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Reopening Strategies During COVID-19: Lessons Learned

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Specific measures countries have taken in response to local outbreaks have varied widely during the COVID-19 pandemic. After the first wave of infections, many countries adopted staged policies to loosen 'physical distancing' restrictions. Amidst a second wave of infections, many countries are now confronting a crossroad. We either stay the course with re-opening or revert back to the more stringent measures of 'distancing' and 'lockdown'. There are clear arguments for both approaches.

Insights

- Looking at where countries currently are in regards to what measures they have implemented and the specific risks associated with becoming increasingly open, they can be categorized into three main groups which include (1) high stringency, high risk of openness, (2) low stringency, high risk of openness, and (3) low/high stringency, low risk of openness.
- Based on their identified risk level, each group needs to take the appropriate precautions when creating, implementing and progressing through their reopening strategy.
- The World Health Organization (WHO) recommends six prerequisites actions for countries to consider reopening: control transmission, maintain a sufficient public health workforce and health system capacity, implement measures that minimize outbreaks in high-risk settings, create preventative measures for the workplace, manage the risk of exporting and importing cases, and ensure communities are fully engaged and understand public health and social measures.
- Countries need the excellent communication of a multi-phase plan, good systems in place to monitor outbreaks as they occur and act locally to control them, measures for ongoing disease transmission prevention such as face coverings and gathering restrictions, and effective testing, digital and manual contact tracing and managed case isolation.
- Investments in public-health and the health-system are necessary action to ensure re-opening strategies are both evidence-based and safe.

Reopening Strategies at a Glance

In a previous Insight, the **Stringency Index (SI)** produced by the Blavatnik School of Government at the University of Oxford was used to compare the COVID-19 measures adopted by various countries. The SI is an index that takes into account measures such as social distancing, mask wearing, border closures and restrictions, testing policies, contact tracing, investment in health and vaccines, income support and debt relief to produce an index which indicates the strictness of government policies (higher values mean more strict measures have been adopted and lower values mean less strict measures have been adopted) (1). Recently, the Blavatnik School of Government has added the **Risk of Openness Index (ROI)**, which provides a measure of the risk each country faces as they begin to relax COVID-19 measures and adopt a more open stance (2).

The ROI is based on World Health Organization (WHO) recommendations for reopening and takes into consideration many different factors when determining risk, such as epidemiological factors (confirmed and probable COVID-19 cases, number of deaths, rate of hospitalizations, percent positive for individuals tested), health care capacity (health system function and capacity, ICU bed capacity, stocks of personal protective equipment, health workforce), public health capacity (rate of identification and testing, methods for isolating new cases, number of public health teams), and the availability of effective pharmaceutical interventions (although currently there are no COVID-19 specific therapeutics or vaccines) (2). It is important to note that no index can be perfectly accurate in measuring the exact risk of each country, especially since data is based on stated policy and not how well the policies are implemented. However, the ROI does provide us with the ability to create a rough comparison between countries (2). When considering both the SI and ROI, countries can be classified into three different groups (Exhibit 1).

GROUP 1	GROUP 2	GROUP 3
• High Stringency • High Risk Of Openness	• Low Stringency • High Risk Of Openness • Highest Risk Of Steering Away From A Successful Covid-19 Response	• Low Or High Stringency • Low Risk Of Openness • Lowest Risk Of Further Transmission If The Country Opens Up
SWEDEN CHINA USA SPAIN GREAT BRITAIN SOUTH KOREA	SWEDEN NORWAY FRANCE PAKISTAN BELARUS	AUSTRALIA NEW ZEALAND INDIA BARBADOS ESTONIA

Exhibit 1: Country Stringency Index (SI) and Risk of Openness Index (ROI) groupings with examples of countries that are classified into each group (high stringency + high risk of openness, low stringency + high risk of openness, low or high stringency + low risk of openness) as of August 23rd, 2020 (1).

Early on in the pandemic, many countries started off in group 3 (with a high SI and low ROI) when lockdown measures were quickly adopted as cases initially surged. In some cases, this increase in SI even caused the ROI to lower (2). Over time however, many have followed the same trend and lowered stringency levels even as the ROI increased. As a result, many more countries are now in groups 1 and 2 (2). The overall response to the rising ROI of some countries can be seen in Exhibit 2.

Exhibit 2: Stringency Index (SI) changes for certain countries as the Risk of Openness Index (ROI) increased from May 15th, 2020 to August 13th, 2020 (2).

With very few countries managing to maintain a stringency index that changes according to ROI (like Australia for example), the danger is that stringency measures will no longer be enough to control the number of COVID-19 cases; resulting in an unmanageable second wave with the potential to, once again, increase the burden on health systems, put more pressure on testing and personal protective equipment resources, and risk another economic downturn.

Guiding Principles for Reopening: There are Six Things That Must Happen!

The WHO indicates that six things must happen before countries consider reopening (3).

1. COVID-19 transmission is controlled (3).
    - **a.** Transmission is controlled to a level of sporadic cases and clusters of cases, all from known contacts or importations.
    - **b.** At a minimum, new cases would be reduced to a level that the health system can manage based on health care capacity.

Countries have varied in their ability to test, trace and isolate cases (4). Countries like the United Kingdom, New Zealand, and Australia continue to place among the top countries for testing rates with 323, 306 and 204 tests per 1000 people respectively; while countries like Sweden, Brazil and India continue to rank amongst countries with the lowest testing rates with 59, 30 and 0.38 tests per 1000 people respectively (5). As one of the factors relating to ROI, it is no surprise that many countries with a lower ROI also have a relatively good testing rate. In many Asian countries, like New Zealand and South Korea, individuals with confirmed infection are closely monitored in hospitals or other government run facilities to ensure quarantine compliance and thorough contact tracing (4). In many European countries and in North America, like Sweden and the United States, patients are typically required to isolate at home with little government involvement or follow-up (4). It seems closely monitoring individuals in quarantine, along with manual and digital contact tracing, also plays a role in a country's ability to control disease transmission and decrease ROI.

> "This principle involves more than producing a national picture; real-time data of high quality are essential to calculate the reproduction number (R) and to ascertain where the disease continues to spread, thereby enabling targeted responses." (4)
>
> **Han et al. (2020)**

2. Sufficient public health workforce and health system capacities (3).

- **a.** This is necessary in order to shift from detecting and treating mainly serious cases to detecting and isolating all cases.

Countries like Sweden and Pakistan, both categorized as having a low SI and high ROI (4), have a very limited capacity to treat patients in terms of number of critical care beds (0.06 and 0.01 critical care beds per 1000 people respectively) (6). As one of the listed risk factors, it makes sense that this health care capacity limitation correlates with a higher ROI. Interestingly though, countries like Italy, France and South Korea, who also all have a relatively low SI and higher ROI (4), have more than sufficient facilities to treat COVID-19 patients (0.13, 0.12 and 0.11 critical care beds per 1000 people respectively) (6). It seems that a country's health care capacity may also come down to how countries manage their health care systems and how efficiently resources are allocated.

> "An adequate health-system capacity is crucial to cope with possible surges in infections after lockdowns are lifted. This capacity includes having sufficient treatment facilities (eg, from hospitals equipped with intensive care units to step-down services in the community), medical equipment (eg, from ventilators for patients to personal protective equipment for staff), and health-care workers. A failure to invest in adequate capacity before a pandemic constrains the choices that can be made." (4)
>
> **Han et al. (2020)**

3. Outbreak risks in high-vulnerability settings are minimised (3).

- a. This requires that all major drivers of COVID-19 transmission are identified. Appropriate measures are in place which ensure physical distancing and minimise the risk of new outbreaks.

There is currently a lack of international consensus when it comes to social distancing measures, mask wearing and gathering/event restriction (4). For example, in Hong Kong and Norway, a 1 m distance is recommended; in Spain it is 1.5 m; and in South Korea it is 2 m (4). In some countries, such as New Zealand, the distance recommended varies, from 2 m in public spaces, to 1 m in schools and workplaces, to no distancing required at level one (the lowest restriction level or a four-level system) (4). These differences are perhaps due to different recommendations provided in the evidence and a variation in priorities when it comes to reopening.

When it comes to face coverings, most countries recommend face coverings in public spaces where social distancing is difficult (4). In Asian countries, like China and South Korea, mandatory mask wearing was adopted very early on; made easier by the regular practice of mask wearing even before the pandemic. Other countries have been slower to adopt this practice and have faced challenges with adherence (4). Some countries, such as New Zealand, have yet to recommend face coverings for the general public (4).

4. Preventive measures are established in workplaces (3).

In almost all countries, there was a push towards working from home early on. For those mandatory workers, promoting compliance with social distancing, mask wearing and hand hygiene protocols was also commonplace (4). Most countries still have policies that require certain workplaces to remain closed with the exception of countries like Sweden, Norway and Pakistan, where this is only a recommendation (7). It seems stringency measures for workplace closures may also play a role in ROI, as these three countries are members of group 2, the group at greatest risk for steering away from a successful response in the event of a case surge. Han et al. (2020) also extends this to thought to the procedures for school reopening:

> "Schools have largely facilitated a staggered return of students, with different countries and regions prioritising different groups of students…However, it was not always clear whether the primary focus was the interests of the child or the desire to enable parents to return to work…Countries varied considerably in the extent to which they used the lockdown to prepare schools for reopening and provided resources for online learning." (4)
>
> **Han et al. (2020)**

5. Manage the risk of exporting and importing cases from communities with a high risk of transmission (3).

- **a.** Having the capacity to perform exit and entry screening for isolation of sick travelers.
- **b.** As well as having the capacity to quarantine travellers upon arrival.

Many countries still have relatively strict border controls. Countries like Australia, New Zealand and India currently have completely closed borders (8). Other countries, like the United States, Sweden, South Korea, China and France continue to ban travellers from high-risk regions, with mandatory quarantine for all other travellers (8). Countries like Norway, the United Kingdom and Pakistan require travellers from high-risk areas to quarantine upon arrival (8). In general, it appears that countries with a lower ROI also have stricter border control measures. Although, as mentioned earlier, specific exceptions to these rules and the extent to which these measures are enforced are not as easily measured.

6. Communities are fully engaged and understand public health and social measures (3).
- **a.** Creating a 'new normal' in which prevention measures are maintained.
- **b.** Ensuring that all people believe they have a key role in preventing a resurgence in cases.

Almost all countries have implemented some form of coordinated public information campaign. Even still, messaging has not always been clear, transparent or easy (9). With the exception of New Zealand, Norway and South Korea, many political leaders have struggled to secure public trust during the pandemic which only makes implementing a successful reopening plan all the more difficult (4). In general, countries with female leaders have done better at securing public confidence and adherence to new measures than have countries with male leaders (4). In Hong Kong and the United States, continuing political issues have negatively affected public trust in the government, although adherence remains much higher in Hong Kong (4). Countries like South Korea and New Zealand, the communication strategy was designed to be transparent and to engage the public through government websites and text alerts. In New Zealand, informal televised briefings and more casual social media live streams also added to this communication, making the campaign even more successful at engaging the public, building a sense of public responsibility and communicating information in an empathetic way (4). The WHO also connects this thought with the current infodemic and stresses the importance of providing information through the correct channels:

> "The infodemic that is associated with every epidemic should be managed at all stages of the response. It is important to provide the right information at the right time to the right people through trusted channels (e.g. community leaders, family doctors, social influencers). The information should explain the situation, the interventions and the response plan, with an indication of the duration of the measures in place. This communication is essential not only for compliance to the public health measures but also for the development of adaptive social measures." (3)
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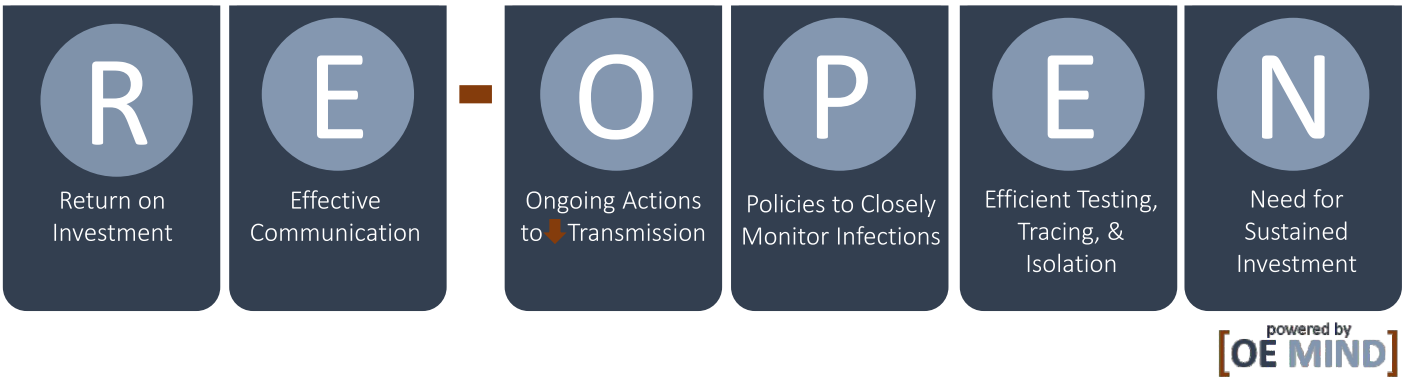
> **World Health Organization**
> April 16th, 2020

Lest We Forget the Lessons Learned: What does it Takes to **RE-OPEN**?



As countries reopen across the globe, a few important lessons have been learned that teach us how we can **RE-OPEN** safely and effectively. Han et al. (2020) outline five important lessons that have emerged (4). Of course, considering epidemiological factors when reopening is essential and something many countries have sought to do, after all, they are an essential marker for readiness (4). However, there are a few other valuable pieces to this reopening puzzle; pieces that are crucial to ensuring reopening plans continue to be successful by limiting the surge of new cases that may result.

R – Return on Investment. Prior to reopening, it is important that policy makers understand that by investing in thorough planning, implementing appropriate restrictions and policies, and thoughtfully navigating the hardships that result, they are also investing in the long-term safety and resiliency of an entire nation.

E – Effective communication. There is a need for a detailed plan and for that plan to be communicated clearly and effectively (4). Ideally, this plan should come in the form of levels or phases as New Zealand has shown. Some other countries have followed suit, and created their own multi-phase plans. However, the key to success is not that a phased plan exists, but that it is communicated effectively – just because countries have a detailed plan, does not mean its citizens will automatically understand, feel informed, feel that the criteria and restrictions for each level are clear, or feel capable and willing to become a part of this plan.

O – Ongoing actions to reduce transmission. Plans need to include measures designed to help reduce transmission well after reopening. This could include the adoption of mandatory face coverings (which have been shown to reduce daily growth rate by 40-60%), the adoption of social bubble policies (another idea pioneered by New Zealand that has shown to work well), social distancing in public spaces, and gathering restrictions (4). It is also important that these policies are designed in coordination with the citizens of each country and with the unique characteristics of the population in mind.

P – Policies to closely monitor infections. Countries need to have strong systems and policies in place to closely monitor infections (4). It is important to understand and to know in real-time where outbreaks are occurring so that more local interventions and lockdowns can be considered in place of a nationwide lockdown (4).

E – Efficient testing, tracing and isolating. Each country needs to be efficient at testing, tracing and isolating even mild and asymptomatic cases in order to reduce transmission and overall health-care burden (4). Drive through testing models have been widely adopted and are an effective way to test cases safely and efficiently (4). However, the capacity to process these tests has proven to be a major limitation in many countries and is an important consideration to make testing most efficient. For case isolation, hospital or government facility-based isolation has proven to be more effective then home isolation (4). However, implementing this type of system requires a lot of planning, funding and resources. For contact tracing, digital or app-based tracing has shown to be very effective, especially when combined with manual tracing (4).

N – Need for sustained investment. Perhaps most importantly, countries need to look towards the future. All of these ideas will need to be "supported by sustained investment in public-health capacity and health-system capacity in terms of facilities, supplies, and workforce." (4). Countries need to take the time to understand these lessons, interpret them based on their own experiences, and use them to design a plan that will work best for them.

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