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Editorial

Is COVID-19 Pandemic Really Coming To An End

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Covid-19 pandemic will not end with the virus disappearing from the face of the earth. Instead, sufficient population will acquire immunity with vaccination as well as natural infection lead to decreas transmission thus to decrease Covid-19 related mortality and hospitalization, even in case the virus continue to circulate, as endemic. According to Tedros Adhanom Ghebreyesus of World Health Organization, the acute phase of the pandemic may end by mid-2022, if about 70 percent of the world gets vaccinated, highlighting the importance of vaccine-induced immunity as the single most important factor in ending the pandemic.

Before we try to grapple with the concept of the anticipated transition of Covid-19 from pandemic to endemic, and what it would entail, it is important to understand what "endemic" really means?

Endemic denotes the constant existence of infectious disease or agent in environment of a specific region.[1] Load of specific disease which is normally present in the community is termed as baseline level of endemic of a disease. This is important to note that this may not necessarily be the desired level of infection or the disease. Whether severe acute respiratory syndrome coronavirus 2 (SARS CoV-2) persists pandemic, epidemic or endemic provided the demographic layout, immunity, susceptibility. behavior of population and emergence of variants of concern (VOC).[2] World-wide, varying levels of interventions and unpredictable emergence of VOC, in addition to population and environment-related factors, periodic increases in cases to outbreak or epidemic, well beyond the endemic levels, are likely to occur.

Several factors have been hypothesized to explain the ongoing pandemic of Covid-19. Different conditions across the world can allow more successful variants to evolve. Close contact between humans and animals allows for cross-species infections and viral mutations. Intra-host evolution in immuno-suppressed individuals is possible and prolonged persistence has been proposed as one of the mechanisms for the emergence of SARS-CoV-2 variants with immune evasion properties.[3] The natural characteristics of the virus, the 'basic reproduction number' or R_0 of the virus, the host-pathogen interactions and environmental factors are linked to countries' capacity of response and integrity of policy implication to infection. At times when a global region touches equilibrium – with a high or low death and burden – might be troubled with upcoming variant having new characteristics reaches from another region.[2]

The pandemic to endemic transition would be complete when the overall Covid-19 disease rates become static — neither rising, nor falling. However, endemicity should not be considered a benign phenomenon. A disease may be endemic and can be proved as deadly and widespread. Endemicity does not mean the taming of pathogen by evolution but life retunes to its norms in simple. There may be disruptive waves still arising from endemic infections, as seen with other infectious diseases like measles.[2]

Existence of endemicity of SARS-CoV-2, with periodic peaks of epidemic, could be fuelled by pockets of vulnerable people and wading immunity after vaccination or infection. emergence of VOCs that escape vaccine-induced immunity and re-entries from zoonotic reservoirs are factors which will impact long term behavior of the virus and its ongoing transmission in different populations.

Since the beginning of the pandemic, effect of climate on transmission of SARS-CoV-2 is being closely watched. However, high susceptibility remains the

core driver of the pandemic, with variations in weather being proposed as more important in disease transmission once Covid-19 becomes endemic. Without effective control measures, outbreaks will be more likely to occur in humid climates.[4] Non-pharmacological interventions may also moderate the pandemic-climate interaction by reducing susceptible population.[4]

Health policies and individual behavior will have an impact on how communities eventually deal with the waning acute phase of the pandemic. Lack of actual surveillance or passable response could allow the appearance of new epidemic or pandemic patterns from an endemic infection of SARS-CoV-2.[5]

As transition of countries are over in managing Covid-19 as endemic ailment the world may reach a long-term position of disease prevention alike to that seen with the flu, with annual or twice yearly booster doses. In the short term, an accelerated rollout of booster doses of Covid -19 vaccines is likely to be one of the best protections against new VOC-fueled wave of the disease.[6]

It remains to be seen if Pakistan will be able to contain Covid-19 once the pandemic is downgraded to endemic. Robust data collection and analysis is the primary requirement of any disease control program. Harnessing data for formulating strategies and making decisions with optimal utilization of available funds and grants are all important. With suboptimal disease notification and clinicians, epidemiologists, private institutions, provincial and federal governments, all working in silos, establishing an effective disease control program will be a challenge. A major paradigm shift is required in order to prevent large scale outbreaks once Covid-19 becomes endemic in Pakistan.

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