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ASIA EDITION

Navigation and evaluation of the 'Long COVID' impact on Asia's public health

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According to the World Health Organization, long COVID refers to symptoms that persist for at least two months after the onset of COVID-19 and cannot be explained by an alternative diagnosis.



- **Francesca Ceddia, Chief Medical Affairs Officer, Moderna (Left)**
- **Dr Leong Hoe Nam, Infectious Disease Specialist, Mount Elizabeth Hospital, Singapore (Center)**
- **Professor Jacob Lee, Department of Infectious Diseases, Hallym University Kangnam Sacred Heart Hospital, South Korea (Right)**

The SARS CoV-2 infection can cause a wide range of recurring or persistent health concerns among the populations infected once with the COVID-19. The majority of patients who are infected with COVID-19 recover within a few days to a few weeks, but in some patients after recovery, Long COVID can be identified at least four weeks after the initial infection. The term "long COVID" refers to signs, symptoms, and conditions that persist or develop following recovery from COVID-19 infection. The term post-acute sequelae of SARS CoV-2 infection (PASC) is also used to refer to a subset of Long COVID. Long COVID is a real illness and can result in chronic conditions that require comprehensive care.

In the midst of a pandemic narrative, Long COVID isn't merely a footnote—it represents a compelling health challenge that continues to confound many and demands attention. The emergence of Long COVID has shed light on the lasting effects of COVID-19, which initially focused only on acute cases. The lingering impact underscores the need for a deeper understanding of the situation in order to provide better support to those affected and reduce the negative health effects in the long run.

Recently Moderna, the global leader in mRNA medicines, convened international experts to evaluate the clinical aspects of Long COVID in the context of Moderna's vaccine research initiatives. An expert panel, composed of **Francesca Ceddia**, Moderna's Chief Medical Affairs Officer, and **Dr Leong Hoe Nam**, Infectious Disease Specialist, at Singapore's Mount Elizabeth Hospital summarized efforts in tackling Long COVID scenarios coupled with Moderna's initiatives. As well, **Dr. Jacob Lee**, South Korea's renowned infectious disease specialist, and research director of Long COVID research at Hallym University Kangnam Sacred Heart Hospital, shared a comprehensive overview.

- **How do you define "Long COVID" in a clinical context? What is the current prevalence of Long COVID and what long-term impact can it have on individuals' health?**

Francesca Ceddia, Chief Medical Affairs Officer, Moderna

Long COVID lacks a universal definition, leading to varied definitions across countries and institutions. According to the World Health Organization, long COVID refers to symptoms that persist for at least two months after the onset of COVID-19 and

cannot be explained by an alternative diagnosis. Long COVID symptoms include fatigue, breathing difficulties, heart and chest issues, brain fog, headaches, memory loss, joint and muscle pain, abdominal pain, diarrhea, depression, anxiety, and attention problems. Let us also not forget the significant burden on the healthcare systems as well.

A systematic review found that globally, around 43% of infected individuals might have experienced Long COVID, with rates varying based on hospitalization status and region. Contrary to myths, Long COVID can stem from mild cases and affect individuals of all ages, including children and healthy adults. Nearly a third of cases lacked underlying medical conditions. While often associated with the elderly, in the US working-age adults are around twice as likely to develop Long COVID.

- **To protect against new variants, do we need reinforced vaccines? What is Moderna's approach and initiatives to managing the complexities from R&D to development?**

Francesca Ceddia, Chief Medical Affairs Officer, Moderna

It was necessary to develop updated vaccines to protect against the new variants that have evolved. These new variants might spread more easily or evade immunity from previous infections or vaccinations and have the potentials to cause severe disease. Maintaining protection against COVID-19 is essential for the community's safety.

Fighting the ongoing complexities of COVID-19 has been at the heart of Moderna's mission since the pandemic's onset and when a new variant was identified as a threat we leveraged our mRNA platform, to swiftly develop a new vaccine within two months. Beyond COVID-19, our technology and AI integration in R&D processes is revolutionizing our approach to medicine, unlocking mRNA medicines' potential to prevent and treat diseases with expedited delivery to patients.

Moderna is also deeply engaged in collaboration with scientists to better understand all aspects of Long COVID. This includes collaborating on real-world evidence studies to assess the vaccine's efficacy against Long COVID, as well as the health and socioeconomic impact of the disease. Moderna remains committed to advancing research and development efforts to address new variants challenges. Through ongoing collaboration and a commitment to innovation, we aim to develop effective vaccines to protect against COVID-19 and its long-term effects.

- **Can you share some insights into the latest research on Long COVID?**

Dr Leong Hoe Nam, Infectious Disease Specialist, Mount Elizabeth Hospital, Singapore

There are various studies in progress to better understand Long COVID and its prevalence among affected individuals. Some studies examine the prevalence of Long COVID while others focus on individuals hospitalized due to the condition. Findings from these studies may vary based on factors such as the study population, methodology and timing.Many studies are ongoing to try and understand the pathology and in turn the potential treatment for it. Unfortunately, despite three years since the arrival of the virus, the understanding, appreciation, and treatment of long covid is still very poor. Put simply, we have no cure or treatment for it currently.

Two recent studies conducted in Singapore have shed light on the risks and prevalence of Long COVID. In the first study, involving over 100,000 individuals, infected persons were found to experience higher risks and increased burdens of new-incident cardiovascular/cerebrovascular complications. The second study revealed that children who contracted COVID-19 were more than twice as likely to develop Long COVID compared to those who had not been previously infected. Importantly, both studies concluded that being vaccinated and staying up to date with vaccinations could mitigate these risks.

- **Where does Asia stand in combating future pandemics?**

Dr Leong Hoe Nam, Infectious Disease Specialist, Mount Elizabeth Hospital, Singapore

Asia has grappled with several pandemics in the past, including SARS in 2003 and H1N1 in 2009. Preventive measures implemented after these outbreaks, such as public education, contact tracing, isolating and surveillance of contacts, use of face masks, among others, contributed to containing the spread of COVID-19. Asia was relatively more prepared for the covid-19 pandemic because of our previous experience with SARS and MERS.

Without any doubt, we would expect another pandemic in the future. It may be even Disease X. It is imperative that Asia learns from the lessons of the past epidemics and pandemics and prepare for the inevitable now. This would include future pandemic planning, including resource allocation, improving partnerships across public, private, and civil sectors, alongside maintaining clear public communication.

Asian nations, especially in South East Asia, a more open and collaborative effort is already underway, and we can do more to strengthen it and build stronger relations through collaboration and communications.

- **What are the potential long-term health effects of Long COVID, and how can they be mitigated? What are its implications in the present pandemic recovery phase?**

Professor Jacob Lee, Department of Infectious Diseases, Hallym University Kangnam Sacred Heart Hospital, South Korea

Long COVID can lead to various long-term health effects, significantly impacting an individual's quality of life and ability to perform daily activities. To mitigate the long-term health effects of Long COVID, it is essential to focus on early diagnosis and comprehensive management. This includes personalized treatment plans that address specific symptoms and needs of each individual.

Physical therapy, respiratory therapy, and mental health support can all play crucial roles in improving outcomes for patients with Long COVID.

In the present phase of pandemic recovery, the implications of Long COVID are significant. As more people recover from acute COVID-19 infections, there is a growing population at risk of developing Long COVID. This not only strains healthcare systems but also highlights the importance of ongoing research and support for individuals affected with Long COVID.

By Hithaishi Bhaskar