

“The next 5-years will see mRNA science evolve beyond infectious disease”

01 December 2025 | Opinion | By Ayesha Siddiqui

A new survey from Moderna Singapore reveals persistent vaccine hesitancy among older adults in Singapore, even as international travel and year-end gatherings increase the urgency of protection. The findings point to clear opportunities to strengthen public health, including empowering healthcare professionals as trusted messengers and promoting co-administration of vaccines. Against this backdrop, Piyali Murkherjee, Vice President, Medical Affairs Asia at Moderna discusses how Moderna is addressing barriers in high-risk groups, the company’s advancing pipeline, the growing importance of the APAC region in its global strategy, and the mRNA trends set to shape the biotech landscape.



Your recent Singapore survey highlights persistent vaccine hesitancy among older adults, with only 51 per cent willing to vaccinate and concerns about side effects at 38 per cent. How is Moderna Singapore addressing these barriers to improve uptake in high-risk populations?

The recent survey conducted in Singapore shows that while 61 per cent Singaporeans intend to get the updated COVID-19 vaccine, willingness drops to just about 51 per cent among older adults, despite their higher risk of severe illness. Concerns about side effects (38 per cent) and a perception that the disease is no longer serious (17 per cent) remain key reasons for hesitation.

These insights underline the importance of sustained public health communication and the role of trusted voices in helping people make informed decisions. Healthcare providers remain at the centre of that conversation, yet only one in two Singaporeans recalls being advised by their doctor to stay current with their vaccinations.

To close this gap, Moderna Singapore is working alongside healthcare professionals and public health partners to help translate awareness into action. This involves supporting educational efforts that normalise vaccination as part of annual wellness habits, such as routine blood pressure monitoring and other healthcare checks.

Doctors play a pivotal role; yet our data shows that only half of Singaporeans report being advised by their doctor to stay current with their vaccinations. Empowering healthcare providers with clear, unified messages and tools to remind patients that timely protection can make a real difference. We're also supporting public health education initiatives that highlight the continued burden of respiratory infections and the importance of protecting those most at risk, especially as COVID-19 and flu continue to co-circulate in the community.

Ultimately, this is about making vaccination part of Singaporean's preventive health mindset, not just a pandemic response, but a sustainable habit for healthy living.

Can you outline your current pipeline across different therapeutic areas and highlight which programmes are progressing most rapidly?

Over the past decade, Moderna has built one of the most comprehensive mRNA pipelines in the biotech industry, with investigational programmes spanning infectious diseases, oncology and rare diseases. This is made possible by the company's platform-based approach. The same scientific platform that enabled rapid innovation during the COVID-19 pandemic now underpins research across multiple therapeutic areas.

Within infectious diseases, Moderna continues to advance next-generation vaccines targeting respiratory viruses such as RSV, influenza, combination vaccines (COVID + Influenza) and norovirus vaccines for older adults. In parallel, the company is pioneering mRNA applications in cancer immunotherapy, exploring cancer vaccines that aim to train the immune system to recognise and attack tumour-specific mutations.

Other programmes in development address complex conditions, such as rare metabolic conditions, where mRNA could enable the body to produce proteins currently missing or defective. These breakthroughs represent not only scientific progress but a vision for a future where mRNA technology becomes a new class of medicines capable of preventing and treating a wide range of diseases.

How significant is the APAC region for Moderna's growth strategy, and how does the company plan to engage with different markets across the region? What initiatives or partnerships are planned in APAC to expand Moderna's presence or enhance local healthcare impact?

Asia-Pacific is one of Moderna's fastest-growing regions. The region's diversity, from advanced biomedical hubs like Singapore, Japan, and South Korea to rapidly expanding healthcare systems across Southeast Asia, together with its rapidly ageing populations, makes it a critical part of our long-term global strategy.

In Singapore and across neighbouring countries, initiatives are under way to strengthen adult immunisation awareness and healthcare capacity. Local partnerships with clinicians, researchers, and public health authorities aim to promote informed choices and improve understanding of respiratory disease prevention.

This is about building long-term resilience. When communities understand why annual vaccination matters, and when access and education are aligned, health systems can better protect their populations against future threats.

Across APAC, Moderna also contributes to strengthening health security through regional dialogue and partnerships aimed at ensuring faster access to innovative vaccines and technologies when they are needed most. These efforts are rooted in a shared purpose: to empower healthcare systems and professionals with the tools and data they need to protect their populations more effectively.

From a global perspective, what trends in mRNA technology do you see shaping the biotech industry over the next five years?

The next five years will see mRNA science evolve beyond infectious disease. We are entering a period of translational medicine, where mRNA could enable the body to produce precise therapeutic proteins that were previously only available through complex biologic manufacturing. The technology is now being explored for conditions that affect millions of people, from cancer to autoimmune diseases, with the potential to transform how long-term conditions are managed.

At the same time, the adaptability of mRNA allows scientists to respond quickly to emerging health threats, strengthening public-health preparedness and resilience. As advances in data science and genomics accelerate, mRNA may increasingly intersect with precision medicine, allowing treatments to be tailored to individual patients. These developments hold great promise, but continued transparency, strong regulatory partnerships, and public trust will remain essential to ensuring that innovation truly benefits people everywhere.

2025 was marred by various challenges. What lessons did Moderna learn last year, and what are your expectations and priorities for 2026?

The past year reminded us that public health is not only about scientific breakthroughs, but also about communication, ensuring vaccine confidence, and access. As COVID-19 becomes endemic, maintaining public motivation to stay protected requires empathy, transparency, and evidence.

In 2026, the focus remains on working with healthcare providers and community partners to reinforce that annual vaccination is an important part of staying healthy and should be part of a routine check. Strengthening health literacy in preventive health and access will continue to be central to these efforts.

At the same time, innovation continues. The mRNA platform remains a foundation for new scientific discovery. Collaboration across sectors, from public agencies to healthcare professionals, will help ensure that science continues to serve people and strengthen health systems.

Vaccination is one effective way to prevent serious illness caused by preventable diseases. As new variants and viruses continue to emerge, maintaining confidence through openness, consistency, transparency, safety data and shared responsibility is key. Every discussion with a doctor, every reminder to a loved one, and every person who chooses to get vaccinated contributes to a healthier and safer Singapore.

Ayesha Siddiqui