Introduction

Antimicrobial resistance (AMR) is the ability of a microorganism (like bacteria, viruses, and some parasites) to stop an antimicrobial (such as antibiotics, antivirals and antimalarials) from working against it. As a result, standard treatments become ineffective, infections persist and may spread to others. AMR is a growing global public health problem that threatens the effective treatment of a number of life-threating infections caused by bacteria, parasites, viruses and fungi that makes treatment of patients difficult, costly and even impossible.

AMR results in prolonged illness and increased mortality. The scope of the problem in the Region is not yet well known nor is the impact of AMR on human health, costs for the health care sector or the wider societal impact.

AMR occurs naturally over time, usually through genetic changes but resistance has been accelerated by the overuse and misuse of antibiotics in humans and animals.

Without effective antimicrobials for prevention and treatment of infections, medical procedures such as organ transplantation, cancer chemotherapy, diabetes management and major surgery (for example, caesarean sections or hip replacements) become very high risk.

Misuse of antimicrobial medicines

The misuse and overuse of antimicrobial medicines is fueling resistance worldwide and the Eastern Mediterranean Region is no exception. A number of factors are contributing to this, including:

- poor prescribing practices
- incorrect choice of medicine
- incorrect dosage
- self-medication practices.

Misuse is also linked to failure to complete the dosage or taking an antibiotic for longer than has been prescribed.

Worldwide country situation analysis: response to antimicrobial resistance (2015)

Misuse and overuse of antimicrobial medicines in animal husbandry and agriculture

Antimicrobial misuse and overuse in animal production for non-therapeutic purposes, such as for prophylaxis, and as growth promoters, reduces the effectiveness of antimicrobial therapies, and excessive use or misuse are recognized as major drivers of AMR.

More data are needed on antibiotic consumption in food-producing animals worldwide, and on the occurrence of antimicrobial resistance in different countries and various production systems to develop strategies to avoid inappropriate use, and to reduce antibiotic usage in animal husbandry and aquaculture, as well as in humans.

WHO, the Food and Agriculture Organization of the United Nations (FAO) and the Organisation for Animal Health (OIE) have established a formal tripartite alliance to enhance global coordination and promote intersectoral collaboration between the public health and animal health sectors, as well as in food safety. The FAO/OIE/WHO Tripartite has identified AMR as one of the 3 priority topics for joint action.

No countries in the Region have ongoing surveillance of antimicrobial resistance in food-producing animals and food or integrated surveillance of antimicrobial resistance in foodborne bacteria. There is a need to build capacities and to encourage countries in the Region to initiate surveillance programmes to gain a better understanding of AMR transmission mechanisms through food chains to humans and its impact on human populations.

Food and Agriculture Organization of the United Nations

Organisation for Animal Health

Surveillance

Surveillance plays a key role in the development and implementation of strategies and interventions to limit the emergence and spread of AMR. Accurate and representative information about the extent and impact of the problem is crucial.

The collection of information on resistance from diseases such as TB, HIV and malaria is relatively advanced in the Region but reliable data on the magnitude of the problem or associated health and socioeconomic impacts is limited. In 2013, WHO initiated the collection of information on national AMR surveillance for 7 common bacterial pathogens, including the health and economic impacts. The review collected data on 7 resistant common bacteria:

- *Esherichia coli*
- *Klebsiella pneumniae*
- *Staphylococcus aureus*
- *Streptococcus pneumoniae*
- *Nontyphoidal salmonella*
- *Sigella species*
- *Neisseria gonorrhoeae.*

Antimicrobial resistance. A global report on surveillance 2014

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