	<i>Monitoring and evaluation of NAP</i>
1.4.1	<i>Performance indicators</i>
1.4.2	<i>Clearly-outlined targets and timelines</i>
1.4.3	<i>Periodic reviews of progress and impact</i>

1.5 Preparedness/response planning for AMR

	<i>Preparedness/response planning for AMR</i>
1.5.1	<i>Preparedness and response planning for outbreaks of highly resistant pathogens</i>
1.5.2	<i>Strategy to ensure availability of new and existing antimicrobial agents, including narrow spectrum antimicrobials</i>
1.5.3	<i>Policies/enforcement to address counterfeit products/ illegal online sales</i>

2. INTER-SECTORAL COORDINATION MECHANISM (ICM)

2.1 Composition of ICM

	<i>Composition of ICM</i>
2.1.1	<i>Inter-sectoral composition of the ICM</i>
2.1.2	<i>High-level chairpersons from the above sectors</i>
2.1.3	<i>Clearly defined roles, responsibility and accountability</i>
2.1.4	<i>Inclusion of relevant stakeholders (government, industry, professional societies, patient representatives, relevant organisations)</i>
2.1.5	<i>Inclusion of relevant expertise (infectious diseases), epidemiology, IPC, microbiology, pharmacology, surveillance, environment, communications).</i>

2.2 Regular meetings of ICM

	<i>Regular meetings of ICM</i>
2.2.1	<i>Meetings of the ICM</i>

²⁹ EU AMR Action plan objectives: 2.2 Better coordination and implementation of EU rules to tackle AMR: Improve the coordination of Member States One Health responses to AMR (applies for section 1 as a whole)

³⁰ At least first four objectives (Objective 1: Improve awareness and understanding of antimicrobial resistance through effective communication, education and training.// Objective 2: Strengthen the knowledge and evidence base through surveillance and research.// Objective 3: Reduce the incidence of infection through effective sanitation, hygiene and infection prevention measures. // Objective 4: Optimize the use of antimicrobial medicines in human and animal health).

³¹ [Guiding principles in WHO Manual for developing NAPs](#): Consistency and compliance with existing guidance and policies; "One Health"; Alignment with AMR global action plan (objectives); Prioritisation and step-wise approach; Multisectoral systems approach (multisectoral coordination engagement).

3. AWARENESS AND UNDERSTANDING OF AMR

3.1 Public awareness-raising activities and understanding of antibiotic resistance risks response

3.1	Public awareness-raising activities and understanding of antibiotic resistance risks response in:
3.1.1	Human Health (general public awareness campaigns and campaigns dedicated to specific target groups)
3.1.2	Animal health (specific public awareness campaigns targeting keepers of animals)
3.1.3	Food safety (specific public awareness campaigns concerning the food safety aspects of AMR)
3.1.4	Environment sectors (specific public awareness campaigns concerning the environmental aspects of AMR)
3.1.5	Collaborative communication activities including activities conducted with a One-Health approach

3.2 Existence of training and professional education on AMR

3.2	Training and professional education in human health sector
3.2.1	Training and professional education in human health sector
3.2.2	Training and professional education in veterinary sector
3.2.3	Training and professional education in farming sector (animal and plant)
3.2.4	Training and professional education in food safety sector
3.2.5	Training and professional education in environmental sector

4. MONITORING AND SURVEILLANCE

4.1 National monitoring system for consumption and rational use of antimicrobials in human health

4.1	National monitoring system for consumption and rational use of antimicrobials in human health
4.1.1	Data collection
4.1.2	Existence of a national monitoring strategy for antimicrobial sales or consumption
4.1.3	Communication of relevant data (rates and trends) to policy/decision makers
4.1.4	Identification of the national 32 trends of use of antimicrobials and major gaps in knowledge on the patterns of use of antimicrobials on national level

4.2 National monitoring system for antimicrobials intended to be used in animals (sales/use)

4.2	National monitoring system for antimicrobials intended to be used in animals (sales/use)
4.2.1	National legal framework (existing prior to Regulation (EU) 2019/6 becoming applicable) for collection of data on SALES of antimicrobials in animals
4.2.2	National legal framework (existing prior to Regulation (EU) 2019/6 becoming applicable) for collection of data on USE of antimicrobials per animal species
4.2.3	Existence of a national standardised approach / plan for collection of USE data with national coordination and supervision to ensure quality of data generated
4.2.4	Communication of relevant data (trends in sales and/or use of antimicrobials in animals) to policy/decision makers
4.2.5	Identification of the national trends of sales and/or use of antimicrobials and major gaps in knowledge on the patterns of use of antimicrobials on national level

4.3 National monitoring system for antimicrobial use in plant production

4.3	National monitoring system for antimicrobial use in plant production
4.3.1	Data collection for any sales/ use of antimicrobials in plant production

4.4 National surveillance system for antimicrobial resistance (AMR) in humans

4.4	National surveillance system for antimicrobial resistance (AMR) in humans
4.4.1	Existence of a national AMR surveillance plan
4.4.2	Existence of a national reference laboratory/ general coordination of the network of national laboratories
4.4.3	Existence of national body with the ability to systematically gather, and analyse data and trends
4.4.4	Communication of relevant data (prevalence and trends) to policy/decision makers
4.4.5	Identification of major knowledge gaps on antimicrobial resistance in human health sector

4.5 National surveillance system for antimicrobial resistance (AMR) in animals and food of animal origin

4.5	National surveillance system for antimicrobial resistance (AMR) in animals and food of animal origin
4.5.1	Existence of a national monitoring system (EU legislation ³²)
4.5.2	Existence of voluntary and additional national AMR surveillance plan for pathogens and food/animal combinations not included under the EU harmonised monitoring
4.5.3	Communication of relevant data (prevalence and trends) to policy/decision makers
4.5.4	Identification of major gaps in knowledge on antimicrobial resistance in animal and food of animal origin sector

4.6 National surveillance system for antimicrobial resistance in plants and food of plant origin

4.6	National surveillance system for antimicrobial resistance in plants and food of plant origin
4.6.1	Existence of programme for monitoring of AMR in plants and food of plant origin

³² In terms of monitoring and surveillance activities, as well as guidelines and programmes, in some Member States, the term 'national' could be seen as a limitation of the assessment. While carrying out the review, specific activities or procedures at different levels (e.g., federal, autonomous communities) will be flagged.

³³ Q 7.5 of the Tripartite refers to surveillance system for AMR the "priority pathogenic/communal bacterial species". These are already regulated at EU level –Regulation (EU) 2019/1729 ; 4.5.1. refers to those in addition to what is required by EU legislation.

4.6	<i>National surveillance system for antimicrobial resistance in plants and food of plant origin</i>
4.6.2	<i>Defined objectives and targets</i>
4.6.3	<i>Identification of major gaps in knowledge on antimicrobial resistance in plant sector and food of plant origin</i>
4.6.4	<i>Communication of relevant data (prevalence and trends)</i>
4.7 National surveillance system for antimicrobial resistance (AMR) in the environment	
4.7	<i>National surveillance system for antimicrobial resistance (AMR) in the environment</i>
4.7.1	<i>National standardised approach or segmented surveillance systems for data collection</i>
4.7.2	<i>Existence of a national AMR surveillance plan covering environment</i>
4.7.3	<i>Existence of a national network of laboratories for testing</i>
4.7.4	<i>Identification of major gaps in knowledge on antimicrobial resistance in environmental sector</i>
4.7.5	<i>Communication of relevant data (prevalence and trends)</i>
5. STRENGTHEN INFECTION PREVENTION AND CONTROL MEASURES	
5.1 Human healthcare Infection Prevention and Control (IPC) measures	
5.1	<i>Human healthcare Infection Prevention and Control (IPC) measures</i>
5.1.1	<i>Existence of IPC programmes at national level including national IPC guidelines</i>
5.1.2	<i>Education and training for IPC professionals</i>
5.1.3	<i>Monitoring and audits of IPC practices</i>
5.2 Animal Health - Infection Prevention and Control (IPC)	
5.2	<i>Animal Health - Infection Prevention and Control (IPC)</i>
5.2.1	<i>Policies and national legislation includes prevention measures in livestock, aquaculture [and pets]³⁴</i>
5.2.2	<i>Existence of initiatives to encourage/incentivise livestock keepers to have a farm health plan, as part of an integrated approach to on-farm animal health</i>
5.2.3	<i>National control and eradication programmes of specific animal diseases, other than those under EU Legislation³⁵</i>
6. PRUDENT USE OF ANTIMICROBIALS	
6.1 Optimizing antimicrobial use in human health	
6.1	<i>Optimizing antimicrobial use in human health</i>
6.1.1	<i>Existence of specific measures to restrict the use of certain antimicrobial agents in humans</i>
6.1.2	<i>Existence of antimicrobial stewardship programmes (ASPs) at different levels</i>
6.1.3	<i>Adoption of 'AWaRe' classification of antibiotics in the National Essential Medicines List</i>
6.2 Promote prudent use of antimicrobials in animals	
6.2	<i>Promote prudent use of antimicrobials in animals</i>
6.2.1	<i>Existence of treatment guidance developed taking into account the importance to preserve the efficacy of certain antimicrobials crucial to human medicine</i>
6.2.2	<i>Existence of specific measures restricting use of antimicrobials crucial to human medicine</i>
6.2.3	<i>Existence of measures to discourage inappropriate use of antimicrobials in animals</i>
6.2.4	<i>Existence of national legislation/ policies to discourage inappropriate prophylactic and metaphylactic use of antimicrobials in animals (prior to new EU VMP & MF Regulations becoming applicable in 2022)</i>
7. INVESTMENT/ RESEARCH PROGRAMMES IN THE AREA OF AMR	
7.1	<i>INVESTMENT/ RESEARCH PROGRAMMES IN THE AREA OF AMR</i>
7.1.1	<i>Investment/research programmes to support the development of new medicines, diagnostic tools and vaccines (national)</i>
7.1.2	<i>Investment/ research programmes in other areas</i>
7.1.3	<i>International collaborative work on research or other areas linked to AMR</i>
8. AVAILABILITY OF NEW AND OLD ANTIMICROBIAL AGENTS	
8.1	<i>Availability of new and old antimicrobial agents</i>
8.1.1	<i>National incentives to develop and keep on market antibiotic agents</i>
8.1.2	<i>Support to manufacturers or suppliers of antimicrobials</i>
8.1.3	<i>Monitoring of shortages of off-patent antibiotics</i>
8.1.4	<i>Existence of national stockpiles of crucial antibiotic agents</i>

³⁴ [EMA and EFSA Joint Scientific Opinion on measures to reduce the need to use antimicrobial agents in animal husbandry in the European Union, and the resulting impacts on food safety \(RONAFA\)](#)

³⁵ Regulation (EU) 2016/429 & Regulation (EC) 2160/2003

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