

Zero-case, is it the right national target for COVID-19 control activities?

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While working hard to combat COVID-19, it seems that a lot of public health professionals in many countries are looking forward to have a zero-case status. Some professionals believe that resuming the normal or new normal activities are dependent on achieving the zero-case status, although, it is unknown how long this status will continue and whether new waves of the epidemic will be developed thereafter.

Considering the novelty of the virus and that, globally, no one had the specific immunity against it before its emergence, every individual around the globe should develop the immunity against this virus. This can be achieved either by contracting a natural infection or by vaccination against the new virus. The latter is still far, for at least the upcoming 12-18 months based on the most optimistic forecasting.¹ Many researchers believe that developing an effective vaccine is not guaranteed and the manufacturing of the vaccine may take years, based on previous experience with many vaccines like those for HIV, Malaria, Hepatitis C and others.²

Extensive efforts are made by many countries to achieve the zero-case status, and few have succeeded and reached this goal like Vietnam, New Zealand and others.^{3,4} Considering all the controversies demonstrated in the publications, the small number of people who contracted the infection had developed the necessary antibodies and hence the natural immunity against the disease, which is going to offer them protection against re-infection. How long will this immunity last? this is another question that is yet unsolved.⁵ But, what about the rest of the community who are indeed the bulk and who did not contract the infection and are left without a natural immunity? The only hope for this group to have the necessary immunity is to wait for the vaccine to be developed, manufactured and distributed.

Upon achieving the zero-case status, the countries have to keep their population fully secured against all potential sources of infection while waiting for the vaccine to be produced and become available for all. It necessitates keeping all the countries' doors and windows completely shut. These countries have to remain vigilant and to keep their population, the coming visitors, tourists, as well as the whole country's activities under strict and harsh supervision. It is evident that no herd immunity will be otherwise built.

All currently used basic public health practices to prevent contracting the disease (e.g. social distancing, using masks, hand hygiene... etc.) can greatly decrease but cannot completely prevent the spread of the disease. Based on this fact and lack of herd immunity, these populations will be exposed to successive epidemic waves upon any intrusion of the virus from whatever source and may necessitate partial or complete lockdown as a response.

Therefore, a gradual building of herd immunity through a partial slackening of lockdown, resumption of certain public and economic activities along with strict carrying out of basic public health practices (such as social distancing, hand hygiene, respiratory etiquette, using masks and others) pose a more realistic approach.

In reality, this can be the only available option for countries that cannot practically impose strict lockdown measures on the whole population, particularly, in countries with a large rural or suburban population, areas of security instability and populations of low socioeconomic status. This can also be the only available option for countries that cannot keep the economic activities, particularly tourism, closed for too long. Similarly, this option is also suitable for countries that do not have the capacity for achieving the highest level of a vigilant surveillance system (including lab capacity) available for a long time and to suffuse the entire countrywide area.

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