

PRESS RELEASE

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Shorter, Smarter, Safer: Short-course antibiotics can revolutionise healthcare

Singapore, 21 January 2025 – Antibiotic overuse is a key driver in the rise of antimicrobial resistance (AMR), a major global health crisis. Researchers from the Yong Loo Lin School of Medicine, National University of Singapore (NUS Medicine) and Duke-NUS Medical School have provided compelling evidence that short-course antibiotic treatments can be a game-changer in tackling ventilator-associated pneumonia (VAP), a serious infection common in critically ill patients.

The findings from the landmark REGARD-VAP trial, published in *Lancet Respiratory Medicine*, and the accompanying economic analyses published in *Lancet Global Health*, highlight how prudent antibiotic use can curb resistance, effectively safeguarding patients as well as combatting the global threat of antimicrobial resistance while reducing healthcare costs.

Led by the NUS Medicine research team, the clinical trial examined over 450 patients across intensive care units (ICUs) in Singapore, Thailand, and Nepal. Results revealed that short-course antibiotics—carefully tailored to individual patients' recovery—are just as effective as traditional longer treatments in preventing death and recurrence of pneumonia. "By shortening the duration of antibiotics, we can reduce the risks of side effects and resistance without compromising patient outcomes," added Dr Mo Yin, Junior Academic Fellow at the Department of Medicine, NUS Medicine, and principal investigator of the clinical trial, and co-author of the economic analysis.

The [economic analyses](#), led by the Duke-NUS research team, accompanying the trial were just published in the prestigious journal *Lancet Global Health*. They demonstrated that adopting short-course antibiotics offers significant value for healthcare systems. In Singapore, the strategy is cost-saving, reducing hospital expenditure while maintaining excellent outcomes for patients. In Thailand and Nepal, short-course antibiotics were highly cost-effective, with health gains outweighing the modest additional costs incurred. "Short-course antibiotics are a pragmatic solution that benefits patients and healthcare systems alike, particularly in resource-limited settings," said Assistant Professor Yiyang Cai, lead researcher from the Health Services and Systems Research Programme at Duke-NUS.

The REGARD-VAP study's findings have practical implications for hospitals worldwide. Short-course antibiotics can streamline treatment in ICUs, where managing infections efficiently is vital. The approach is effective across high-income (Singapore), middle-income (Thailand), and low-income (Nepal) settings, making it a scalable solution for diverse healthcare systems. These results provide robust evidence including cost-effectiveness data for policymakers to adopt short-course antibiotics into national and institutional guidelines.

The team hopes to disseminate their findings globally to encourage the adoption of short-course antibiotics, particularly in regions with limited resources. They also advocate for integrating cost-effectiveness studies into future clinical trials to strengthen both clinical and economic decision-making processes. By reducing unnecessary antibiotic exposure, short-course treatments help preserve the effectiveness of existing drugs for future generations. Every additional day of antibiotic use increases the risk of drug resistance by 7%. Reducing treatment duration is a critical step in combating this silent epidemic. "Prudent antibiotic use is essential to combat antimicrobial resistance and optimise healthcare outcomes. Our findings¹ make a strong case for adopting short-course antibiotics as the new standard of care," concluded Dr Mo Yin.

The REGARD-VAP trial was supported by the UK Medical Research Council, the Wellcome Trust and National Research Foundation, Singapore, under its Central Gap Fund (Award ID: CTGIIT18may0005). The trial, which combines clinical and economic data, sets a new benchmark for trials that evaluate healthcare interventions.

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¹ Any opinions, findings and conclusions or recommendations expressed in this material are those of the author(s) and do not reflect the views of National Research Foundation, Singapore.

About National University of Singapore (NUS)

The National University of Singapore (NUS) is Singapore's flagship university, which offers a global approach to education, research, and entrepreneurship, with a focus on Asian perspectives and expertise. We have 16 colleges, faculties, and schools across three campuses in Singapore, with more than 40,000 students from 100 countries enriching our vibrant and diverse campus community. We have also established more than 20 NUS Overseas Colleges entrepreneurial hubs around the world.

Our multidisciplinary and real-world approach to education, research and entrepreneurship enables us to work closely with industry, governments, and academia to address crucial and complex issues relevant to Asia and the world. Researchers in our faculties, research centres of excellence, corporate labs and more than 30 university-level research institutes focus on themes that include energy; environmental and urban sustainability; treatment and prevention of diseases; active ageing; advanced materials; risk management and resilience of financial systems; Asian studies; and Smart Nation capabilities such as artificial intelligence, data science, operations research, and cybersecurity.

For more information on NUS, please visit <http://www.nus.edu.sg/>

About the NUS Yong Loo Lin School of Medicine (NUS Medicine)

The NUS Yong Loo Lin School of Medicine is Singapore's first and largest medical school. Our enduring mission centres on nurturing highly competent, values-driven, and inspired healthcare professionals to transform the practice of medicine and improve health around the world.

Through a dynamic and future-oriented five-year curriculum that is inter-disciplinary and inter-professional in nature, our students undergo a holistic learning experience that exposes them to multiple facets of healthcare and prepares them to become visionary leaders and compassionate doctors and nurses of tomorrow. Since the School's founding in 1905, more than 12,000 graduates have passed through our doors.

In our pursuit of health for all, our strategic research programmes focus on innovative, cutting-edge biomedical research with collaborators around the world to deliver high impact solutions to benefit human lives.

The School is the oldest institution of higher learning in the National University of Singapore and a founding institutional member of the National University Health System. It is one of the leading medical schools in Asia and ranks among the best in the world (Times Higher Education World University Rankings 2024 by subject and the Quacquarelli Symonds (QS) World University Rankings by subject 2023).

For more information about NUS Medicine, please visit <https://medicine.nus.edu.sg/>

About Duke-NUS Medical School

Duke-NUS is Singapore's flagship graduate-entry medical school, established in 2005 with a strategic, government-led partnership between two world-class institutions: Duke University School of Medicine and the National University of Singapore (NUS). Through an innovative curriculum, students at Duke-NUS are nurtured to become multi-faceted 'Clinicians Plus' poised to steer the healthcare and biomedical ecosystem in Singapore and beyond. A leader in ground-breaking research and translational innovation, Duke-NUS has gained international

renown through its five Signature Research Programmes and ten Centres. The enduring impact of its discoveries is amplified by its successful Academic Medicine partnership with Singapore Health Services (SingHealth), Singapore's largest healthcare group. This strategic alliance has led to the creation of 15 Academic Clinical Programmes, which harness multidisciplinary research and education to transform medicine and improve lives.

For more information, please visit www.duke-nus.edu.sg

About the National Medical Research Council (NMRC)

The NMRC was established in 1994 to oversee research funding from the Ministry of Health and support the development and advancement of biomedical research in Singapore, particularly in the public healthcare clusters and medical schools. NMRC engages in research strategy and planning, provides funding to support competitive research grants and core research enablers, and is responsible for the development of clinician scientists through awards and fellowships. The council's work is supported by the NMRC Office which is part of MOH Holdings Pte Ltd. Through its management of the various funding initiatives, NMRC promotes healthcare research in Singapore, for better health and economic outcomes.