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How vaccine accessibility efforts paving the way for combating future pandemics

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An analysis recapitulating the impact of quick regulatory support and supply chain revolutions which acted as the catalyst in the global distribution of vaccines during the pandemic

Life science has experienced unprecedented innovation in R&D practice, funding, investment, population data management, digital solutions, drug development, medical technology, supply chain, and pharmaceutical markets. The level of collaboration among various stakeholders to address pressing pandemic challenges has been exemplary. By rapidly implementing regulatory amendments and coordinating among stakeholders, companies across pharma and biopharma revamped manufacturing and supply chain operations. A pandemic lesson requires reviewing the factors that contributed to the rapid development, manufacturing, and delivery of vaccines.

In addition, non-profit organisations such as the World Health Organisation(WHO), Coalition for Epidemic Preparedness Innovations(CEPI), and vaccine alliance Gavi, through the Covax facility meant to ensure quick and equitable vaccine access worldwide, provide funding to companies to mitigate risk for development and assure equitable supply to both low- and high-income countries. Thus, Regulatory cooperation and supply chain strength are considered to have greatly revolutionized the way the global crisis was handled. Let's have a quick review on recent revolutionary progress in healthcare deliveries.

Regulatory amendments to extend vaccine reach:

Pandemic even compelled the drug regulatory and authorisation firms to amend the approval policies in order to expedite the approval process in the public interest. Pandemic shortened the process of developing, reviewing, and releasing drugs and vaccines. In order to speed up the drug approval process, regulatory authorities implemented emergency use authorization, interim authorisation, and accelerated market authorisation modes.

Dr. Danny Soon, CEO of the Consortium for Clinical Research and Innovation, Singapore (CRIS) and concurrent Executive Director at the Singapore Clinical Research Institute (SCRI), explained recently that under normal drug and vaccine development paradigms, major regulatory agencies like the FDA and EMA set a prolonged multiple validates and audits at clinical study sites and manufacturing plants prior to issuing licensing and marketing approvals. With Covid-19, major regulatory agencies around the world, including Singapore's Health Sciences Authority (HSA), have activated accelerated pathways to speedily review and approve novel vaccines.

The FDA used its emergency use authorisation pathway, and countries like Singapore HSA recently introduced the Pandemic Special Access Route (PSAR) for the interim authorisation of critical novel vaccines. These allow companies with robust Phase 3 data to apply for emergency use of their products. To further expedite reviews, regulators even accepted data on a rolling basis, so that as the final trials come to a conclusion, the review of prior information may already have been completed". A veteran of the pharmaceutical sector, Dr Soon is a member of the Ministry of Health Expert Committee on

Covid-19 Vaccination.

Revolution in Supply chain:

Supply chain efficiency, COVID-19 vaccines became a catalyst for evolution in the Pharma supply chain. The high cost of vaccines is attributed to their storage and delivery to maintain efficacy for a prolonged period. Since the pandemic, the supply chain uses data and automated technology to follow real-time inventory for vaccine distribution and identify supply bottlenecks. Expensive equipment and restrictive conditions could limit market access to drugs. A centralised hub-and-spoke model of production and distribution ensures that vaccines arrive at their destinations with the longest shelf life possible.

Explaining the opportunities and challenges which arose during the pandemic period, Niklas Adamsson, Chief Operating Officer at Envirotainer explains “Collaborative partnerships between pharmaceutical manufacturers, forwarders, and airlines facilitated the global rollout of vaccines at a critical time. There was – and remains – a lack of air freight capacity. Yet, billions of temperature-sensitive vaccines needed quick and careful delivery.

Ensuring container fleet capacity and adopting a global infrastructure, with new destination countries and airports that were not used to handling cold-chain shipments prior to the pandemic, has given the healthcare supply chain learnings for years to come. In the future, the volume of temperature-sensitive biopharmaceuticals will likely grow. The newfound way of planning and working across the whole supply chain will provide a blueprint for future vaccine rollouts and associated airlifts to avoid a resurgence in the disease”.

“Specialist logistics services are critical for clinical trials in addition to the timely and secure delivery of essential medicines wherever they are needed. As the science accelerates, healthcare companies need agile, responsive and innovative supply chain partners. Over the past two years, FedEx has shipped millions of COVID vaccines safely and swiftly worldwide – with the help of our end-to-end cold-chain solutions and sensor-based technology. Healthcare delivery is evolving, and we at FedEx are equipped to meet the growing demand”, shared Audrey Cheong, Vice President, South East Asia Operations, FedEx Express.

Will the legacy continue?

It's impressive to know that the legacy of the COVID-19 pandemic will be on Pharma R&D, regulators, go-to-market planning, and logistics. While the health and economic costs of the pandemic appear to be sustainable, the recurring viral variants and unknown long-term impact of the vaccines are yet to be fully understood and determined.

“This will require continued development of new products that are effective against new variants, maintenance of the manufacturing capacity needed to quickly produce both existing and new products at scale, and measures to guarantee that these products remain broadly accessible and affordable” opines The Brookings Institution in Washington, DC.