European Commission

Health and Food Safety

OVERVIEW REPORT

AMR monitoring in zoonotic and commensal bacteria

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EUROPEAN COMMISSION
DIRECTORATE-GENERAL FOR HEALTH AND FOOD SAFETY

Health and Food Audits and Analysis

Monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria

Overview report

P23510

EXECUTIVE SUMMARY

This overview report outlines the outcome of a DG Health and Food Safety project concerning the implementation of monitoring and reporting of antimicrobial resistance (AMR) in zoonotic and commensal bacteria. The project has been carried between 2023 and 2026, and included audits to nine Member States, complemented with a questionnaire submitted to all Member States, Norway and Iceland.

Overall, the report highlights the Member States' commitment to AMR monitoring, which has resulted in significant improvements (in comparison with the previous monitoring period – 2014-2020) in meeting the design and implementation of most of the sampling and testing requirements laid down by European Union legislation.

The sampling framework implemented largely follows the applicable requirements, providing comparable data within the European Union. Some areas still require improvement, including gathering and testing of *Salmonella* spp. isolates obtained in the context of the Salmonella national control plans, and preventing delays in the start of sampling programmes. The most significant challenge is related to the requirements for sampling at border control posts.

The national laboratory networks perform mostly in a satisfactory manner. Member States report AMR data to the European Food Safety Authority, mainly in line with the applicable requirements, however the accompanying description of the implementation of the monitoring, which is key to the correct interpretation of results, was often lacking in detail.

The report also highlights some examples of good practice and monitoring that goes beyond what is required by the European legislation.

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ABBREVIATIONS AND DEFINITIONS USED IN THIS REPORT

Abbreviation	Explanation
AmpC	AmpC β-lactamases
AMR	Antimicrobial resistance
AST	Antimicrobial susceptibility testing
BCP	Border control post
EFSA	European Food Safety Authority
ESBL	Extended-spectrum β-lactamases
EU	European Union
EUCAST	European Committee on AST
EU Decision	Commission Implementing Decision (EU) 2020/1729
EURL-AR	European Union Reference Laboratory for AMR
ISO	International Organisation for Standardisation
JIACRA	Joint Interagency Antimicrobial Consumption and Resistance Analysis
NRL	National Reference Laboratory
WGS	Whole genome sequencing

1. INTRODUCTION

Antimicrobial resistance (AMR) is a major threat to health and food security. In 2019, bacterial AMR directly caused an estimated 1.27 million deaths worldwide [(1)]. Resistant infections also increase pressure on healthcare systems. The Organisation for Economic Co-operation and Development − OECD − estimates that every year, higher health expenditure and reduced workforce productivity due to AMR costs the EU/EEA countries nearly EUR 11.7 billion [(2)].

AMR also affects food-producing animals. It can reduce livestock productivity and harm agricultural economies. Food-producing animals can carry resistant bacteria that may reach humans through the food chain.

The EU tackles AMR through a One Health approach. The 2017 EU Action Plan aimed to strengthen integrated surveillance and harmonised action across human health, veterinary medicine, food safety and the environment [(3)]. The 2023 Council Recommendation on AMR highlighted the need for robust surveillance and monitoring of both AMR and antimicrobial consumption across sectors [(4)].

Directive 2003/99/EC of the European Parliament and of the Council requires Member States to monitor zoonoses and relevant threats to public health, including AMR. The AMR monitoring requirements are detailed in Commission Implementing Decision (EU) 2020/1729.

In this context, the Directorate-General for Health and Food Safety of the European Commission carried out a project from 2023 to 2026 to assess how Member States implement EU rules on AMR monitoring.

This report summarises the main findings. It includes examples of good practice and highlights key gaps. It must be emphasised that these examples do not constitute an exhaustive account of the situations encountered during the audits.

2. OBJECTIVES AND SCOPE

The main **objective** of this project was to:

- assess how Member States implement EU requirements for harmonised monitoring and reporting of AMR in bacteria from certain food-producing animals and foods; and
- identify good practices and voluntary monitoring that add value beyond the legal minimum.

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(1) The Review on Antimicrobial Resistance: Antimicrobial Resistance: Tackling a crisis for the health and wealth of nations. https://amr-review.org/sites/default/files/160525_Final%20paper_with%20cover.pdf

(2) OECD (2023), "Fighting Antimicrobial Resistance in EU and EEA countries: Embracing a One Health Approach", OECD Publishing, Paris, https://doi.org/10.1787/fdb1629f-en.

(3) EU Action on Antimicrobial Resistance - Public Health - European Commission. https://health.ec.europa.eu/antimicrobial-resistance/eu-action-antimicrobial-resistance_en

(4) Council Recommendation on stepping up EU actions to combat antimicrobial resistance in a One Health approach https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32023H0622(01)

In terms of **scope**, the project focused on:

- sampling framework (sampling design and sample size);
- laboratory performance; and
- reporting to the European Food Safety Authority (EFSA).

The scope excluded the 2025 monitoring of methicillin resistant *Staphylococcus aureus* (MRSA) in fattening pigs [(5)].

The **methodology** of the project included:

- audits to nine Member States, carried out between 2023 and 2025 [(6)];
- a questionnaire sent in January 2026 to all Member States plus Norway and Iceland [(7)]; and
- information reported by Member States to EFSA.

3. LEGAL BASIS

The audits were carried out under the general provisions of the EU legislation and articles 116, 117 and 119 of Regulation (EU) 2017/625 of the European Parliament and the Council.

In the context of the above-mentioned objectives, the following EU legal acts are of relevance:

- Directive 2003/99/EC; and
- Commission Implementing Decision (EU) 2020/1729 (hereafter, the EU Decision).

Full legal references are provided in Annex 1. Legal acts quoted in this report refer, where applicable, to the last amended version at the time of the production of this report.

4. BACKGROUND

Directive 2003/99/EC requires Member States to ensure that monitoring provides comparable data on the occurrence of AMR in zoonotic agents and, in so far as they present a threat to public health, other agents. It also requires Member States to assess and report the trends and sources of AMR in their territory to EFSA, which publishes the national isolate-based quantitative AMR data and results of the analyses reported.

The EU Decision lays down specific harmonised rules for the period 2021-2027 and repeals the previously applicable legislation. The EU Decision introduced several important changes in comparison to the requirements applicable during the previous

(5) This exclusion was made because there were no MRSA monitoring data at the time of audits, since most testing and reporting is only taking place in 2026.

(6) Further information on these audits can be found in the publicly available individual reports, which are listed in Annex 2.

(7) To facilitate the narrative, references made to the EU and Member States in this report should be understood to encompass also the European Economic Area and the corresponding countries.

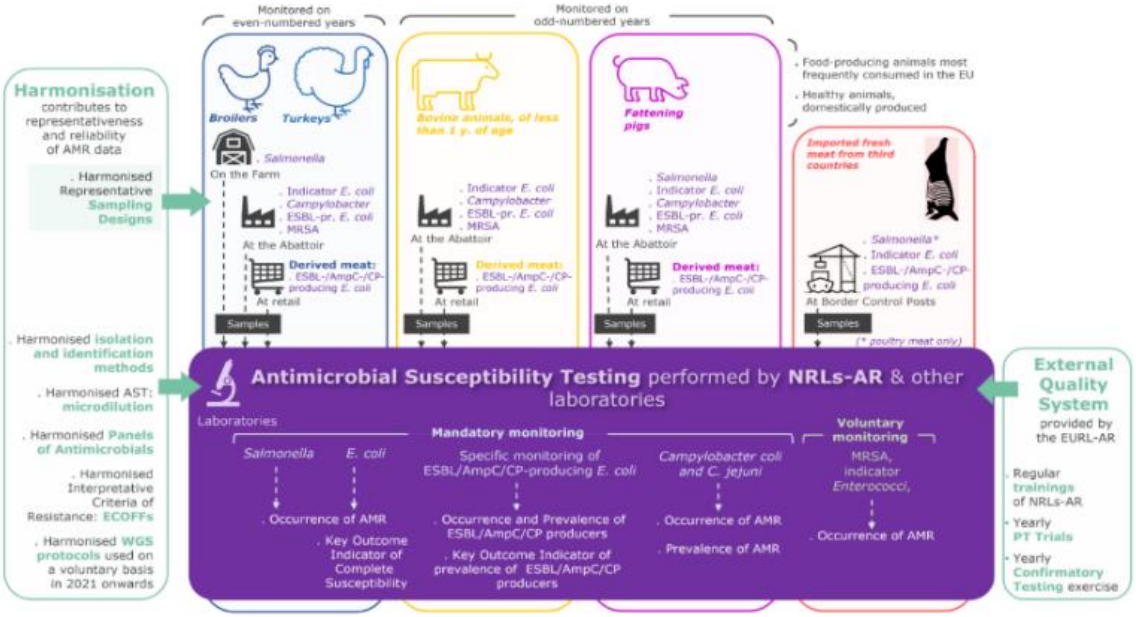
monitoring period (2014-2020) [8]; these are outlined in Table 1. The most important new requirement is sampling imported fresh meat at border control posts (BCPs).

Table 1: Comparative summary of the requirements in the previous legislation with those in the EU Decision

Topic	Previous legislation	EU Decision
BCPs	Not required	Mandatory sampling of imported fresh meat
Campylobacter spp. monitoring	Only mandatory for *Campylobacter jejuni*	Mandatory for both *C. jejuni* and *C. coli* (only *C. coli* for pigs)
Facultative monitoring	*C. coli* and indicator commensal enterococci	Commensal *Enterococcus faecalis* and *E. faecium*
ESBL/AmpC/ Carbapenemase confirmation	Single antimicrobial panel used	Mandatory second panel
Whole genome sequencing	Not considered	Alternative to phenotypic antimicrobial susceptibility testing on a voluntary basis

Member States are required to sample different food-producing animal populations and fresh meat derived thereof and subject the obtained bacterial isolates to antimicrobial susceptibility testing (AST). The monitoring is performed on a rotational basis and figure 1 outlines the combinations of bacterial species/food and food animal populations.

Figure 1: Combinations of bacterial species/food and food animal populations



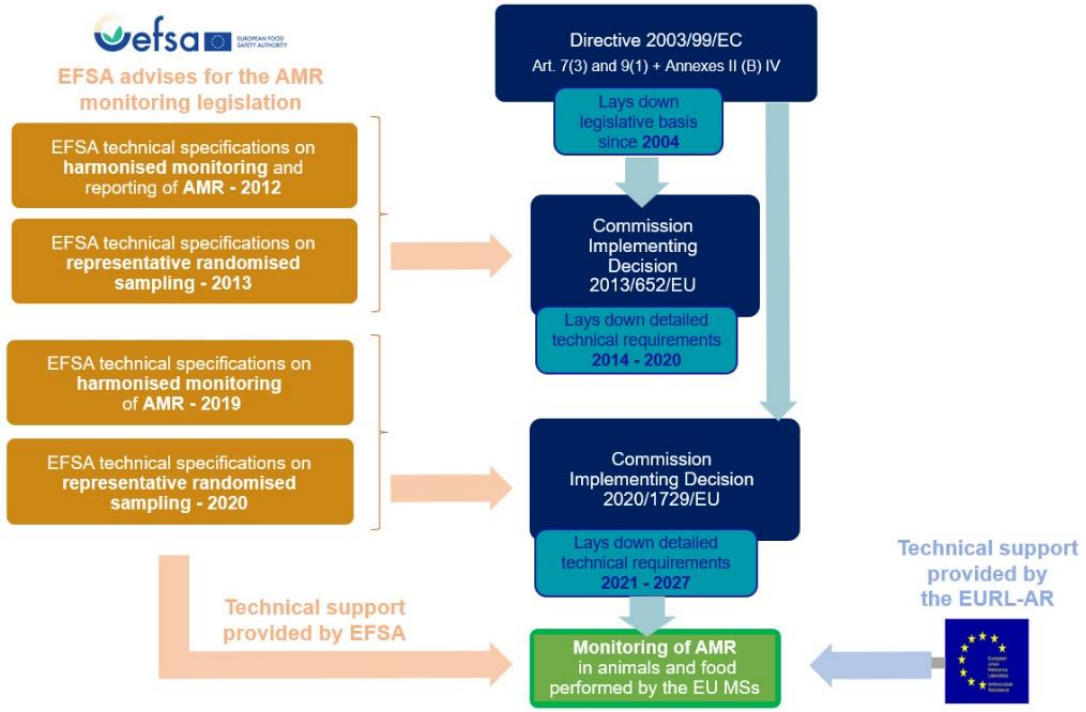
Source: EFSA (available at Monitoring Antimicrobial Resistance)

(8) Commission Implementing Decision 2013/652/EU on the monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria (notified under document C(2013) 7145), OJ 303, 14.11.2013, p. 26).

The European Commission provides the following support to Member States (see also Figure 2):

- Financial support under the Single Market Programme, managed by the European Health and Digital Executive Agency (HaDEA). Member States submit their national monitoring programmes and cost estimates to HaDEA, implement the required activities, and subsequently claim reimbursement for eligible expenses [(9)].
- Technical support provided by EFSA and the EU Reference Laboratory for AMR (EURL-AR) [(10)]. EFSA publishes technical specifications [(11)], and manages data submission and validation (which entails several rounds of meetings and clarifications with Member States), and the EURL takes responsibility for protocols, confirmatory testing and training.

Figure 2: AMR monitoring support mechanisms



Source: EFSA (available at Monitoring Antimicrobial Resistance)

Value of monitoring data

Harmonised monitoring provides comparable data across the EU. It supports trend analysis, detection of emerging resistance and evidence-based risk assessments. It also feeds into the joint inter-agency antimicrobial consumption and resistance

(9) For the 2024-2027 period. https://hadea.ec.europa.eu/system/files/2024-01/C_2023_8926_F1_ANNEX_EN_V2_P1_3132789.PDF.

(10) https://www.food.dtu.dk/english/topics/antimicrobial-resistance/eurl-ar

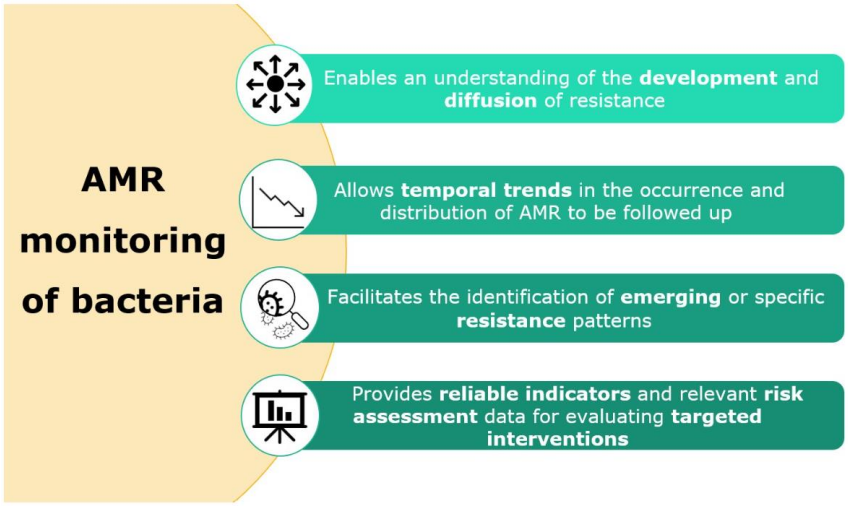
(11) For instance, Technical specifications on harmonised monitoring of antimicrobial resistance in zoonotic and indicator bacteria from food-producing animals and food. https://efsa.onlinelibrary.wiley.com/doi/10.2903/j.efsa.2019.5709

analysis (JIACRA) reports [12], which examine links between antimicrobial consumption and AMR in humans and food-producing animals in the EU.

Monitoring has also enabled targeted follow-up, for example after detection of Carbapenemase-producing *Escherichia coli* in food animals by a limited number of Member States in 2021–2022. Without harmonised monitoring, such findings could remain undetected for longer.

Monitoring results support policy development, antimicrobial stewardship (see Figure 3). They also support updates to cut-off values used to interpret AST results.

Figure 3: Purpose of AMR monitoring



Source: EFSA (available at Monitoring Antimicrobial Resistance)

5. OVERVIEW OF MAIN FINDINGS AND CONCLUSIONS

5.1. Sampling framework

All Member States audited had monitoring programmes that covered the required bacteria and animal/food combinations (see Figure 1).

In general sampling plans met the specifications laid down in the EU Decision. In rare cases, Member States initially omitted an animal population but corrected this later. Overall, there has been an improvement in the way sampling plans are developed in comparison to the previous monitoring period (2014-2020).

Most Member States develop sampling plans centrally. Regional or local services then collect samples. The audits usually found good coordination across all levels.

In their reply to the questionnaire, nearly all Member States indicated that they oversee how the monitoring programme is progressing during the year, which could result in corrective actions such as reallocating samples or increasing sampling intensity.

(12) https://www.ema.europa.eu/en/veterinary-regulatory-overview/antimicrobial-resistance-veterinary-medicine/analysis-antimicrobial-consumption-resistance-jiacra-reports

5.1.1. Sample design

Proportional distribution

The EU Decision requires that the slaughterhouses selected for sampling cover at least 60% of the domestic animal production [13]. To ensure representativeness, samples should be allocated proportionally to slaughterhouse throughput.

At retail, Member States should use stratified sampling and cover geographical regions that include at least 80% of the national human population. Sampling should be random, focus on high-volume outlets and must not pre-select products based on country of origin, to ensure representativeness of products on the market.

Monitoring at BCPs must include all BCPs approved for fresh meat and cover consignments from all origins (all third countries).

The audits showed that Member States generally designed sampling to reach the correct coverage and distribution at slaughterhouse and retail levels. However, sampling at BCP level proved more problematic (see below).

Even distribution throughout the year

The EU Decision requires Member States to distribute sampling evenly across all months. This helps capture seasonal changes in AMR.

In one or more years, this requirement was not met in 4 of the 9 Member States audited, with sampling starting sometimes as late as in September or October. In their reply to the questionnaire, 10 Member States reported delayed starts since 2024 and the main causes were:

- late approval of monitoring plans;
- procurement and tender delays, including shortages of consumables;
- internal organisational delays;
- staffing constraints; and
- limited availability of turkey meat at retail (to a lesser extent).

Late starts create data gaps. They also affect data representativeness and comparability. Delays can also disrupt other parts of the programme, such as randomisation and proportional allocation. These challenges are reflected in the data reported to EFSA.

Nonetheless, Member States are conscious of the situation and are striving to improve compliance with the requirements of the EU Decision by planning earlier in the year and monitoring implementation.

A few Member States have been able to conclude the financing, procurement and coordination before the monitoring year begins. They set slaughterhouse and

[13] The exclusion of animals dispatched directly for slaughter from other Member States aims at allowing full comparability between the data obtained in the different Member States.

sampling calendars in advance and share them with participants. This **good practice** allows sampling to begin in January and continue evenly through the year.

Randomisation

The EU Decision expects randomisation of sampling days each month, as far as possible. Randomisation helps ensure that each epidemiological unit has the same chance of selection.

The audits found that sampling days were often fixed, mainly due to practical constraints, including slaughterhouse operating days, inspectors' schedules, transport logistics and, mainly, laboratory capacity.

5.1.2. Sample size

The EU Decision establishes requirements on the number of samples to be collected at slaughter, retail and BCPs. Member States aim to obtain a set number of isolates for AST. The EU Decision allows derogations in specific situations, such as low production, low prevalence, or too few epidemiological units. Among other reasons, this is to reduce the burden on smaller Member States or those with smaller production of specific food categories and to prevent repeated sampling of the same epidemiological unit [(14)].

In response to the questionnaire, 22 Member States declared the use of these derogations: i) all these Member States used the low-production derogation, ii) nearly half of them also used a prevalence-based derogation, and iii) eight Member States referred to using the derogation on a low number of epidemiological units. In the reply to the questionnaire, only three Member States indicated that they had directly communicated the use of derogations to the Commission. Instead, most Member States embedded this information in grant applications or annual reporting.

The audits found that most Member States calculated sample sizes correctly, although some undersampled due to implementation issues. In a few cases, Member States did not account for low prevalence when planning. Two audited Member States could have used derogations but did not.

5.2. Sampling implementation

Sampling at primary production

The EU Decision requires Member States to test, every other year, 170 *Salmonella* spp. isolates from broilers, laying hens and turkeys. Member States obtain these isolates through Salmonella National Control Plans. The EU Decision allows a reduced target (85 isolates) for low production. Where Member States cannot reach the minimum due to low prevalence, they should test all available isolates.

(14) Member States making use of the possibility of limitating the annual number of samples, must base their decision on documented evidence, such as results of surveys, and, before implementing the reduced sampling for the first time, have to submit such evidence to the European Commission.

The audits found varying levels of compliance. Many Member States struggled to collect enough isolates. Although low prevalence was the main reason, the audits also found operational weaknesses, including:

- unclear picture on the total number of isolates available;
- difficulties in receiving isolates from some private laboratories; and
- missing or incorrect metadata and weak traceability.

In the questionnaire, 20 Member States reported difficulties in obtaining enough isolates. The main reasons given for not receiving existing isolates where similar to those found during audits. On the contrary, Member States with many isolates satisfactorily select the required number and apply randomization rules.

Sampling at slaughterhouse level

Member States must collect enough caecal samples to achieve the necessary number of isolates. This entails collecting 170 isolates per pathogen, except if derogations can be applied.

The Member States audited achieved the required caecal isolates for commensal *E. coli.* Results varied more for *Salmonella* spp. (pigs and bovines) and, in particular, *C. coli* and *C. jejuni* isolates.

For pigs and bovines, most Member States audited did not use strict random selection of epidemiological units (slaughter batches). They often preferred a census approach, (avoiding repetition of herds) to obtain an image of the national situation. In general there were good systems in place to avoid repeated epidemiological units in poultry sampling.

Some Member States audited could not ensure distribution throughout the year due to the late start of the programmes. Others struggled to meet targets for turkey caecal samples due to incorrect planning or insufficient sampling.

Sampling at retail

Retail sampling should cover fresh meat without pre-selecting by product origin or type of packaging. Member States should allocate samples proportionally to the human population and apply randomised sampling, consistent with EFSA technical specifications.

Most Member States had systems that could meet retail requirements and reached the coverage requirement, and some exceeded it. Some exceptions were found in the audits:

- two Member States allocated sampling by retailer density rather than by geographical regions as they considered that such an approach covers 80% of consumers; and
- three Member States planned to cover 80% but did not due to late implementation, geography, resource constraints or laboratory delivery timelines.

The audits also found some cases of unclear or incorrect instructions on eligible products affecting the randomisation and representativeness, such as:

- sampling focused on meat of EU origin, which conflicts with the requirement not to pre-select by origin; and
- targeting either unpacked or packed meat only, potentially excluding a large share of the market.

There was improvement on the information concerning lots sampled when compared with the previous monitoring period. Most Member States audited achieved the required retail sample numbers. Turkey meat often remained difficult to sample due to its seasonal or low availability.

Sampling at BCPs

The EU Decision introduced mandatory sampling of imported fresh meat at BCPs from 1 January 2021. It requires that sampling takes place at a set frequency per BCP and per country of origin.

As reflected in the replies to the questionnaire, Member States use different approaches to plan BCP sampling: a) 14 Member States based sampling on total consignments by species received nationally in previous years, b) 10 based sampling on the number of previous years' consignments per BCP, and c) 19 stated that they had mechanisms to identify eligible consignments from new origins and at BCPs with no recent eligible consignments; the audits indicated though that these mechanisms did not always prevent missing consignments.

Member States stated that implementation challenges include miscommunication with colleagues at that level, logistic difficulties in sampling, technical/administrative obstacles and Brexit-related controls.

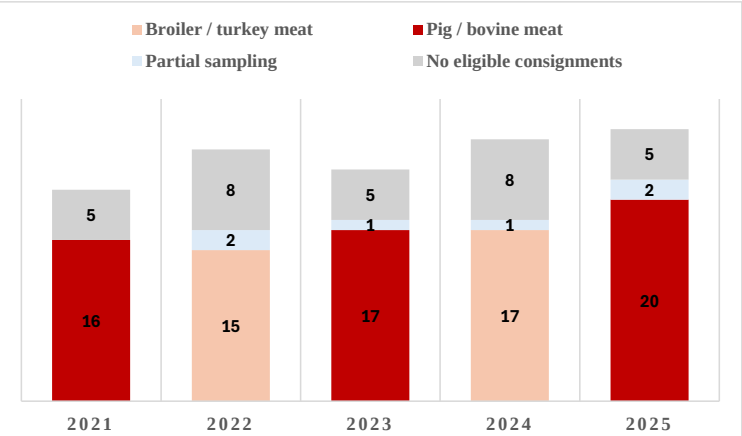
The audits identified critical gaps across Member States concerning sampling:

- some did not include sampling in their programmes in early years;
- several did not include all relevant BCPs approved to receive fresh meat;
- organisational changes and late implementation led to gaps in sampling and missed eligible consignments; and
- missing "unusual" consignments often, such as imports from a new country of origin arriving through a BCP that had not previously received such consignments.

It is noteworthy that all reports of the audits carried out made a recommendation on BCP sampling, although the degree of severity of the shortcomings identified varied considerably (from not sampling to not identifying unusual consignments).

Questionnaire replies suggest a gradual increase over time in the number of Member States sampling at BCP level (see figure 4). Some Member States stated they did not plan sampling at this level due to the negligible number of consignments, although such an approach could lead to missing eligible consignments.

Figure 4: Member States sampling at BCP level



Source: Questionnaire 2026

Sampling the first eligible consignment per BCP and per each country of origin is considered **good practice**, an approach reported by 16 Member States, which helps detect low-frequency or unexpected origins.

5.3. Laboratories

National reference laboratories for AMR, or other laboratories designated by the competent authority are responsible for carrying out AST of bacterial isolates, the specific monitoring of extended-spectrum β-lactamases (ESBL)-, AmpC β-lactamases (AmpC)- or Carbapenemase-producing *E. coli* and whole genome sequencing (WGS) as an alternative method.

The EU Decision changed laboratory requirements compared with 2014–2020 (see Table 1). These changes support harmonisation and comparability.

5.3.1. Laboratory organisation

In most Member States audited, a single NRL performed AST. Four Member States shared responsibilities between two NRLs, often splitting between meat samples (from retail and BCPs) and other samples (from the Salmonella National Control Plan and caecal samples). Often additional designated laboratories prepared isolates from the samples and, in one case, performed AST. In one Member State, other laboratories in the territory also perform AST.

In the Member States audited, NRLs were designated and accredited with a single exception where ISO (International Organisation for Standardisation) 17025 accreditation was lost due to administrative issues, but was later restored.

Coordination

NRLs need clear coordination with other designated laboratories, including private laboratories that generate isolates. In this respect, the audits found that the coordination between competent authorities responsible for AST/isolates was not well developed in three Member States, and that one NRL did not provide timely feedback to slaughterhouses, which delayed adjustments to sampling and contributed to under sampling.

5.3.2. Analysis

The EU Decision requires Member States to interpret results using updated European Committee on AST (EUCAST) cut-off values [15]. It also requires confirmatory testing for presumptive ESBL-, AmpC-, and Carbapenemase-producing *E. coli* using a second antimicrobial panel. Member States may use WGS in place of phenotypic testing for defined parts of monitoring if they follow EURL-AR protocols.

NRLs should perform according to AST EURL-AR protocols and relevant ISO standards. Laboratories should use reference strains in each test batch, in line with EURL-AR requirements.

To compare ESBL-, AmpC- and Carbapenemase-producing *E. coli* across Member States, laboratories should use EURL-AR selective isolation methods for caecal and retail samples. Presumptive isolates should undergo confirmation using the two panels listed in the EU Decision.

NRLs followed EURL-AR protocols and used required methods and panels. Some Member States started WGS voluntarily. However, the audits found shortcomings in some NRLs, including:

- deviations from EURL-AR protocols (for example, culture media or incubation conditions);
- use of incorrect selective media for Carbapenemase-producing *E. coli*, which could reduce detection; and
- in one Member State, procurement delays prevented AST in 2022, which resulted in no monitoring data for that year.

Sample delivery and cold chain

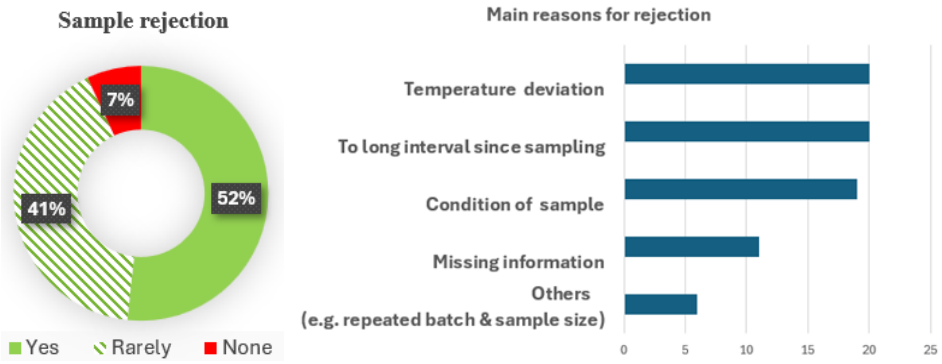
EURL-AR protocols set timeframes for sample processing. Updated protocols allow up to 96 hours for isolation of ESBL-, AmpC-, or Carbapenemase-producing *E. coli*. Most Member States follow these timelines. Some laboratories restrict receipt of samples to certain weekdays which is foreseen in the legislation.

Samples should remain at 5°C ± 3°C during transport. Some Member States audited could not demonstrate compliance. They did not use data loggers and had not validated transport conditions. Some did not routinely record sample temperature at arrival and rarely rejected samples, particularly for caecal samples (see figure 5).

In the reply to the questionnaire, 26 Member States indicated that temperatures are checked at arrival at the laboratories, although these are more frequent in laboratories responsible solely for meat samples. While most Member States indicated that they reject samples at laboratory reception, almost half rarely do so even in Member States with high summer temperatures.

[15] https://www.eucast.org/

Figure 5: Rejection of samples at laboratory reception



Source: Questionnaire 2026

While the replies to the questionnaire are positive, the experience during audits was sometimes contradictory, with often only a visual check at sample reception, temperatures not routinely recorded and no evidence of rejected samples. This was more frequent when dealing with caecal samples.

5.3.3. Use of alternative methods

The use of WGS as an alternative method has increased since the last monitoring period, and the audits found that laboratories were using EURL-AR protocols.

In the questionnaire, 11 Member States indicated that they report data to EFSA based on WGS. WGS can be performed in-house in 17 laboratories/Member States, while 10 outsource it fully or partly. Expanding the use of WGS is an aspiration of 20 Member States which, nevertheless indicated some barriers to do it, including limitations in staffing and equipment, higher costs, accreditation burden and limits on which isolates can be reported using WGS.

5.3.4. Quality controls and storage

Laboratories performing AST must have quality assurance systems and take part in proficiency testing.

All Member States audited had NRLs with quality systems in place. However, a very small number did require substantial improvements. NRLs generally performed well in EURL-AR proficiency tests. This supports confidence in EU-level comparability.

Most laboratories used reference strains, as required. However, they varied in testing frequency and documentation. Some tested reference strains in every batch, which is **good practice**. Others did so weekly or monthly, which may delay detection of batch-specific problems.

Resistant isolates need to be stored by the laboratories at a temperature of – 80 °C for a minimum period of five years. Other storage temperatures may be used if they ensure viability and absence of changes in strain properties.

The audits found that all Member States had stored samples at the correct temperature. However, in a couple of NRLs, isolates had been stored for certain periods at temperatures significantly higher than –80 °C, owing to the lack of suitable or

sufficient freezers. This is particularly relevant, as higher temperatures can significantly reduce the recovery rate of isolates.

5.4. Reporting and assessment

Member States are required to submit AMR monitoring data to the European Commission via EFSA. They use EFSA formats and tools for this purpose. Submissions must include isolate-level results, minimum inhibitory concentrations values, interpretation using EUCAST cut-off values and metadata on sampling context. Member States must also explain how they implemented monitoring, including sampling design, randomisation, deviations and challenges.

As regards the description of how monitoring is planned and implemented, the information contained in the text forms was not always comprehensive enough, although this aspect has improved since the previous monitoring period. For instance, information was often missing on the rationale for derogations applied, sampling at BCPs and implementation challenges (such as reasons for under sampling). For the 2025 reporting year, EFSA has amended the template to be more detailed and help Member States with their reporting.

Member States indicated a variety of validation approaches in their reply to the questionnaire:

- re-testing unusual phenotypes or minimum inhibitory concentration's discrepancies;
- checking against EFSA rules and data dictionaries;
- automated cross-checks in internal databases;
- second-person review and supervisor sign-off; and
- confirmation through EURL-AR support for difficult cases.

The audits found that data management and validation varied:

- some Member States extracted results automatically from laboratory information systems (LIMS) into EFSA formats, which reduces transcription errors; and
- other Member States still relied on manual data entry, which increases errors and creates additional work during EFSA validation.

The audits found uneven validation practices. Some Member States used documented pre-submission checks and sign-off procedures. Others relied on informal review. Examples of weaknesses found during audits mirrored those reported by EFSA:

- submission of incorrect isolates, including clinical isolates, which required correction; and
- failure to submit tested isolates until prompted, suggesting weak internal checks.

The more common reporting issues, based on the validation process with EFSA are listed in Table 2. This also results in additional burden as Member States have to re-test and resubmit information.

Table 2: Common reporting issues

Common reporting issues	
• Data Discrepancies	• Programme Code Errors
• Validation and unusual serovars	• Panel Data Errors
• Text Form and Data Entry Errors	• Lack or Incompleteness of Import Data

Source: EFSA's validation process

Automation and stronger pre-submission validation would reduce resubmissions and improve data quality.

Voluntary monitoring beyond EU requirements

Several Member States run programmes beyond EU minimum requirements. In their reply to the questionnaire, 16 Member States indicated additional monitoring activities. A non-exhaustive list of additional monitoring by Member States includes:

- indicator *Enterococcus* spp.;
- all combinations annually instead of a two-year cycle;
- additional products (e.g. lamb meat, live bivalve molluscs, vegetables);
- additional animal species (e.g. ducks and geese);
- additional bacteria (e.g. MRSA surveillance in pigs and veal calves);
- colistin resistance screening; and
- using wider WGS characterisation of AMR isolates.

Member States may not always report these additional results to EFSA. Nonetheless, national initiatives demonstrate a strong commitment of Member States towards AMR surveillance and provide valuable data that complements the overall monitoring scheme.

6. MEMBER STATES VIEWS - CHALLENGES AND OPPORTUNITIES

The EU Decision and information provided by EFSA introduced some changes when compared to the previous monitoring period. These aimed at addressing Member States' challenges reported in the 2019 overview report. For instance, changes regarding epidemiological units (to avoid repetition), types of derogations available, distribution of sampling during weekdays (taking into account laboratory capacity), testing methods and reporting templates.

In their reply to the questionnaire, Member States identified the most challenging aspects of implementation. Common challenges included:

- low production or limited availability of samples, including seasonal availability of turkey meat;
- administrative burden, including co-financing processes, procurement delays and complex reporting;
- cold chain requirements, including long transport distances and temperature compliance;

- difficulty reaching isolate targets, often due to low prevalence and limited *Salmonella* spp. isolates;
- reporting and digitalisation constraints, including incomplete data flows and limited automation;
- staffing constraints, including turnover and competing duties;
- implementation of sampling at BCPs, including low import volumes and identifying eligible consignments; and
- constraints on representativeness and randomisation, driven by geography and production structure.

Member States also suggested issues to clarify in a future revision of the EU Decision, including:

- greater flexibility for small Member States and low throughput;
- clearer rules for sampling and targets when quotas cannot be met;
- improving technical aspects (inconsistencies between the EU Decision and technical specifications); and
- clearer definitions, including epidemiological unit and the rationale for differences between BCP and retail sampling.

Member States reported several strategies that improved monitoring, including:

- central IT tools and integrated data flows;
- regular coordination, communication and training; and
- standardisation through EURL-AR protocols and proficiency testing.

7. OVERALL CONCLUSION

The report highlights the Member States' commitment to AMR monitoring, which has resulted in significant improvements (in comparison with the previous monitoring period – 2014-2020) in meeting the design and implementation of most of the sampling and testing requirements laid down by European Union legislation.

The sampling framework implemented largely follows the applicable requirements, providing comparable data within the European Union. Some areas still require improvement, including gathering and testing of Salmonella spp. isolates obtained in the context of the Salmonella national control plans, and preventing delays in the start of sampling programs. Nonetheless, the most significant challenge is related to the requirements for sampling at border control posts.

The national laboratory networks perform mostly in a satisfactory manner. Member States report AMR data to EFSA, mainly in line with the applicable requirements, however the accompanying description of the implementation of the monitoring, which is key to the correct interpretation of results, was often lacking in detail.

8. MATTERS FOR CONSIDERATION BY MEMBER STATES

Member States are invited to consider the following improvements:

- Designing more representative sampling plans, using the relevant derogations and notifying the European Commission before sampling starts.
- Ensuring that sampling at BCPs provides an accurate picture of AMR in imported fresh meat, covering eligible consignments from all origins and all approved BCPs at the correct frequency.
- Aligning laboratory isolation, detection and storage methods with EURL-AR specifications (including sample acceptance, incubation and isolate storage temperatures), to improve data representativeness.
- Implementing and maintaining robust, documented quality control procedures to ensure AST is performed correctly and results are validated.
- Reporting AMR in line with EFSA reporting manuals and data dictionaries, ensuring all relevant information is recorded.

9. ACTION TAKEN OR PLANNED BY THE EUROPEAN COMMISSION SERVICES

The Commission services have launched the following actions to assist Member States in the implementation of AMR monitoring and reporting:

(1) The Council Recommendation on AMR, adopted in June 2023, builds on and complements the **2017 European One Health action plan against AMR** in all three dimensions of the One Health spectrum (human health, animal health and the environment) to maximise synergies and attain a strong and effective response against AMR across the EU. In particular, it identifies for the first time specific targets for AMR and antimicrobial use in human health for 2030, both at EU level and at country-level. It also confirms the aim to reach by 2030 a 50% reduction of the overall EU sales of antimicrobials used for farmed animals and in aquaculture. As part of its objectives, the Council Recommendation aims at strengthening One Health surveillance and reporting of AMR and antimicrobial use and ensuring that the best evidence-based analysis and data are available and put in use.

(2) To assess the progress and results achieved in implementing the 2017 AMR Action Plan and the Council Recommendation on AMR, the European Commission designed a **monitoring framework** with indicators and will use it for its report to the Council on the implementation of the Council Recommendation in 2027.

(3) The EU-JAMRAI 2 Joint Action, launched in 2024 under the EU4Health programme, supports Member States in effectively implementing One Health policies on the ground. With a total budget of EUR 62.5 million (EUR 50 million EU co-funding) running until 2027, this initiative acts as a key operational tool to strengthen national action plans, enhance integrated surveillance systems, and upscale antimicrobial stewardship and infection control practices across 30 participating countries.

(4) A request for a **Scientific Opinion** in view of reviewing the EU Decision was sent to EFSA. The Scientific report will be published in December 2026 and will provide scientific advice to support amendments in the existing legislation.

(5) The European Commission took part in EFSA's, EURL-AR **Working Groups** on AMR, where it gathers technical advice aiming to support amendments to the existing legislation and, at the same time, assist in surpassing key implementation barriers highlighted by this overview report.

(6) The **EURL-AR** will be asked to review the corresponding protocols in view of the planned revision of the EU Decision.

(7) The **data** obtained from, among others, the AMR monitoring under Decision 2013/652/EU and the EU Decision were **used to feed into** the fourth JIACRA report published in February 2024 This report highlighted a positive association between consumption of antimicrobials and the corresponding resistance in bacteria. A mandate for a new JIACRA report, encompassing elements of environmental surveillance where available, has been sent to the European Medicines Agency, EFSA and the European Centre for Disease Prevention and Control. This fifth JIACRA report will be published by the end of 2026, and its findings will be presented to Member States' competent authorities.

(8) The findings contained in this report will be considered to the relevant extent in the context of the planned revision of the EU Decision on the monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria.

Annex I - Legal references

Legal Reference	Official Journal	Title
Regulation (EU) 2017/625	OJ L 95, 7.4.2017, p. 1–142	Regulation (EU) 2017/625 of the European Parliament and of the Council of 15 March 2017 on official controls and other official activities performed to ensure the application of food and feed law, rules on animal health and welfare, plant health and plant protection products, amending Regulations (EC) No 999/2001, (EC) No 396/2005, (EC) No 1069/2009, (EC) No 1107/2009, (EU) No 1151/2012, (EU) No 652/2014, (EU) 2016/429 and (EU) 2016/2031 of the European Parliament and of the Council, Council Regulations (EC) No 1/2005 and (EC) No 1099/2009 and Council Directives 98/58/EC, 1999/74/EC, 2007/43/EC, 2008/119/EC and 2008/120/EC, and repealing Regulations (EC) No 854/2004 and (EC) No 882/2004 of the European Parliament and of the Council, Council Directives 89/608/EEC, 89/662/EEC, 90/425/EEC, 91/496/EEC, 96/23/EC, 96/93/EC and 97/78/EC and Council Decision 92/438/EEC (Official Controls Regulation)
Directive 2003/99/EC	OJ L 325, 12.12.2003, p. 31-40	Directive 2003/99/EC of the European Parliament and of the Council of 17 November 2003 on the monitoring of zoonoses and zoonotic agents, amending Council Decision 90/424/EEC and repealing Council Directive 92/117/EEC
Regulation (EC) No 2160/2003	OJ L 325, 12.12.2003, p. 1-15	Regulation (EC) No 2160/2003 of the European Parliament and of the Council of 17 November 2003 on the control of salmonella and other specified food-borne zoonotic agents
Decision (EU) 2020/1729	OJ L 387, 19.11.2020, p. 8–21	Commission Implementing Decision (EU) 2020/1729 of 17 November 2020 on the monitoring and reporting of antimicrobial resistance in zoonotic and commensal bacteria and repealing Implementing Decision 2013/652/EU (notified under document C (2020) 7894)

Annex II - details of individual audits

Country	Date of audit	SANTE ref. no.
Croatia	7 to 19 December 2023	2023-7690
Ireland	20 to 31 January 2023	2023-7693
Malta	24 February to 3 March 2023	2023-7691
Portugal	27 April to 10 May 2023	2023-7692
Greece	6 to 16 December 2024	2024-7947
Netherlands	29 May to 10 June 2024	2024-7948
Poland	11 to 21 October 2024	2024-7949
Bulgaria	13 to 21 October 2025	2025-0049
Spain	3 to 11 November 2025	2025-0051

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