Joint Action
Antimicrobial Resistance and
Healthcare-Associated Infections

Policy brief:
The need to develop indicators and targets for AMR action plans in the EU

An unmet need

Antimicrobial resistance (AMR), known as the ability of microorganisms to resist the action of antimicrobials, is a global and major issue that threatens human and animal health as well as the environment, which are all interrelated, as microorganisms can spread in all sectors. The issue of AMR requires a holistic and multi-sectoral approach, known as the One Health approach.

Excessive and inappropriate use of antimicrobial drugs as well as poor infection prevention and control (IPC) practices are the two main drivers of AMR. If AMR continues to increase, we would revert to a world where infectious diseases are no longer treatable, leading to prolonged illnesses, disabilities, mortality, and at the same time increasing the cost of healthcare[1].

International organisations act for the prevention of antimicrobial resistance: OIE, WHO and FAO, in relation with UNEP, are engaged in a Tripartite plus alliance to coordinate the strategies to combat AMR. WHO published the Global Action Plan to combat AMR in 2015 while the European Union adopted an updated European One Health action plan against AMR in 2017. According to the European Commission guidelines[2], the control of AMR can only be achieved by combining strong IPC (including those targeting healthcare-associated infections), and programmes promoting prudent use of antimicrobials known as antimicrobial stewardship (AMS) programmes. From an economic perspective, the OECD demonstrated that the implementation of AMS and IPC programmes is cost-saving[3].

However, despite these plans and guidelines, EU Member States do not reach the same level of achievements concerning their AMR national action plans. There is a need to support Member States and to monitor the European One Health action plan with indicators and targets. **The EU-JAMRAI is urging the European Commission to establish indicators and targets to monitor the progress of the EU Action Plans, with a One Health perspective. The establishment of these indicators and targets should be mandated to European health Agencies (i.e. ECDC, EMA and EFSA) with the support of European medical societies.**

The global threat of AMR

At the international level, AMR is recognized by the WHO as being one of the major global threats and is listed as a top priority for action on the global health agenda. The numbers published by the ECDC and the OECD[3] are alarming:

- 33 000 patients die annually in the EU/EEA as a direct consequence of infections caused by multi-resistant bacteria[4].
- Antibiotic use and infection prevention and control practices vary a lot between countries. By 2050, Southern Europe will be the most strongly impacted by AMR: Italy, Greece and Portugal are forecasted to be the countries with the highest mortality rates[4] from AMR by the OECD.

Concerning the animal sector, in the EU / EEA, about two thirds of total antimicrobial use is for food producing animals[5]. Globally, if no effective action is put in place, antimicrobial use in food-producing animals will rise by 67% between 2010 and 2030[6]. Across the EU, between 2011 and 2016, it has been estimated that sales of veterinary antimicrobials were reduced by 20 %[5], but use still remains too high.

AMR also has a significant impact on the cost of healthcare in EU/EEA countries. In 2019, the OECD and ECDC estimated that, due to extra healthcare costs induced by AMR, 1.1 billion euros are expected to be spent yearly across EU/EEA countries between 2015 and 2050[7]. If no effective public health action is put in place in the coming years, AMR rates and its impacts will grow further.

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What can be done?

As the European One Health Action plan against AMR[1] is urging to make the EU a best practice region and to shape the global agenda, having a set of indicators and targets to monitor progress across Europe is necessary.

The 2019 Council Conclusions on AMR encourage Member States and the Commission to "strengthen and widen the scope of surveillance of AMR and healthcare-associated infections rates and consumption of antimicrobials, both in the human and the animal health sectors", in establishing, for Member States, "national measurable targets (…) and monitor progress towards reducing the spread of AMR, taking into account to the appropriate extent the indicators developed by EFSA, EMA and ECDC"[8]. The European Joint Action on Antimicrobial Resistance and Healthcare-Associated Infections (EU-JAMRAI) highlighted that Member States and stakeholders consider indicators for human and animal health as the key to secure concrete outcomes[9]. Moreover, the European guidelines for the prudent use of antimicrobial in human health[10] and the guidelines for the prudent use of antimicrobials in veterinary medicine[11] also recommend developing indicators on AMS.

The European Commission requested that ECDC, EMA and EFSA produce a scientific opinion on outcome indicators for AMR One Health Action that could use existing surveillance data. These agencies published in 2017 a Joint Scientific Opinion with a list of general outcome indicators on AMR in humans and food-producing animals[12]. However, the last report of the European Court of Auditors highlighted that these indicators were not used enough by Member States or by the European Commission, to monitor progress[5]. Moreover, no target / objective to reach was defined for each of these indicators, which makes it difficult to assess the room for improvement.

A cross-sectional survey conducted in 2016 by the ESCMID Study Group for Antimicrobial stewardship (ESGAP) found that only **29%** of the European participating countries had national indicators on antibiotic use in human health with both clear targets and incentives[13]. A survey conducted in 2019 by the Transatlantic Taskforce on Antimicrobial Resistance (TAFTAR) highlighted that only **nine countries** out of 30 responding countries had implemented targets for the reduction of antibiotic use in humans and 17 countries were working to establish such targets[14]. Some examples of indicators and targets are provided below.

Indicators	Targets
Number of antibiotic prescriptions for 1000 inhabitants per year in primary care	<250
Proportion of children treated with third-generation cephalosporins over the year, out of children receiving antibiotics in primary care	<3%

Concerning the animal sector, EMA recommended in 2016 that "*over the course of the next three to four years, all Member States should reduce the use of colistin in animals at least to a target level of 5 mg colistin/population correction unit.* […] *Member States are also encouraged to set stricter national targets, ideally below 1 mg colistin/PCU as a desirable level*".[15]

Establishing a set of key structure/process/outcome indicators (e.g. quality indicators, proxy indicators, quantity metrics, on antibiotic use and resistance, AMS and IPC) and targets should be a priority, with a One Health perspective. **The EU-JAMRAI therefore urges the European Commission to initiate such a work, in relation with the relevant EU agencies and EU Member States.** These indicators and targets, on the basis of the examples described above, might be developed using the following methodology:

- Review of the existing published and grey literature and existing guidance / recommendations;
- EU agencies (EMA, ECDC, EFSA) to provide advice on possible target values;
- Followed by a structured consensus procedure involving all EU Member States representatives.

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