



Stop AMR Global Media Monitor

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Global increases in antibiotic consumption: a concerning trend for the WHO targets which further stresses the challenges of antimicrobial stewardship

According to a new analysis in *The Lancet Infectious Diseases*, global consumption (data from 76 countries) of antibiotics that have a greater potential for driving antibiotic resistance nearly doubled from 2000 to 2015.

The researchers found that the consumption of 'Watch antibiotics'— which are broader spectrum drugs, and not recommended for routine use because of their higher potential for resistance— increased by 90.9%. Furthermore, 'Access antibiotics', which are narrow-spectrum, first- and second-line drugs that the WHO believes should be used for most common infections and be widely available increased by 26.2% in the fifteen years from 2000 to 2015.

The substantial increase in the proportion of Watch antibiotic consumption was driven primarily by low- and middle-income countries (LMICs), which saw a rise of 165% (2.0 to 5.3 defined daily doses per 1,000 inhabitants per day (DIDs)), compared to just 27.9% in high-income countries (HICs) (6.1 to 7.8 DIDs). The ratio of Access to Watch antibiotics varied considerably across countries, decreasing by 46.7% in LMICs (from 3.0 to 1.6) and 16.7% in HICs (from 1.8 to 1.5) over the study period.

"The rapid increase in the use of Watch antibiotics, particularly in LMICs, poses a significant challenge for global health. While greater understanding of the reasons for this rise is needed at the country level, taken as a whole, they paint a bleak future for antibiotic effectiveness," said co-author and CDDEP Director, Ramanan Laxminarayan.

Of concern, the proportion of countries that met the WHO national-level target of at least 60% of a country's total antibiotic consumption comprising Access antibiotics,

decreased from 76% of countries (50 of 66) in 2000 to 55% of countries (42 of 76) in 2015.

Source: [CIDRAP](#), 28 July 2020. From: [The Lancet](#)

India and UK join forces to fund £8 million research on antimicrobial manufacturing waste

India and the United Kingdom will co-fund five new research projects that aim to tackle the growing antimicrobial resistance threat, with each country contributing £4 million. The projects, which will start in September, will be collaborations between British and Indian universities and will focus on how waste from antimicrobial manufacturing can fuel AMR. In particular, they will investigate the effects of such waste on microbial ecosystems, set evidence-based environmental standards, and work with experts in sensor technologies and industrial regulatory processes.

The UK already stands as India's second biggest research partner (the first being the US), so this development will only deepen the already tight scientific collaboration between the two countries, where joint projects are forecasted to total £400 million by 2021. British High Commissioner to India Philip Barton stated, *"Today's announcement is another demonstration of our excellent research relationship and will strengthen the important fight against antimicrobial resistance."*

Source: [UKGOV](#), 28 July 2020

Australia's CSIRO leads fight on Fiji's superbugs

In other international AMR research news, Australia's Commonwealth Scientific and Industrial Research Organization (CSIRO) announced the launch of a 3-year research project with the government of Fiji to monitor



antibiotic use and AMR in humans, animals, and the environment.

Researchers from the two countries will collect data from hospitals, farms, and the environment in Fiji to identify AMR trends and hot spots. The project also aims to build local laboratories and research capabilities in Fiji.

"This research has the potential to be leveraged across the Pacific region, including Australia," CSIRO biosecurity research director Paul De Barro, PhD, said in a press release. *"The opportunity for Australia being part of this collaborative project means we can take a proactive and coordinated approach to tackling antimicrobial resistance."*

Source: [CIDRAP](#), 28 July 2020. From: [CSIRO](#)

New cell profiling technology could speed up tuberculosis antibiotic discovery

Researchers at Tufts University have developed a new technique that allows them to identify the mode of action of any drug on *Mycobacterium tuberculosis*, the pathogen responsible for TB and the leading cause of death from a single infectious agent. MorphEUS (Morphological Evaluation and Understanding of drug Stress), as the method has been termed, does so through high throughput imaging and machine learning; it analyzes images of the bacteria under treatment, compares them to a database of pre-existing mode of action profiles, and determines the closest match.

Out of 37 drugs tested, the technology had a success rate of 94% in identifying the correct mechanism of action. For the remaining 6%, it actually identified previously unknown target pathways.

MorphEUS is therefore a rapid, cost-effective technique which can also boast of vast potential. As senior author Bree Aldridge said, *"we expect that the success of MorphEUS in profiling drug action in an organism like M. tb [...] will make it useful in other pathogens and cell types"*. By facilitating the screening of new drugs, researchers can more easily identify the most effective and novel drug candidates.

Source: [ScienceDaily](#), 23 July 2020

U.S. Is Not Prepared to Combat 'Existential Threat' of Antibiotic-Resistant Superbugs, says Pew Trust

In June, The Pew Charitable Trusts sent a letter to the leaders of the Senate Committee on Health, Education, Labor, and Pensions, providing recommendations for how the U.S. can better prepare for future pandemics. The letter highlighted the urgent need for government incentives to help fix the broken antibiotic market.

"There is widespread and longstanding consensus that such incentives are needed to revitalize and sustain the woefully inadequate antibiotic pipeline. Without them, antibiotic developers will continue to go bankrupt, and innovation will continue to stagnate. Now is the time for action. Policymakers must ensure that the U.S. is not caught flat-footed when the inevitable superbug outbreak hits. Some threats we cannot begin to anticipate, but when it comes to antibiotic-resistant bacteria, there is no excuse for being unprepared", said Kathy Talkington, Director of Health Programs Pew Trust.

Source: [The Pew Charitable Trusts](#), 27 July 2020

Medieval remedies could provide novel antibiotics

It is no news that the antibiotic pipeline is dried up. To solve this, scientists from the University of Warwick have taken a different, unusual approach: researching natural old-fashioned antimicrobials, which they say could provide candidates to fill the antibiotic discovery gap.

The "Ancientbiotics" team reconstructed a 1,000-year-old medieval remedy known as 'Bald's eyesalve' containing onion, garlic, wine, and bile salts. The concoction was shown to have promising antibacterial activity, especially against biofilms which are notoriously difficult to treat, and with low toxicity to human cells.

What's most interesting about this discovery is that the anti-biofilm activity of Bald's eyesalve cannot be attributed to a single ingredient and instead requires the combination of all ingredients to achieve full activity. In researcher Dr Freya Harrison's words, *"We think that future discovery of antibiotics from natural products could be enhanced by studying combinations of ingredients, rather than single plants or compounds."*

Source: [Warwick News](#), 28 July 2020. From: [Nature](#).