THE UNITED REPUBLIC OF TANZANIA

MINISTRY OF HEALTH

NATIONAL INSTITUTE FOR MEDICAL RESEARCH

PRESS RELEASE

NIMR STUDY SOUNDS ALARM ON "SUPERBUG" URINARY TRACT INFECTIONS, IDENTIFIES KEY DRIVERS AND PROPOSES INTERVENTIONS

Dar es Salaam, 05th December 2025 – Antimicrobial resistance (AMR) surveillance results from the National Institute for Medical Research (NIMR), released during the 7th Africa Continental World AMR Awareness Week (WAAW) in Dar es Salaam, reveals a serious challenge in overdiagnosis and management of the Urinary Tract Infections (UTIs), and rampant antimicrobial resistance.

The EXPAND-AMR study (PI, Professor John Lusingu, NIMR Tanga Centre), conducted at hospitals in Tanga and Korogwe, analyzed over 2000 urine samples, revealed concerning levels of AMR among the common uropathogens in the studied region. The main causative pathogen detected included *Escherichia coli*, the primary culprit, which showed 77% of AMR to ciprofloxacin and 100% resistance to ampicillin, the two antibiotics are commonly prescribed for UTIs in Tanzania, as presented by Mr. Edward Msoma (Laboratory technologist, NIMR Tanga Centre).

"This isn't just about 'superbugs', it's about a major challenge in our diagnostic approaches to UTIs", explained Mr. Athanas Mhina, Co-investigator in the study based at NIMR. "Our data suggests a cycle of overdiagnosis, patients with non-specific symptoms are given a dipstick test, which is often misinterpreted as a definitive UTI. The issue led to antibiotic prescriptions for infections that may not be the case. Each unnecessary antibiotic prescription increases drug selection pressure and leads to bacteria surviving, making simple UTIs untreatable with common antibiotics.

The overdiagnosis of UTIs is a silent problem fueling the challenge. The study highlights a critical gap between clinical practice and accurate diagnosis that may be the case in many facilities across the country. A positive dipstick test may indicate other issues, such as inflammation and not necessarily a confirmed bacterial infection. Other conditions, such as vaginal infections or non-bacterial inflammation, can trigger a false positive. Treatment of these patients with antibiotics is ineffective and risks the selection of antibiotic-resistant strains.

"The 18.6% bacterial culture positivity rate in our study implies that the majority of suspected UTI cases sent to the lab did not grow significant bacteria," noted Mr Athanas Mhina. "This is strong evidence that we are treating far too many people who don't have bacterial UTIs and subsequently fuelling AMR. It also underscores a critical need to assess our diagnostic capacity at our facilities, specifically based on culture-based and sensitivity testing, to be strengthened to meet patient clinical needs.

Amidst these alarming study findings, however, the study identifies a silver lining through a clear and actionable path forward and hope in the management of UTIs. The sensitivity testing revealed a highly effective first-line antibiotic drug, nitrofurantoin. The study demonstrated that this oral antibiotic retains a high (94.3%) susceptibility rate, making it a potent, affordable, and accessible antibiotic agent. The researchers suggest that the drug should be prioritized and protected as the first-choice treatment for laboratory-confirmed, uncomplicated UTIs to safeguard its long-term efficacy and use.

Commenting on the study results, the NIMR Director General, Professor Said Aboud, underscored the link between accurate laboratory diagnosis and effective treatment. “Our approach must evolve from presumptive to confirmed laboratory diagnosis. ‘Test before you prescribe’ is not just a slogan; it is a critical clinical practice to reduce unnecessary antibiotic pressure and combat the AMR problem. This issue, however, requires intentional and sustained investment in diagnostic laboratory capacity nationwide,” he stated.

Urgent Call to Action: Professor Aboud also further emphasized that the fight against AMR will be realized by the strength and investment of the laboratory system to ensure accessibility, affordability of quality diagnostics and prescription practices. “This fight is won or lost at the laboratory bench. We require investment first, in laboratory infrastructure and in the competence of our laboratory personnel to perform culture and drug susceptibility testing. Second, we need to continue scaling up coordinated AMR surveillance networks across the country to timely guide practices and policies. Our approach is to use data for action, the most powerful weapon. Strengthening diagnostic laboratory capacity will require that facilities and hospitals have a microbiology capacity for culture and drug susceptibility testing. This requires consistent investment, a strengthened supply of reagents and supplies, and regular training and re-training of laboratory technicians.

Scientists attending the WAAW event emphasise real-time mapping of resistance as an essential updating of treatment guidelines and detecting emerging "superbug" outbreaks before they spread. This work, supported by the Global Health Protection Programme (GHPP) under the Bernhard Nocht Institute for Tropical Medicine (BNITM) Germany supporting evidence to directly inform Tanzania's National Action Plan on Antimicrobial Resistance (NAP-AMR).

NIMR research scientists actively participated in the WAAW event. The institute showcased its leadership in AMR research by presenting a total of ten scientific abstracts on AMR. The 7th Africa Continental WAAW, inaugurated by the Vice President of Tanzania, Ambassador Dr. Emmanuel John Nchimbi on behalf of H.E. President Samia Suluhu Hassan, served as an international platform for advocating for a pathway from data to action, timely sharing of scientific findings supports an effective national AMR response.
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About NIMR: The National Institute for Medical Research is the leading public health research institution in Tanzania. NIMR is mandated to oversee, promote, and conduct scientific research. Its mission is to generate and translate evidence into knowledge that directly contributes to improved health and national development.

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