Covid-19 endgame: How India could move from lockdowns to disease control

Opinion

Updated on Apr 13, 2020 09:29 AM IST

A more feasible option is to achieve herd immunity – a concept which predicts that all of India would be protected as long as at least 65% of the population has experienced the infection, even if without symptoms or in its mildest form.

By Ramanan Laxminarayan

We are nearly three weeks into a lockdown that has been driven by epidemiological projections of the human toll of Covid-19, and scenes of overrun hospital systems in Europe and the US. The lockdown has likely saved thousands of lives from Covid-19 but has extracted an enormous economic and human toll. Is there an end in sight? Will the disease come back if we lift lockdowns? If so, are we simply condemned to lurch from one lockdown to another? How do we balance lives lost through Covid with others that will be lost from poverty, starvation and other diseases?

What we should do really depends on our end goal. A first goal could be to try to eliminate the disease from India through an extended lockdown. However, even if the country were to do its best at containment and contact tracing, achieving this would be unlikely. Also, it would require that we keep international borders closed indefinitely. An alternative goal could be to contain the number of infections until the middle of 2021 which is the earliest that a vaccine or effective, validated treatment is expected to be available. Currently, the evidence on chloroquine is simply too weak to be relied upon, and other treatment options are still in early stages of evaluation. Keeping infections down for a year will require multiple lockdowns of the kind we have just been through and could wreak havoc on livelihoods.

A more feasible option is to achieve herd immunity – a concept which predicts that all of India would be protected as long as at least 65% of the population has experienced the infection, even if without symptoms or in its mildest form. The 65% figure is based on a well-validated mathematical formula where herd immunity is 1-1/R0, where R0 (R naught) or the reproductive number of the disease is 2.8. Once that figure is reached, then even those that have not experienced the infection would be protected.

How does one get to a herd immunity level of 65% without endangering the elderly population that is most at risk? If we were simply to lift the lockdown in an uncontrolled manner, we would return to the threat of large epidemic peaks that could overwhelm the health system. India's biggest asset in this situation is its demography. Sixty-five per cent of our population is under the age of 35 and only 6% is above the age of 65. In comparison, 22% of Italy and 10% of China is in the older, higher risk age group. The bulk of infections in younger individuals are mild and asymptomatic. Exposure to this group at a pace that is controlled would allow for smaller epidemic peaks.

In order to achieve this, first, we need to vastly expand our testing using both RT-PCR and antibody testing. This would allow us to keep containment and lockdown options for communities and hot spots where infections are spreading too quickly and to proactively identify critical care needs. Second, we should maintain physical distancing of at least six feet and universal cloth/simple masking in public spaces. Implementation may not be perfect but even an imperfect brake on the spread can help. Third, we should ban gatherings of more than 25 people. That means no movies, malls, or large gatherings at weddings, public functions, religious gatherings, and rallies. Companies should be encouraged to maintain teleworking to the extent possible.
Alongside this, we need to widely test the population for antibodies. Put simply, an antibody tests reveals whether or not we have been exposed to the virus. If we have been exposed, we likely have immunity and cannot spread the disease. We should test widely for antibodies and those that have Covid-19 antibodies can be allowed to be close to the elderly, to get on planes and travel without restrictions. Each person's antibody status (green or red) can be tied to their Aadhar and would determine the degree of freedom the person would have in moving around.

All of our measures to slow down the spread of disease without a lockdown may be not sufficient to protect the elderly and at-risk population, and we should be vigilant about preventing deaths. We should encourage those over 65 years or at risk because of other illnesses (diabetes, heart disease) to self-quarantine to the extent possible and strictly enforce mask barriers and distancing. The availability of PCR-based testing that allows us to identify the virus in a patient is limited. If we can prioritise RT-PCR for the above-65 and at-risk population, and focus on early identification of cases that would progress to severity, it would avert a lot of the potential severe cases or mortality. Finally, we should continue to proactively prepare the system for peak hospitalisations with sufficient health care personnel and bed capacity positioned in places with the greatest number of projected cases. The government's idea of building critical care units in railway coaches is an excellent one since it allows resources to be moved quickly to places of greatest need. Other, out-of-the-box solutions are needed to get to the hundreds of thousands of additional beds and associated medical personnel and equipment that are needed across the country.

Even with these plans, we may face higher rates of severe disease than in other countries with young populations because we are all exposed to worse air quality and have higher rates of uncontrolled hypertension and diabetes. Early identification of those with these risk factors and providing each person with a Covid-19 risk score based on their risk factors (including smoking) could help us prioritise those that need testing.
Our current lockdown has bought us a few weeks of time. We do not need to extend the lockdown but do need to religiously maintain our physical distancing and mask wearing. According to our most recent models, the lockdown only pushes out the peak by about a month if there is no substantial change in behavior, but with the policies described earlier, we could both push out the peak into early July and flatten the curve substantially, which would allow our health system to manage the peak of infections. Dividing the country into zones may not be helpful – the virus does not recognise human borders, and moreover, leaving zones with little or no exposure may come back to hurt us in the future when the rest of the country has reached herd immunity.

Our plan for dealing with Covid-19 really depends on what our end goal is, and we cannot continue to live our lives under the threat of Covid-19 indefinitely. Our choices are limited. India has been an early mover in tackling the spread of disease, both in terms of shutting borders and in initiating a lockdown. We should leverage the dividend from our lockdown

and our demography to determine our path. We will all need to collaborate in reducing transmission and while the physical lockdown should end, we cannot return to normalcy until we are done with this virus.
If the young can protect the elderly and at-risk, India could be the first major economy to emerge from the shadow of Covid.

(Ramanan Laxminarayan is director at the Center for Disease Dynamics, Economics & Policy, and a senior research scholar at Princeton University. Views expressed are personal.)