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GROUP

Roadmap to Eliminating COVID-19 in 5-6 Weeks Through the Zero Covid Strategy

Introduction

Towns, cities, provinces, and countries can eliminate coronavirus in 5-6 weeks through the Zero Covid strategy, even without the completion of mass vaccination campaigns. The goal is to return to normal social and economic activities safely: gatherings with family and friends and opening of schools, restaurants, bars, theater, sports events and business activities without special precautions. The key to the actions required to achieve this is that the time over which they are needed is short, the shorter the better, so that extraordinary actions can and should be done with this goal in mind.

Travel restrictions, isolation facilities, financial and other support for vulnerable individuals, and short and strict lockdowns are indispensable elements of this approach. The Zero Covid strategy is being piloted in Europe and has already virtually eliminated the virus in Australia, New Zealand, Vietnam, Thailand, Singapore, China, Taiwan, Mongolia, and the Atlantic provinces of Canada.

See this [Lancet article](#) for an overview of why the Zero Covid strategy is the optimal approach to containing coronavirus, as well as maintaining social/economic activities.

This roadmap lays out six steps that countries or sub-national regions can take to eliminate COVID-19 in 5-6 weeks through the Zero Covid strategy:

1. Define protected zones
2. Implement Zero Covid messaging campaign
3. Implement five week lockdown, along with strong protective and supportive measures
4. Convert hotels and other facilities into managed isolation and quarantine facilities
5. Quarantine incoming travelers in designated hotels
6. Reopen through Green Zone strategy

While the Zero Covid strategy requires one-time upfront investments, it is orders of magnitude less costly than the alternative: several months more of yoyo-ing between lockdown and partial reopening, accompanied by the death, sickness, and permanent disability of a significant percentage of the population. If a new virus mutation renders vaccines ineffective, and we don't adjust our vaccine-centred containment strategy, we may never overcome this cycle.

Travel restrictions are an essential aspect of the Zero Covid approach because they allow countries to preserve the benefits achieved by lockdowns. Even if a six week lockdown eliminates coronavirus transmission, the absence of quarantine requirements

for incoming travelers means cases will be imported from neighboring regions, and these cases will grow exponentially in the absence of ongoing restrictive measures. We have seen this dynamic play out in every country of Europe and every U.S. state. In contrast, strictly enforced travel restrictions have allowed life to safely return to normal following lockdowns in many countries, including places outside the Asia-Pacific, such as Hawaii and Canada.

Recognizing that not all countries or regions would accept a Zero Covid strategy at this time, we propose a bottom-up approach led by neighborhoods, towns, cities, counties, provinces, or countries that are ready to do what it takes to eliminate coronavirus.

Step 1: Define Protected Zones

It is up to towns, cities, counties, and countries to establish protected zones with the goal of eliminating COVID-19 and then safely reopen schools and businesses. A protected zone is an area where the local population, government, and business community have decided to pursue the Zero Covid strategy. Protected zones implement strict lockdowns for 5-6 weeks to eliminate coronavirus transmission and require incoming travelers to isolate for 14 days to prevent the importation of new cases.

Neighborhoods, towns, cities, counties, or states that want to form protected zones should consider the following:

Bottom up, not top down: In order to succeed, the Zero Covid strategy does not have to be pursued simultaneously by neighboring countries, or even within the same country. For example, Sicily and Calabria in southern Italy could opt for a Zero Covid strategy and succeed, even if more Northern Regions declined to adopt such a strategy.

Design zones to minimize disruption: Zones should be designed in such a way that inhabitants will experience the least possible disruption due to the imposition of travel-related isolation requirements. A zone should be a district that is naturally or artificially separated from its neighboring districts. It should only have controllable traffic links with neighboring zones. If two geographic regions have a shared border that cannot be effectively controlled, they should be considered as one zone.

In the U.S. context, a Washington, DC protected zone would only be feasible if it included inner and outer suburbs in neighboring Maryland and Virginia, though other parts of Maryland (such as the rural coastal areas) and other parts of the Virginia (such as Shenandoah mountain region) might form their own zones. In the European context, border regions between EU member states might choose to join the same protected zone to avoid disruption of cross-border economic links.

Travel permits: A permit system should be used for necessary exceptions such as essential workers and freight drivers that cross zones on a daily or otherwise regular basis. Guidelines should be made for those workers that identify best practices for

avoiding transmission and identify risk factors at work or home for mitigation in collaboration with employers.

Frequently Asked Questions:

- *Don't "protected zones" only work if the zones are islands?* No, Mongolia, Thailand, Vietnam, Atlantic Provinces of Canada, and communities in the U.S. State of Washington have largely eliminated COVID-19 – these places have land borders longer than those of most U.S. states.
- *Isn't it impossible to restrict travel 100% of travel into a protected zone? Won't some people sneak through?* While 100% compliance would be ideal, restricting access by 90% or 95% of travelers would drastically reduce the rate of infection and allow robust testing and contact tracing to handle the small number of remaining cases.

Step 2: Implement Messaging Campaign to Build Support for Zero Covid

A Zero Covid messaging campaign should help individuals understand that elimination is possible within a matter of weeks, but it requires buy-in to an effort from the entire community.

- *Publicly explain Zero Covid strategy and how it will improve life.* Emphasize that the lockdown will be temporary and, if enough people adhere to the Zero Covid strategy, life will return to normal within weeks, even before the completion of vaccination campaigns. Regions that implement Zero Covid will return to normal faster than places that don't, even if those places have higher rates of vaccination.
- *Enlist civil society and business to support Zero Covid:* Encourage everyone to focus on what can they do to get to zero. This includes support and advocacy by community organizations, social networks, healthcare organizations, businesses, and government.
- *Provide latest information about potential long-term effects for the health of adults and children.* [Studies](#) indicate 10%-20% of individuals who are infected with SARS-COV-2 could develop "Long Covid." Children also experience Long Covid. Authorities should publicize the stories of previously healthy adults and children to illustrate the real risk of COVID-19 to these groups.

Step 3: Implement Strongest Possible Restrictive, Protective, and Supportive Measures

During an initial period of time the transmission should be stopped using every available tool to prevent the spread of coronavirus. If a measure is low cost, low risk, and has a reasonable

likelihood of being successful, it should be deployed. Measures should be kept in place until transmission has been eliminated.

Public communication:

- *Daily updates:* Should follow a consistent format including information on current conditions, progress toward the goal of zero transmission, the expected trajectory, clarity about shared responsibility. A second part should include updates on or reiteration of guidelines and essential knowledge about how it will be possible to get there.
- *Guidelines on stopping transmission:*
 - Explain both airborne and surface transmission and how to protect against them. Explain that since we now know that coronavirus is airborne, and becoming more transmissible due to new variants, proper ventilation and use of premium masks is essential indoors at any distance or when in proximity to others outdoors. Explain that if individuals do have to meet with one another, they should do so outside with a mask and at a distance.
 - Explain asymptomatic and presymptomatic transmission so people recognize that they don't know if they are sick and we must assume that anyone who is not isolating can be sick. Explain that isolating at home is high risk and that, to protect family and housemates, supported isolation and quarantines are needed. Care and services should be provided to help prevent them from getting sick.
 - Explain the use of testing and its limitations so that tests are used to identify cases for isolation, but because of false negatives multiple tests may be needed to confirm someone is not infected. This is particularly important if there are symptoms or for close contacts.
 - Provide guidelines for essential services both for workers and consumers. Provide industry specific guidelines as well as general information for the public on how to avoid transmission through encounters during essential services.

Restrictive Measures (Lockdown):

If lockdowns are sufficiently strict, they can eliminate transmission within five weeks. The following is a non-exhaustive list of restrictive measures that should be imposed:

- *Impose movement restrictions.* Individuals in urban areas should be restricted from traveling more than two kilometers from home; individuals in more rural areas can be allowed to travel longer distances.
- *Close schools:* Schools are drivers of transmission. The role of children in spreading coronavirus has been underappreciated due to undertesting of children. The UK variant may be more transmissible among children than traditional variants.

- *Require work from home when possible:* Authorities should ensure businesses comply with “work from home requirements.”
- *Ban all non-essential indoor activities.* This includes restaurants, bars, gyms, and other facilities.
- *Require curbside pickup or delivery whenever possible.* Authorities should ensure that stores minimize indoor foot traffic. Curbside pickup or delivery should be required where feasible.

Supportive Measures:

- *Ensure financial support to those undergoing quarantine.* Many people choose not to quarantine because they cannot afford to miss work. The desire to not cause economic hardship to friends and family is a reason why many individuals do not cooperate with contact tracers. It is essential that authorities ensure a positive COVID-19 test isolation and quarantine of close contacts will not impose a financial burden on individuals. Support includes employment assurance, mental health and other support by the community, businesses and government. Regular check-ins with individuals and families by the community makes both rapid case identification and other forms of support possible.
- *Ensure financial support to those affected by lockdown:* With a Zero Covid strategy, lockdowns are strict and temporary. Authorities should invest in maximal financial support to affected residents to ensure compliance and support for lockdowns.
- *Provide supported hotel-based isolation away from home for infected individuals and their contacts.* See later sections of this guide for further information on this.
- *Provide childcare for essential workers.* Maximal precautions must be taken to minimize transmission among children and staff.

Protective Measures:

- *Rapid vaccination of high risk individuals:* Focus on disease severity (age and prior conditions) and essential employment needs (healthcare and other essential workers). Mass vaccination may help with transmission prevention and should be used as one of, not the only, tool to do so.
- *Test massively; testing should be easily accessible and ideally free of charge for all residents.* Testing should include symptom based, screening of high risk individuals, mass testing, and other methods such as sewage testing.

- *Use rapid community based case identification:* Authorities should leverage communities (school communities, religious groups, social clubs, workplaces) to provide mutual aid including to identify individuals who are positive or may be positive. This will aid contact tracing and coordination by public health and medical organizations.
- *Require the use of premium masks outside the home.* Individuals should be required to wear FFP2, KN95, or equivalent masks outside the home, including outdoors when in close proximity to others. Authorities should provide these masks to those unable to purchase them.
- *Require all shared indoor spaces ensure proper ventilation (5-6 air exchanges per hour).* This can be achieved through upgraded air ventilation systems, opening windows when weather permits, and installing HEPA air purifiers, including low-cost, home-made “[Corsi Filters](#).” Authorities should strictly monitor and enforce ventilation regulations, just as they enforce other building safety and health regulations.

Step 4: Set up Managed Isolation and Quarantine Facilities



Managed Isolation Facility in Auckland, New Zealand. Image Credits: [Auckland Council](#) (left); [Newroom.co.nz](#) (right)

Zones should consider establishing a network of Managed Isolation Facilities and Quarantine Facilities, based on the New Zealand model. The following section draws heavily on [New Zealand's Standard Operating Procedures for Managed Isolation and Quarantine Facilities](#).

Managed Quarantine Facilities are for incoming travelers who are asymptomatic, have not tested positive for COVID-19, and are not close contacts of confirmed or probable cases of COVID-19. They are lower-risk facilities designated by the Health Authorities for the purposes of accommodating people with a low risk of transmitting COVID-19. Accommodation for family members to stay together in the same facility or room should be included.

Isolation and Close Contact Quarantine Facilities are higher-risk facilities for people who are confirmed or probable cases of COVID-19 and/or close contacts of confirmed or probable cases. These facilities can include both incoming travelers and local residents. Facility security and infection prevention protocols should be stricter than in Managed Isolation Facilities. Due to the higher probability of infection, each individual in quarantine should have their own room and bathroom. Exceptions for young children would be necessary. Facilities that are purely for isolation of confirmed cases do not require separate rooms for each individual.

Leverage Excess Hotel Capacity: Zone authorities should identify hotels that can serve as Managed Quarantine or Isolation Facilities. [Hotel capacity in 2021 is expected to be well below 2019 levels](#), which suggests many hotels may welcome the opportunity to work with local and state governments. For example, many US states have already established quarantine facilities with the support of FEMA's "[Non-Congregate Sheltering](#)" program.

Best Practices for Hotel-Based Isolation and Quarantine Facilities: When designing isolation and quarantine facilities, zones should take the following into consideration, and also consult best practices documents from [New Zealand](#) and [Australia](#):

- *Services for Isolated/Quarantined Individuals:* Facilities must provide isolated and quarantined individuals with food, bathrooms, laundry facilities, outdoor exercise facilities, internet access, toiletries, sewage disinfectants, smoking areas and medical consultations. Facilities will be staffed by hotel workers, as well as health personnel. Each individual or family bubble must have its own bedroom and bathroom. Proper building ventilation codes to prevent transmission room to room and to improve public space air flows are essential. Room HEPA air purifiers are recommended.
- *Timeline of Typical Stay in Managed Isolation:* Protected zones can adopt [New Zealand's timeline](#) for Managed Isolation for incoming travelers. The typical stay will last 14 days. Incoming travelers will be tested within 24 hours of arrival. On Day 1, isolated individuals will receive a comprehensive health and wellbeing check, followed by daily health and wellbeing checks. There will be a second and third COVID-19 test on or around Days 3 and 12, respectively. Health authorities can release isolated individuals on Day 14 if the individual is determined to not be at risk of having COVID-19. Health authorities may extend stay to a total of 24 days if a person is positive or suspected of being positive.
- *Reservations for Managed Isolation Facilities:* Incoming travelers must book a spot in a Managed Isolation Facility prior to entering a protected zone. Priority can be given to individuals traveling for essential purposes.

determine how much to charge incoming travelers for their stay in isolation facilities. [New Zealand](#) charges adults approximately 2,200 USD for a 14 day stay, and the [Australian State of New South Wales](#) charges approximately 2,300 USD for 14 days, with discounts for additional family members. Fees should be reduced or waived for individuals with extenuating circumstances (see [New Zealand's fee waiver form](#)).

- *Quarantine Facility Fees:* In contrast to Managed Isolation Facilities, Quarantine Facilities should be free for local residents, as they are intended for individuals who have COVID-19 or are suspected of being positive. In fact, residents should be generously compensated for each day they spend in the facility. This will incentivize individuals to quarantine safely in a Quarantine Facility rather than stay home where they might infect relatives or continue working due to financial hardship. On the other hand, incoming travelers who are suspected of having coronavirus may be directed to Quarantine Facilities and pay the standard Managed Isolation Facility fee.
- *Facility Staff:* All staff should undergo training regarding infection protection protocols, security rules, and procedures for dealing with distressed or agitated individuals. Staffers should also undergo daily health checks.
- *Security:* There must be 24/7 security monitoring of Managed Isolation and Quarantine Facilities. If an individual leaves a facility without the consent of Health Authorities, the Facility should inform local police who can then take appropriate action, including the issuance of fines and possible arrest.
- *Addressing Complaints:* People in quarantine should have access to timely decision making, review processes and complaints mechanisms, including pathways for escalation.

Frequently Asked Question:

- *Why not substitute a testing requirement for the 14 day isolation requirement?* The false negative rate of PCR tests can range from [20% to 100%](#), depending on how many days after infection the test is performed. In other words, standard coronavirus tests will fail to catch many infected individuals. No country or region that has successfully zeroed out COVID-19 has done so without mandatory isolation requirements.

Step 5: Screen and isolate incoming travelers to protected zones



Left: State border checkpoint in Victoria, Australia (Image Credit: abc.net.au). Right: Provincial border checkpoint in Nova Scotia, Canada (Image Credit: VOA)

Protected zones must establish checkpoints at land, air, and sea entry points to ensure individuals traveling from areas with active coronavirus transmission (red zones) quarantine in Managed Isolation or Quarantine Facilities upon arrival, or have permits allowing their cross border travel. Individuals traveling to protected zones directly from areas without coronavirus transmission (green zones) should not be subject to isolation requirements.

Establish Entry Requirements: Individuals from areas with active transmission (red zones) should apply for permission to enter protected zones through an online system. [Victoria, Australia](#) has created one such system. After completing an online application, travelers should receive a “pre-clearance document” showing they have tested negative for COVID-19 and reserved a spot in a Managed Isolation Facility. Anyone from a neighboring zone should be given permission to enter the protected zone, provided they adhere to testing and isolation requirements. Permit rules can be altered for certain essential workers and individuals with extenuating circumstances (for example, see Victoria’s [list of permit exemptions](#)).

Set Penalties for Noncompliance: Protected zones must establish penalties for violating quarantine requirements for incoming travelers. In Hawaii, [violating quarantine requirements can result in a \\$5,000 fine](#) or up to one year in jail. [New York has threatened fines of up to \\$10,000](#) for violation of 14 day quarantine orders. The [Australian State of Victoria](#) has imposed fines of over \$3,500 for violation of quarantine orders and fines of over \$14,000 for second offenses. [Taiwan](#) also imposes comparable fines on incoming travelers who violate quarantine orders. If enforcement measures are too weak, they will fail to contain the spread of coronavirus. For example, New York has imposed fines of only \$1,000-\$2,000 for violating quarantine orders and did not enforce these orders to the extent that Australia, New Zealand, and Taiwan did.

Implement Border Controls at Land Crossing Points: Controlling land borders may seem like a daunting task for regions or countries that are not accustomed to doing so, but the experience of European countries like Germany, as well as Australian states and territories, shows effective borders can be quickly established. Police in protected zones

necessary to block smaller roads to vehicle traffic if they cannot be monitored. Travelers wishing to enter a zone must show a “pre-clearance document” showing evidence of a negative COVID-19 test, as well as a reservation for quarantine facility or intent to transit through the state. They must be escorted to their designated Managed Isolation Facility. Travelers who sign an affidavit stating they are traveling through the state and do not intend to stop may be allowed to enter, but zones should request they download a tracking application on their phone which they can delete upon leaving the zone. All other vehicles should be turned around.

- **Australian Example:** [Australian police used highway checks](#) along the borders between the states of New South Wales (population 7.5 million) and Victoria (population 6.4 million) to successfully contain a COVID-19 outbreak in Victoria. The border between the two states measures more than 500 miles, longer than most state borders in the United States.

Implement Checks at Airports: Individuals should only be allowed to board flights to protected zones if they can show an approved “pre-clearance document” indicating a negative COVID-19 test, as well as a reservation at a Managed Isolation Facility or intent to transit.

Strict infection protection protocols should be observed at the airport and during transportation to Managed Isolation Facilities. Individuals who refuse to quarantine should be sent back to their city of origin. (Note: Consult [New Zealand’s Standard Operating Procedures](#) for further information on airport safety procedures). Travelers must be escorted directly from the airport to Managed Isolation Facilities.

Implement Special Procedures For Various Groups of Travelers: The border control and isolation system must be flexible enough to allow economic activity to continue and to cause as little disruption as possible for people inside and outside the zone. For further details: [Endcoronavirus.org Travel Restrictions for Limiting Disease Spread](#).

- **Transit Traffic:** Transit airport, highway and major road traffic should not be blocked. However, vehicles transiting through a protected zone should obtain Pre-clearance Documentation. Transit passengers should download a mobile tracing application that can be deleted once they have left the protected zone.
- **Designated Pit Stop Locations:** Protected zones should designate pit stops for freight vehicles and vehicles transiting through the zone. Pit stops should include bathrooms, vending or restaurant facilities, and hotels where distances may require overnight stays. These pit stops should follow enhanced infection control procedures. All workers should be given priority for vaccination.
- **Deliveries of Goods:** Freight drivers should have clear destinations and itineraries. They should attempt to enter and depart the protected zone on the same day. If this is not possible, they should stay overnight at a designated pitstop. Loading and unloading

Frequently Asked Question:

- *Won't state or county-level travel restrictions cripple local economies?* No, the objective is to minimize the time during which travel restrictions are required between nearby zones due to progressive conversion of zones from red to green. Zones should also be designed to minimize disruption in day to day life. The experience of Australia shows that exceptions can be made for freight shipping and essential travel that allows essential economic activity to continue. As more areas achieve "green zone" status, more areas will open to unrestricted travel.

Step 6: Reopen through Green Zone strategy

When a zone eliminates transmission, it can begin easing restrictive measures. "Green Zones," defined below, can fully reopen, even in the absence of full vaccination. When two zones achieve "green zone" status, they should allow unrestricted travel with each other.

- **Green Zones** are defined as areas that border other Green or Yellow Zones and have had no community transmission for 14 consecutive days. All new recorded cases, if any, occur in individuals who are effectively isolated from the moment they entered the zone (imported cases). Green zones can fully reopen schools, restaurants, businesses, and other activities, though travel restrictions must remain in place from Red and Yellow Zones.
- **Yellow Zones** are areas where there has been no local transmission for 14 consecutive days, but there are new cases identified using contact tracing, or the zone is adjacent to red zones. Yellow zones can undergo partial reopening or be subdivided into Green and smaller Yellow buffer zone areas.
- **Red Zones** are areas where community transmission has been identified within the last 14 days. Red zones should remain in transmission prevention (locked down) status until they eliminate community transmission. By accelerating the process of stopping transmission they can rapidly achieve green zone status within a few weeks and join with adjacent green zones to have few restrictions.

The [Australia-New Zealand travel bubble](#) is the most well-known example of a Green Zone to Green Zone free travel area. Other examples include the Baltic bubble which allowed travel among Latvia, Lithuania and Estonia, and the Canadian Atlantic Bubble including the four Canadian Atlantic provinces. Within country travel between previously restricted zones such as between Melbourne and the rest of Victoria, or between states in Australia, are other examples.

Zones that see a recurrence of community transmission not contained through contact transmission should temporarily impose a hard lockdown to bring transmission back to zero. For example, [Auckland, New Zealand](#) entered a three day lockdown in February in response to the

appearance of COVID-19 cases in the city. Restrictions can be lifted once transmission is eliminated and cases are safely quarantined.

See No-COVID's [Action Plan](#) for further information on the “Green Zone Strategy.”

***COVID Action Group** is a network of pandemic experts, scientists, researchers, and communicators with a mission to advise the country about how to eliminate the COVID-19 virus through practical strategies that policymakers and citizens can implement. COVID Action Group aims to add depth of perspective to the newly established national task force beyond physicians and public health experts. Visit covidactiongroup.net.*