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. If trends continue we would revert to a world where simple infections are no longer treatable.

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 infection and resistance trends are not reversed. 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?
- EUR 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.

How much Antibiotics are we consuming?
- The consumption of specific antibiotics used for treatment of multidrug-resistant bacterial infections has almost doubled in Europe between 2010-2014.
- Some good news – There has been a significant decrease in antibiotic consumption in the community (outside hospitals) in 6 countries (Denmark, Estonia, Finland, Luxembourg, Spain, Sweden).
- Although consumption of antibiotics by animals has decreased by 12% in 24 EU countries between 2011 and 2014, there are notable differences between countries (decrease in 9 countries, increase in 5).

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.
- Globally it is estimated that only half of antibiotics are used correctly.

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

There is a high variability of antibiotic consumption across OECD countries. Antibiotic consumption in 2014 (defined dose per 1000 inhabitants per day)

<table>
<thead>
<tr>
<th>Country</th>
<th>Consumption Rate (defined dose per 1000 inhabitants per day)</th>
</tr>
</thead>
<tbody>
<tr>
<td>OECD: 20.5</td>
<td></td>
</tr>
<tr>
<td>Germany: 14.6</td>
<td></td>
</tr>
<tr>
<td>Chile: 9.4</td>
<td></td>
</tr>
<tr>
<td>Netherlands: 10.6</td>
<td></td>
</tr>
<tr>
<td>Canada: 17.3</td>
<td></td>
</tr>
<tr>
<td>UK: 20.8</td>
<td></td>
</tr>
<tr>
<td>Australia: 23.5</td>
<td></td>
</tr>
<tr>
<td>France: 29.0</td>
<td></td>
</tr>
<tr>
<td>Greece: 34.0</td>
<td></td>
</tr>
<tr>
<td>Italy: 27.8</td>
<td></td>
</tr>
<tr>
<td>Spain: 21.6</td>
<td></td>
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<tr>
<td>South Korea: 31.7</td>
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</tbody>
</table>
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.

What is the EU doing?

The EU has been active in this field for more than 15 years. The Commission Action Plan against the rising threats from AMR (2011-2016) tackled this pressing issue with a “One Health” approach, which recognises that human and animal health are interconnected. The Plan contained 12 actions for implementation with EU Member States and 7 areas where measures were most needed, including appropriate use of antimicrobials, infection prevention, development of new antimicrobials or alternatives, cooperation with international partners, monitoring and surveillance, research and innovation, communication, education and training.

The evaluation of this Action Plan showed that it had a clear added value acting as a symbol of political commitment, stimulating several actions within Member States, and reinforcing international cooperation.

Next steps

The Commission is strengthening its commitment against AMR with the launch in 2017 of a second Action Plan, with the aim to:

- support Member States, developing new actions and initiatives, focusing on key areas with the highest added value for Member States, particularly in establishing, implementing and monitoring their National Action Plans;
- bring together EU funds and instruments in order to promote innovation and research against AMR and
- strengthen its leading role in global fora and contribute to regional and global action on AMR with international organisations and major trade partners while emphasising the One-Health approach.

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Support Member State’s AMR efforts

Push for Research and Innovation

EU action at international level

EU decision-makers

Scientific advice

International organisations

Sources: