World Health Organization

Control antibiotic misuse or the drugs won’t work, warn WHO experts

New data reveal a third of the population in 14 countries of the WHO European Region consumes antibiotics without a medical prescription

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WHO recognizes antimicrobial resistance (AMR) as 1 of the 10 major global public health threats, with an estimated 5 million deaths annually associated with bacterial AMR worldwide. More than half a million of these deaths occur in the WHO European Region, which comprises 53 Member States in Europe and central Asia.

AMR occurs when microorganisms develop the ability to resist the antimicrobial drugs that are typically used to kill them and treat infections. Different types of antimicrobials – such as antibiotics for bacteria, antivirals for viruses and antifungals for fungi – target specific types of microorganisms. While AMR is a natural phenomenon, the development and spread of superbugs are being accelerated by the misuse of antimicrobials, rendering infections more challenging to treat effectively.

The alarming reality is that, without immediate intervention, AMR could result in up to 10 million deaths a year by 2050. Moreover, this burden falls disproportionately on low- and middle-income countries, exacerbating global health inequalities.

New data

WHO/Europe has conducted a standardized survey across more than a dozen countries of the WHO European Region, namely in the Western Balkans, the Caucasus and central Asia (including Türkiye), shedding light on the knowledge, attitudes and behaviours surrounding antibiotic use and AMR. The survey is the first of its kind to be conducted in these countries, all of which gave the research their full support.

The results have been published in the journal Frontiers. The survey used the same methodology and questions as an established survey that is periodically carried out in the European Union (EU). Conducting surveys in this way, in close collaboration with the European Commission, enables WHO to achieve its goal of having a pan-European overview. This clear picture of the current situation makes it possible to monitor progress and evaluate interventions in the future.

The survey involved 8221 participants from 14 countries, half of whom reported taking oral antibiotics in the past 12 months. Medical practitioners prescribed or directly administered the majority (67%) of the antibiotics. The reasons cited for taking the antibiotics included colds (24%), flu-like symptoms (16%), sore throat (21%) and cough (18%). This gives cause for concern because these symptoms are often caused by viruses against which antibiotics are not effective. Medical expertise is essential to make a correct diagnosis and determine whether antibiotics are the right course of treatment.

The survey further highlighted a lack of enforcement around the use of a medical prescription for every course of antibiotics. Across the 14 countries, a third (33%) of respondents consumed antibiotics without a medical prescription. In some countries, more than 40% of the antibiotics were obtained without medical advice. In contrast, the equivalent survey conducted across the EU in 2022 revealed that only 8% of respondents consumed antibiotics without a prescription.

WHO/Europe's survey also highlights gaps in people's knowledge; just 16% of respondents responded correctly to all 4 of the awareness-related questions. This could indicate that people are taking antibiotics for the wrong reasons without realizing it. A majority of

respondents (67%) were aware that unnecessary use of antibiotics can make them less effective; however, nearly half (43%) incorrectly said antibiotics are effective against viruses (they are not).

Equally worrisome is the fact that only 37% (and just 23% in the EU research) reported receiving any information about the importance of avoiding unnecessary antibiotic use in the past year. This highlights the urgent need for clearer and more targeted public health communication.

"This research clearly shows the need for education and awareness raising," said Mr Robb Butler, Director of WHO/Europe's Division of Communicable Diseases, Environment and Health. "All countries in our Region have regulations in place to protect precious antibiotics from misuse, for example, preventing over-the-counter sales without a prescription. Enforcing these regulations would solve most antibiotic misuse among humans."

Mr Butler continued, "Other drivers of AMR have their roots in the social and cultural norms learned in communities, for example, not completing a course of antibiotics in order to save some for the next time you fall ill, or sharing with a sick relative or neighbour. This learned behaviour can take time to change, and it's imperative that behavioural and cultural insights are used to the full when planning interventions."

Behavioural and cultural insights

As global efforts to control AMR intensify, social and behavioural sciences are emerging as crucial yet underutilized areas of knowledge and expertise that can guide interventions in AMR control, radically increasing impact.

"The use of antimicrobial medicines is intrinsically tied to human behaviour and deeply entrenched in social and cultural contexts, shaped by our attitudes, policies and available choices," commented Dr Danilo Lo Fo Wong, Regional Adviser for the Control of Antimicrobial Resistance.

"Conserving the effectiveness of antimicrobial medicines requires interventions at many levels, such as timely vaccination, improved hygiene and reduction of inappropriate prescribing. Behavioural science and cultural context analyses have a pivotal role to play in understanding and addressing all these behaviours. They can provide critical insights into the barriers and drivers of behaviour, aiding in the development of effective interventions" Dr Lo Fo Wong added.

“We encourage and support countries to design and conduct targeted behavioural interventions, using the guidance provided in our Tailoring Antimicrobial Resistance Programmes (TAP) toolbox.”