Why pay attention to antimicrobial resistance (AMR)?

Antimicrobial Resistance (AMR) threatens historic achievements in modern medicine and public health as well as broader development. Antimicrobial agents like antibiotics are essential to treat some human and animal diseases. Microbes can develop resistance to antimicrobials, meaning that a drug such as an antibiotic is no longer effective in treating the infection. Overuse and misuse of antimicrobials in food-producing animals has contributed to an increasing challenge of antimicrobial-resistant pathogens being passed on to people through the food chain and the environment. Vulnerable populations suffer the most. Residues of antimicrobial agents in food of animal origin are another health concern as they can cause allergies, alterations in the intestinal flora and bacterial resistance.

The European Strategic Action Plan on Antibiotic Resistance for the period 2011–2020 has contributed to significant progress in tackling AMR in the WHO European Region in recent years. However, much remains to be done to safeguard the prevention and treatment of human and animal diseases in the future.

Why pay attention to Food Safety?

Food safety is fundamental to good health and essential for sustainable development. Foodborne diseases are a significant public health concern in the WHO European Region. In 2010, an estimated 23 million people fell ill and approximately 4700 people died from consuming contaminated food. A significant proportion of the deaths and illnesses were caused by bacteria which are showing increasing levels of resistance to commonly used antimicrobials. Unsafe food is not only a threat to human health, but also plays a fundamental role in the socio-economic development of countries.

For many years, food- and waterborne diarrhoeal diseases have been leading causes of illness and death in the Region, particularly in the less developed countries. Increasing levels of antimicrobial resistance in common foodborne pathogens have highlighted the need for action to improve food safety and coordination of action for the animal, human and environment interface.

How can both issues benefit from each other?

Food safety authorities play a key role in strengthening the legal framework for antimicrobial residues and microbial contaminant limits in food. They are also responsible for monitoring antimicrobial residues in food and AMR in priority foodborne pathogens. In addition, the food safety authorities play an important supportive role in advocating for high-level political attention to AMR, strengthening One Health governance structures and coordinating action across sectors. This includes risk communication, the education of consumers, and promotion of the prudent use of antimicrobials.

What are WHO/Europe's priorities regarding AMR and Food Safety?

**Strengthen surveillance of AMR in the food chain**
Information on the level of antimicrobial resistance in common foodborne pathogens and levels of antimicrobial residues in food of animal origin is extremely important for guiding risk management and policy action. It is a key priority for the Region to establish/strengthen systems for surveillance of antimicrobial resistance and antimicrobial residues in the food supply, as well as to integrate antimicrobial resistance testing in existing systems for foodborne disease surveillance and response.

**Support Codex Alimentarius' work on AMR**
Codex Alimentarius develops food codes of practices with the aim to ensure fair trade in food. This includes science-based guidance on how to assess and manage the risks to human health associated with antimicrobial resistant microorganisms in food and feed, as well as guidance to enable coherent management of antimicrobial resistance along the food chain. Codex also develops texts on veterinary drugs and their residues. WHO/Europe supports Member States in actively participating in Codex work and in adopting Codex texts into national legislation, policies and guidelines.

**Antibiotic stewardship for prudent use of antimicrobials in human and animal health and agriculture**
Prudent use of antimicrobials in agriculture, livestock and aquaculture production is critical for reducing the risk of AMR in common foodborne pathogens. WHO supports food safety authorities in strengthening the legal framework for antimicrobial residues and microbial contaminant limits in food, as well as for the use of antimicrobials in food-producing animals. This is done in line with the WHO list of critically important antimicrobials for human medicine and the WHO Guidelines on the use of medically important antimicrobials in food-producing animals.

**Promoting good food hygiene practices**
Keeping to basic good food hygiene practices is an effective way to prevent common foodborne illnesses, including those caused by resistant bacteria. The WHO Five Keys to Safer Food explains the basic principles that everyone should know to prevent foodborne diseases, which are: 1) keep clean; 2) separate raw and cooked food; 3) cook thoroughly; 4) keep food at safe temperatures; and 5) use safe water and raw material.

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Dr Gulnora Abdukhalilova is a scientist working to reduce AMR and uphold food safety standards in Uzbekistan. In 2016, she conducted a research project looking at AMR strains of salmonella and campylobacter in broiler chicken (chickens bred specifically for food). Both these bacteria can cause diarrhea, fever and stomach cramps. The research showed that most of the salmonella strains found in the broiler chickens were multi-drug resistant, meaning that the infections they cause can be hard to treat. The overuse and misuse of antimicrobials in poultry production is one of the drivers of this resistance.

“It is important to reduce the use of antimicrobials in livestock production and coordinate and exchange information between different sectors, such as poultry production and health care,” explained Dr Abdukhalilova. “Monitoring of resistance to antimicrobial drugs in common foodborne pathogens simply has to be done. Despite a small sample for this project, we got interesting results, but they were also concerning. Ideally, monitoring resistance should be routine in the health and agricultural sectors. As a result of our research, resistance monitoring has been included in our “National program to combat microorganism resistance to antimicrobial drugs for 2020–2024”.

The fight against AMR requires everyone’s commitment. Support us by giving this important issue the high priority it deserves, by taking the appropriate decisions and implementing effective food safety measures!