

AMR: a major European and Global challenge

What is AMR?

Antimicrobial Resistance (AMR) is the ability of microorganisms to resist antimicrobial treatments, especially antibiotics.

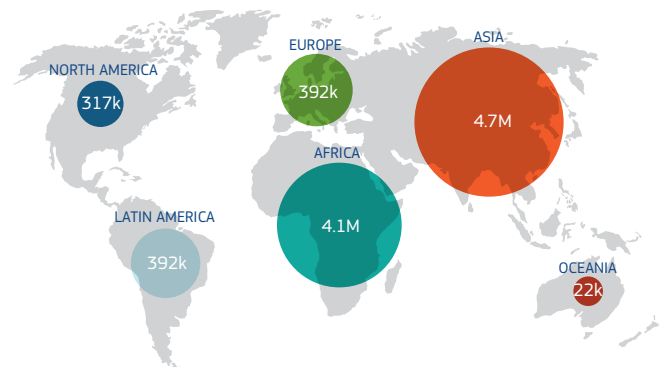
Excessive and inappropriate use of antimicrobial medicines and poor infection control practices have transformed AMR into a serious threat to public health worldwide.

Why is AMR a serious threat to public health?

- **25 000 patients die annually in the EU alone** as a result of infections caused by resistant bacteria.
- **Globally this number could be as high as 700 000.**
- **10 million deaths per year are projected between 2015 and 2050** if current rates of resistance increased by 40%. Only 0.7 million of these additional deaths would occur in North America or Europe, with the **largest numbers in Africa and Asia.**

What is the economic cost of AMR?

- **€1.5 billion each year** - Extra healthcare costs and productivity losses due to multidrug-resistant bacteria in the EU.
- **USD 2.9 trillion by 2050** - Expected cumulative losses in OECD countries due to AMR.
- **USD 10 000 to 40 000** - Additional hospital costs per patient in OECD countries. The associated impact of lost economic outputs due to increased mortality, prolonged sickness and reduced labour efficiency are **likely to double** this figure.
- **Losses to Trade and Agriculture** - For example, in 2015 chicken sales in Norway dropped by 20% (for some distributors) following the news that a resistant strain of Escherichia coli (E. coli) was found in chicken meat.



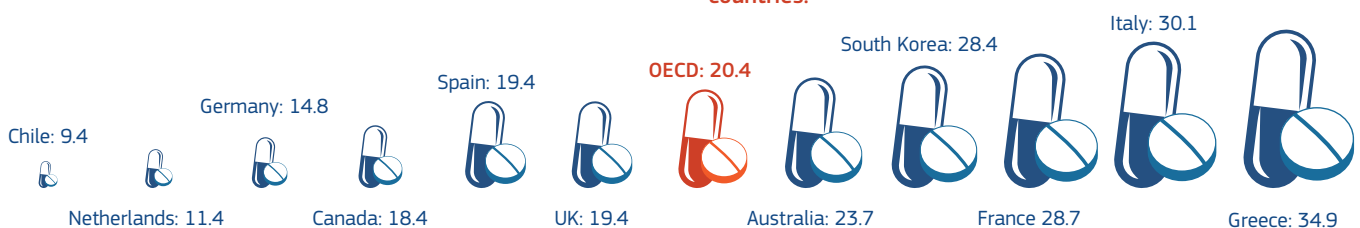
Number of deaths per year attributable to AMR by 2050 if current resistance rates increased by 40%

How much Antibiotics are we consuming?

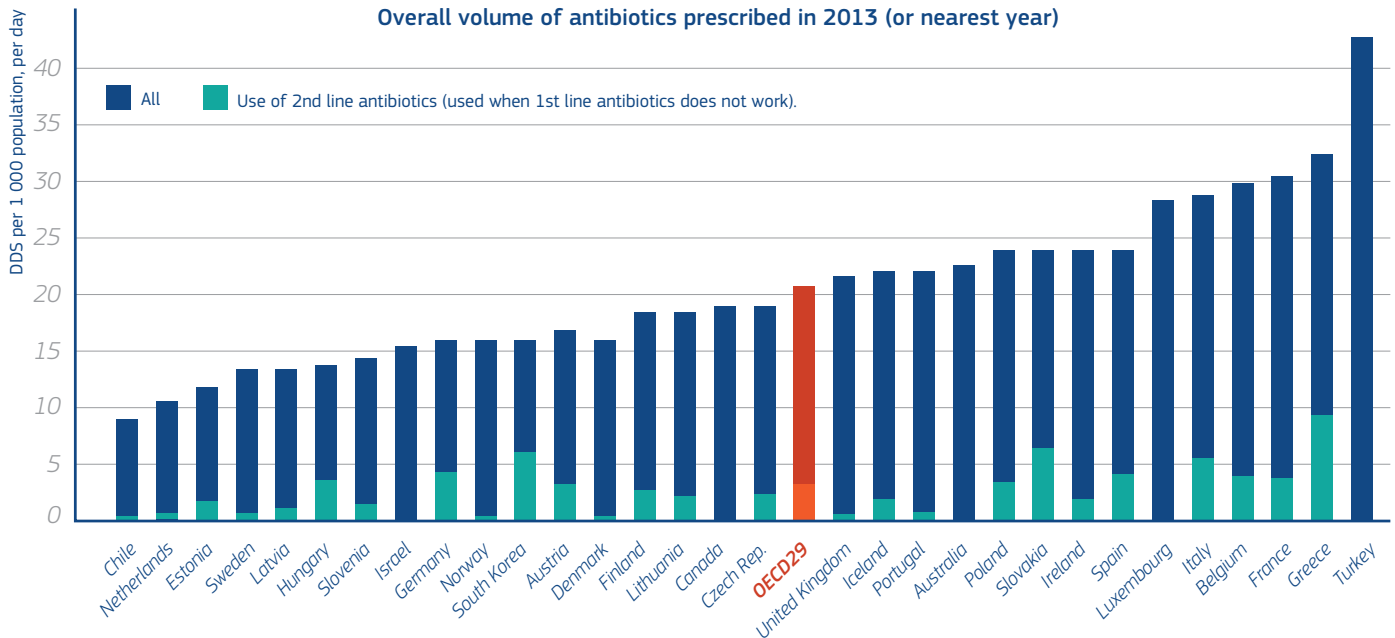
- **The consumption** of specific antibiotics used for treatment of multidrug-resistant bacterial infections has **increased significantly** between 2010-2014.
- Some good news - **There has been a significant decrease in antibiotic consumption in the community** (outside hospitals) in 5 countries (Denmark, Luxembourg, Slovenia, Spain and Sweden).
- Although **sales of antibiotics in animals** in Europe have **decreased** by approximately 8% between 2011 and 2013, **there are notable differences between countries** (decrease in 11 countries, increase in 6).

Worldwide

- **The bulk of antimicrobials are not consumed by humans, but by animals.** In the US the livestock sector accounts for about 80% of total annual consumption. **Between 2010 and 2030, global consumption of antimicrobials in the livestock sector is projected to increase by about 67%.**
- **Only 25% of countries have implemented a national policy to tackle AMR.**
- **Less than 40% of countries have put in place infection prevention and control programmes for AMR.**
- **Number of prescription varies more than four-fold across countries.**



There is a high variability of antibiotic consumption across OECD countries. Antibiotic consumption in 2013 (defined dose per 1000 inhabitants per day)



What is the EU doing?

The EU has been active in this field for more than 15 years. It strives to tackle this pressing issue with a **"One Health" approach**. The Commission's 2011 **Action Plan against the rising threats from AMR** contains 12 actions for implementation with EU Member States and identifies 7 areas where measures are most needed:

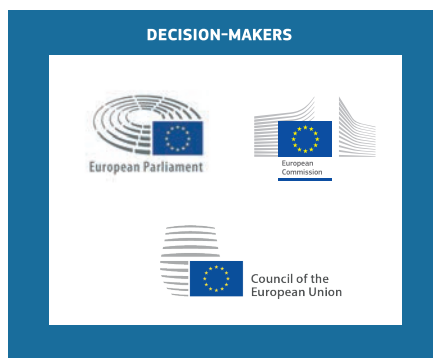
- 1- making sure antimicrobials are used appropriately in both humans and animals
- 2- **preventing** microbial infections and their spread
- 3- **developing new effective antimicrobials** or alternatives for treatment
- 4- **cooperating with international partners** to contain the risks of AMR
- 5- improving **monitoring and surveillance** in human and animal medicine
- 6- promoting **research and innovation**
- 7- improving **communication, education and training**

The 12 Actions



The global fight against AMR

The EU is not alone in recognising the threat of AMR and in addressing this issue at the highest political level. Many countries outside of the EU, as well as international organisations, are tackling this issue. International cooperation is a key element of the AMR action plan.



Sources:



- European Centre for Disease Prevention and Control: Summary of the 2014 data on antibiotic resistance in the European Union – EARS-Net surveillance data, 2015.
- European Centre for Disease Prevention and Control: Summary of the latest data on antibiotic consumption in the EU, November 2015
- European Centre for Disease Prevention and Control: Evidence brief: Update on the spread of carbapenemase-producing Enterobacteriaceae in Europe – Summary of the May 2015 expert assessment, 2015.
- EMA: Latest figures on sales of veterinary antibiotics, October 2015
- OECD: Antimicrobial Resistance in G7 Countries and Beyond, 2015
- OECD: Health at a Glance 2015: OECD Indicators, 2015