

Opinion **Coronavirus**

Eran Yashiv: how to reopen society more quickly

Use the coronavirus's incubation period against itself

ERAN YASHIV



An Israeli woman lies on a banner depicting Prime Minister Benjamin Netanyahu to protest against the country's coronavirus measures. One option under discussion is to divide the population into two sets of households that work on alternating weeks © Jack Guez/AFP/Getty

Eran Yashiv 54 MINUTES AGO

This article is a part of [a series](#) in which leading commentators explore innovative scientific, medical and epidemiological approaches to the Covid-19 pandemic

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Countries are facing stark and terrible choices now. End the lockdown to restart their economies but risk the ravages of the Covid-19 pandemic, or prolong the lockdown and inflict more heavy damage on people's lives and on the economy.

Large-scale testing is unfeasible in some of the most affected countries and antibody testing to detect immunity is struggling with reliability issues. That makes it difficult to identify the subpopulations that can be allowed out of the lockdown and to determine how long others need to remain sequestered.

There is a way out. According to Uri Alon and Ron Milo at Israel's Weizmann Institute of Science in Israel, we can exploit the way coronavirus develops in human beings to begin to open our societies for [four days out of every 14](#).

Most infected people are non-infectious for the first three days after infection and are at peak infectiousness at days 4-7. So a 14-day cycle, that sees people go to work for four days and then be locked down for 10, would minimise the spread of the disease. Most of those infected during work days would reach maximum infectiousness during lockdown, reducing the spread.

While those with severe symptoms can be infectious for longer, they can also be detected by their symptoms, allowing their households to self-quarantine and minimise secondary infections. Asymptomatic cases infected on workdays would spend the majority of their peak infectious period under lockdown. Family-level and work-level rapid testing and quarantine, when symptoms arise, can help shorten infection chains.

We could also go a step further and divide the population into two sets of households that work on alternating weeks, each with a four-day work and 10-day lockdown schedule. That would spread productive activity across the period, and reduce population density, and therefore infection rates, on the workdays. The downside would be that this would be harder to enforce.

The potential impact of this policy was simulated using what is known as the SEIR epidemiological model and a macroeconomic model, taking into account the virus's spread and the extent of worker participation in the labour market, and hence in production. Applied to Israel, it predicts increases in unemployment of up to 21 percentage points, compared with 32 percentage points in lockdown scenarios.

Compare that to the situation right now. France's Institut National de la Statistique et des Etudes Economiques placed activity in March 2020, when France was on tight lockdown, at [35 per cent below normal](#). The UK Office for Budget Responsibility's scenario puts the second-quarter decline in gross domestic product at [35 per cent](#). Forecasts by [the IMF](#), central banks and investment banks speak of declines for all of 2020, including a recovery phase, of 6 to 12 per cent of GDP. This is based on fairly optimistic scenarios of lockdown phase-out and resumption of normal activity.

The 14-day cyclical lockdown-work policy has better health outcomes than the no intervention option, and, in certain circumstances, even better than the current lockdown policy; and it has better economic outcomes than the full lockdown. Fewer jobs are lost and the outcome for both GDP and consumption improves. There are positive effects in terms of predictability, production and consumption planning, work in the informal sector, and more.

The same schedule can be applied to schools, and is, in fact, under serious consideration by the [Ministry of Education](#) in Israel at the moment. It could also include, from the second or third month of implementation, restaurants, pubs and bars and other places of high social interactions. This could be done after observing the outcomes of the first stage, and would be conditional on maintaining hygiene regulations and measures of social distancing.

The strategy should be tested in smaller areas, tried out for a month, and modified according to outcomes. Importantly, it should complement existing measures of social distancing, masks, tests and protection of risk groups. For most affected countries it may be a workable endeavour, as early as this or next month.

Let's turn the coronavirus's schedule against itself.

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