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“Absence of a widespread infectious disease emergency in 2025 has hindered progress in combating AMR”

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After decades of incremental antibiotic innovation, antimicrobial resistance (AMR) is outpacing our ability to respond, and 2026 may mark a breaking point. While US government prioritisation of AMR will likely remain low in 2026, the EU and Australia are ramping up incentives and R&D funding. Amidst these developments, the US Food and Drug Administration (FDA) is focused on facilitating new antimicrobial, diagnostic, and vaccine development, promoting responsible use of antibiotics, improving the surveillance of resistance trends and advancing regulatory science to accelerate safe, effective innovation. As a result, a key player in the US market, TAXIS Pharmaceuticals is dedicating itself solely to combating AMR, by leveraging contemporary medicinal chemistry, molecular biology, and translational science to revitalise antibacterial pipelines. To find out more about the company’s plans in the AMR space, BioSpectrum Asia spoke to Dr Ajit Parhi, Chief Scientific Officer, TAXIS Pharmaceuticals.

Why does TAXIS choose to focus on antimicrobial resistance? What are the key developments taking place at TAXIS to combat this threat?

TAXIS Pharmaceuticals focuses on developing treatments to combat antibiotic resistance. Our pipeline includes TXA709, a novel investigational therapy targeting FtsZ that aims to treat Methicillin-resistant *Staphylococcus aureus* (MRSA) infections. Additionally, we are developing efflux-pump inhibitors designed to enhance the effectiveness of standard antibiotics against Gram-negative pathogens, particularly for hospital-acquired pneumonia (HAP) and ventilator-associated pneumonia (VAP). We are also developing investigational dihydrofolate reductase inhibitors aimed at drug-resistant *Neisseria gonorrhoeae* and chlamydia, which currently lack effective antibiotics.

In 2025, TAXIS Pharmaceuticals received a $2.9 million grant, to be awarded over three years, from the National Institute of Allergy and Infectious Disease (NIAID), one of the institutes of the National Institutes of Health (NIH). The grant will allow TAXIS to further advance R&D efforts for its dihydrofolate reductase inhibitors (DHFRIs) as a novel approach to combat multi-drug resistant gonorrhea (MDRSG, commonly referred to as Super Gonorrhea), a rapidly spreading deadly and highly resistant strain of *Neisseria gonorrhoeae*.

This marks the second multi-year, multi-million dollar NIH grant awarded to TAXIS Pharmaceuticals within a 12-month period, following a $2.67 million NIH grant in May 2024 to further R&D of its investigational efflux pump inhibitor (EPI) candidate, a combination therapy intended to combat antibiotic-resistant pneumonia.

What was the single most surprising or most underestimated development in the broader AMR landscape that emerged in 2025, and what lesson does it hold for the industry moving forward?

The most surprising thing about AMR in 2025, which I think has been taken for granted, is the lack of a major infectious disease crisis within the United States. Throughout that year, several bacterial outbreaks revealed significant vulnerabilities in our ability to effectively manage infectious diseases. Notable incidents included cases of multidrug-resistant *Salmonella* and *E. coli,* as well as localised surges of hospital-acquired infections caused by *carbapenem*-resistant *Klebsiella pneumoniae* and MRSA. Furthermore, drug-resistant strains of *Neisseria gonorrhoeae* and *Clostridioides difficile* were increasingly reported, particularly in long-term care settings.

We're extremely fortunate that none of these instances escalated into a full-blown national or global crisis, but the continued headlines about antibiotic resistant infections being on the rise underscores the persistent danger posed by AMR and the urgent need for a solution.

Ironically, the absence of a widespread infectious disease emergency in 2025 has hindered progress in combating AMR. Without the impetus of public alarm or political urgency, AMR risks being overlooked, leading to stagnant funding, reduced policy attention, and insufficient economic motivation for the development of new antibiotics. The continued apathy we saw around AMR in 2025 should serve as a clear warning to the industry: addressing this issue demands more than mere evidence; it requires a concerted effort from all stakeholders, involving aligned incentives, accountability, and increased awareness.

We saw an alarming rise in antibiotic resistant bacteria and related infections throughout 2025. Why are the approaches many pharma and biotech companies are taking no longer enough?

As we begin 2026, it has become clear that relying on small-scale innovations and 'me-too' antibiotics is no longer sufficient. The mechanisms of resistance, the rapid evolution of bacteria, and the economic landscape of antibiotic utilisation have far outstripped this approach.

Each new iteration of an established drug class exerts selective pressure, pushing the resistance in consistent directions and encouraging cross-resistance within and across various drug classes. Consequently, we are witnessing the emergence of resistance not only to single drugs, but to whole classes of antibiotics.

This shift has led to a growing prevalence of multi-drug resistant (MDR) and extensively drug-resistant (XDR) infections, often driven by pathogens that evade all first line and many last-line treatment strategies. Additionally, the minor improvements being made fail to effectively tackle the genuine resistance challenges encountered in critical care environments, including intensive care units, transplant units, and cancer treatment centres.

Beyond purely scientific advancements, what strategic shifts or new industry alliances are most critical to accelerate our collective response to AMR in 2026?

In 2026 and beyond, addressing AMR requires a transition from isolated initiatives to unified, system-wide strategies that go beyond mere scientific innovation. Governments and funding organisations need to make investments in AMR more appealing by substituting short-term grants with binding financial incentives—such as subscription models, advance purchase agreements, and guaranteed income streams—that can attract long-term private capital. The pharmaceutical industry should shift its focus from developing individual antibiotics to creating comprehensive platforms that connect therapeutics with rapid diagnostics, immediate monitoring, and responsible usage practices, ensuring that new treatments are utilised effectively and

maintained over the long term.

How can the life sciences community, particularly pharma and biotech leadership, more effectively communicate the urgency and complexity of AMR to a wider audience, including the general public and non-specialist policymakers?

The life sciences industry must redefine AMR as not only a technical health issue but also as a pressing societal and economic concern that resonates beyond specialised circles.

Pharmaceutical and biotech leaders should communicate clearly, highlighting the tangible consequences of AMR, such as delayed surgeries, jeopardised cancer treatments, and lengthened hospital stays, rather than focusing solely on abstract resistance data. By linking AMR to critical topics like national security, healthcare costs, and everyday medical practices, policymakers who may lack expertise can grasp its significance.

It is crucial to ensure that messaging is unified and consistent across various stakeholders, including those in the industry, healthcare, and public health spheres. This approach should include a sense of urgency paired with practical solutions, highlighting the fact that inaction is a deliberate choice and that strategic investments and policy reforms can prevent the slow deterioration of modern healthcare.

What long-term opportunity do you see for the industry to not just combat AMR, but to fundamentally reshape how we think about infectious disease management in the next 3-5 years?

The true potential for progress lies in reshaping how we manage infectious diseases, moving away from a reactive approach and towards a proactive, integrated, and precision-focused model of care. By harnessing real-time data monitoring, quick diagnostic capabilities, AI-driven risk assessment, and specific therapeutic strategies, the health sector can predict and prevent outbreaks, customise responses, and ensure the continued effectiveness of antibiotics.

Over the next three to five years, the pharmaceutical and biotech industries can champion a movement toward collaborative, data-centric strategies that connect human, animal, and environmental health. This initiative can transform the approach to AMR from viewing it as an imminent threat to establishing a proactive and sustainable framework for infectious disease management.

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