

Long-term strategies to control COVID-19 must treat health and economy as equally important

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Strategies for the safe reopening of low and middle-income countries (LMICs) from months of strict social distancing in response to the ongoing COVID-19 pandemic must recognize that preserving people's health is as important as reviving the economy, argue an international team of researchers.

The team also say that strategies need to be based on local epidemic growth rate at the time, social and [economic costs](#), existing [health](#) systems capabilities and detailed plans to implement and sustain the strategy.

The COVID-19 pandemic has been responsible for over half a million deaths globally. Many LMICs responded to the pandemic by introducing a number of measures from physical distancing to strict social distancing.

These measures have proved relatively successful in containing the disease and limiting the number of deaths in places where the risk of transmission is high, public health systems and usage are

suboptimal and awareness of disease prevention practices is low. However, they have often come with tremendous negative social, economic and psychological effects.

To prevent further negative impacts of lockdown, many countries are now looking to 'reopen', risking [population health](#), especially given shortcomings in surveillance infrastructure and poor diagnostic capabilities.

In a paper published in the *European Journal of Epidemiology*, a team of epidemiologists from the University of Cambridge, the University of Bern, BRAC University and the National Heart Foundation in Bangladesh, have examined three community-based exit strategies, and recommend their scopes, limitations and the appropriate application in the LMICs.

Dr. Rajiv Chowdhury from the University of Cambridge, lead author of the paper, said: "Successfully re-opening a country requires consideration of both the economic and social costs. Governments should approach these options with a mind-set that health and economy both are equally important to protect—reviving the economy should not take priority over preserving people's health."

The three approaches considered are:

Sustained mitigation

Sustained 'mitigation-only' approaches such as those adopted in the United Kingdom, Switzerland and other European countries, involve basic prevention measures such as mask wearing, physical distancing and the isolation of positive cases after testing.

However, the researchers point out that the relative success and ease of implementation of these approaches in high-income settings was aided by a number of factors. For example, high-income countries have the capacity to implement mass testing, population surveillance and case isolation to contain the epidemic, in addition to a high number of trained contact tracers operating in a relatively small and sparse population and high levels of adherence to the measures, including home quarantine and hygiene advice.

By contrast, in LMICs, a sustained mitigation-only approach may be unfeasible due to poor or absent nationwide population surveillance, contact tracing, testing infrastructure and critical care. For example, LMICs generally have limited supply of ventilators (around 48,000 for India's 1.3 billion people), personal protective equipment, trained healthcare personnel and safe working conditions, compromising the healthcare system's effectiveness.

Zonal lockdowns

Zonal lockdowns involve identifying and 'cordoning off' new outbreak clusters with a high number of cases, keeping contact between zones low and containing the disease within a small geographic area.

However, the authors point out that any successful implementation of zonal lockdown requires regular data feedback operations in real time to identify hotspots, including information on newly confirmed cases, updated region-specific reproduction and growth rates, and deaths by age. This may be especially difficult to introduce in LMICs due to the absence of widespread population surveillance on random selections of the population and poor reporting and testing capabilities—for example, Pakistan conducts only 0.09 tests daily per 1,000 individuals compared to 0.52 in France.

Additionally, control of transmission within zones may be an enormous undertaking. In India, where this approach has been employed, the infection size within a cordoned zone can be as high as 100-200 times that outside the zone.

Countries seeking to introduce such measures should establish within the lockdown zone public health measures, including house-to-house surveillance and case-referral systems, and emergency services. They should also create buffer zones to reduce the rates of transmission from outside the zone. Such measures may only be effective when overall population transmission is relatively low and reducing.

Rolling lockdowns

Intermittent rolling lockdowns are now advocated by the World Health Organization in various LMICs. These involve implementing strict social distancing for a set number of days before a period of relaxation. Rolling lockdowns may be particularly useful in LMICs with dense populations, where this is a high potential for contact, weak health systems and poor contact tracing.

A modeling study published by the team in May showed that a system involving 50 days of strict lockdown followed by 30 days of relaxation, enabling the economy to 'breathe' and recuperate, could reduce the reproduction number to 0.5, reduce the strain on health systems and considerably reduce the number of deaths compared to a situation with no [lockdown](#).

Professor Oscar Franco, of the University of Bern and senior author of the paper, said: "Rolling lockdowns need be flexible and tailored to the specific country. The frequency and duration of the lockdowns or relaxed periods should be determined by the country based on local circumstances. They don't necessarily need to be nationwide—they can also involve a large zone or province with very high incidence of COVID-19."

Dr. Shammi Luhar of the University of Cambridge and co-author of the paper, added: "These three strategies should not be considered as one or the other. A country should further adapt and could combine them as needed."

More information: Rajiv Chowdhury et al. Long-term strategies to control COVID-19 in low and middle-income countries: an options overview of community-based, non-pharmacological

interventions, *European Journal of Epidemiology*
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