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UCT researchers part of new global research consortium to optimise antimicrobial use in humans

Researchers from the University of Cape Town (UCT) are part of a research consortium made up of teams from institutions in Africa, Asia, Europe and South America that are coming together to form the Centres for Antimicrobial Optimisation Network (CAMO-Net).

As part of this ground-breaking consortium, UCT will receive funding from Wellcome, which will support translational research to address a major driver of antimicrobial resistance (AMR), using a bespoke funding model to help enhance global health research equity.

CAMO-Net's aim is to address the global impact of antimicrobial resistance on human health. This will be achieved through optimising antimicrobial use through a sustainable global research ecosystem, developed across low, middle, and high resource settings, and across urban and rural environments.

The consortium brings together research teams from UCT, the University of Liverpool and Imperial College London in the UK, the Infectious Diseases Institute in Uganda, and the Faculty of Medicine at the University of São Paulo in Brazil.

Professor Marc Mendelson, head of the Division of Infectious Diseases & HIV Medicine at UCT and Groote Schuur Hospital, said: "We are delighted to partner with our international colleagues across the globe to form the Centre for AntiMicrobial Optimisation-Network. Ensuring optimal antimicrobial use requires an understanding of context-specificity, however, for far too long our understanding and actions have been informed mainly from high-resource settings in the global north.

"CAMO-Net provides the opportunity to understand the social contexts, central to enabling antimicrobial optimisation in low- and middle-income countries. We are looking forward to combining our knowledge and expertise with that of our distinguished partners, towards effectively optimising the use of this threatened resource."

Researchers will seek to build knowledge relating to the optimised use of antibiotics, improved access to effective treatment and better prevention and treatment of bacterial infections, all of which will minimise AMR. This will take into account specific epidemiological, cultural, structural, and economic factors.

Timothy Jinks, head of Infectious Disease Interventions at Wellcome, said: "Antibiotics have been saving millions of lives for decades, but their effectiveness is under increasing pressure. Our funding for CAMO-Net will support research that generates new knowledge about how best to preserve and sustain their efficacy, drawing on local contexts where the burden of drug-resistant infections is highest. This will help guide more effective and tailored interventions from policymakers and prescribers, ensuring patients can continue to benefit from these lifesaving medicines into the future."

This initiative will help to improve clinical decision-making regarding antimicrobial use and also inform practices and guidelines for prescribers, users and policymakers. Importantly, the consortium's key operations will be in regions with extremely high burden of drug-resistant infections, serving some of the communities most affected by escalating infectious disease, while taking a unique, multi-sectoral, systems-based approach to improving the use of antimicrobials.

The four sites form 'national hubs' responsible for driving the research and leading the global network. Each hub has specific and complementary multidisciplinary research expertise, necessary to help address the inappropriate use of antimicrobials – a complex, dynamic and multifactorial issue.

CAMO-Net also includes three 'shadow national sites' which will participate in network activities and develop a pilot project as part of the larger CAMO-Net programme. The Shadow National Sites include [Dow University of Health Sciences](#) in Pakistan, [Child Health Research Foundation](#) in Bangladesh and [Universidade da Paz](#) in Timor Leste, supported by [Menzies School of Health Research](#).

Each of the national hubs will receive its own individual funding, with awards linking directly to those of the other three countries. This approach will aim to improve research equity by ensuring local leadership and facilitating joint ownership of the programme across partners. These elements form the consortium's core values alongside knowledge mobilisation, output sharing and mutual cross-regional learning.

CAMO-Net will use its extensive network of interdisciplinary experts, partners at the forefront of relevant technological innovation and links with policymakers to conduct research to actionably improve antimicrobial use in humans through three interlinked themes identified through a [Wellcome-commissioned roadmap](#).

The network will seek to build a comprehensive contextual understanding of situational data in each national hub to identify opportunities to address existing gaps and challenges. It will harness the power of data through strategic and targeted studies to generate new knowledge, implement co-produced, contextually fit, and sustainable solutions to optimise antimicrobial use, and evaluate these interventions and strategies using an intersectional approach.

Dr Andrew Kambugu, executive director of the Infectious Diseases Institute in Uganda, said: "Our engagement in the CAMO-Net grant is a landmark opportunity to generate new knowledge (research) and mitigate the looming threat of antimicrobial resistance in the region. We are keen to leverage our 20-year experience in combatting and studying infectious diseases in Africa to influence leadership and empower the rising generation of scientists in the Global South."

Professor Anna Levin of the Faculty of Medicine at the University of São Paulo noted that the connection between the use of antibiotics and bacterial resistance has been extensively studied. "Over time, as antibiotics are used, resistance appears and leads to their obsolescence. It is imperative that we improve the use of these drugs if we want to extend the useful life of antibiotics. However, how to do this is a huge practical challenge.

"In Brazil, the CAMO-Net study will focus on strategies to improve the use of antibiotics in the community, and the impact that this may have on antimicrobial resistance, including patients, health workers, and the environment (wastewater and drinking water). We established a partnership with a city of 162000 inhabitants in the state of São Paulo, São Caetano do Sul and its local university, and will work with the entire municipality. This is the sort of challenge made possible by our international partnership CAMO-Net."

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