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Focusing on Vigilance & Preparedness

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Despite advances in development of countermeasures such as diagnostics, therapeutics and vaccines, world travel and increased global interdependence have added layers of complexity to containing infectious diseases. COVID-19, an outcome of weaponisation by genetic manipulation as part of 'gain of function' research, had brought the entire world to its knees in less than six months. Now, researchers and policymakers are being more vigilant towards surveillance and management of emerging infectious disease threats, and revisit global mechanisms for the control of pandemic disease. In addition to other countries across the globe, 2021 saw many initiatives taken by the APAC region to strengthen their capacities for effective preparedness and for the prevention of new and existing infectious diseases.

Infectious diseases have been increasing in frequency during the past few decades. These include recurring outbreaks caused by influenza and Ebola viruses; diseases that have dramatically increased their range and impact such as Chikungunya and Zika viruses; and outbreaks caused by novel pathogens such as severe acute respiratory syndrome coronavirus-1 (SARS-CoV-1) in 2002 and SARS-CoV-2 in 2019–20, the virus responsible for the current COVID-19 pandemic.

A section of experts attribute this to unlawful and potentially dangerous 'gain of function' research which, among other reasons, looks to 'weaponise' the naturally occurring viruses. More recently, Bill Gates announced the successful development of a vaccine against smallpox (a disease already eradicated) in the (un)likely event of a bioterror attack using the smallpox virus.

The unprecedented scale and rapidity of dissemination of recent emerging infectious diseases pose new challenges for vaccine developers, regulators, health authorities and political constituencies.

While vaccine manufacturing and distribution are complex and challenging, access to vaccines and vaccination needs to be prioritised in low- and middle-income countries. In addition, pharmacovigilance of vaccine safety and surveillance of virus variants are also critical. The combination of these factors weigh heavily on the ultimate success of efforts to bring the current and any future emerging infectious disease pandemics to a close.

As a result, we saw many countries within the Asia Pacific (APAC) region taking new initiatives throughout 2021, across the diagnostic, medtech, pharma, services, supplier and digital healthcare space, in order to prepare themselves better for a

future crisis.

For instance, $650 million has been invested for the development of a new Australian Institute of Infectious Disease in Victoria to lead the fight against future pandemics and other infectious diseases. The institute is said to be the largest centre of expertise in the Southern Hemisphere region. Additionally, a robotic biobank facility is being built to ensure international best practice for specimen storage in large-scale clinical trials.

Also, in the next three years, the Australian government will be investing more than $14.2 million in surveillance of antimicrobial resistance (AMR) in human health in Australia, to ensure detection of emerging threats from AMR microbes, mainly bacteria, as early as possible.

Likewise, the government of New Zealand has announced $36 million in funding over three years to kickstart a new programme of infectious disease research and capability building, to focus on prevention, control and management of infectious diseases.

Further, a five-year research programme has been announced by the University of Otago that focuses on finding ways of reducing the burden of infectious diseases, long-term conditions, and poverty in New Zealand. University of Otago's Global Health Institute is also supporting the establishment of a new Communicable Diseases Research Centre at Fiji National University (FNU).

In Japan, Osaka University and The Nippon Foundation are implementing the 'Nippon Foundation- Osaka University Infectious Disease Prevention Project' over the course of the next 10 years. The Nippon Foundation will provide 23 billion yen to Osaka University in support for this project, which also includes funding for strengthening the function of the Center for Infectious Disease Education and Research (CiDER), which was established at the university in April 2021.

Alongside, the government is building an infectious diseases databank with a plan to collect data on 10,000 COVID-19 patients to help firms and universities develop effective treatments.

Joining this list of initiatives is a 40-year old South Korea-based pharmaceutical firm Hanmi Science that has entered a pandemic science alliance with the University of Oxford in the UK to conduct research to prevent new and mutated infectious diseases. Further, the International Vaccine Institute (IVI) and the Institut Pasteur Korea (IPK) have signed a memorandum of understanding (MOU) for mutual collaboration in the research and development of therapeutics and vaccines for infectious diseases. IVI has also joined hands with the Future Investment Initiative Institute (FII-I) in Saudi Arabia to increase awareness and muster support to tackle infectious diseases.

A major consortium of 27 organisations has been launched by the Indian government, called One Health, for carrying out surveillance of important bacterial, viral and parasitic infections of zoonotic as well as transboundary pathogens in India, including the north-eastern part of the country. India has also recently launched an innovation hub, a unique global multi-stakeholder platform, to combat the emerging silent pandemic- antimicrobial resistance (AMR).

Not to miss out the recent decision taken by the National Centre for Infectious Diseases (NCID) in Singapore to launch a gallery for educating the public on how to protect themselves, in order to reduce the transmission of infectious diseases.

Multiple steps are being executed by experts across the APAC region after taking lessons from COVID-19. The permanent threat of emerging pathogens has indeed called for vigilance, surveillance and preparedness for epidemiologists, scientists, developers, human and veterinary health authorities, regulators and other stakeholders.

As 2021 comes to an end, let's take a look at the key developments across the diagnostic, medtech, pharma, services, suppliers and digital healthcare space in the APAC region.

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