

Why no one can explain the drop in coronavirus cases in Israel

The number of new confirmed coronavirus cases in Israel ranged between 10 and 20 a day last week. That tiny number comes even though the lockdown measures began to be gradually eased a month ago and have virtually ended over the past two weeks. Israelis can now go to the beach, attend concerts and were even allowed to go out in public without their masks during last week's heat wave.

Amid continuing suspicions that Prime Minister Benjamin Netanyahu cynically exploited the [coronavirus](#) to create hysteria and lure Benny Gantz into [a national unity government](#), the politicians haven't emerged from the crisis looking good. The same applies to the scientists, none of whose models predicted that the number of daily cases would fall once the lockdown was lifted.

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Based on their models, the health and [finance ministries](#) engaged in a titanic battle over whether the lockdown would have to be reimposed if the number of daily cases rose to 100 or 300. With the reality being just a tiny fraction of those estimates, the debate is wholly irrelevant.

How could it be that all the models were mistaken? That question has divided the Israeli scientific community and has created enmity between the physicists and mathematicians on the one side and the epidemiologists on the other as to why the first group led management of the crisis instead of the second.

The physicists have ruled since early March when the Gertner Institute, a research arm of the Health Ministry, [issued a distressing forecast](#) that became the basis for ministry policy that between 8,600 and 21,600 Israelis would die from the coronavirus. The physicists and mathematicians warned us that Israel's health care system would be overwhelmed and so we needed to flatten the curve to avert disaster. The problem is that their expertise is on the movement of particles and the arcana of numbers theory not the science of epidemics or public health.

All their models were based on mathematical assumptions on the rate of contagion that in the end proved wrong. To their immense disappointment, it turns out the coronavirus is a biological phenomenon that doesn't fit the rules of mathematics. The bastard killer didn't study math at an advanced level and to the shock of those doing the calculations tended to change its behavior over time. Why? Maybe because of the change in temperature, maybe because of genetic diversity. The bottom line is all the models predicted a rise in cases with the end of the

lockdown and yet the opposite has occurred.

This has become a signal for the epidemiologists – the ones who are the experts on epidemics and public health who were ignored throughout the crisis – to protest.

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- [Israel's Biggest Challenge in Preparing for a Second Wave of Coronavirus](#)

“They took models from physics, based on faulty assumptions, because of that they created a panic,” said Prof. Hagai Levine, chairman of the Israel Association of Public Health Physicians and one of the strongest critics of the Health Ministry’s coronavirus strategy.

“The models looked at anchored cruise ships or at Italy but forgot that Israel is different from these two cases by an infinite number of parameters. You can, you must, be helped by models, but you need to remember that a model is just one tool among many and is a less valuable one than monitoring disease rates in real time,” he said.

Levine speaks out of frustration. He saw how the ministry’s director general, Moshe Bar siman Tov, and his top aides managed the crisis without the advice of experts on how epidemics progress. In fact, Prof. Sigal Sadetzki, who is in charge of public health services, is an epidemiologist by training, but she was the only more or less at the center of the decision-making process.

Absurdly, nearly all the other epidemiological experts in Israel were left out, including those working at the ministry. All but 15% of the staff of its Center for Disease Control was put on unpaid leave; the ministry’s emergency unit, which only had an acting head when the endemic erupted, was never put into operation.

The result was an overreliance on physicists and decision-making based on hysteria and exaggerated forecasts even though it was known at the time that the models had limited utility.

“Of course, our assumptions based on the mathematical movement of particles is problematic,” admits Dr. Michael Assaf of The Hebrew University’s Racach Institute of Physics, which built the model for the virus’ spread. “Not only did we treat the virus as a mathematical particle with fixed behavior, but we made the same assumptions about humans. So necessarily the models presented the worst-case scenario and should be regarded that way.”

Gertner’s projection was also based on faulty assumption that led to needless panic.

“Gertner’s scenario assumed that Israel is attacked on four fronts at the same time by surprise with no army to defend it. That was an unreasonable assumption because it was clear that when the pandemic arrived we would defend against it both through the health care system and through changes in the public’s behavior,” said Levine.

In retrospect, epidemiologist say the models should have taken a back seat to a policy of constant and widespread testing and identification and quarantining of coronavirus carriers.

“Epidemiology is a scene of facts, not of models,” says Levine, You need to constantly check outbreaks on a geographical basis, if there is evidence of conagion from surfaces, if crowds at

beaches are as dangerous as in a gym. It's a world where the variables are constantly being created and changing. Only on the basis of these variables can you make decisions," said Levine.

According to public health officials if officials had systematically investigated all those who came down with the illness, they would have realized that before they took the decision March 19 to begin imposing a lockdown that the incidence of coronavirus had begun to fall, except in areas with concentrations of Haredim. Later, they would have found that a week before the most severe lockdown was imposed on the eve of Passover that the overall rate of contagion was falling.

If they were investigating the situation comprehensively today, say public health experts, decision makers would realize that Israel is easing its social-distancing rules faster than anywhere else in the world and that they are probably acting too quickly and dangerously.

They don't know whether the virus is in temporary retreat because of the summer or gone forever. The SARS virus is from the same family as the coronavirus, and it disappeared after eight months with the onset of the summer and never returned. In contrast, the flu, which has been with us for centuries, disappears every summer only to return in the winter. No one can explain why.

The fact that science can't explain the flu's recurrence is hardly encouraging vis a vis the coronavirus. Scientists know a lot less than the public thinks. This calls for modesty, which epidemiologists are the first to admit is needed.

"We don't know what are the best ways to fight the epidemic. There are signs that a minimum of distancing is enough to cope with it," said Levine. "This isn't like the Holocaust. It appears that moderate policies based on the constant monitoring of infection is the best way of handling it."

The epidemiologists' voice of moderation wasn't heard at all during the coronavirus crisis. It's not being heard today as the National Security Council sets up a team, with representatives from the army, the police and the Shin Bet, to prepare for a possible second wave of the virus. Again the experts in epidemiology and public health are shunted to the side as if we've learned nothing.

In response, the Health Ministry said the Center for Disease Control took a "significant part" in controlling the pandemic. "The center monitors the coronavirus contagion the same way it monitors the spread of the flu each winter." Regarding the emergency center, it said its activities were done in accordance with directives issued by the Supreme Hospitalization Authority.



The ward for coronavirus patients at Hasharon hospital in Petah Tikva, April 13, 2020Credit: Eyal Toueg