Health Care Without Harm

PRESS KIT ON ANTIMICROBIAL RESISTANCE

WHAT IS AMR?

ANTIMICROBIAL RESISTANCE (AMR) IS A GROWING HEALTH THREAT THAT REQUIRES URGENT ATTENTION. IN THIS DOCUMENT, WE PROVIDE AN INTRODUCTION TO AMR, INCLUDING HOW IT IS CAUSED AND SPREAD, ITS EFFECTS, AND WHAT CAN BE DONE ABOUT IT.

Antimicrobial resistance (AMR) is when a microbe becomes resistant to an antimicrobial treatment, e.g. medical drugs used to treat an infection. AMR reduces antimicrobials' efficacy and can render them ineffective. It is important to note that microbes become resistant - not animals or people.

Antimicrobials are used to treat microbial infections caused by bacteria, fungi, parasites, or viruses. For the treatment of infections caused by bacteria, specific antimicrobials called antibiotics are used. When bacteria become resistant to antibiotics, it is specifically described as antibiotic resistance.

HOW DOES AMR DEVELOP?

AMR is actually a natural phenomenon in which microbes evolve to combat antimicrobial compounds in their environment. However, this process is dangerously accelerating, partially due to the misuse and overuse of antimicrobials.

There are three ways antimicrobial resistance can occur: naturally, by genetic mutation, or by acquiring resistance from another microbe. Resistant microbes can spread amongst humans, animals, and the environment.

WHAT ROLE DOES THE ENVIRONMENT PLAY IN AMR?

Previously, the development of AMR in the environment has been overlooked, however, it is now widely recognised that the environment is a reservoir for AMR. The drivers of AMR in the environment are antimicrobials, biocides, and heavy metals. Pharmaceuticals such as antimicrobials can enter the environment at all stages of their life cycle: wastewater discharges in manufacturing production, human and animal excretion, and improper disposal.

WHAT IS THE CONNECTION BETWEEN FOOD PRODUCTION AND AMR?

Animals, as humans, need to be treated with antibiotics when they have developed an infection. However, veterinary treatments are given often to the flocks and herds en masse as a preventative measure depending of the risk of the spread of the infection. Furthermore, poor farming practices, such as early weaning, tail docking, as well as poor hygienic conditions can increase the need for antibiotics in farmed animals.

The overuse and misuse of antibiotics in farming is associated with a growing number of resistant bacteria that can spread to humans through direct contact with animals on farms, through the processing, transport, or handling of food animals and food, and through the environment.

This situation is all the more worrying when we consider that the development pipeline of new antibiotics is running dry - almost all new antibiotics brought to market in recent decades are variations of antibiotic classes discovered in the 1980s.

HOW IS AMR BEING TACKLED?

GLOBAL LEVEL

THE WHO GLOBAL ACTION PLAN ON AMR

At the 68th World Health Assembly in May 2015, the World Health Organization (WHO) adopted a Global Action Plan on AMR with five key objectives:

- Improving awareness and understanding of AMR
- Strengthening knowledge through surveillance and research
- Reducing the incidence of infection
- Optimising the use of antimicrobial agents
- Increasing investment in new diagnostic tools, medicines, and vaccines

Read more: World Health Organization (2015) Global action plan on antimicrobial resistance

THE INTERAGENCY COORDINATION GROUP (IACG) ON ANTIMICROBIAL RESISTANCE

Further to the 2016 UN High-Level Meeting on AMR, the UN Secretary General convened an Interagency Coordination Group on Antimicrobial Resistance (IACG). In their final 2019 report, the IACG made five recommendations to the UN Secretary General:

- Accelerate progress in countries
- Innovate to secure the future
- Collaborate for more effective action
- Invest for a sustainable response
- Strengthen accountability and global governance

Based on the IACG recommendations, a new governance structure is being developed based on three bodies:

- A One Health Global Leaders Group on AMR to advocate and advise to ensure that action is taken to address the challenges of AMR (established in November 2020)
- An Independent Panel on Evidence for Action against AMR to assess the science relating to AMR and provide options for interventions (in progress)
- A Multi-Stakeholder Partnership Platform to develop and implement a shared global vision, narrative and targeting on AMR

Read more:

- One Health Global Leaders Group on AMR
- ACG (2019) No time to wait: Securing the future from drug-resistant infections

THE QUADRIPARTITE'S STRATEGIC FRAMEWORK FOR COLLABORATION ON AMR

In May 2018, the World Health Organization (WHO), the Food and Agriculture Organization (FAO), and the World Organisation for Animal Health (WOAH, formerly known as OIE), [WC] agreed a Tripartite Collaboration on AMR in the framework of a 'One Health' approach.

In March 2022, the UN Environment Programme (UNEP) formally joined the coalition, which became a Quadripartite, to accelerate coordinated strategy on human, animal, and ecosystem health.

In April 2022, the Quadripartite adopted a joint Strategic framework for collaboration on AMR to preserve antimicrobial efficacy and ensure sustainable and equitable access to antimicrobials for responsible and prudent use in human, animal, and plant health, contributing to achieving the Sustainable Development Goals (SDGs).

The Strategic framework follows two objectives:

- Optimise the production and use of antimicrobials along the whole life cycle from research and development to disposal
- Decrease the incidence of infection in humans, animals, and plants to reduce the development and spread of AMR

Read more:

- FAO, UNEP, WHO & WOAH (2022) Strategic framework for collaboration on AMR
- FAO (2021) Action plan on antimicrobial resistance
- UNEP (2022) Environmental dimensions of antimicrobial resistance: Summary for policymakers
- WOAH (2022) Strategy on antimicrobial resistance and the prudent use of antimicrobials

EU LEVEL

THE EU ONE HEALTH ACTION PLAN AGAINST AMR

The European Commission adopted a One Health Action Plan against AMR in June 2017. The plan aims to preserve the possibility of effective treatment of infections in animals and humans with three key objectives:

- Making the EU a best practice region
- Boosting research, development and innovation
- Shaping the global agenda

Read more: European Commission (2017) A European one health action plan against AMR

KEY FIGURES ON AMR

- AMR causes more deaths per year worldwide then influenza, HIV/AIDS, and tuberculosis combined:
  - Worldwide: **1.27 million deaths** per year[1]
  - EU/EEA: **35,000 deaths** per year[2]
- By 2050 AMR could cause **10 million deaths per year globally** and **390,000 deaths per year in Europe**[3]
- The two **most impacted regions** are:
  - **Africa:** 4.1 million deaths per year
  - **Asia:** 4.7 million deaths per year[3]

GLOBAL USE OF ANTIMICROBIALS IN FOOD PRODUCTION

- **70% of all antibiotics** consumed globally are **consumed by animals**[4]
- **Antimicrobial use** for livestock will **increase by 67%** between 2017 and 2030[5]
- **Reducing antibiotic** use in farm animals **decreases the prevalence of antibiotic-resistant bacteria** in animals by 15%, and **multidrug-resistant bacteria** in animals by 24-32%[6]

USE OF ANTIMICROBIALS IN FOOD PRODUCTION IN EUROPE

- Active antimicrobial substances sold in 2018 in EU/EEA
  - **Human consumption 4,263 tonnes**
  - **Animal consumption 6,358 tonnes**[7]
- Highest **consumption of antimicrobials in food production** in the EU/EEA: **Cyprus, Italy, Spain, Portugal, and Hungary**[7]
- **14% of antimicrobial sales for animals** in 2018 in Europe were antimicrobials identified as **'critically important' for human medicine** by the WHO[8]
- Simple resistance or multi-resistance to various antibiotics was found in **more than half of chicken meat samples** from three leading EU poultry companies[9]

KEY RESOURCES ON AMR

- Access to Medicine Foundation (2021) Antimicrobial resistance benchmark 2021
- AMR Review (2016) Tackling drug-resistant infections globally
- Chatham House (2019) Review of progress on antimicrobial resistance
- ECDC (2022) Antimicrobial resistance surveillance in Europe 2022
- ECDC & OECD (2019) Antimicrobial resistance: Tackling the burden in the E
- European Observatory on Health Systems and Policies (2019) Averting the AMR crisis: What are the avenues for policy action for countries in Europe?
- HCWH Europe (2019) Tackling AMR in Europe's healthcare facilities
- OECD (2016) Antimicrobial resistance: Policy insights
- OECD (2018) Stemming the superbug tide: Just a few dollars more
- The Lancet (2022) Global burden of bacterial antimicrobial resistance in 2019
- Wellcome Trust (2019) Reframing resistance: How to communicate about antimicrobial resistance effectively
- World Bank (2017) Drug-resistant infections: A threat to our economic future

AMR IN THE ENVIRONMENT

- Changing Markets (2015) Bad medicine: How the pharmaceutical industry is contributing to the global rise of antibiotic-resistant superbugs
- Global Leaders Group on Antimicrobial Resistance (2022) Reducing antimicrobial discharges from food systems, manufacturing facilities and human health systems into the environment
- OECD (2019) Pharmaceutical residues in freshwater: Hazards and policy responses
- Swedwatch (2020) The health paradox
- Toxics Link (2022) Antibiotic pollution in rivers
- UBA (2018) Antibiotics and antibiotic resistances in the environment: Background, challenges and options for action
- WEF (2021) AMR and water: The risks and costs for economies and societies
- Wellcome Trust (2018) Initiatives for addressing antimicrobial resistance in the environment: Current situation and challenges

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2 ECDC. (2022) Assessing the health burden of infections with antibiotic-resistant bacteria in the EU/EEA, 2016-2020. www.ecdc.europa.eu/en/publications-data/health-burden-infections-antibiotic-resistant-bacteria-2016-2020

3 AMR Review. (2014) Antimicrobial resistance: Tackling a crisis for the health and wealth of nations. amr-review.org/

4 Tiseo et al. (2020) Global Trends in Antimicrobial Use in Food Animals from 2017 to 2030. pubmed.ncbi.nlm.nih.gov/33348801/

5 Van Boeckel et al. (2015) Global trends in antimicrobial use in food animals. www.researchgate.net/publication/274248344_Global_trends_in_antimicrobial_use_in_food_animals

6 Tang et al. (2017) Restricting the use of antibiotics in food-producing animals and its associations with antibiotic resistance in food-producing animals and human beings. pubmed.ncbi.nlm.nih.gov/29387833/

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8 EMA. (2020) Sales of veterinary antimicrobial agents in 31 European countries in 2018. www.ema.europa.eu/en/documents/report/sales-veterinary-antimicrobial-agents-31-european-countries-2019-2020-trends-2010-2020-eleventh_en.pdf

9 Germanwatch. (2020) Chicken meat tested for resistance to Critically Important Antimicrobials for Human Medicine. www.germanwatch.org/sites/default/files/2020%20Study%20%27Chicken%20meat%20tested%20for%20resistance%20to%20Critically%20Important%20Antimicrobials%20for%20Human%20Medicine%27.pdf

ABOUT HEALTH CARE WITHOUT HARM (HCWH) EUROPE

We are Health Care Without Harm Europe. We exist to create a sustainable healthcare sector. One that does no harm to patients or our planet. One that acts as a catalyst, inspiring action right across society to protect human health and the environment. One that drives change in communities, so people can live more healthily on a healthier planet.

The potential for transformation is huge. In Europe alone, the healthcare sector employs more than 21 million people and accounts for around 10% of GDP. But right now our health systems are under increasing strain, as populations age and the impacts of climate change and pressures such as the coronavirus pandemic grow. In this context, we prove that it's possible to deliver the highest quality of care in a way that's sustainable environmentally and financially. We show how we can transform healthcare and protect people and our planet. Everyone connected to the health care sector has a vital role to play.

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