

# Value of Effective Antimicrobial Stewardship (AMS)

## What is AMS?

A multi-disciplinary approach designed to optimise the use of antimicrobials, improve patient outcomes, reduce the development of antimicrobial resistance (AMR) and hospital-acquired infections, and decrease healthcare costs<sup>1</sup>



## Why is AMS needed?

Annually, AMR is estimated to be contributing to:<sup>2,3</sup>

 **25,000**  
deaths in the EU

 **700,000**  
deaths globally

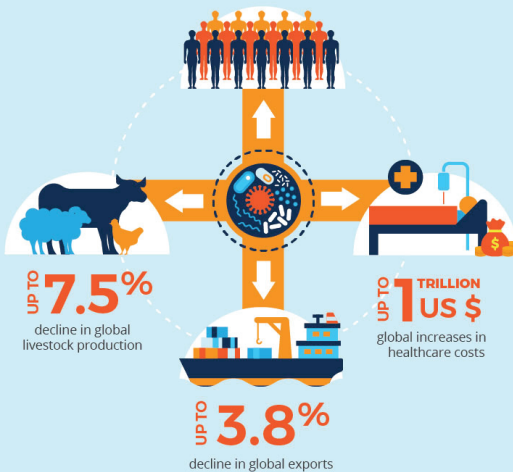
 **€1.5 billion**  
in extra costs in the EU alone

By 2050, a continued rise in AMR would lead to:<sup>3</sup>

**10 million**  
deaths every year

World Bank estimates\* on the impact of AMR by the year 2050<sup>4</sup>

**28 MILLION**  
PEOPLE  
projected to fall into poverty  
because of AMR



\*Values were estimated by the World Bank using economic simulation tools

### Key steps in implementing AMS<sup>5</sup>

Establish  
AMS teams

Develop  
processes

Monitoring of  
antimicrobial use

Medical education  
for patients and HCPs<sup>6</sup>


Communication  
of guidance on  
antimicrobial prescribing

### Goals of AMS<sup>1</sup>

 Improve patient  
outcomes

 Improve patient safety<sup>6</sup>

 Reduce AMR

 Reduce healthcare costs

### How is AMS economically evaluated?

Parameters used to evaluate AMS financially include:<sup>7</sup>

- Implementation costs
- Antimicrobial costs
- Hospital day costs/total hospital cost per admission
- Operational costs
- Morbidity and/or mortality costs
- Societal costs



### Current perspectives on the value of AMS

 **Societal perspective**

Beneficial for all if AMR rates are reduced<sup>7</sup>

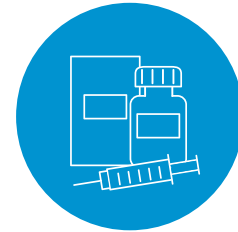
 **Patient perspective**

It is better to leave the hospital sooner<sup>7</sup>

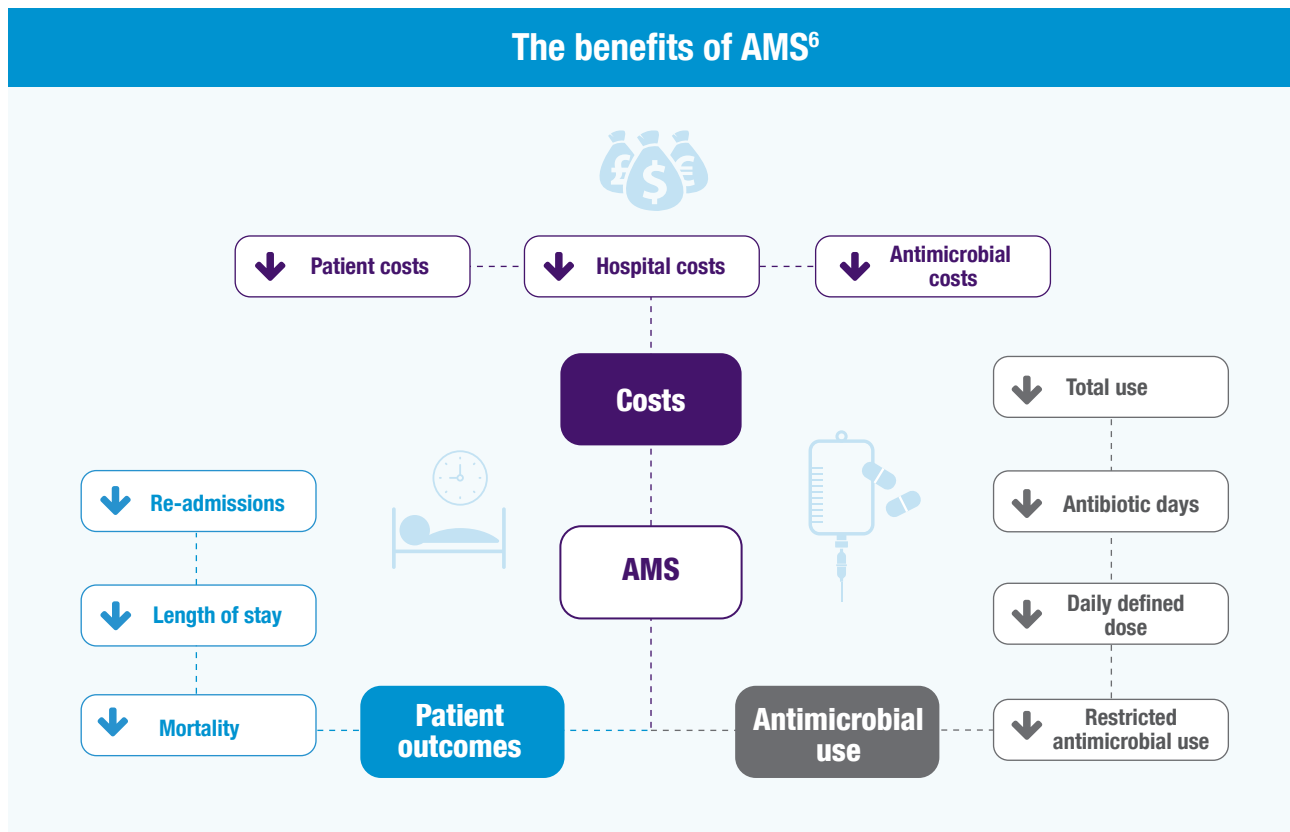
 **Decision-maker perspective**

A reduction in costs could help convince payors of the benefit of AMS<sup>6</sup>

# Measuring the clinical and economic benefits of AMS



Healthcare costs encompass clinical parameters, such as length of stay and mortality, as well as economic costs of antimicrobials.<sup>7</sup>



## Challenges to introducing AMS

- Initial cost/investment<sup>6</sup>
- Difficulties in quantifying/qualifying the effectiveness of AMS and its financial evaluation<sup>5,8</sup>
- Integration and acceptance by hospital personnel<sup>1</sup>
- Lack of recognition of the value of AMS<sup>1</sup>
- There has been a lack of support at policy level, however, the WHO National Action Plan process is working to ensure governments take action<sup>9,10</sup>

**References:** 1. Jeffs L, et al. *Can J Hosp Pharm.* 2015;68(5):395–400. 2. ECDC, European Centre for Disease Prevention and Control. The bacterial challenge time to react. Technical report. EMEA/576176/2009. 3. O'Neill, J. *The Review on Antimicrobial Resistance.* 2014. 4. The World Bank. Drug resistant infections: a threat to our economic future (infographic). 2016. 5. NICE guidelines. Antimicrobial Stewardship: systems and processes for effective antimicrobial medicine use. 18 August 2015. 6. Nathwani D, et al. *Antimicrobial Resistance and Infection Control.* 2019;8:35. 7. Dik JW, et al. *Front Microbiol.* 2015;6:317. 8. You J. *Expert Opin Pharmacother.* 2015;16(2):155–157. 9. Tiong JLL, et al. *Front Microbiol.* 2016;7:1860.ecollection2016. 10. WHO, World Health Organization. Global Framework for Development and Stewardship. WHO/EMP/IAU/2017.08.