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2025 Trends Buoying Boom Phase in APAC

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Like many industries, life sciences, too, faced numerous challenges in 2024, such as a slowing economy, and geopolitical conflicts. Despite these headwinds, the sector has shown remarkable resilience, with strong prospects for recovery and growth. Significant investments are being directed toward research and development in key areas such as Antibody Drug Conjugates (ADCs), Cell and Gene Therapies, Artificial Intelligence (AI) and Contract Development and Manufacturing Organisations (CDMOs) and many more. These fields have been major drivers of growth this year and offer promising opportunities. It's that time of year again when we interact with leaders from major market segments of the industry. These leaders provide their insights into what the coming year is likely to hold for their respective fields. Let's look into a few trends from life sciences that are expected to make a significant splash in 2025.

Antibody Drug Conjugates (ADCs) in Stoplight

ADCs, touted as ‘magic bullets’ for targeted cancer therapies, are having a moment. All the major biopharma firms have announced acquisitions, investments, or partnerships in this space, with new deals emerging practically every day. In 2024, the Asia-Pacific region (APAC) witnessed significant activity in this space. The year began with Swiss giant Roche signing a billion-dollar licensing agreement with Chinese startup MediLink Therapeutics for its lead candidate YL211, which targets c-Mesenchymal epithelial transition factor (c-Met) to combat solid tumours. More recently, on November 7, 2024, AstraZeneca held a groundbreaking ceremony in Singapore to commemorate the expansion of its new ADC manufacturing facility, the largest in the Asia-Pacific region.

Chinese companies are leading the ADC trend, accounting for half of the top ten developers, as they seek to capitalise on potential returns, according to Global Data. All the big pharma companies have inked a deal in this space with Chinese biotech companies. Some of the important deals include Bristol Myers Squibb, in collaboration with SystImmune, entered an exclusive agreement to jointly develop and commercialise BL-B01D1, an innovative EGFRxHER3 bispecific antibody-drug conjugate. SystImmune is spearheading efforts in Mainland China, while Bristol Myers Squibb oversees developments elsewhere. GSK strategically fortified its oncology portfolio by acquiring Hansoh Pharma's gynaecologic cancer candidate (HS-20089), showcasing a commitment to addressing specific cancer types. In a clinical trial collaboration agreement, Eisai and China-based Bliss Biopharmaceutical partnered for BlissBio's ADC candidate targeting Human Epidermal Growth Factor Receptor 2 (HER2) in cancer treatment. AstraZeneca joined the ADC surge with the acquisition of China-based LaNova

Medicines, gaining access to LaNova Medicines' preclinical candidate LM-305, focused on relapsed and refractory multiple myeloma.

Shanghai-based DualityBio, a clinical-stage company, stands out for its cutting-edge ADC technology platform. The firm is emerging as a fan favourite with both big pharma and local firms. In April, DualityBio made headlines by selling two ADC assets to the German mRNA giant BioNTech for an upfront payment of $170 million. Building on this achievement, the collaboration between DualityBio and BioNTech expanded in August to globally advance, manufacture, and commercialise a third ADC candidate, DB-1305. Strengthening its position, DualityBio entered into an agreement with BeiGene in July 2023, granting BeiGene an exclusive option for a global clinical and commercial licence for an investigational preclinical ADC therapy targeting specific solid tumours. In October, DualityBio further solidified its standing by securing global out-licensed rights from local firm MediLink Therapeutics for their ADC targeting HER3.

ADCs have offered a stronger hope that the elusive cure for cancer will finally be on the horizon and biotech firms will continue to bet big on this in the coming year.

Cell and Gene Therapies (CGT) Remain Hot

The most sought-after and hot sector in the pharmaceutical industry, which has witnessed an outpouring of billions and record-breaking approvals in recent times, is cell and gene therapy. The Asia Pacific region has been leading in the field of cell and gene therapies, with several countries investing significantly in research and development. China, in particular, has emerged as an important market for CGTs, particularly CAR-T therapies, surpassing the USA in the number of clinical trials conducted. The industry is considered a strategic priority by the government, with CAR-T cell therapy clinical trials in China accounting for over 50 per cent of registered CGT studies worldwide. Currently, there are over 200 ongoing CAR-T trials in China covering a wide range of targets and indications, from haematology-oncology to solid tumours, according to reports of Nature.

Yescarta, developed by Fosun Kite, and relma-cel, from JW Therapeutics, stand as China’s first regulatory-approved CAR-T cell therapies, heralding a new era for the industry. A notable achievement is cilta-cel, developed by Legend Biotech, which has successfully gained US FDA approval, marking its global recognition. While India lags behind China in the production of cell and gene therapies, a wave of new biotech startups is emerging to address this challenge. Organisations like Immuneel Therapeutics and ImmunoACT are currently developing CAR-T cell therapies. ImmunoACT's NexCAR19 therapy received approval from India's Central Drug Standards Control Organisation (CDSCO) for treating relapsed or refractory B-cell lymphomas and leukaemia. This approval positions ImmunoACT to lead India's indigenous CAR-T cell therapy efforts, with NexCAR19 undergoing Phase II trials for other lymphomas and leukaemia types.

In 2025, we anticipate a surge in approvals for cell and gene therapies. Oncology is expected to remain the dominant area, driving significant advancements and accounting for 44 per cent of the CGT market by 2029. Other therapeutic areas, including neurodegenerative, autoimmune, and cardiovascular diseases, are poised to benefit from the continued growth of CGT.

Indispensable Artificial Intelligence (AI)

Artificial Intelligence (AI) has touched every industry, and the pharmaceutical sector is no exception. Companies in APAC are embracing AI for tasks like hypothesis generation from literature and biological data, target identification for various diseases, novel molecule design, clinical pharmacology, trial enrollment and analysis, personalised medicine etc.

AI has become an indispensable part of drug discovery and AI-driven drugs are already in the clinic. Recently, Insilico Medicine received US FDA approval for its Investigational New Drug (IND) application for ISM3412, a small molecule inhibitor targeting MAT2A to treat MTAP-deleted cancers. This drug was designed using Insilico’s generative AI platform, marking a significant milestone in AI-conceived drug development. As 2025 approaches, AI's role in drug discovery will continue to grow, bringing us closer to the reality of AI-designed drugs receiving regulatory approval and entering the market.

“Multimodal generative reinforcement learning will continue to be the main trend in life sciences in 2025 dramatically improving productivity in drug discovery and development. I hope to see the previous record of 9 months from the start of a new preclinical programme to preclinical candidate nomination broken. This may coincide with the trend toward deregulation across the board with regulators recognising the opportunity to provide a larger number of high-quality drugs to patients in need faster and advancing the most promising programmes developed using AI to boost industry performance,” said **Dr Alex**

Zhavoronkov, Founder and CEO of Insilico Medicine, China.

Apart from this, experts are especially bullish on the role of AI in improving clinical trials. “By the end of 2025, artificial intelligence will transform clinical operations, dramatically improving efficiency and productivity. Already, generative AI enables the automation of labour-intensive tasks but there is also promise in predictive analytics, which can leverage historical and real-time clinical operations data to forecast outcomes, optimise resource allocation, and streamline timelines. AI will also soon be used more to extract key information from protocol documents to populate downstream systems, reducing manual entry errors and increasing speed. This same data will also start to be used to auto-generate study calendars based on the schedule of assessments, streamlining trial planning,” said **Dr Jeff Sidell, Chief Technology Officer, Advarra, USA**. Advarra provides integrated solutions that safeguard trial participants, empower clinical sites, ensure compliance, and optimise research performance.

Additional use cases that will become more common this year include using AI to analyse past trials and recommend improvements based on data patterns. Site selection will also benefit from AI by identifying optimal sites with the greatest likelihood for patient recruitment success, considering factors like demographics, past performance, and patient availability.

“In 2025, the life sciences industry will finally witness the realisation of AI’s promise in clinical trials, moving beyond years of hype to tangible, industry-wide transformation. This is the year AI converges with SaaS tools to redefine the clinical trial process entirely, shifting from a service-heavy, project-based model to a scalable, technology-first paradigm. Key innovations, like fully automated and error-free protocol builds, will enable therapy sponsors to embrace hyper-adaptive trial designs that evolve in real time. This is not just about efficiency—it’s about reimagining the critical path in ways never seen before. Trials that once took years to plan and execute will be built and optimised in weeks, driven by AI tools that offer unprecedented speed, precision, and scalability,” said **Dr Michelle Longmire, CEO & Co-Founder, Medable, USA**.

Medable is a platform technology company committed to accelerating drug development by improving evidence generation in clinical trials. It serves the biopharmaceutical industry and is utilised by leading drug developers worldwide.

Ruling the Roost in Clinical Trials

The APAC region continues to rule the roost in clinical trials, experiencing dramatic growth rates surpassing those in the US and Europe. Various reports highlight APAC's emergence as a pivotal hub for clinical trials, with almost half of the world's trials now conducted in the region. The area’s abundant patient population makes it a prime choice to start cutting-edge trials across a range of diseases, and since 2021 it has surpassed the rest of the world in the number of clinical trials that it annually hosts.

“From 2019 to 2023, the percentage of clinical trials in APAC countries (including Australia/Oceania) rose from 44 to 55 per cent and 2025 will continue to see APAC come out on top. The most impactful life sciences trend in 2025 will be the Asia-Pacific region’s normalisation as a leader in advanced clinical trials on the world stage,” said **Dr Annie Siu, Director of APAC Content, Citeline, Hong Kong**.

China will be the major driver of this growth story. “China will continue to drive the growth of clinical trials in the APAC region, attracting trials for innovative therapies and numerous domestic industry sponsors. From 2019 to 2023, the percentage of global Phase I-IV trials starting in China jumped from 25 to 39 per cent, making it the top trial location globally in 2020. Innovative therapies and domestic industry sponsors are the key drivers for China taking an increasingly large share of global clinical trial activity, with recent regulatory reforms and listing rule changes acting as ‘rocket propellant’ for this growth,” said Dr Annie Siu.

Within the APAC region, the most impactful trend for 2025 will be its growing dominance in oncology trials. Even though oncology continues to be the therapeutic area with the most drugs under development worldwide, 30 per cent of trials initiated in the APAC region from 2019 to 2023 were oncology trials, while only 19 per cent of trials were focused on oncology in the rest of the world.

“In 2025, APAC is expected to maintain its lead in oncology trials because of its large treatment-naïve patient pool. From 2019 to 2023, approximately 63 per cent of oncology trials with treatment-naïve patients were carried out in the APAC region and, despite worldwide decreases in trials for this segment as it becomes increasingly competitive, APAC is still slated to have an advantage in oncology because of the number of treatment-naïve patients it still has to offer. Pharmaceutical companies may also choose to conduct clinical trials for less common types of cancer in APAC due to the high rates of occurrence and death associated with these diseases in comparison to Western countries, making it a lucrative market to study treatments for

emerging forms of cancer and fast-track new treatments for common cancers," said **Saakshi Gupta, Senior Analyst, Oncology, Citeline, USA**.

It's not just the increasing number of trials held in this region that will cement it as a world leader in clinical trials; APAC has surpassed Western countries in the scale and scope of clinical trials, thus solidifying its appeal to both local and global pharmaceutical firms seeking strategic advantages.

China's Biopharma Boom

Over the past decade, Mainland China's biopharmaceutical sector has rapidly advanced to become a global leader in innovation, ranking among the top three for initial drug launches. Driven by reforms, increased investment, and progressive policies, the industry has reduced approval timelines, raised regulatory standards, and improved patient access to advanced therapies.

Insights from the Institute for Scientific Information show that China's Gross Expenditure on Research and Development has grown 3.5 times over the past decade, outpacing growth rates in the UK and the U.S. These developments, combined with an evolving healthcare reimbursement system, have enabled both domestic and multinational companies to bring new therapies to market, benefiting millions of patients, according to the Clarivate report.

China has approved 113 innovative drugs since the start of its 14th Five-Year Plan in 2021, according to data presented at a forum in Shanghai on the development of the domestic pharmaceutical industry, as reported by the *South China Morning Post* . In 2024 alone, 37 innovative drugs and 51 medical devices were approved for sale, according to data from the Ministry of Industry and Information Technology shared at the forum.

The growing importance of China in the global biotech sector is clear, as major pharmaceutical companies increasingly invest in the country. For example, in November 2024, Pfizer announced plans to invest $1 billion in China by 2030, focusing on accelerating innovation, improving diagnostics, and supporting the local biotech ecosystem.

In October 2024, Eli Lilly China committed approximately RMB 1.5 billion to upgrade its Suzhou plant, expanding the production of innovative drugs for type 2 diabetes and obesity. This investment is part of Eli Lilly's largest global capacity expansion in history. Since 2022, the company has doubled its global production capacity for incretin injection drugs. The investment will further accelerate capacity growth and ensure a steady supply of these critical drugs. Additionally, Eli Lilly is expanding its innovation presence in Beijing, opening two new research centres: the China Medical Innovation Center and Lilly Gateway Labs. The newest Gateway Lab is the second outside the U.S., following a recently announced European branch in the UK These innovation incubators offer flexible partnerships, allowing researchers to leverage Lilly's resources and expertise during drug development.

In September 2024, Bayer opened a life sciences incubator in Shanghai, citing China's innovation capabilities as 'among the world's top two.' In August 2024 Roche Diagnostics announced a $420 million investment to expand its manufacturing site in Suzhou, marking its largest single investment to date.

CDMO Digital Revolution

As the pharma industry shifts from generic to personalised medicines, traditional manufacturing systems, designed for large-scale, standardised production, struggle to keep pace. To address this, the industry is embracing AI and machine learning to create smarter, more agile manufacturing solutions.

"In 2025 and beyond, we expect to see a step-change in the re-examination of business models to build a culture of standardisation, leveraging AI, digital systems and new workplace processes to reduce the time it takes to move from research to development, to clinical manufacturing, to full-scale commercial manufacturing and distribution. We are already seeing industry innovators coming together in Singapore to lay the foundation for new automation standards to reduce bottlenecks and speed technology transfer. Those efforts will only increase as life sciences innovators take advantage of new technologies like AI to break down barriers to a faster development pipeline-bringing treatments to patients with unprecedented speed and efficiency," said **Kristel Biehler, vice president of Life Sciences, Emerson, USA**. Emerson is a leading global technology, software, and engineering company providing innovative solutions for customers in industrial and commercial markets.

Pharma and Contract Development and Manufacturing Organisations (CDMOs) organisations are bringing clinical trials, manufacturing and distribution closer to patients in high-demand markets to maximise speed and agility while minimising cost and supply chain risk.

“In 2025, global drug shortages and limited patient access to advanced therapies will remain critical challenges in the life sciences industry. Addressing these issues requires a shift towards decentralised manufacturing models, where therapies like CAR-T can be produced closer to the point of care to provide higher quality and better economics. Innovations such as mobile and modular cleanrooms are anticipated to play a transformative role, enabling localised production of personalised medicines and sterile drugs in short supply. These solutions reduce logistical barriers, accelerate delivery timelines, and improve resilience against supply chain disruptions, expanding access in underserved regions,” said **Kevin Kyle, Chief Executive Officer, Germfree, USA**. Germfree is a pioneering laboratory & cleanroom manufacturing company.

BIOSECURE Act Boosting Indian CDMOs

On September 9, 2024, the US House of Representatives passed the BIOSECURE Act. The Act restricts US Federal agencies from contracting with or procuring services and equipment from Chinese ‘biotechnology companies of concern’, and will extend to companies that source or utilise equipment or services from five Chinese companies, namely WuXi Apptec, MGI, BGI, Complete Genomics, and WuXi Biologics. According to a report from LEK Consulting, international demand accounts for a large portion of revenue for these companies (e.g., WuXi Apptec derived 65 per cent of its 2023 revenue from the US). This Act could potentially result in a remarkable decrease in upstream demand for the services provided by the named companies.

“Biopharma industry executives are going to have to figure out how to minimise any risks associated with the heightened geopolitical tensions that may be triggered by the proposed BIOSECURE Act. Companies in Mainland China are the premier source of Active Pharmaceutical Ingredients (API) to the global pharma industry which will find it difficult to replace with enough high-quality production from other sources. Moreover, after a decade of policy decisions focused on boosting the Chinese biopharma sector, Mainland China is already leading the world in life sciences research publications and patents and is now looking to global markets for its innovative products. A reduction in US-Mainland China biopharma collaborations could be a boon for European pharma and biotech companies,” said **Michael Ward, Global Head of Thought Leadership, Life Sciences & Healthcare, Clarivate, England**.

Both US and non-US biopharmaceutical companies have begun to explore mitigation plans and seek backup supplies. Contract organisations such as Evotec and Fujifilm Diosynth have been receiving increasing engagement and exploratory inquiries, as per LEK Consulting. This is opening opportunities for India to dominate the landscape and could potentially benefit from the Bill as pharmaceutical companies seek to diversify their production from the mentioned companies, or even from China.

“The BIOSECURE Act and less reliance on China’s supply chain is expected to especially benefit Indian CDMO companies. India pharma is well recognised globally for quality generics. In the future, we will see massive growth of Indian CDMO companies due to evolving opportunities amid the BIOSECURE Act and less reliance on China’s supply chain by the US and Europe-based pharma companies,” said **Prashant Khadayate, Director – Lifesciences Consulting & Research, GlobalData, India**.

Michael agrees, “Some industry estimates suggest that the Act is projected to create a multi-billion-dollar opportunity for India's biotech industry over the next five years. Indeed, Indian CDMOs like Divis Labs, Syngene, Piramal Pharma, Suven, and Laurus are expecting to see a surge in demand, with some reporting a year-on-year increase in requests for proposals (RFPs) for Indian CDMOs during 2024.”

While the BIOSECURE Act presents significant opportunities for Asian CDMOs outside of China, they will need to adapt their strategies, invest in capabilities, and navigate complex market dynamics to fully capitalise on this shift in the global biopharma ecosystem.

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