Countering the Second Wave with Facts, not Misconceptions

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On March of this year, the UK government seriously considered avoiding a lockdown, but changed its mind abruptly after mathematical models, presented by Prof. Neil Ferguson, predicted baseless doomsday scenarios. The same type of models predicted that in Sweden, the number of deaths from COVID-19 would reach about 100,000 by June, if the Swedish government continues to refuse to impose lockdown measures. Sweden rejected these models and bravely adopted, although with certain initial failures, a democratic policy that broadly enabled normal life to continue.

Despite the large nursing homes in Sweden, insufficient early protection measures for them, and in stark contrast to apocalyptic forecasts – the number of deaths turned out to be 6% of the one predicted, about 6,000 people, at an average age of 81. Half of the victims were nursing home residents who, in Sweden, have a median life expectancy of 9 months after admission. If a similar policy were to be adopted in Israel, for example, this figure of 6,000 places an upper limit of 3,000 deaths, because the size of the Swedish elderly population is more than double that of Israel. For comparison, more than 4,000 people who contract pneumonia die in Israel every year – that is, an average of more than 10 people per day.

The spread of the COVID-19 epidemic in Sweden has reached its saturation point without fulfilling the well-known, but erroneous, threshold of infecting 60% of the total population – the presumed required level for herd immunity. How did this happen?

Contrary to a popular belief, the Swedish policy did not set the goal of causing as many people as possible to become infected. Its goal was, and still is, to enable a sustainable degree of normal life, while recommending that vulnerable people take precautions and allowing others to be exposed to the virus and develop immunity. The latter, who made up less than 20 percent of the population, complemented the natural immunity to the virus that already existed in the population, thus arresting its spread.

Israel and other countries that face a second wave can adopt a policy similar to Sweden, or even better. Such a policy may provide a fast exit from the crisis and reduce the number of victims. We first list counter-arguments.

Three arguments against exposing low-risk population to the virus

1. Acquired immunity following infection is short-lasting, and therefore should not be relied on.
2. In order to reach the saturation point of the spread of the infection, 60% of the population must be infected – an intolerable percentage.
3. The death toll of such a policy will be higher than the death toll of the alternative – namely, cyclic imposition and easing of restrictions, according to observed rates of infection.

We unequivocally reject these arguments because scientific evidence indicates that the exact opposite is true. All three are based on misconceptions, and those who have conceived these fallacies continue to hold on to them, leading many countries to human-made catastrophe. We refute each argument next.

Infection with COVID-19 results in long-term immunity

The first argument – infection does not result in long-term immunity – stems from incorrect reports about re-infection in people who have recovered from a first one. Dozens of cases of re-infection were discovered in South Korea several months ago and caused a great deal of panic. All of these recurrent infections turned out to be testing errors (falsely positive) due to inability of the standard PCR test to distinguish between a live virus and its residual genetic material. Of more than 20 million people infected, only few cases of re-infection have been reported and the possibility of a testing error has never been properly excluded. That almost no re-infections have yet been established after millions of infections overwhelmingly indicates that immunity is effective for at least 8 months after infection (the time since viral emergence). We see no reason to assume that immunity to COVID-19

will fade away quickly, since immunity typically lasts for years. There is nothing to suggest it will be any different in this particular case.

Widespread infection is not required for stopping the epidemic

The argument that 60% of the population must be infected and becomes immune before the infection spread is halted is based on an incorrect mathematical calculation. That calculation relies on two main assumptions:

1. The contact rate with others is the same for each person in a population

2. COVID-19 is a completely new virus, and therefore, there is no prior immunity. Any exposure to the virus will lead to an infection.

Recently, *Science*, one of the leading scientific journals, published an article that highlighted the absurdity underlying the calculation of the 60 percent threshold. The authors state an obvious fact: As far as contact rates are concerned, people do not interact identically with other people; some have more contacts than others. For example, a cashier at a supermarket and a taxi driver meet many more people than the average retiree. Since people with many social contacts are key factors in transmitting the virus, their immunity will contribute to stopping the spread of the virus more than people who have little contact with others. The former get infected sooner and become immune faster than people with low contact rate, so the spread of the virus reaches saturation at a level that is significantly lower than 60%. Again, the latter is founded on the false assumption of uniform social contacts for all members of a population.

The most significant evidence – decidedly refuting the need for 60% infection rate – is pre-immunity. For example, COVID-19 has several relatives (other coronaviruses) to which the population had been exposed, and such prior exposure can provide immunity to a significant segment of the population. Back in April, two of us wrote an article about the postulated nature of this immunity and the statistical evidence that pointed to its existence. We noted that in several closed communities that underwent testing, the infection rate was always capped at 20%, which statistically aligns with maximal infection rate in these communities rather than recurring coincidences. About a month later, a group of researchers published corroborating evidence in *Cell*, one of the most prestigious journals in the life sciences. About 60% of people in California who had never been exposed to COVID-19, had immune memory cells that recognized the virus and are therefore likely to provide immunity. Moreover, a study in Germany showed that such immunity could reach a level as high as 81% of the population. We assume that the situation in Israel is even better – for example, due to the age distribution (younger) and the number of children per household (higher). The above figure implies that less than 20% of the Israeli population is susceptible to an infection with the virus, while the vast majority is immune. A survey of cellular immunity is urgently needed to estimate the level of this type of immunity in Israel and in other countries.

This rate of pre-immunity to COVID-19 is also evident in the global rates of infection. The virus began infecting humans more than eight months ago, and the epidemic has already spread to most of the world. Yet in all countries, the infection rate remains below 20 percent of the general population. This limited rate of infection has remained unchanged regardless of social distancing measures (if any), such as quarantines, local or country-wide lockdown, mask-wearing, and so on. In Sweden, for example, the infection rate did not exceed 20% and the percentage of people who survived the epidemic exceeds 99.9% (!) of the population. Such is the case in Belgium as well, the country with the highest population mortality rate, where less than 20% were infected, and more than 99.9% of the population has survived the epidemic.

Assuming that approximately 80% of the Israeli population have some sort of cellular immunity – whether due to previous exposure to coronaviruses or for genetic or other reasons – we estimate that the epidemic will naturally fade away when 5 to 15 percent of the population is infected. The implications of these findings are of utmost importance. They call for immediate removal of most restrictions on the economy, immediate return to normal life of low-risk population while helping high-risk groups reduce the rate of social contacts (e.g., continuous monitoring of nursing homes and enabling diabetic teachers to work from home).

Trying to "mitigate" the pandemic will result in a heavy toll on human life

The third argument – removing restrictions will result in a higher mortality than a policy of lockdowns and restrictions – is also incorrect. A virus spreads in the population until enough people become infected and immune, or until a vaccine is found. Lockdowns and restrictions may only slow down its spread ("flatten the curve") but they do not lower the total number of infections or overall mortality. If there is a risk of overwhelming hospitals, there might be a need to slow the spread of the infection. Otherwise, flattening the curve can only be harmful since the infection returns once the restrictions are removed. Moreover, efficient protection of high-risk groups is possible only for a limited period of time: The longer the time, the harder it is to prevent their exposure to the virus. Therefore, paradoxically, it is precisely lockdowns and restrictions that slow the building of herd immunity, which in turn is needed to stop the epidemic and protect high-risk groups. In the long run, such policy can lead to excessive mortality. Another reason for an urgent policy change is that it seems that in Israel the fatality rate from the disease in the summer is several times lower than in the winter, even when correcting for statistical factors such as the increase in the number of tests.

The strongest evidence that a lockdown only suspends the infection, rather than abolish it, is that the infection resumes upon removal, as is happening now in Israel and elsewhere. In Sweden, on the other hand, there is no "second wave" because there was no lockdown. Thus, the policy of imposing and easing restrictions only prolongs the crisis, destroys the economy, and eventually leads to a larger number of victims. It may even continue for years as long as a vaccine is not available.

The alternative to lockdowns and restrictions must be seriously considered

It can be assumed that the handling of the COVID-19 crisis will be scrutinized – both in terms of health aspects, but also in light of public outrage over the state of the economy. So many people all over the world have lost their sources of income, livelihood, dignity and future. Poverty is a much more severe mortality risk factor than COVID-19, and it affects children as much as adults. One of the key questions that will surely be asked is whether the leadership in each country has ever seriously considered a worthy alternative to resolving the crisis, which will not cost so many human lives or destroy the economy. Countries such as Norway, Ireland, and Belgium have already declared that they will not impose further lockdowns as the obvious damage outweighs the doubtful benefit by a wide margin. To dispel economic uncertainty, the same must be declared immediately in Israel and other countries,

Israel has optimal conditions for coping with the pandemic, now

Now is the last chance for the leadership in Israel and other countries to declare that another lockdown will not be imposed, neither full nor partial. Israel has enormous advantages over Sweden and other countries in the context of the pandemic. The population is much younger on average (only about 11 percent of the population is older than 65). Israel has excellent medical services and logistical abilities to handle hospitalized patients in severe condition. The summer, which probably also has a positive effect on the virus spread and its fatality rate, is particularly long. In addition, there appears to be high natural immunity in the Middle East region, perhaps as a result of high exposure to common cold viruses (whereas Western European countries might have had "bald spots" of immunity as a result of deficient exposure to these viruses.) In light of its excellent opening conditions, Israel can now pursue a policy that protects the vulnerable populations, while striving to complete the immune layer needed to stop the virus spread, long before the 60 percent threshold. Thus, Israel can be at the end of the crisis in the coming months before winter arrives, thereby setting an example to the rest of the world.

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The original article was published in *Ha'aretz* in Hebrew on July 20, 2020. The English text contains minor revisions.