Embracing a One Health Framework to Fight Antimicrobial Resistance

Netherlands

Antimicrobial resistance (AMR) – the ability of microbes to resist antimicrobials - remains an alarming global health threat that jeopardises the effectiveness of many 20th century public health advances. The latest OECD analysis shows that across 34 OECD and EU/EEA countries, AMR is estimated to claim more than 79 thousand lives every year, with the annual costs to health systems nearing USD PPP 29 billion. Adopting a multisectoral approach called the One Health framework is vital to tackling the complex drivers of AMR across human health, animal health, agrifood systems and the environment.

In recent years, the Netherlands made important strides in tackling AMR. Yet, more progress is needed:

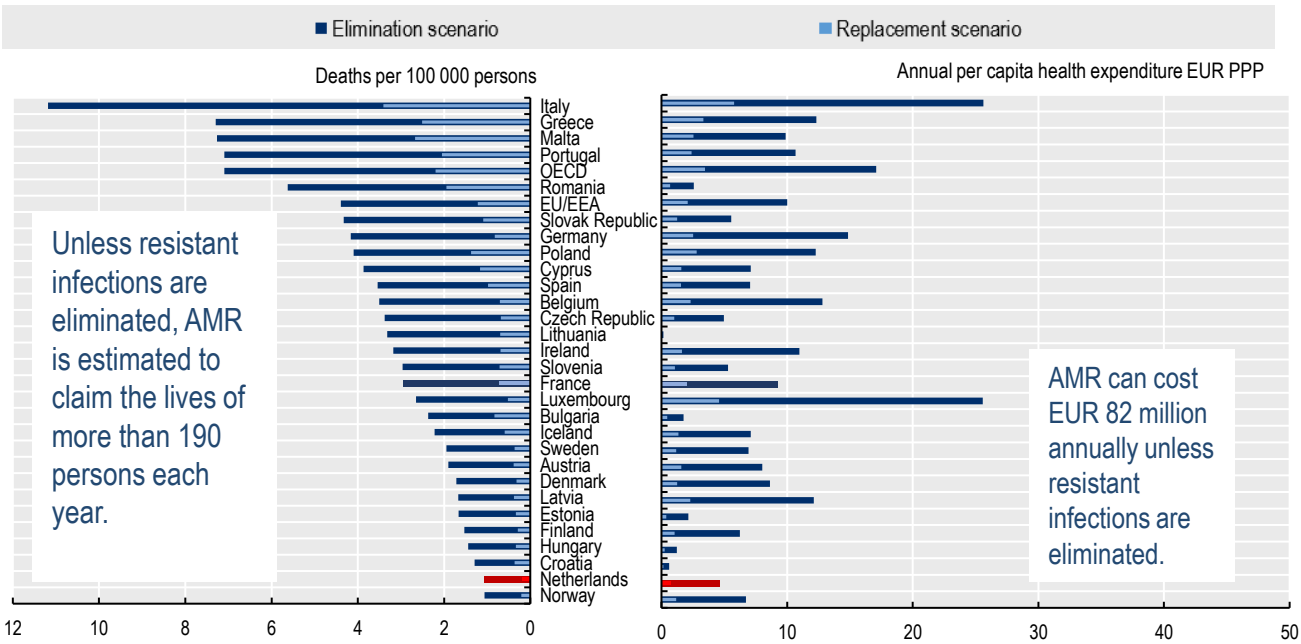
Resistance proportions for 12 antibiotic-bacterium pairs increased between 2005 and 2019 (4.4% vs 7.3%) but averaged below the EU/EEA average (21.3% in 2019). Resistance proportions are projected to decrease slightly to 6.1% by 2035, averaging below the expected EU/EEA average (20.3%).

Without further policy action, resistance proportions for third-generation cephalosporin-resistant *Escherichia coli* and carbapenem-resistant *Acinetobacter baumannii* are expected to grow at the fastest pace between 2019 and 2035 (1.6 and 1.6 percentage points respectively). Growing resistance in these antibiotic-bacterium pairs can undermine the treatment of illnesses such as diarrhea, pneumonia, bloodstream infections and urinary tract infections.

Total antibiotic consumption in human health averaged at 11.3 defined daily dose (DDD) per 1 000 persons per day in 2015, below the EU/EEA average (24.1). If trends persist, total antibiotic consumption is expected to increase to 14.3 DDD per 1 000 persons per day by 2030, remaining below the projected EU/EEA average (23.2).

Access antibiotics – first- and second-line therapies with lower resistance potential – made up nearly 69% of all antibiotics consumed in the Netherlands in 2015, exceeding the WHO target for Access antibiotics to make up at least 60% of national consumption.

AMR continues to pose a worrisome threat to population health and healthcare budget in the Netherlands:



Note: The impact of AMR on population health is modelled by the OECD using two scenarios: 1) Elimination Scenario and 2) Replacement Scenario. The Elimination Scenario assumes elimination of all the resistant infections whereas the Replacement Scenario considers a situation where all resistant infections are assumed to be completely replaced by susceptible infections. Both scenarios are seen as plausible due to the dearth of concluding evidence in the literature.

The Netherlands performs well in many policy areas but there is room for further policy action:

National AMR Action Plan

Optimising antimicrobial use in human health

Monitoring antimicrobial consumption in human health

Infection prevention and control (IPC) in human health

Training and education on AMR in human health

Biosecurity practices in terrestrial animal production

The following priorities for action are identified to align policies with the *Global Action Plan* to Tackle AMR:

- **Advancing in the AMR agenda** by incorporating the financial provisions for the implementation of the AMR action plan into the national action plans and budgets.
- **Enhancing training and education on AMR in human health** to ensure AMR is systematically and formally incorporated in pre-service and in-service training for all relevant human health professionals.
- **Improving biosecurity practices** by a) implementing a nationwide plan to ensure good animal husbandry and biosecurity best practices and b) implementation is regularly assessed.

Notes: 1- least developed; 5 – most developed; diamonds indicate mode for OECD and EU/EEA countries; country scores are denoted in light blue.
Source: 2021-22 Tripartite AMR Self-Assessment Survey

The One Health approach underscores the importance of pairing policies across sectors. The OECD examined the impact of different policies including a mixed policy package that would involve the scaling-up of 5 policy priorities across sectors.

Improve antibiotic stewardship

Improve hand hygiene practices in healthcare settings

Delayed antimicrobial prescription

Increase mass media campaigns

Enhance food safety

In the Netherlands, investing 3 EURs per person annually in a mixed policy package can yield important gains every year:

Infections prevented	Lives saved	Savings in healthcare costs (in million EURs)	Gains by increased workforce participation and productivity (in million EURs)	Return per EUR invested
10 911	142	50	51	1.92

Discover the OECD SPheP-AMR data explorer and the model's documentation at http://oecdpublichealthexplorer.org/amr-doc/. Find the full OECD report *Embracing a One Health Framework to Fight Antimicrobial Resistance* at https://oe.cd/amr-onehealth

OECD BETTER POLICIES FOR BETTER LIVES

Co-funded by the European Union