

## Policy brief:

# The need to develop core elements at the European level on antimicrobial stewardship (AMS) and infection prevention and control (IPC)

### 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<sup>1</sup>.

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<sup>2</sup>, the control of AMR can only be achieved by combining strong IPC measures (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<sup>3</sup>.

However, despite these plans and guidelines, EU member states do not reach the same level of achievements concerning health policies on AMS and IPC. This represents a barrier to the effective implementation of AMS and IPC programmes at the European level. **To overcome this obstacle, the EU-JAMRAI strongly invites the Member States and the European Commission to mandate the relevant EU Agencies with the support of European medical societies to develop core elements on AMS and IPC. They should be implementable at national and facility levels, both in human and animal health, that are relevant to the EU, in order to create the minimum framework to be used by all EU Member States.**

### 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. Indeed, the figures published by the ECDC and the OECD<sup>3</sup> are alarming:

- 33 000 patients die annually in the EU/EEA as a direct consequence of infections caused by multidrug-resistant bacteria<sup>4</sup>.
- 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<sup>4</sup> from AMR.

Concerning the animal sector, in the EU / EEA, about two thirds of total antimicrobial use is for food producing animals<sup>5</sup>. Globally, if no effective action is put in place, antimicrobial use in food-producing animals will rise by 67% between 2010 and 2030<sup>6</sup>. Across the EU, between 2011 and 2016, it has been estimated that sales of veterinary antimicrobials were reduced by 20 %<sup>5</sup>, 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 the 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<sup>7</sup>. If no effective public health action is put in place in the coming years, AMR rates and its impact will grow further.

## What can be done?

As the European One Health Action Plan against AMR<sup>1</sup> is urging to make the EU a best practice region and to shape the global agenda, establishing harmonized core elements guiding AMS and IPC programmes in the EU is necessary.

Without a common framework, effective AMS and IPC programmes that have the ability to reduce the burden of AMR at the European, national and facility level cannot be implemented properly.

The 2019 Conclusions of the EU Council urged for the development of common guidelines on IPC and AMS<sup>8</sup> based on best practices and for supporting their implementation. The European Joint Action on Antimicrobial Resistance and Healthcare-Associated Infections (EU-JAMRAI) found that the Member States and stakeholders interviewed consider that having standards at the European level was a priority<sup>9</sup> for effective implementation of AMS and IPC programmes.

Some core elements have already been developed at international level, but several gaps need to be addressed in order to have such core elements fully implemented in the EU (see Table below). Furthermore, in animal and environmental health, we are not aware of existing core elements at international level.

	Infection Prevention and Control (IPC)	Antimicrobial Stewardship (AMS)
	Human health	Human health
<b>Existing core elements at national and facility (hospital) level</b>	<ul style="list-style-type: none"> <li>The 2016 WHO guidelines<sup>10</sup></li> <li>The 2019 WHO Minimum Requirements<sup>11</sup></li> </ul>	<ul style="list-style-type: none"> <li>The 2019 WHO Antimicrobial stewardship toolkit<sup>12</sup></li> </ul>
<b>⇒ Gaps to address</b>	⇒ <i>Adapted to the EU?</i> ⇒ <i>Develop core competencies at national and facility level for animal health?</i>	
<b>Existing core elements at facility (hospital) level only</b>	<ul style="list-style-type: none"> <li>A 2015 literature review and expert consensus with a European perspective<sup>13</sup></li> </ul>	<ul style="list-style-type: none"> <li>The 2015 TATFAR common structure and process indicators<sup>14</sup></li> </ul>
<b>⇒ Gaps to address</b>	⇒ <i>Need to be updated?</i> ⇒ <i>Focus only on hospitals, need to be developed for nursing homes and primary care</i>	

The EU-JAMRAI therefore urges the European Commission, together with EU Member States but also key stakeholders such as professional organisations, to address these gaps. These core elements on AMS and IPC programmes, both at national and facility/setting level (e.g. hospital/nursing homes/primary care), for human and animal health, could be developed on the basis of the examples described above. A solid methodology is advisable, for example:

- Review of the existing published and grey literature and existing guidance / recommendations;
- Followed by a structured consensus procedure involving all EU Member States representatives.
- These core elements must be complemented by a standard structure/process/outcome evaluation framework, with relevant indicators, that could be used both at national and European level if accompanied with quantified achievable targets. This can follow the same process as the Transatlantic Taskforce on Antimicrobial Resistance (TATFAR) work<sup>15</sup>.

## References

- <sup>1</sup>European Commission (2017). European One Health Action Plan against antimicrobial resistance.
- <sup>2</sup>European Commission, (2017/C 212/01). EU Guidelines for the prudent use of antimicrobials in human health.
- <sup>3</sup>OECD (2018), *Stemming the Superbug Tide: Just A Few Dollars More*, OECD Publishing, Paris.
- <sup>4</sup>Cassini A. et al (2019). Attributable deaths and disability-adjusted life-years caused by infections with antibiotic-resistant bacteria in the EU and the European Economic Area in 2015: a population-level modelling analysis, *The Lancet*, 19:1.
- <sup>5</sup>European Court of auditors (2019). Addressing antimicrobial resistance: progress in the animal sector, but this health threat remains a challenge for the EU, Luxembourg: Publications Office of the European Union.
- <sup>6</sup>Van Boeckel, T. et al. (2015), "Global trends in antimicrobial use in food animals", *Proceedings of the National Academy of Sciences*, Vol. 112/18, pp. 5649-5654.
- <sup>7</sup>ECDC, OECD (2019), *AMR tackling the burden in the European Union*. Briefing note for EU/EEA countries. Paris.
- <sup>8</sup>Council of the European Union (2019). Conclusions on the next steps towards making the EU a best practice region in combatting antimicrobial resistance n°36,37.
- <sup>9</sup>EU-JAMRAI, WP4, (2020). MS4.1 "Survey of Member States (MS) and Stakeholders (SH) priorities"
- <sup>10</sup>WHO (2016). Guidelines on core components of infection prevention and control programmes at the national and acute health care facility level. Geneva: World Health Organization
- <sup>11</sup>WHO (2019). Minimum Requirements for infection prevention and control (IPC) programmes. Geneva: World Health Organization
- <sup>12</sup>WHO (2019). Antimicrobial stewardship programmes in health-care facilities in low- and middle-income countries toolkit. Geneva: World Health Organization
- <sup>13</sup>Zingg, W. and al. Hospital organisation, management, and structure for prevention of health-care-associated infection: a systematic review and expert consensus. *The Lancet. Infectious diseases*, 15(2), 212-224.
- <sup>14</sup>TAFTAR (2015). Summary the modified Delphi process for common structure and process indicators for hospital antimicrobial stewardship programs.
- <sup>15</sup>Pollack LA and al (2016). A Concise Set of Structure and Process Indicators to Assess and Compare Antimicrobial Stewardship Programs Among EU and US Hospitals: Results From a Multinational Expert Panel, *Infect Control Hosp Epidemiol*. 37(10):1201-11.