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UCT's H3D Centre and LifeArc collaborate to combat potential 39 million deaths due to silent AMR pandemic

H3D and LifeArc team. Photo: Angela Rogan Fienberg

In a powerful testament to its commitment to global health innovation, the University of Cape Town (UCT), through its renowned Holistic Drug Discovery and Development (H3D) Centre, has joined forces with LifeArc, a leading medical research charity, to launch the Centre for Translational AMR Research (CTAR) Programme. This landmark collaboration, backed by a substantial GBP 5 million investment from LifeArc, aims to address the escalating threat of antimicrobial resistance (AMR), which disproportionately impacts low- and middle-income countries (LMICs), including many across Africa.

The CTAR Programme is aimed at identifying and developing first-in-class therapeutics for infections caused by multidrug-resistant (MDR) Gram-negative bacteria, including *Acinetobacter baumannii*. This partnership not only targets the development of new antibiotics but also focuses on strengthening local research capacity in Africa. The collaboration will enhance H3D's research capabilities to facilitate efficient AMR drug discovery, which will be

achieved through secondments of experienced scientists from LifeArc to UCT, and scientific research visits of H3D scientists to LifeArc to gain exposure to new technologies and techniques available through LifeArc.

H3D director Kelly Chibale said: "We are thrilled to partner with LifeArc in this crucial endeavour. This partnership with LifeArc underscores the importance of international collaborations in tackling pressing global health issues such as AMR, and this investment will significantly boost our efforts to develop new treatments for drug-resistant infections. Together, we are poised to make a meaningful impact on global health."

Recent studies show that 1.91 million people are currently dying as a direct result of AMR, and failure to address the problem could result in 39 million deaths between 2025 and 2050 – equivalent to three people every minute. It is also estimated that AMR will reduce gross domestic product (GDP) by $1-3.4 trillion USD annually by 2030. The burden of AMR is highest in low- and middle-income countries (LMICs), and strategic actions, including better surveillance and stewardship, are required to address the problem. The discovery of new antibiotics that can overcome clinical drug resistance is a critical component of the strategy to tackle this "silent pandemic." This is of extraordinary importance for the African continent, as the incidence and prevalence of resistance are widespread.

One of the greatest concerns for AMR includes carbapenem (an antibiotic used to treat severe multi-drug-resistant bacterial infections) and colistin-resistant gram-negative organisms (bacteria that are resistant to the antibiotic colistin). This poses a significant clinical challenge, especially in the context of hospital-acquired infections. In this regard, *Acinetobacter baumannii* is among the pathogens of concern. This pathogen is responsible for a number of severe infections in people with weakened immune systems. In many LMICs, 80–90% of these bacteria are resistant to common treatments. It has, therefore, been listed by both the Centres for Disease Control (CDC) and the World Health Organisation (WHO) as a "critical priority pathogen."

"Antimicrobial resistance is a growing global crisis that requires innovative solutions and a global approach. Our collaboration with H3D at the University of Cape Town aligns with LifeArc's mission to advance early-stage research into life-changing medical treatments. We are proud to work with H3D in their pioneering work to address this critical health threat and to support capacity growth in Africa," said LifeArc Interim Head of Global Health Julie Brady.

LifeArc and H3D are both dedicated to discovering new treatments to combat the AMR pandemic, benefiting both African and global populations. The CTAR Programme will leverage the unique capabilities and respective strengths of both organisations; paving the way for groundbreaking advancements in the fight against drug-resistant bacteria and fostering a healthier future for African and global populations.

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