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Reshaping Asia's Healthcare with mRNA Innovation

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The COVID-19 pandemic acted as both a challenge and a catalyst, serving as a testbed that fundamentally reshaped the biotechnology landscape across Asia and beyond. What emerged during this period was not just a breakthrough moment for mRNA, but the early foundation of a broader transformation that is still unfolding.

Building an mRNA Innovation Ecosystem: Lessons from COVID-19

COVID-19 underscored the transformative potential of mRNA technology. Decades of foundational research enabled the rapid deployment of mRNA vaccines during the pandemic, demonstrating how sustained scientific investment can translate into real-world impact when urgency demands it.

The emergence of an mRNA innovation ecosystem during this period enabled major advances across research and development, regulatory processes and clinical trial design. Governments, public health authorities, researchers, academic institutions, vaccine developers and regulators worked together to accelerate vaccine deployment without compromising safety or scientific rigour. This unprecedented level of collaboration laid the groundwork for future innovation around mRNA technologies.

Expanding a Comprehensive Respiratory Portfolio

Building on lessons from the pandemic, the industry is now working toward more comprehensive respiratory disease strategies. Addressing respiratory conditions remains a key focus, particularly as public concern persists. A 2025 perception survey across five APAC markets—Hong Kong, Japan, Singapore, South Korea and Taiwan—found that around one-third of respondents remain concerned about hospitalisation due to COVID-19 or influenza.

In response, next-generation vaccines targeting respiratory viruses such as RSV and influenza, along with combination vaccines, are advancing as part of broader efforts to improve prevention and preparedness for respiratory illnesses.

Unlocking New Frontiers Beyond Vaccines

While mRNA vaccines are widely regarded as the pandemic's most visible success story, the technology's potential extends well beyond COVID-19. Industry pipelines increasingly include mRNA-based therapies targeting cancer, infectious diseases and rare conditions, reflecting a broader ambition to rethink how medicines are developed and delivered.

At the core of this shift is a patient-first philosophy: using mRNA to reimagine how diseases are treated and prevented, and to deliver the greatest possible impact. Advances across both vaccines and therapeutics are driven by this overarching goal.

A New Era for Global Regulatory Pathways

One of the pandemic's less visible but most important achievements was the evolution of regulatory pathways. Rapid yet rigorous approval processes demonstrated that speed and safety are not mutually exclusive, setting new benchmarks for future medical development.

There is now growing momentum behind harmonising regulatory frameworks globally. A platform-based approach to mRNA development is increasingly seen as a way to accelerate epidemic and pandemic responses, offering flexibility to adapt quickly to emerging threats while maintaining safety and efficacy standards.

Delivering the Greatest Impact

There remains strong optimism across the sector about the long-term potential of mRNA technologies. The pandemic showed how collaboration under pressure can unlock breakthroughs that might otherwise take decades.

With its adaptability and scalability, mRNA is positioned to transform not only vaccines but also a wide range of therapeutic areas. As the industry continues to build on the lessons of COVID-19, the promise of mRNA lies in its ability to reshape medicine and improve health outcomes across Asia and globally.

Patrick Bergstedt, Senior Vice President and General Manager – Asia and Emerging Markets, Moderna