

Stopping COVID in Israel using Green Zones

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Israel is facing a second Coronavirus crisis, what can it do to act strongly and effectively? A green zone strategy that selectively imposes restrictions on regions of the country is the optimal strategy to rapidly reduce the number of cases and enable maximum economic activity without disease and loss of life. This approach was used effectively in multiple countries, including China, South Korea, Ireland, and Germany.

These countries imposed restrictions on non-essential travel between localities in order to control the outbreak, resulting in rapid elimination of the disease and enabling them to open economic activity in most of the affected area within a few weeks.

For Israel, the first step is to implement a short strong lockdown of 14 days (the incubation period to reveal many of the cases) to gain control of the outbreak. During this time, the key is to establish the travel restricted boundaries and identify Zones where there are and are not cases. By the end of the second week restrictions can be relaxed in those areas where there are no community transmissions (cases that are not quarantined at time of symptom onset). Effective testing and contact tracing during the first two weeks will lead to quarantines that dramatically reduce the area in which community transmission is taking place.

The approach has two levels of geographic zones. The largest areas include major urban centers and surrounding areas: Galil, Haifa, Tel Aviv, Jerusalem, Beer Sheva and Eilat. At the second level these areas are further subdivided into small cities and rural communities (kibbutzim, moshavim) as well as neighborhoods in the urban centers.

The areas that are Green zones after the first 2 week period, should include large parts of the country. This will include some of the suburban areas and perhaps certain neighborhoods of the urban areas. In subsequent weeks, only areas with community transmission will be locked down. Core urban areas will likely require an additional 3rd or 4th week. By the 4th week most of the country will be COVID free and the remaining areas can be cleared by 5 weeks.

The opening of economic activity can be successfully done by locality and rapidly expanded across

the country, rather than by sector.

This strategy is also a preparation for rapid response to any new cases that are subsequently discovered. Any individual case or localized outbreak can be stopped with contact tracing and, at worst, highly localized lockdowns only as needed with minimal economic impacts.

This enables one to drive the disease to extinction. Extinction has been achieved or nearly achieved in almost 50 countries and is the best exit from this disease. Achieving this in Israel will return Israel to the group of elite countries that have defeated the Coronavirus.

Examples: China used Green Zone strategy to eliminate the outbreak within 4-5 weeks, and in the epicenter of Wuhan in 5-6 weeks (Fig. 1). Ireland imposed province to province travel restrictions and has achieved a very rapid decline in cases (Fig. 2). Switzerland achieved a similar geographical contraction but didn't control the tail of the outbreak as well (Fig. 3). In contrast, Italy did not use this strategy, and after 4 months of lockdown cases continue in the epicenter and across the country (Figs. 4, 5). Russia, the longest country in the world allowed the disease to propagate all across the Siberian railway to the end without imposing travel restrictions (Fig. 6).

Island countries have a tremendous advantage in achieving a COVID free country. This is apparent from New Zealand, Australia, Iceland, and other examples. From the point of view of travel, Israel is an island and can use this advantage to rapidly eliminate the virus completely. A Green Zone strategy is key both for this and to have the capacity to stop any future outbreaks at minimal economic impacts.

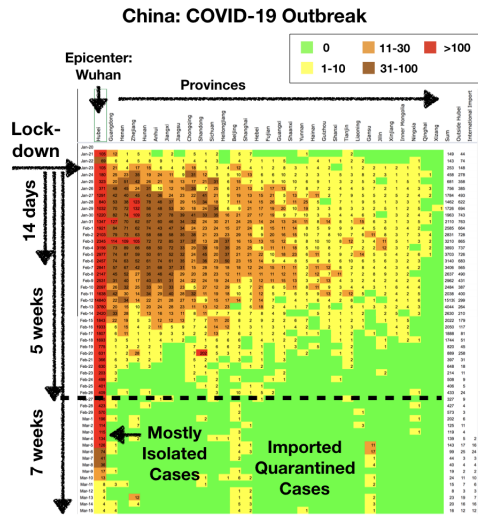


Fig. 1: Outbreak control in China. Horizontal axis is the provinces, higher number of cases are on the left and are closer to the epicenter in Wuhan. Outside of the epicenter provinces had no more than 21 identified cases per day at the time of lockdown. The trajectory of growth and decline led to a 4-5 week elimination. In Wuhan 5-6 weeks were needed, not including a period in which essentially all cases that arose were already quarantined due to contact tracing of close contacts, often of housemates.

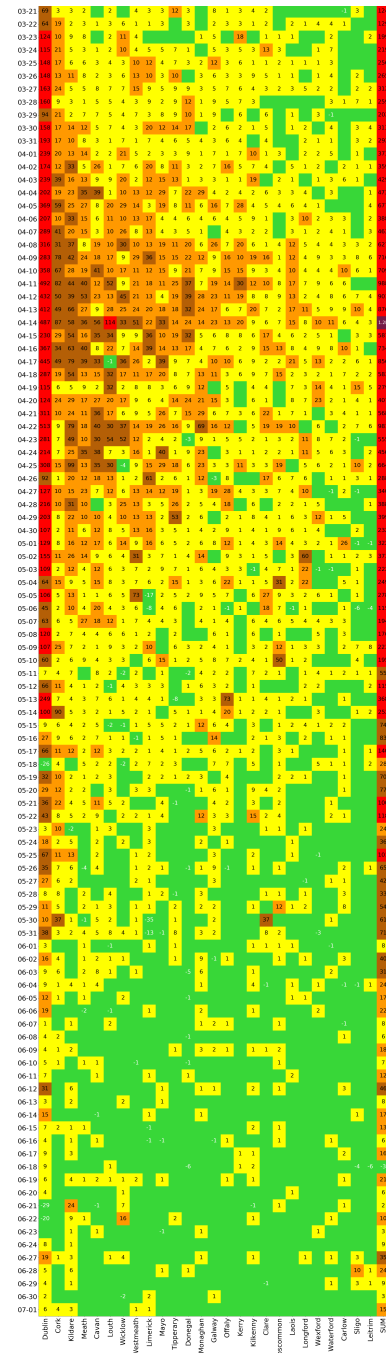


Fig. 2: Outbreak control in Ireland showing significant geographical contraction (compare Italy below).

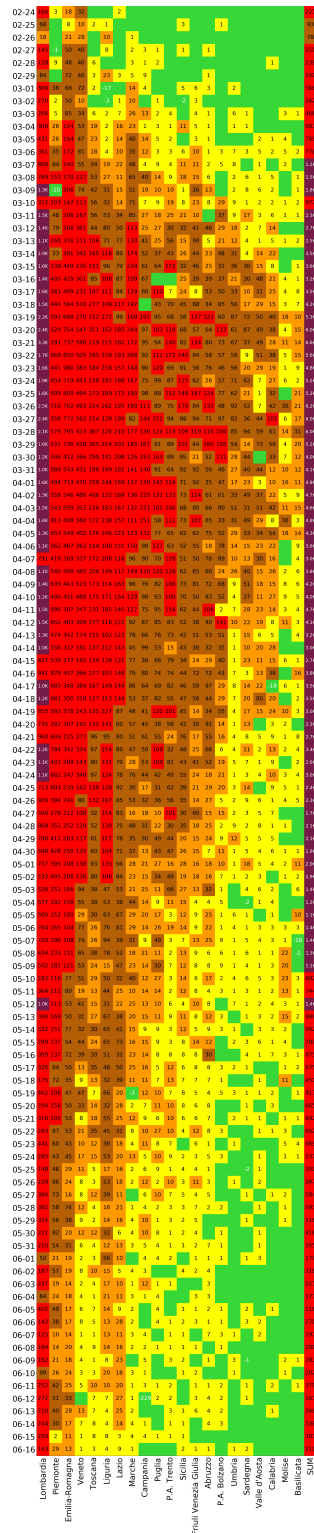


Fig. 5: Outbreak control in Italy including expanded view showing that the control of the outbreak took over 3 months and has not been completed even after 4 months (see also Fig. 4).

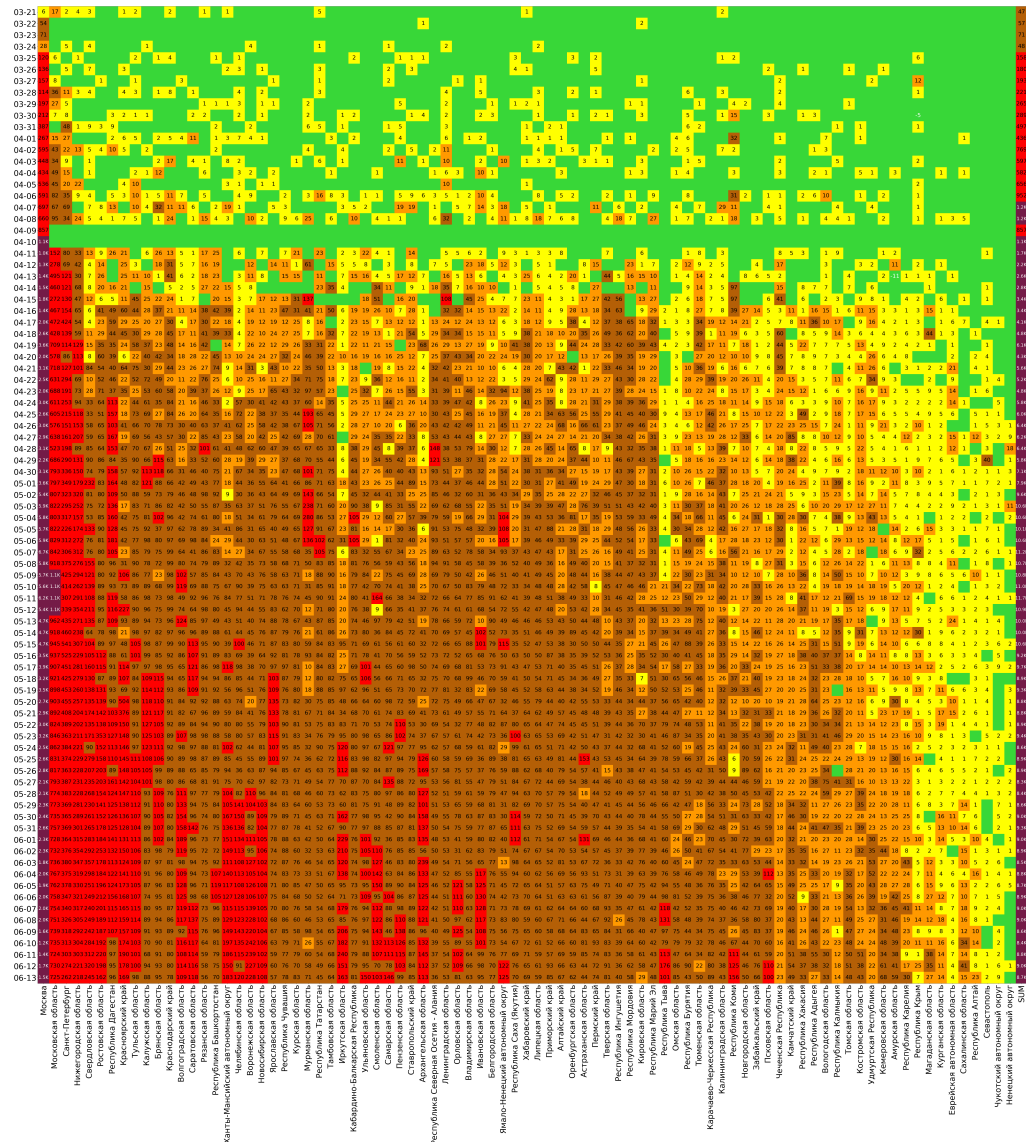


Fig. 6: Outbreak control in Russia showing that without travel restrictions the outbreak propagated from end to end of the longest country in the world and led to major outbreaks and dramatically extended the time to control the outbreak. While the outbreak is being reduced in the epicenter in Moscow by end of this period, it continues to grow in other areas.