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Editorial

Disease X: A Probable Future Pandemic

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'Rare Disease Day 2024' is Thursday, February 29, 2024. The campaign for uncommon Disease Day will revert to its core and enduring focus, which is realizing equity for the 300 million people worldwide who suffer from uncommon illnesses. This time, I felt that 'Disease X' was a topic more appropriate to discuss briefly. Disease X is the awareness that a pathogen that is not yet recognized to cause disease in humans could be the source of a significant global epidemic. The R&D Blueprint specifically aims to facilitate early cross-cutting readiness for R&D that is pertinent to an unidentified "Disease X".

The saying "Prevention is better than cure" is not new. There is no better example of this concept than "Disease X". "Disease X represents the knowledge that a serious international epidemic could be caused by a pathogen currently unknown to cause human disease", said the World Health Organization (WHO). "Pathogen X" is thought to be the cause of disease X. Such a pathogen is anticipated to be a zoonosis, most likely an RNA virus, that arises from a location where a specific combination of risk variables greatly increases the likelihood of long-term transmission.

The World Health Organization (WHO) created the placeholder name "Disease X" in February 2024 to stand in for an unidentified, hypothetical infection that might spark an epidemic in the future. The disease is listed on their shortlist of high priority diseases. Experts, including a few of the WHO's own expert advisors, conjectured in 2020 that COVID-19, a virus strain generated by the SARS-CoV-2 virus, would have been the first Disease X.

Nobody knows where or when the next outbreak of Disease X will occur. All that is clear, though, is that there exists a future Disease X that will eventually seep from animals into humans and start a pandemic. History demonstrates that there is a growing trend in the frequency of pathogen outbreaks that can result in fatalities and serious illness in humans. There have been epidemics of Zika, MERS, SARS-CoV-1, and numerous other newly and re-emerging viral infections alone in the twenty-first century.

According to recent research statistics, there is roughly a 1 in 50 possibility of a pandemic with an effect comparable to COVID-19 in any given year. This indicates that there is a 38% chance in a lifetime for anyone reading this to experience a pandemic like COVID-19. Regretfully, a significant factor contributing to that rising risk is environmental change. The 100 Days Mission of CEPI (launched in the year 2017), the Coalition for Epidemic Preparedness Innovations, aims to develop new vaccines against novel or well-known infectious illnesses within three months after the identification of their pandemic threat.

In this mission, I suggest the nations to contain 'Strategic Drug Reserve' (SDR) to be available across the globe in order to curtail such unexpected pandemics. It will be essential to optimize manufacturing procedures for quick initial production and later scaling in order to counter any pandemic risks. It is essential to create a

worldwide network of vaccine producers in or close to regions where disease outbreaks are more likely. The key to these facilities' longevity will be maintaining their commercial viability during times between pandemics. Manufacturing capacity for several distinct vaccine platforms will need to be set aside ahead of time in order to guarantee that these manufacturing centres can react within a 100-day window during a pandemic.