المجلس التنفيذي
THE EXECUTIVE COUNCIL

دبــــي للــتمـــيز الحـــكومــي
Dubai Government Excellence

# Managing and Recovering from COVID-19

**GLOBAL RESEARCH REPORT**
**DUBAI WE LEARN'S BENCHMARKING INITIATIVE**

# Managing and Recovering from the COVID-19 Pandemic

**Foreword**

In this time of crisis, benchmarking and learning from global best practices have never been more important. It was for this reason the Dubai Government Excellence Program (DGEP) launched an accelerated benchmarking initiative called "Dubai We learn - Conquering COVID-19" to provide best practices and ideas to Dubai Executive Council's Supreme Committee of Crisis and Disaster Management with the aim "for Dubai to become a Global Best Practice in Managing and Recovering from the COVID-19 Pandemic". This publication shares some of the findings from the international research that was undertaken for the project. A later publication will share information on the project itself and the best practices that have been implemented in Dubai.

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Dubai Government Excellence

This is a joint publication by the Dubai Government Excellence Program (DGEP), United Arab Emirates, and its partner the Centre for Organisational Excellence Research (COER) Limited, New Zealand.

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## Definition of COVID-19

COVID-19 is an infectious disease caused by a novel (or new) strain of coronavirus, a severe acute respiratory syndrome. Common symptoms include fever, cough, fatigue, shortness of breath, and loss of smell and taste. The time from exposure to onset of symptoms is typically around five days but may range from two to fourteen days. COVID is an acronym: "CO" stands for corona, "VI" for virus, and "D" for disease. Formerly, this disease was referred to as the "2019 novel coronavirus" or "2019-nCoV."

## Overview of COVID19

COVID-19 was first reported to the World Health Organization (WHO) Country Office in China on December 31, 2019. The virus was first identified in Wuhan and has since spread globally; the first case can be traced back to November 17, 2019. The outbreak was declared a Public Health Emergency of International Concern on January 30, 2020, and was subsequently declared a global pandemic on March 11, 2020, as the coronavirus spread rapidly around the world.

As of June 18, 2020, more than 8.4 million cases have been reported across 188 countries and territories, resulting in more than 451,000 deaths. More than 4.4 million people have recovered.

The virus is primarily spread between people during close contact, most often by small droplets that are produced by coughing, sneezing or talking. Less commonly, people can become infected after touching a contaminated surface and then touching their face. It is most contagious in the first three days after symptoms appear; however, spread is possible before symptoms appear, and from people who are asymptomatic (i.e. who do not appear to have, and may not develop, any symptoms).

The most effective way of avoiding the virus is by taking preventive measures. These include frequent hand washing with soap or alcohol-based sanitiser (for a minimum of 20 seconds); maintaining physical distance from others; quarantine or self-isolation; coughing and sneezing into a sleeve; and avoiding touching eyes, nose and mouth. The use of a face mask is recommended for those who suspect they have the virus. Some authorities recommend all people should wear a face mask in public, while others believe it is not needed.

The WHO is working around the clock to analyse available data, provide advice, coordinate with partners, help countries prepare, increase supplies and manage expert networks. Many countries, as well as pharmaceutical companies, research labs, and universities are working to create a vaccine and treatments for the virus. As of June 18, 2020, the WHO states there are no available vaccines for COVID-19.

## In This Report…

Managing the COVID-19 crisis has become the most significant issue in the world. This special report seeks to capture global best practices, specifically from countries that have achieved some success in their approach to managing the crisis. The report is organised into five key aspects of civil society, and focuses primarily on how various governments and the WHO have tackled – and, indeed, are still tackling – both the pandemic and its effects.

Pillar 1: Crisis Management

Pillar 2: Health

Pillar 3: Food Security & Supply Chain

Pillar 4: Economy

Pillar 5: Societal Behaviour

Conclusion

# Pillar 1: Crisis Management

## 1.1    Crisis Leadership

### 1.1.1    GRID Index: Global Leadership Response to COVID-19
**Link:** GRID Index: Tracking the Global Leadership Response in the COVID-19 Crisis
**Application/Key learning points:** The Institute of Certified Management Accountants (Australia) commissioned a Global Response to Infectious Diseases (GRID™) index to indicate how efficient and effective the leadership of a country has been, and how prepared its health system was to tackle the current crisis. The index shows a ranking for countries based on their leadership response to the COVID-19 pandemic, including the level of transparency based on the Corruption Perception Index 2019 (CPI). The two key indicators to look at are:
- Response ranking: how effective and efficient has the government leadership response been to the crisis?
- CPI ranking: the percentage of cases tested within the population indicates the readiness of the health system to handle a pandemic.

Note that the GRID index will change over the weeks. As an example, Singapore initially did very well without a lockdown. However, in April, clusters of migrant construction workers living in close quarters were badly affected. Singapore responded quickly to isolate them and was transparent; therefore, its score is still high.

### 1.1.2    Global Best Practices in Controlling the COVID-19 Pandemic
**Link:** Global Best Practices in Controlling the COVID-19 Pandemic
**Link:** COVID-19 Regional Safety Assessment
**Application/Key learning points:** In November 2019, the World Economic Forum prepared a table showing which countries were best prepared to deal with a global epidemic or pandemic. The United States of America and the United Kingdom were ranked first and second respectively. Fast forward to February 2020, and neither of these countries were anywhere close to being best at handling the COVID-19 pandemic. In fact, some of the world's best practices have come from countries that didn't make the original list at all. Some of the best practices come from:
- New Zealand: early implementation of highest-level lockdown.
- Singapore: massive early testing and transparency; solid medical care.
- UAE: highest per capita testing for populations over one million.
- Taiwan: first to ban flights from China (zero cases for three weeks from May 5, 2020).
- Czech Republic: compulsory masking and social distancing.
- Hong Kong: early lockdown, significant use of media.
- Vietnam: early lockdown, strategic testing, aggressive contact tracing and effective public communications campaigns (as of June 18, 2020: 335 cases and 0 deaths).

The link leads to a PowerPoint presentation from Stanford University in the United States. It focuses on four responses from countries that were hit early by the pandemic: South Korea, China, Hong Kong, and Singapore. The second link is a superb comprehensive big data analysis by the Deep Knowledge Group of how 200 countries have responded to the COVID-19 crisis. It concludes that one of the most critical factors impacting regional safety is the specific policies and crisis management strategies and tactics countries employ.

### 1.1.3    Iceland: Unique Leadership in Large-Scale Testing Approach
**Link:** [Coronavirus: Iceland's Mass Testing Techniques Gives the World COVID-19 Answers](#)
**Application/Key learning points:** Iceland has been one the best in Europe at managing the virus and has successfully kept the number of deaths low. The country has a very small population (some 364,000 people). Since May 6, 2020, it has tested more than 15 per cent of its population, which is the highest percentage of any country. It has a unique strategy of [large-scale testing](#) to curb the spread of the virus:
- targeted testing of individuals at high risk of infection (January 31, 2020);
- population screening of those having accepted an offer of free testing (March 14, 2020); and,
- a team of detectives to identify potential carriers of the virus.

Iceland has not really implemented a lockdown, but quarantine can last for up to a month in certain cases. The primary testing agent is deCode, now a subsidiary of the American biotech company Amgen. Kári Stefánsson, CEO of deCode, [explains the process in this three-minute video](#). They use a randomised screening method (voluntary) to visualise the spread of the virus throughout the country. One of its findings is quite startling: 50 per cent of those testing positive for COVID-19 had no symptoms.

### 1.1.4    New Zealand: Elimination Strategy for the COVID-19 Pandemic
**Link:** [COVID-19 Alert System](#)
**Link:** [Prime Minister Jacinda Arden's Announcement of Alert Levels](#)
**Link:** [New Zealand's Elimination Strategy for the COVID-19 Pandemic](#)
**Application/Key learning points:** Most New Zealanders are able to explain the government's response to COVID-19 because a simple four-level alert system was introduced, see the first link. This was clearly and decisively explained by Prime Minister Jacinda Arden. The Prime Minister's speech introducing the alert system is shown in the second link. Any level changes were clearly communicated at least three days in advance so that the public and businesses could plan ahead. The alert system included detailed guides for specific sectors. New Zealand's science-driven approach included the following steps:
- The Prime Minister immediately sought advice from scientists and health professionals.
- Decided upon a mitigation or elimination approach.
- Mandatory quarantine on March 15, 2020, was one of the strictest in the world.
- Countrywide lockdown quickly escalated to the highest level with only 100 cases.
- Director of Health Ashley Bloomfield attended the daily press conference with the Prime Minister to lead the New Zealand health response.
- Professor Michael Baker, Otago University Public Health Department, was fully engaged.
- Professor Shaun Hendy, Auckland University science expert, led the modelling response.
- Local experts engaged the international communities and gave advice.

The information from the third link explains New Zealand's elimination strategy.

### 1.1.5    Singapore: Whole-of-Government Approach
**Link:** [Multi-Ministry Task Force on Wuhan Coronavirus](#)
**Download (PDF):** [Remarks by Minister Lawrence Wong, Co-Chair of the Multi-Ministry Task Force](#)
**Application/Key learning points:** On February 3, 2020, Singapore's Prime Minister Lawrence Wong addressed all of his cabinet ministers and parliament on the subject of COVID-19. As early as January 2020, when China sounded the alarm, Singapore's government instituted a Multi-Ministry Task Force to coordinate the whole-of-government efforts to combat the outbreak. The Prime Minister's directive was as follows:
- Direct the national whole-of-government response to the novel coronavirus outbreak.

- Coordinate the community response to protect Singaporeans and stay vigilant against the spread of the disease.
- Work with the international community to respond to the outbreak.

The first link shows the composition of the task force. The chairman regularly gives a national address to inform the public of what the government has been doing, and how Singaporeans have a big role to play in fighting the spread of the virus. The second link is the transcript of a public address by the task force chairman.

## 1.2 Effectiveness of Media Control

### 1.2.1 Sri Lanka: Coronavirus and Health Promotion
**Link:** Health Promotion Bureau on COVID-19
**Link:** How Is Sri Lanka Managing the Coronavirus Pandemic? Setting a Global Example
**Application/Key learning points:** There are many country-level websites on COVID-19: Sri Lanka provides a good example of one with simple, clear instructions and real-time information. The website has a vast reach and has been very successful in helping control the virus. Despite having a population of 21.6 million and being one of the world's most popular tourist destinations, Sri Lanka has had fewer than 2000 cases (as of June 18, 2020), and only 11 deaths. Sri Lanka's president has been fully involved from the very first case. It was also the first country in the world to send rescue missions to Wuhan, and managed to completely quarantine the 33 citizens it brought back. The second link provides a chronological account of how the country dealt with the virus from February 1 to April 4, 2020.

### 1.2.2 Pandemic Mitigation in the Digital Age: Case Studies
**Link:** Pandemic Mitigation in the Digital Age: Digital Epidemiological Measures to Combat the Coronavirus Pandemic
**Application/Key learning points:** This paper from the Austrian Institute for European and Security Policy presents case studies on countries that have made extensive use of digital technologies to combat the spread of the virus. Countries include Taiwan, South Korea, Singapore and China. All of the case studies focus on three areas:
- Contact tracing and monitoring of infections.
- Quarantine enforcement measures.
- Public communication.

The paper also deals with national security and privacy concerns, technological infrastructure, culture, and other cyber issues.

### 1.2.3 Taiwan: Big Data, Transparency and Central Command Fight the Virus
**Link:** Taiwan's Coronavirus Response Is Among the Best Globally
**Link:** How Taiwan Used Big Data, Transparency and a Central Command to Protect Its People from Coronavirus
**Application/Key learning points:** Taiwan has done exceptionally well at controlling the spread of the virus and countering disinformation. The country has had a rapid, transparent response, with medical officials holding daily briefings. It also uses digital platforms. Taiwan was one of the first countries to take proactive action thanks to the lessons it had learned from the SARS virus. The Ministry of Foreign Affairs sought out and countered global misinformation and disinformation. Other steps taken by the government include:
- Quick-response scanning and online reporting of travel history.
- Use of SMS to inform citizens about what to should do.
- Free hotline for citizens to report suspicious cases.

- Extensive use of mainstream and social media channels for daily expert briefings.
- Social media (including Facebook and Twitter) used to quickly tackle disinformation.
- National warning of severe fines for breaches.
- National coronavirus website including information about what to do.

### 1.2.4 India: Local Dialects and Village Outreach Key Part of Success
**Link:** COVID-19, India and Crisis Communication
**Link:** How India's Rural Poor Are Coping with the Coronavirus Lockdown
**Link:** Coronavirus: India Can't Fight Covid-19 If Millions Don't Know Anything About It
**Application/Key learning points:** The WHO declared the pandemic on March 11, 2020; on March 22, India's Prime Minister declared a national curfew, followed 48-hours later by a 21-day lockdown. India has a population of 1.3 billion people in 28 states and eight union territories, who speak many dialects and have many different cultures: crisis communication is therefore a complex and multi-layered exercise. The government had to develop tailor-made crisis communication plans for every state and section of society (especially the poor and marginalised). It took the following steps:
- The Prime Minister declared the curfew on March 22, 2020, followed by a lockdown.
- A COVID-19 Economic Response Task Force was set up, and announced in the media.
- Accredited Social Health Activists (main strategy to reach villages).
- Mainstream coverage on television and in newspapers.
- WhatsApp group called "MyGov Corona Helpdesk" set up to answer questions in Hindi and English.
- Chief Minister and Health Minister hold daily briefings and post alerts on social media.
- Free Kerala Government application, called GoK Direct in the following languages: Malayalam, English, Bengali, Hindi, Tamil, and Kannada.

Accredited Social Health Activists are the nation's front-line healthcare workers who have been going door-to-door to monitor the health of residents during COVID-19.

### 1.2.5 Singapore: Social Media Used to Fight Coronavirus
**Link:** Singapore's Fight Against Coronavirus on Social Media
**Link:** Singapore Response Contained Outbreak
**Application/Key learning points:** Singapore has a population of six million, most of whom are very technologically literate. As of March 4, 2020, Singapore had recorded fewer than 100 cases of COVID-19 with no deaths. Singapore was one of the first countries to impose travel restrictions and announce them through all forms of media. A couple who had provided a false travel information history were charged for the offence: this set a precedent and sent a firm message. In addition, Singapore:
- provided a text and mobile solution on February 10 to report the location of those quarantined;
- put in place strong epidemiological surveillance and contact-tracing capacity;
- featured the Prime Minister regularly in the media to address the issue of transparency and downplay panic;
- made extensive use of WhatsApp, Facebook, Instagram to allay fears, and give clear instructions and updates daily;
- countered misinformation on Gov.sg.

It should be noted that there was a subsequent spike in cases in Singapore among blue-collar migrant workers who were living in close proximity to each other.

## 1.3    Data Control and Management

### 1.3.1    Taiwan: Big Data, New Technology, and Privacy Issues
**Link:** Response to COVID-19 in Taiwan
**Link:** Big Data and Privacy Issues - Big Data Coronavirus in Taiwan
**Application/Key learning points:** These articles will show you how Taiwan used big data very early on in the game to flatten the curve, quickly mobilising and putting in place specific approaches for case identification, containment, and resource allocation to protect public health. Taiwan leveraged its national health insurance database and integrated it with its immigration and customs database to begin the creation of big data for analytics; it generated real-time alerts during a clinical visit based on travel history and clinical symptoms to assist with case identification. It also used new technology, including QR Code scanning, and online reporting of travel history and health symptoms, to classify travellers' infectious risks based on flight origin and travel history over the past 14 days. People designated as being low risk (i.e. no travel to Level 3 alert areas) were sent a health declaration border pass via SMS messaging for faster immigration clearance. Those with higher risk (recent travel to Level 3 alert areas) were quarantined at home and tracked through their mobile phone to ensure that they remained at home during the incubation period.

### 1.3.2    United Kingdom: Shielding the Most Vulnerable from the Virus
**Link:** Guidance on Protecting People Most Likely to Get Very Poorly from Coronavirus (Shielding)
**Application/Key learning points:** The United Kingdom government has promoted "Shielding" – a guide to protect the most vulnerable from the virus. It spells out who is are likely to be most affected, e.g., the elderly, those with cancer or lung disease, pregnant women or those needing specific medicine. The National Health Service (NHS) then sends a letter to their home address (and electronically, where possible) to provide instructions about virus prevention and mitigation.

### 1.3.3    Australia and New Zealand Share Similar Playbook with COVID-19
**Link:** Vanquish the Virus? Australia and New Zealand Aim to Show the Way
**Link:** After Containing COVID-19, Can New Zealand and Australia Show How to Reopen?
**Application/Key learning points:** New Zealand and Australia shared one common approach to tackling COVID-19: A Scientific Approach to Complete Elimination. As of June 7, 2020, both have been highly successful in the implementation of their strategies with New Zealand reporting no new cases for 18 days with no active case left in the country, whilst Australia has an average of only 2-10 reported cases per day with 432 active cases. Both countries adopted similar tactics:
- The Prime Ministers met and talked from early February.
- Both countries put scientific expertise – including university and medical expertise – at the forefront of the fight
- Both engaged relevant medical and scientific experts in a collaborative effort to eliminate the virus from their countries, e.g. test kits, lockdown approaches.
- Both prioritised elimination of the virus as opposed to containment (short-term pain for long-term gain).
- Both leaders addressed the nation frequently.
- Both demonstrated continued consultation with health experts.
- Both imposed strict lockdowns early (New Zealand's was the strictest in the world).

### 1.3.4 Norway: "Smittestopp" Virus App Helps Stop Spread of COVID-19

**Link:** Norwegian Virus App to Help Stop the Virus

**Application/Key learning points:** Norway has had one of the lowest death rates in the world and has controlled the spread of the virus. This article describes a sophisticated yet controversial app with many features to track and control the spread of the virus. The main concern with the app was privacy. These are the main features of the app:

- A text message is sent to an infected person's close contacts.
- This app can track secondary pathways of infection (someone who has been in contact with someone who becomes ill).
- Information is kept for 30 days to enable analysis.
- The effectiveness of the measures can be assessed.
- Hotspots can be identified.

1.4 million Norwegians – or 25 per cent of the population – have downloaded the app, which is called "Smittestopp". Norway has also developed a new method of using nanoparticles to test 150,000 people per week.

### 1.3.5 South Korea: Flattening the COVID-19 Curve

**Download (PDF):** How Korea Responded to a Pandemic Using ICT

**Link:** Coronavirus Data Lessons from South Korea

**Application/Key learning points:** South Korea has one of the lowest COVID-19 mortality rates, reporting just 280 deaths as of June 18, 2020. In February, it was one of the most infected countries in the world, but it took drastic steps to curtail the spread of the virus. One of their main strategies was the use of big data to combat the virus. Information and communications technology was used in the following ways:

- social distancing
- rapid testing
- contact tracing
- treatment or telemedicine
- education.

The blog in the link explains how big data and artificial intelligence (AI) helped South Korea with contact tracing and in developing a quick test kit.

## 1.4    Effective and Efficient Use of Communication Channels

### 1.4.1 Australian Health Sector Emergency Response Plan for COVID-19

**Link:** Australian Government Response to the COVID-19 Outbreak

**Link:** State and Territory Government Information

**Link:** How Australian States Are Enforcing Coronavirus Measures

**Application/Key learning points:** The Australian Health Protection Principal Committee is the key decision-making body for the COVID-19 health emergency. It comprises all state and territory chief health officers and is chaired by the Australia's Chief Medical Officer. State and territory governments each have their own responses to the virus, depending on the severity and peculiarities of the local outbreak. However, they adhere to the fundamental guidance and message provided by the national government. The differences usually relate to new restrictions; different penalties or corporate penalties. For example, in New South Wales, NSW Health has gone into detail about its restrictions on gatherings and movement, including the provision of 16 "reasonable excuses" for leaving the house and 14 "essential gatherings".

### 1.4.2 New Zealand: Government Best Messaging and Compliant Business Response

**Link:** [COVID-19 Lockdown Extension: How New Zealand Industries, Politicians and Public Reacted](#)
**Link:** [Coronavirus: Jacinda Ardern Says New Zealand Will Shut Down in Two Days](#)
**Link:** [Legal Perspectives](#)

**Application/Key learning points:** When the WHO declared the virus a pandemic on March 11, 2020, governments around the world decided to shut down businesses; some decided earlier than others. In general, businesses complied. Perhaps the best messaging and business compliance rate for lockdown came from New Zealand, which went from Level 1 to Level 4 in 48 hours. The key messaging from the government was very clear:

- Early shutdown will save 10,000 lives.
- Immediate subsidies to businesses and workers; massive financial support from the government.
- Non-essentials clearly spelled out.
- Essentials remain open; social distancing in place.
- Wage subsidies to employers.
- Negotiate with banks to support those with mortgages.
- Schools closed.

In addition, New Zealand's Prime Minister gave instructions about exactly what Alert Level 4 would entail. In general, all of the government's decisions were accepted and welcomed; there was, however, some criticism, and this is still being managed. Criticism came notably when extending the complete lockdown, and describing what moving down to Level 3, Level 2, and Level 1 would look like.

### 1.4.3 How Singapore Sends Daily WhatsApp Updates on COVID-19

**Link:** [How Singapore Built an AI Temperature Tool in Two Weeks](#)
**Link:** [Singapore COVID-19 Resources](#)

**Application/Key learning points:** The Singapore government has a web page of all official COVID-19 sources. This lends credibility to the information it provides and gives the public a wide range of information and media platforms with which to engage. These include:

- Official COVID-19 sources.
- Posters relating to COVID-19.
- Downloadable videos about COVID-19.

Singapore's COVID-19 WhatsApp messaging is provided in four official languages. It is recognised as being the best way of communicating with residents on a daily basis. There are 4 million people in Singapore who use the app. The project was built by the Ministry of Communication and Information, the A*STAR Institute for Infocomm Research, with GovTech. The app was built in three days and has the following key features:

- Information is sent two or three times a day.
- Fake news and disinformation is removed.
- Contact tracing.
- Manages quarantine (reporting of current location).
- Enables the reporting of breaches by other people.

**1.4.4    WHO & IMF: Critical Preparedness, Readiness, and Pandemic Response Action**
**Link:** WHO Critical Preparedness, Readiness and Pandemic Response Action
**Link:** Policy Responses to COVID-19
**Application/Key learning points:** The WHO link takes you to the organisation's Immediate Response Plan from the moment the pandemic was declared. It covers actions to be taken in prioritised areas for an entire economy, according to four levels of transmission. The second link from the International Monetary Fund (IMF) tracks the key economic responses from 193 countries. You can access the specific policy and discretionary actions taken by various countries in the following areas: tax and spending; loans; monetary instruments; foreign exchange; border control; and, how businesses have been affected

## 1.5    Future Foresight and Readiness

**1.5.1    Hong Kong: Lessons Learned from SARS Applied to COVID-19**
**Link:** Hong Kong Learned from SARS
**Link:** Lessons from SARS
**Link:** SARS Coronavirus as an Agent of Emerging and Re-emerging Infection
**Application/Key learning points:** After the SARS outbreak, Hong Kong made sure it was prepared for a pandemic response. This was clear as early as January 4, 2020, when the alarm was first raised. Its geographical position meant the virus would probably arrive very quickly in Hong Kong, but it currently reports one of the lowest numbers, with about 1100 cases and four deaths. Following SARS, Hong Kong did the following:

- Most people have become used to wearing masks in daily life.
- Large investments made in health systems to prepare for infectious diseases.
- School cancelled at quick notice.
- Immediate social distancing.
- Care for elderly and vulnerable, strong attention given to this (from SARS lessons).
- Close borders (not done quickly enough though, and was criticised for that).
- No total lockdown.
- Strong charity within country from donation campaigns.
- Government aid.
- Extensive use of social media (millennial thinking).

The third link is to a 2007 academic paper on SARS. Useful preparations for a possible future virus can be found on p. 683.

**1.5.2    Taiwan: Post-SARS/H1N1 Public Health Emergency Preparedness**
**Link:** Report on Taiwan's Public Health Emergency Preparedness Programs 10 Years after SARS
**Application/Key learning points:** Taiwan was hit hard by SARS in 2003 and then by the H1N1 influenza outbreak in 2009. Since then, the Department of Health has made big plans to prepare for future similar emergencies with Taiwan Centres for Disease Control (CDC). This paper highlights programs that do the following:

- Improve collection of disease surveillance data.
- Run a state-of-the-art Epidemic Intelligence Centre that can integrate, analyse, and report on surveillance data from diverse sources.
- Create a functional network of laboratories that can perform diagnostic tests and rapidly report results.
- Establish a medical network that includes six respected regional commanders who can provide expert advice and a medical response in the event of an outbreak.

- Exercise systems to practice response activities and regularly test readiness levels.
- Raise general awareness of the risks of infectious diseases and good practices for controlling transmission among the public and international travellers.
- Invest in a domestic vaccine manufacturing capability

### 1.5.3    Czech Republic: Probably One of the Best Responses in Europe

**Link:** Measures Adopted by the Czech Government Against the Coronavirus

**Application/Key learning points:** As of June 4, 2020, the Czech Republic has reported just over 9,400 cases and 324 deaths. This is one of the lowest per capita rates in Europe. Early on, the government provided mixed and changing messages, which caused some confusion. However, it learned its lesson and invested a great deal in research and medical studies, as well as learning from Taiwan and Hong (particularly about a culture of mask wearing). It has been extremely strict about enforcing mask use outdoors, making it mandatory.

### 1.5.4    China: Late to the Game but Harsh Containment Strategy Worked

**Link:** Report of the WHO-China Joint Mission on Coronavirus Disease

**Application/Key learning points:** China started seeing the most devastating effects of the virus around the third week of January, 2020, and focused all its efforts on containment of the virus and treatment of patients. As of February 20, 2020, there were some 75,000 cases in China. However, by late March, the virus appeared to have been contained. The timeline shows how China's massive response came late, but proved very effective. The various stages of China's response can be found from p. 14 on in the joint report with the WHO, to which the link provided will take you. The tide began to turn when China implemented one of the most aggressive containment and quarantine efforts in history, as well as many other measures, including big data and monitoring of citizens. In Wuhan, authorities converted stadia and other facilities into mass quarantine centres and built more than a dozen temporary hospitals to house patients with less severe symptoms. The message was clear: everyone had to stay at home. Studies have shown that had the government reacted three weeks earlier, there could have been a 95 per cent reduction in the number of cases.

### 1.5.5    Singapore's Diagnostics Development (DxD) Hub Launched in 2014

**Link:** Singapore Shares COVID-19 Response

**Download (PDF):** Singapore's Path to Prosperity

**Application/Key learning points:** In response to the 2003 SARS crisis, Singapore established many protocols and inter-agency collaboration agreements, and sought to improve its infrastructure to deal with an epidemic or pandemic-type scenario. One of its capabilities is the Diagnostics Development Hub, whose purpose is to cluster medical experts to create a world-class medical diagnostics hub. This was why Singapore was amongst the first to detect and be able to undertake rigorous testing at the early stages of the virus. Singapore even developed its own 5-minute COVID-19 test kit. The rationale for the DxD Hub can be found on the A*STAR website, the elite national research and development agency supporting the government in Singapore.

### 1.5.6    Future Foresight: The World After COVID-19

**Link:** Futures Platform: COVID-19 Radar

**Application/Key learning points:** The radar, developed by Futures Platform Finland, provides a holistic view of the world after COVID-19. It includes the initial shock, recovery, and the world after. The radar is populated with the likely trends of the future with clickable links that reveal more information on the trend and its potential impact. The radar is updated daily to help decision makers plan for the future.

# Pillar 2: Health

## 2.1    Digital and Technological Solutions

### 2.1.1    Role of Technology in Tracking, Testing, and Treating COVID-19
**Link:** Roundup: Tech's Role in Tracking, Testing, Treating COVID-19

**Application/Key learning points:** As the cases of COVID-19 increase, there is a commensurate rise in digital epidemiology tools, chatbot helpers, electronic health record (EHR) guidance tools and rapid-response test kits. This link provides a list of how health organisations, governments and digital health providers are using technology to tackle the COVID-19 crisis. The information offers best practices with around 75 digital apps and solutions, and technologically integrated channels based on highly sophisticated and innovative mechanisms from across the globe. These are explained, and there are useful links to the respective app/diagnostic or service provider/organisation. Here are a few examples:

- *Fever check.* During the spread of COVID-19 in Singapore, Integrated Health Information Systems (IHiS) partnered with local healthcare AI start-up KroniKare to pilot iThermo, an AI-powered temperature-screening solution that screens and identifies those having or showing symptoms of fever.
- *Nursing home tracing.* In the United States, a senior-focused digital health company CarePredict rolled out a set of contact-tracing tools designed for residents of old people's care homes that can be used to track COVID-19.
- *Telemedicine partnership increases capacity.* Acute care telemedicine technology and services vendor SOC Telemed and clinical practice management company SCP Health have announced a partnership to deliver scalable, flexible emergency and hospital medicine services via telemedicine.
- *Tracking in Denmark.* The Danish government teamed up with IT service provider Netcompany to create digital solutions to ease the country's national lockdown restrictions.
- *Checking for contamination.* The Chinese government released a new app intended to help citizens check whether they had come into contact with the virus.

### 2.1.2    Germany: Symptom Checker App Launches COVID-19 Version
**Link:** Symptom Checker App Launches COVID-19 Version

**Application/Key learning points:** Ada Health has released a new COVID-19 assessment and screener available through its website. The new solution is free to use as a web app. Among other things, it will enable individuals to do the following:

- *Assess symptoms.* Users will be able to understand their risk of having COVID-19 based on an assessment of their symptoms and risks, as well as their exposure risk.
- *Receive guidance on next steps.* The solution provides personalised guidance on what to do next, based on an individual's symptoms and risk of suffering a more serious form of COVID-19.
- *Stay informed and manage their health.* Users receive advice on self-monitoring at home, and access to the latest global COVID-19 information.

By offering users access to high-quality healthcare information and guidance, Ada aims to help ease the immense pressure being put on health systems. This will enable medical professionals to focus their support on those who need it most, while also enabling users to better understand their own symptoms from home.

### 2.1.3 South Korea: Technology that Breaks U.S. Privacy Laws Helps Contain COVID-19

**Link:** South Korea Is Relying on Technology to Contain COVID-19, Including Measures that Would Break Privacy Laws in the US

**Application/Key learning points:** South Korea is one of the only countries in the world that has brought a major COVID-19 outbreak under control. It is not currently enforcing stay-at-home orders, and most businesses are open. The country is relying on various cutting-edge technology solutions:

- The government is stockpiling infrared cameras to detect fevers, along with other medical equipment.
- South Korea plans to use "smart city" technology to bulk up its contact tracing networks.
- The government plans to roll out location-tracking wristbands for people who violate quarantine orders.
- A mandatory government-run smart-phone app tracks the location of all new arrivals to the country.

### 2.1.4 Google and Apple Ban Location Tracking in Apps

**Link:** Google and Apple Ban Location Tracking in Their Contact Tracing Apps

**Application/Key learning points:** Apple and Google have announced their coronavirus tracing technology will ban the use of location tracking. The announcement may well create potential complications for some apps that had planned to use the two systems to notify people of their potential exposure to COVID-19. The full system, which uses Bluetooth signals to determine how close you have come to diagnosed COVID-19 patients, is expected to be released by the middle of May. Developers currently have an early version of the system. In addition, Apple and Google released a set of additional requirements for developers of apps. These include only government health authorities being permitted to create apps; all apps having to get user consent before using the Exposure Notification API; and a second consent being required before positive test results and "diagnosis keys" are shared with public health authorities. Finally, data collection has to be minimised and can only be used for health response. Other uses of the data are banned: data cannot be used for targeted advertising or policing. The new technology will be built into iOS and Android operating systems, which account for the vast majority of all smartphones. The technology aims to avoid fragmentation between different systems and instead allow all these phones to work together, a key requirement for successful contact tracing efforts. The announcements are an attempt to roll that out while maintaining user privacy and preventing potential abuse.

### 2.1.5 Canada: Digital Health Supports for COVID-19

**Link:** Digital Health Supports for COVID-19

**Application/Key learning points:** The eHealth Centre of Excellence works at both the system and local level to move eHealth initiatives forward. By providing digital health tools, the team supports healthcare providers and organisations in their battle against COVID-19. The following tools are available and can be used to safely and effectively screen patients and facilitate monitoring and treatment of the disease:

- virtual visits;
- InputHealth COVID-19 Population Health Navigator;
- screening tools for Electronic Medical Records (EMRs);
- electronic referral (eReferral);
- tablets (such as CognisantMD's Ocean Tablets);
- ePrescribing;
- Healthline.

### 2.1.6　United States: New Considerations for Contact Tracing

**Link:** Contact Tracing for COVID-19: New Considerations for Its Practical Application

**Application/Key learning points:** This eight-page article by McKinsey & Company deals with the global public health practice of contact tracing, which is being widely applied in the fight against COVID-19. Collaborative public health and private sector efforts are addressing new social and medical challenges in various ways. This opinion piece by McKinsey experts introduces some new best practices that might serve as guiding principles for COVID-19 contact tracing, as well as considerations for its practical application. It is an excellent source of information relating to contact tracing.

### 2.1.7　Australia: First "Virtual Hospital" for COVID-19 Patients

**Link:** Australia's First 'Virtual Hospital' for COVID-19 Patients Use Caretaker Medical Wireless Patient Monitor for Remote Monitoring and Reporting

**Application/Key learning points:** Australia is one of the best-performing countries leading the fight against the COVID-19 pandemic. Caretaker Medical, a global leader in remote wireless patient monitoring, is the technology behind Australia's first virtual hospital. The technology will be used to monitor COVID-19 patients in their homes, thus reducing the pressure on the Australian healthcare system. The Caretaker devices will monitor patients in their homes who have moderate symptoms, and will continuously track their vital signs, including heart rate, temperature, oxygen saturation, beat-by-beat blood pressure and breathing. A team of doctors, supported by AI technology, will continuously monitor their status; if conditions worsen, the patients will be taken to hospital for emergency care.

## 2.2　Predictive Analytics, Dashboards, and Big Data

### 2.2.1　United States: COVID-19 Data Dashboards

**Link:** State COVID-19 Data Dashboard
**Link:** COVID-19 Surveillance Dashboard: University of Virginia

**Application/Key learning points:** This expert perspective reviews the key indicators currently being tracked by states through their COVID-19 dashboards, and also provides an overview of best practices states might take into consideration when developing or modifying these same COVID-19 dashboards. The second link shows the different tracking measures and parameters for the dashboard, as well as the nuances of how they are recorded and projected. An Interactive Map Dashboard (Chinese only) has been released to capture and visualise information about the novel coronavirus spread in Macau, using ArcGIS Online and AI technologies in near real time, automatically, without manual updates, and on a single map

### 2.2.2　Interactive Novel Coronavirus Map Dashboards

**Link:** List of Novel Coronavirus Dashboards - Interactive Map Dashboards

**Application/Key learning points:** The Hong Kong/Macau interface enables users to see the number of confirmed cases; severe cases; ruled-out cases; and, available resources such as the location and number of surgical masks for sale. The Philippines Department of Health has created a coronavirus dashboard for public awareness about the spread of the virus. It is the authoritative source of information about infections in the Philippines, and is also used to share information with other government departments, enabling them to more efficiently deploy resources and make informed decisions about their activities to combat the epidemic.

### 2.2.3 Canada: Current Status Coronavirus Dashboard
**Link:** Current Status of Canada - Coronavirus Dashboard
**Link (video):** A Walkthrough of our COVID-19 in Canada Dashboard
**Application/Key learning points:** Track COVID-19 across Canada with an interactive dashboard that helps you stay up-to-date on the status of the coronavirus in real time. Explore critical cases and resources by location, and perform social-distancing "what-if" analysis. The data in this dashboard is drawn from John Hopkins University and is updated every 24 hours. It provides COVID-19 information in three defined sections:

- *Current Provincial Data*: explore current case and death trends at the provincial level.
- *Current Hospital Resources*: explore resource capacities based on the number of critical cases; hospital beds (presented as acute care hospital beds per 1000 residents by province); ventilator count by province; and, which hospitals have the most beds in your region.
- *Future Projections*: interact with, explore, and forecast the impact of social distancing on future case and death trends.

### 2.2.4 United States: How Workplaces Can Prepare for Social Distancing Post-Lockdown
**Link:** How Workplaces Can Prepare for Social Distancing Post COVID-19 Lockdown
**Application/Key learning points:** In the post-lockdown world, we will all be going back to an altered version of our previous workplaces. As social distancing has been one of the key tools in the ongoing effort to mitigate the spread of COVID-19, the question is, are organisations ready to apply it in the workplace? The Landing AI social distancing detector demonstration provides a good visual description of approach used by a start-up company to manage to do this. On the left-hand side, you can see people walking down a street, while on the right you see a bird's-eye view of the same scene, with each person represented as a dot. These dots turn red when they move close to each other, indicating that the social distancing protocol has been violated.

### 2.2.5 China: Visualising the Progression of the COVID-19 Outbreak
**Link:** Visualising the Progression of the 2019-nCoV Outbreak
**Application/Key learning points:** This is an excellent example of visualising the data for the COVID-19 outbreak, presented in the form of live heat maps. Mapbox China launched a real-time map to visualise the spread of the epidemic with Sinomaps, the leading map publishing house in China. The map uses real-time data and heat maps to display both the current and historical spread of the virus over recent weeks.

## 2.3 Developing and Using Equipment and Treatments

### 2.3.1 United States: Latest COVID-19 Testing Methods and Availability
**Link:** The Latest in Coronavirus (COVID-19) Testing Methods and Availability
**Application/Key learning points:** This excellent article provides a few fascinating pieces of takeaway information:

- The two main types of tests for COVID-19, molecular and serological; it explains how they work, the science behind them, test result times, and how accurate the tests are.
- The fastest test to be authorised by the United States Food and Drug Administration (FDA), created by Abbott, can return results in as little as five minutes.
- The FDA has issued the first authorisation of an at-home collection molecular test kit by LabCorp.
- Due to an influx of potentially unreliable serological antibody tests coming to market, the FDA now requires tests be authorised if they are to remain on the market.

If you have an active COVID-19 infection, the molecular test will generally be more accurate unless you've started developing antibodies to the virus. The serological test will be able to tell you whether you have had the infection and recovered (regardless of having symptoms or not). This can be useful in determining who may be able to go back to work or school. Rapid response, point-of-care tests and at-home tests are also being developed.

### 2.3.2    United States: Policy for COVID-19 Tests
**Link:** Policy for Coronavirus Disease-2019 Tests During the Public Health Emergency
**Link (video):** What is an EUA?
**Application/Key learning points:** This link provides invaluable information on the United States FDA policy relating to COVID-19, and explains what Emergency Use Authorisations (EUAs) are and why they are used. You will be able to access the following information:

- About Emergency Use Authorisations (EUAs)
- EUA Guidance
- COVID-19 EUAs (detailed information for all COVID-19 EUAs, including authorisations and fact sheets on):
    - in vitro diagnostic products;
    - high complexity molecular-based laboratory developed tests;
    - SARS-CoV-2 antibody tests;
    - personal protective equipment (PPE) and related medical devices;
    - ventilators and other medical devices;
    - therapeutics.

Within these links are hundreds more links and PDFs, which will provide a vast repository of knowledge on COVID-19 diagnostic and medical products, from production specifications and operational guides to quality regulatory requirements.

### 2.3.3    United Kingdom: Making Ventilators for Coronavirus Patients
**Link (video):** Making Ventilators for Coronavirus Patients
**Application/Key learning points:** In this two-minute video, Federico Formenti, senior lecturer in human physiology at King's College London, speaks about his involvement in a collaboration with the University of Oxford to produce ventilators, following the British government's plea for support with design and production. The aim is to produce a ventilator, which is safe, simple in design and operation, and can be produced in a large scale in a short period of time. A key aspect of the proposal is that it is based on a constructive collaboration with several individuals with different areas of expertise. The most important element is the clinical component of the team; this informs the engineering component of the team of the clinical requirements, and through an iterative approach, a prototype was agreed upon.

### 2.3.4    United States: Leaders Discuss COVID-19 Research and Treatment
**Link (video):** Leaders Discuss the Latest COVID-19 Research and Treatment
**Application/Key learning points:** Two leading American experts – Tom Mihaljevic, MD, Cleveland Clinic CEO and President, and Serpil Erzurum, MD, Chair of the Lerner Research Institute – discuss key research in the COVID-19 pandemic, including vaccine development, anti-viral medications and testing, as well as the importance of philanthropy in advancing COVID-19 treatments.

### 2.3.5    Switzerland: WHO "Solidarity" Trial
**Link:** WHO Solidarity Trial: How a Spanish Doctor Joined the Race for a COVID-19 Treatment
**Application/Key learning points:** The WHO has stepped up to address this critical health crisis with the most ambitious and extensive search for a treatment ever conducted. Through the "Solidarity" Clinical Trial, it is leveraging its ability to drive global collaboration and research to test a range of

possible treatment options, and ensure that patients get access to safe and effective medicines and, ultimately, save lives. With the trial, the WHO has used its international reach and convening power to fast-track and scale up randomised clinical trials around the world to find a treatment for COVID-19 at a rate that aims to be 80 per cent faster than any traditional trial. By enrolling an unprecedented number of patients in a single randomised clinical trial carried out across about 100 countries, the WHO is able to test four possible treatment options faster, with the aim of gaining strong evidence for a potential treatment. Doctors around the world, such as Vicente Estrada, the Spanish infectious disease doctor featured here, have now dedicated themselves full time to the task of identifying a viable treatment. Even doctors who are not normally infectious disease specialists (such as gynaecologists and dermatologists) have joined his team to work on the trials.

## 2.4    Immunological Factors

### 2.4.1    COVID-19 Might Not Be As Deadly As Previously Thought
**Link (video):** German Study Shows COVID-19 Might Not Be As Fatal As Previously Thought
**Application/Key learning points:** In this seven-minute interview, Professor Hendrick Streeck, who is director of the Institute of Virology and Institute for HIV Research at the University of Bonn in Germany, discusses the university's antibody study and explains what it means for the coronavirus pandemic. Germany has dealt with the epidemic exceptionally well, recording a low number of deaths despite having a high number of cases. From 4'31" in the video, there is an interview with Bill Gates about herd immunity.

### 2.4.2    World's Leading Vaccine Expert Talks About COVID-19 Vaccine
**Link (video):** We Asked the World's Leading Vaccine Expert About COVID-19 Vaccine
**Application/Key learning points:** This 44-minute interview with Jerome Kim, the director general of the International Vaccine Institute, gives a fascinating insight into the potential development of a vaccine for COVID-19. He talks about the time required to develop a vaccine (from 9'15"), the potential cost of a vaccine (from 14'47"), and vaccine distribution (from 28'38"). The International Vaccine Institute is a non-profit international organisation, established in 1997 as an initiative of the United Nations Development Programme (UNDP). It is one of the few organisations in the world dedicated to vaccines and vaccination for global health.

### 2.4.3    United Kingdom: Immunology Research – What Are the Research Priorities?
**Download (PDF):** COVID-19 immunology Research: What Do We Know and What Are the Research Priorities?
**Application/Key learning points:** The United Kingdom is at the forefront of immunological research globally. The British Society for Immunology (BSI) is a leading membership organisation, and works with scientists and clinicians from academia and industry to promote immunology research and application around the world. The Academy of Medical Sciences is an independent body representing the diversity of medical sciences. The Academy and BSI convened an expert group in April 2020 to collate what is currently known about the immunology of COVID-19. On May 1, 2020, an advisory group, comprising 15 leading immunology experts, published a 23-page rapid review of the relevant immunology research to help us understand how it can inform our response to the COVID-19 pandemic. They have quickly identified 13 priority areas where immunology research might deliver significant public health impacts – either quickly, meaning within 12-18 months, or further into the future.

### 2.4.4 United Kingdom: Targeting the Immune Response

**Link:** [Spotlight on COVID: Targeting the Immune Response](#)

**Application/Key learning points:** Professor Francesco Dazzi, School of Cancer & Pharmaceutical Sciences at Kings College London, [discusses targeting the COVID-induced cytokine storm](#) with mesenchymal stromal cells with Professor Richard Trembath, Executive Dean, Faculty of Life Sciences & Medicine. A cytokine storm is a severe immune reaction in which the body releases too many cytokines into the blood too quickly. Cytokines play an important role in normal immune responses but having a large amount of them released in the body all at once can be harmful. A cytokine storm can occur as a result of an infection, autoimmune condition, or other disease. It may also occur after treatment with some types of immunotherapy.

## 2.5 Widening the Medical Workforce

### 2.5.1 Denmark: Medical Students Fill Healthcare Staff Shortages in Pandemic

**Link:** [Medical Students for Healthcare Staff Shortages During the COVID-19 Pandemic](#)

**Application/Key learning points:** Faced with medical healthcare staff shortages as a result of the pandemic in Denmark, Aalborg University and Aalborg University Hospital were able to shift the teaching of medical students to a digital platform, employ final year students as temporary residents, and plan and initiate course programmes in ventilator therapy assistance and nursing assistance within two days. This two-page document explains the action plan and timelines to include, prepare and employ medical students at Aalborg University. It is an inspiring example that can be followed by other universities.

### 2.5.2 Discussion on Staffing During the COVID-19 Pandemic

**Link (video):** [A Discussion on Staffing during the COVID-19 Pandemic](#)

**Application/Key learning points:** The United States and United Kingdom are two of the countries that have been most seriously affected by the COVID-19 pandemic. This 33-minute video is a fascinating discussion between and American and a British medical expert, both of whom have practical insights into the need for resourceful staffing and future needs.

### 2.5.3 United States: COVID-19 Health Workforce Surge Planning

**Link:** [COVID-19 Health Workforce Surge Planning](#)

**Application/Key learning points:** The expected patient surge due to COVID-19 requires the rapid training and deployment of the existing health workforce, as well as innovative and creative methods to increase the skills and types of individuals providing care on the frontlines, and the launch of alternative care settings. This website is updated frequently with quick turnaround recommendations and other rapid response resources to support the rapid scale-up of the health workforce to address the COVID-19 crisis in California. Faculty affiliated with Healthforce Center at the University of California San Francisco have developed many of the resources on this site. It is an excellent resource with more than 25 documents or links; it shares knowledge and information relating to workforce and staffing, alternative care sites, and other surge planning resources.

### 2.5.4 United States: Recognising Volunteers During COVID-19

**Link (video):** [Volunteer Recognition During COVID-19](#)

**Application/Key learning points:** This 49-minute webinar video provides key information on the following:
- Recognition ideas for retention, sustainability, and success.
- Strategies to keep your volunteers feeling engaged and appreciated.
- Ways to leverage technology to recognise your volunteers virtually.

- Dynamic ideas to reward and certify volunteers, e.g., digital/online awards, Lion's Heart's "Golden Lion" Award, and many more (from 33'45").

## 2.6    Modelling and Forecasting

### 2.6.1    United States: What is the COVID-19 Case Capacity in Your Area?
**Link:** What is the COVID-19 Case Capacity in Your Area?
**Link (video):** Definitive COVID-19 Capacity Predictor
**Application/Key learning points:** Definitive Healthcare is the number one healthcare data and analytics platform, delivering information on every care provider in the United States. Based on more than 3 billion medical and prescription claims, the platform empowers users to analyse clinical and healthcare information, as well as other data about hospitals, doctors and physicians, medical groups, surgery centres, long-term care facilities, etc. Users of Definitive Healthcare's COVID-19 Capacity Predictor dashboard can also filter to a state and/or county of interest. Based on the filters a user applies, information is provided about that area's total available treatment resources (beds and ventilators), as well as the projected number of days until current resources in the healthcare system are at their limit.

### 2.6.2    Why Vietnam Won Its COVID-19 War
**Link:** Why Vietnam Won and US Lost Their COVID-19 Wars
**Application/Key learning points:** As of June 2, 2020, Vietnam had recorded zero coronavirus deaths. Despite sharing a border with China, the country has confirmed a minuscule number (328) coronavirus cases nationwide. Vietnam's actual toll might be higher because of the relatively low number of 88,000 coronavirus tests conducted, but it still has one of the lowest COVID-19 mortality rates in the world.

### 2.6.3    From War to Peace: Five Stages in the Battle Against COVID-19
**Link:** Five Stages for Healthcare Institutions in the Battle Against COVID-19
**Application/Key learning points:** This excellent article by McKinsey & Company is a goldmine of information. It presents a path from the present to the future, where the "next normal" for healthcare won't look anything like the normal that we left behind. It asks us to ponder, plan, prepare, and perform accordingly. It deals with the following five stages for healthcare institutions in the battle against COVID-19:

- *Resolve*: How organisations can structure a nerve centre to combat COVID-19.
- *Resilience*: How the economic impact may affect healthcare organisations over time.
- *Return*: How can organisations begin to scale up operations once the worst of the crisis is over?
- *Reimagination*: How can we fundamentally reinvent health services given what we have learned?
- *Reform*: How will the relationship between government, businesses, and individuals change?

### 2.6.4    United States: Lessons from the Past to Help Supply Chains Today
**Link:** 5 Lessons from Past Epidemics and Shortages to Help Supply Chains Cope with COVID-19
**Application/Key learning points:** This is an informative article by Jody Hatcher, former president of supply chain services at Vizient, Inc., in the United States. Vizient drives performance improvement in health care and is transforming health care with innovative, data-driven solutions. This article argues that it is important to create open communications between providers and suppliers; use analytics to predict demand and forward-buy appropriately; evaluate alternatives or new pathways for critical products; ensure uptime of mission-critical equipment; and, share insights and best practices across networks. Otherwise, we will be doomed to repeat the mistakes of the past.

### 2.6.5 United States: Health Care Supply Chain Solutions: PPE Forecasting

**Link (video):** COVID-19 Health Care Supply Chain Solutions: PPE Forecasting

**Application/Key learning points:** This 11-minute demonstration video shows how University of Florida (UF) Health created its own PPE calculator, allowing it to calculate current demand and forecast future worst-case scenario needs. This free model uses the Sg2 data to better estimate the downstream demand for PPE and workforce needs incorporating timing and impacts of social distancing in individual markets using the specific beta in the SIR model. Supply chain applications within the UF Health calculator include a modified HHS model and incorporates Sg2 average daily census output in weeks/days. Ratios for patient input are modified depending on individual hospital labour needs and PPE assumptions per role per shift. This model can be applied to any PPE with multiple data sources such as order quantities allocated from distributors to determine what is needed several weeks out.

### 2.6.6 Modelling COVID-19 Case Growth in Singapore

**Link (video):** Modelling Coronavirus (COVID-19) Case Growth in Singapore: Part 1 - Data Stories
**Link (video):** Modelling Coronavirus (COVID-19) Case Growth in Singapore: Part 2 - Data Stories

**Application/Key learning points:** Urban Agents built a custom model to simulate the growth of COVID-19 in Singapore. This excellent video has been divided into two parts. In Part 1, the various key variables for the spread of the COVID-19 disease are described and explained (such as the time lag between infections and detected cases, R (the reproduction rate, describing the virality of the virus), various testing deployment by symptoms, test accuracy issues such as false positives & negatives, asymptomatic population, etc.). Part 2 of the video explains how the latest statistical updates from the Ministry of Health are used to build up the custom model. The effects of social distancing are considered, especially during the circuit breaker period (i.e. wear masks, stay home, etc.) before the world can get a vaccine.

## 2.7 Information Sharing

### 2.7.1 New Zealand Is Safest Country in the World During COVID-19

**Link (Video):** Safest Country in the World During the Coronavirus- New Zealand
**Link (Video):** Learning from New Zealand During Coronavirus

**Application/Key learning points:** New Zealand has won its battle against widespread undetected coronavirus community transmission and has been one of the first countries in the world to do so. New Zealand implemented a four-level alert system:

- Level 1 is the "Preparation" stage with confined borders.
- Level 2 is the "Reduce" stage; there are no restrictions on movement, but people are asked to maintain a social distance.
- Level 3 is the "Restrict" stage, where people can go out for essential personal movements such as work or school.
- Level 4 is the "Lockdown" stage where everyone is instructed to stay at home (in their bubble).

New Zealand's coronavirus regulations have been some of the toughest in the world; the country went into lockdown when it had only around 100 confirmed cases and zero deaths. The five key reasons that helped the country beat COVID-19 are:

- advance warning;
- immediate lockdown;
- testing and tracking;
- geographic location;
- strict travel controls.

### 2.7.2    Taiwan: Response to COVID-19

**Link (video):** [Inside Taiwan's Response to COVID-19](#)

**Link:** [This Is How Taiwan Got a Head Start on Smashing the Virus](#)

**Application/Key learning points:** Taiwan has emerged as a success story in the global battle against COVID-19, having had 445 confirmed cases and only seven deaths among its roughly 23 million residents as of June 18, 2020. It has been credited with taking early action to prevent the spread of the coronavirus as it emerged, and for avoiding the lockdown measures many other countries were forced to implement. Taiwan's Vice-President Chen Chien-jen received a Doctor of Science degree in epidemiology and human genetics from the Johns Hopkins Bloomberg School of Public Health in 1982. Vice-President Chen joined John Hopkins Dean Ellen J. MacKenzie for a conversation about Taiwan's early and effective response to the coronavirus. In this 46-minute webcast, they discussed the specific measures Taiwan took to control the spread of the virus and how Vice-President Chen's public health training played a role.

### 2.7.3    Caring for Critically Ill Patients with COVID-19

**Link (video):** [Coronavirus (COVID-19) Grand Rounds - Stanford Department of Medicine](#)

**Application/Key learning points:** This is a one-hour webinar; the relevant session starts at the 15-minute mark. The United States had 1,390,816 confirmed and 16,501 critical COVID-19 cases as of May 12, 2020. As doctors are trying their best to save lives, this webinar is an extremely rich source of information on the topic, and explains how US hospitals are trying to deal with it scientifically.

### 2.7.4    China: Anaesthesiologists Share Strategies for Healthcare Response

**Link:** [Strategies for Health Care Response to COVID-19 Shared by Chinese Anaesthesiologists](#)

**Application/Key learning points:** Anaesthesiologists treating patients at the forefront of the coronavirus (COVID-19) outbreak in Wuhan, China, share valuable lessons for other practitioners as the wave of coronavirus infections rolls through other countries. Their first-hand accounts are combined with scholarly review articles in a special article series published in *ANESTHESIOLOGY*, the peer-reviewed medical journal of the American Society of Anaesthesiologists.

## 2.8    Integrated Primary Healthcare as Support

### 2.8.1    Telemedicine in Primary Care During COVID-19

**Link (video):** [Implementing Telemedicine in Primary Care During COVID-19 Tips and Strategies](#)

**Link (video):** [The Changing Role of Telehealth](#)

**Application/Key learning points:** Telehealth use has surged dramatically during the pandemic as clinicians use various platforms to consult with a wide variety of patients – those who may have COVID-19 as well as patients with other conditions. In the United States, state and federal authorities have temporarily lifted many regulatory restrictions to telehealth even as public and private insurers have expanded reimbursement. Yet, the rapid shifts have posed challenges even for systems that had previously created robust telehealth programs. Clinicians in charge of two programmes share lessons learned and discuss prospects for the ongoing use and growth of telehealth after the current public health emergency.

**2.8.2    Australia: From the Primary Care Frontline**
**Link (video):** COVID-19: From the Primary Care Frontline with Dr Tamsin Franklin
**Link:** North Western Melbourne Primary Health Network is Supporting Primary Care Services
**Application/Key learning points:** Dr Tamsin Franklin, a GP at Turn the Corner Medical Clinic in Northcote, a suburb of Melbourne, Australia, explains how her practice team are adapting to fight COVID-19 pandemic. She explains how they estimated and segregated into "Sick Clinics", i.e., infectious clinics, and "Non-sick Clinics".

**2.8.3    Australia: Private Hospital Resources in Exchange for Funding Support**
**Link:** Federal Government Gets Private Hospital Resources for COVID-19 Fight in Exchange for Funding Support
**Application/Key learning points:** Private hospitals will be on the frontline in the coronavirus battle, under an arrangement with Australia's federal government that makes available the sector's more than 30,000 beds and 105,000 workforce, including more than 57,000 nursing staff. The government will offer agreements to Australia's 657 private and not-for-profit hospitals "to ensure their viability, in return for maintenance and capacity" during the COVID-19 crisis. Private hospitals will support the COVID-19 response through:

- hospital services for public patients testing both positive and negative for COVID-19;
- Category 1 (urgent) elective surgery;
- use of wards and theatres to expand ICU capacity;
- accommodation for quarantine and isolation cases where necessary, and safety procedures and training are in place, including:
    - cruise and flight passengers with COVID-19;
    - quarantine of vulnerable members of the community;
    - isolation of infected vulnerable COVID-19 patients.

# Pillar 3: Food Security & Supply Chain

## 3.1 Food Sourcing

### 3.1.1 United States: Critical Supply Chain Planning Capabilities Needed

**Link:** Critical Supply Chain Planning Capabilities Needed to Survive the COVID-19 Pandemic and Future Supply Chain Disruptions

**Application/Key learning points:** This is a short article that focuses on managing the supply chain in difficult times. The primary focus is on the use of technology to improve management the supply chain. It proposes a few key approaches, including improving data management; three key ideas are presented below:

- The establishment of organisational roles and business processes to continuously drive towards supply chain data management excellence.
- Technology to support the acquisition, cleansing, management and near real-time update of end-to-end supply chain data.
- Ownership of the process, data and technology by the supply chain organisation

The paper also discusses the use of forecasting approaches and software.

### 3.1.2 ASEAN: Managing Food Resilience in a Time of Uncertainty

**Download (PDF):** Managing Food Resilience in a Time of Uncertainty

**Application/Key learning points:** This article presents the food supply challenges faced by ASEAN countries during the COVID-19 pandemic. While it contains a number of well-established measures (e.g., keeping borders open, rationing food at the point of retail, etc.), it also proposes a few interesting innovative solutions. On p. 10, there are some ideas about policies that governments could use to protect the supply chain. The need for targeted support for small stakeholders (e.g., the expansion of collection centres, digitisation) is emphasised here. The actions that individual food businesses may take is featured on p. 14. These include production flexibility and distribution mitigation (i.e. the sharing of capacity among producers).

### 3.1.3 Singapore: Strengthened Food Security Helps Country Cope with Crisis

**Link:** Singapore Has Been Buttressing Its Food Security for Decades. Now, People Realise Why

**Application/Key learning points:** The article gives a comprehensive overview of Singapore's approach to food security and how this has enabled the country to cope with the COVID-19 crisis. It explains how Singapore imports 90 per cent of its food. Its approach to food security has been developed over decades. Singapore takes advantage of its proximity to Malaysia but also has contingency plans in place in case of disruption. Singapore's approach is to grow its "three food baskets" – to diversify its sources of imported food, encourage firms to grow food overseas, and expand its local produce industry. Today, Singapore's food imports come from more than 170 countries and regions around the world, up from 160 in 2007. This diversification of food sources did not occur overnight; it is the result of years of sourcing trips and prudent procurement decisions to ensure that the nation does not starve.

## 3.2 Technology

### 3.2.1 Blockchain Helps Safe Trade During COVID-19
**Link:** Global Supply Chain Partners Use Blockchain to Trade Safely During COVID-19
**Application/Key learning points:** Managing trade during pandemics can be difficult. This article describes how food supply chain partners Cargill and Agrocorp, in alliance with Rabobank, were able to create a blockchain platform to trade during the COVID-19 pandemic. The advantage of this innovation is that it speeds up the trade process from about one month to five days – and can involve multiple partners. According to the article, the blockchain platform provided a repeatable framework for end-to-end digital trade executions, digitising the document and trade execution process. The trade took a total of five days to settle, whereas traditional trading processes can reportedly take up to a month. It has also reduced costs.

### 3.2.2 Food Supply Chain Automation for Restaurants
**Link:** Food Supply Chain Automation Could Be a Bright Spot for Restaurants
**Application/Key learning points:** This article focuses on the restaurant sector and how it accesses raw materials. It suggests that the current supply chain is already being digitised in China and this allows restaurant groups to combine forces to buy directly from producers. One company uses AI to analyse vast quantities of consumer data, allowing it to anticipate customer needs, purchase in bulk, and reduce costs across the board. By having millions of consumers on its platform and accessing their preferences, it is able to buy products directly from producers, leverage scale economies, coordinate the logistics ahead of time, and deliver fresh agricultural products to their customers for a low price.

### 3.2.3 United States: Reducing Food Waste and Packaging
**Download (PDF):** Reducing Wasted Food & Packaging: a Guide for Food Services and Restaurants
**Application/Key learning points:** Food packaging reduction and improving the environmental impacts of the food supply chain have been important issues for the food industry in the United States. Several initiatives are being promoted to achieve this. Some of these initiatives are as follows:
- The Pratt Institute is brainstorming and researching new forms of packaging that do not involve single-use plastics. One of their ideas is to use edible packaging, as it reduces waste and the need for recycling.
- The United States Environmental Protection Agency (USEPA) has produced a guide for reducing food and packaging waste. The guide gives strategies for reducing packaging on p. 19.
- The article by Greenbiz provides information on alternatives to plastic packaging and includes options such as biodegradable packaging. It also provides links to organisations such as Natureworks and Tipa that are developing these technologies.

### 3.2.4 United States: Technology is Transforming the Food Supply Chain
**Link:** How Technology Is Transforming the Food Supply Chain
**Application/Key learning points:** Food Logistics is an important source of information that covers almost all the areas of interest with regards to food technology. The article provides a good overview of technologies in use across the entire food supply chain, including process automaton in warehousing; augmented reality; analytics; and, agritech. More importantly, the site provides links to various detailed articles about how technology is being developed and used to improve all aspects of the food supply chain:
- Port digitisation using blockchain and other technologies.

- CubicFarms, a leading platform provider of automated controlled-environment growing systems that produce commercial-scale quantities of fresh produce and nutritious livestock feed. The systems work continuously all year, providing consistent and predictable produce and feed without the typical investment in labour, land, water and fertiliser.
- Real time tracking of food during transportation.

## 3.3 Primary Production

### 3.3.1 United Kingdom: Impact & Mitigation of Supply Chains

**Link:** COVID-19 and Supply Chains in the United Kingdom: Impact & Mitigation

**Application/Key learning points:** The article examines the impact of COVID-19 on the supply chain in northern England. While it contains a good deal of data and information, the case study of a food manufacturer on p. 22 has several best practices. One of the best of these is the customer profiling section. This is based on big data analytics and shaping consumer demand through customised promotion (i.e. changing consumer offerings in difficult times to focus on greater efficiency rather than wide variety).

### 3.3.2 Singapore: National Food Strategy 2030

**Link:** Food Farming
**Link:** $30m for Local Farms to Grow More, Grow Faster
**Link:** Citizens' Workgroup on Increasing Demand for Local Produce

**Application/Key learning points:** Local production is an important secondary strategy in ensuring food supply resilience for Singapore. Singapore aims to produce 30 per cent of its nutritional needs by 2030. This has been called the 30 by 30 strategy (30X30). In the short to medium term, Singapore has evolved a number of initiatives which include 30X30 express grants, which gives a grant of SG$30 million to help local farmers ramp up their production of eggs, leafy vegetables and fish over the next six to 24 months. Singapore has also involved its citizens in seeking ideas to improve local demand and place and open call for residents to participate in work groups.

## 3.4 Consumers

### 3.4.1 United States: How COVID-19 Has Disrupted the Food Supply Chain

**Link:** How COVID-19 Has Disrupted the Food Supply Chain

**Application/Key learning points:** The article is an interview with two experts from North Carolina State University in the United States: Heidi Schweizer and Kelly Zering. They provide a number of insights into how some players in the US food Industry have been dealing with the COVID-19 pandemic. Their insights cover a number of areas including production and consumer purchase options. Some of the key insights include:
- Carrying out less processing of food to maximise resources and speed up food production.
- Cutting out intermediaries and improving direct connectivity between producers and consumers.

### 3.4.2 COVID-19: Underlying Issues Affecting UK Food Supply Chains

**Link:** COVID-19: The Underlying Issues Affecting the UK's Food Supply Chains

**Application/Key learning points:** This is a short article that focuses on the underlying issues relating to supermarkets and consumers during the pandemic. The suggestions that may be of particular interest are:
- Asking suppliers to simplify ranges to help increase production volume.
- Changing the opening hours and increasing the workforce.

- Expanding delivery hours and increasing the click-and-collect points since the current online infrastructure cannot cope with the abrupt increase in demand. This helps only with the delivery part, because both online and offline retailers depend on the same suppliers.

The simplification of ranges implies that production can be focused on particular foods that are faster and cheaper to produce, thereby improving the volume of food available, and reducing the cost of production and distribution challenges.

### 3.4.3    Poland: Do Europeans Consider Sustainability When Making Food Choices?

**Link:** Do Europeans Consider Sustainability When Making Food Choices? A Survey of Polish City Dwellers

**Application/Key learning points:** There have been various campaigns in different countries aimed at encouraging people to eat locally produced foods. These campaigns are typically led by trade bodies of primary producers or governments. The campaigns typically focus on the health, environmental, community and financial benefits of buying locally produced foods. A study in Poland surveyed the factors relating to the consumption of local produce, and found that 65 per cent of respondents did not understand what was meant by "sustainable diet". Adopters reported that the most persuasive factors to convince them to make more sustainable food choices were the need to improve their health and lower prices of food products. Emergents indicated that apart from lower prices and the need to improve health, they would be encouraged by widespread knowledge of the need to make their diets more plant based. For Non-Adopters, the need to improve health (including losing weight) was a key factor driving changes to their current food consumption. People in all three consumer segments reported that social campaigns had only a limited effect on consumption change.

### 3.4.4    United Nations: Promotion of Food and Dietary Diversification Strategies

**Link:** Promotion of food and dietary diversification strategies to enhance and sustain household food security

**Application/Key learning points:** Food and dietary diversification means different things to different people (e.g., becoming vegetarian or eating food from other cultures). This document from the Food and Agriculture Organization of the United Nations (FAO) identifies the activities for diversification at consumer level and discusses some of these in detail. The key actions are as follows:
- Promotion of mixed cropping and integrated farming systems.
- Introduction of new crops (such as soybean).
- Promotion of underexploited traditional foods and home gardens.
- Small livestock raising.
- Promotion of fishery and forestry products for household consumption.
- Promotion of improved preservation and storage of fruits and vegetables to reduce waste, post-harvest losses, and effects of seasonality.
- Strengthening of small-scale agro-processing and food industries.
- Income generation.
- Nutrition education to encourage the consumption of a healthy and nutritious diet year-round.

## 3.5    Regulatory Management

### 3.5.1    United Nations: COVID-19 and the Risk to Food Supply Chains
**Link:** [COVID-19 and the Risk to Food Supply Chains: How to Respond?](#)
**Application/Key learning points:** This article focuses directly on strategies that have been used by governments to manage the food supply chain during the COVID-19 pandemic. It is clear and gives specific strategic decisions that should be taken. These include:
- Expand and improve emergency food assistance and social protection programs.
- Give smallholder farmers support to enhance their productivity and market the food they produce, also through e-commerce channels.
- Keep the food value chain alive by focusing on key logistics bottlenecks.
- Address trade and tax policies to keep global trade open.
- Manage the macroeconomic ramifications.

For each of these points, there is a detailed description of how the action helps and how it may be implemented. For the first two points, there are bullet points on actions taken by different countries to address the issue.

### 3.5.2    United Kingdom: Strategy for Agricultural Technologies
**Link:** [A UK Strategy for Agricultural Technologies](#)
**Application/Key learning points:** The United Kingdom government has produced a national strategy for managing and developing the use of technology in agricultural production. This strategy document sets out the innovation requirements for primary food production in the United Kingdom until 2030 in eight priorities for research (p. 25) as well as Action points (from p. 26). This is a long-term plan until 2030 that other countries could benchmark against.

### 3.5.3    China's Food Strategy: Two Examples
**Link:** [Brazil and China Food Partnership](#)
**Link:** [African Countries and China Food Partnership](#)
**Application/Key learning points:** China has some 20 per cent of the world's population and about 7 per cent of the world's arable land. While it has significant local production and exports, it has had to develop long-term strategies to produce and source food abroad. It has approached this in a number of ways. The first link discusses investments in logistics and infrastructure and the purchase of foreign food producers and traders in Brazil. The second link discusses the development of partnerships with several African countries. These partnerships comprise several facets including food, raw material, infrastructure, and training/skills development. It can be seen that food-related partnerships are not a stand-alone initiative, but a part of a larger strategic partnership.

## 3.6    Storage & Distribution

### 3.6.1    United States: How Can Supply Chains Manage COVID-19 risk?
**Link:** [How Can Supply Chains Manage COVID-19 Risk? 4 Experts Weigh In](#)
**Application/Key learning points:** The article interviews four experts for their opinions on how best to manage the supply chain during the COVID-19 pandemic. It proposes a number of clear strategies for managing different aspects of the supply chain. With regards to inventory and distribution, it identifies some specific best practices for the current period and the future:
- Conduct rapid, rough-cut Sales Operations and Inventory Planning scenarios. Rebalance production to address prioritised, and if needed, customer allocated demand.

- Preserve cash. Manage the materials inflow, right-size inventory, bolster credit and collection, control the payments outflow.
- Understand on-hand and in-transit inventory, and identify options to redirect and re-deploy.
- Rebalance product and services portfolios – e.g., rapid rationalisation and substitution strategies.
- Rethink traditional operating rules including just-in-time, minimum scale, and inventory policies.
- Deploy multi-sourcing strategies for critical materials.
- Develop flexible supply, production and logistics partnerships.
- Develop an allocation plan that can be activated should supply become constrained.

### 3.6.2 United States: What Happens When the Food Supply Is Disrupted by a Pandemic

**Link:** Food Distribution 101: What Happens When the Food Supply Is Disrupted by a Pandemic

**Application/Key learning points:** Food distribution and storage are key issues during a pandemic. The scenarios faced differ significantly depending on food type, climate, staffing effects, supply chain, amount of local production, etc. There are as many solutions as there are countries. Food availability, storage and distribution issues during a pandemic are not necessarily due to a fundamental shortage of food but are due to system issues including staffing issues, disrupted supply chains, etc. This article suggests that staffing hours should be modified to give staff time to rest, clean, and restock. The article also suggests putting in place flexible systems that can redistribute food products from service to retail.

### 3.6.3 United States: Distribution of Emergency Food During a Pandemic

**Download (PDF):** Distribution of Emergency Food During a Pandemic

**Application/Key learning points:** This toolkit helps with ideas on planning for food distribution during a pandemic. Its specific aims are as follows:
- Estimate how much food you may need to acquire in order to distribute emergency food rations to protect households from food shortages.
- Understand the type of food that should be distributed and the nutritional requirements for food rations.
- Determine where and how to properly store emergency food stocks.
- Recognise when it will be necessary to begin distributing food.
- Understand how food can be safely distributed during a pandemic.

# Pillar 4: Economy

## 4.1    Transformational Support to Businesses

### 4.1.1    Singapore: Support for Small and Medium-Size Enterprises (SMEs)
**Link:** COVID-19: Timely and Much-Needed Support for SMEs in the Little Red Dot
**Application/Key learning points:** Enterprise Singapore is helping and guiding SMEs through the following programmes:

Enterprise Development Grant
The Enterprise Development Grant (EDG) helps grow and transform Singapore enterprises. In the time of COVID-19, EDG provides them with technical and financial support. EDG helps enterprises in three areas, including core capabilities, innovation and productivity, and market access.

Productivity Solution Grant
During COVID-19, the Productivity Solution Grant (PSG) has extended solutions to help enterprises to operate remotely. The support areas include online collaboration tools; virtual meeting and telephony tools; queue management systems; and, temperature screening solutions

E-Commerce Booster Package
For domestic e-commerce, the package supports local retailers, including heartland enterprises, to expand their reach across Singapore in partnership with Amazon, Lazada Singapore, Qoo10, and Shopee. For overseas e-commerce, it supports local retailers with little or no prior experience of exporting products to sell overseas through the Multichannel E-Commerce Platform Programme, see below. This scheme covers 90 per cent of the costs (up to SG$9,000) for retailers to set up on an approved e-commerce platform.

Multichannel E-Commerce Platform Programme
The Multichannel E-Commerce Platform Programme connects SMEs with approved solution providers. It helps manufacturers, retailers, and distributors sell their products overseas on multiple e-marketplaces, including CombineSell, SELLinALL, Synagie, and Vinculum.

### 4.1.2    European Digital SME Alliance
**Link:** European Digital SME Alliance
**Application/Key learning points:** The European Digital SME Alliance is the largest network of the small and medium-sized ICT enterprises in Europe, representing some 20,000 digital SMEs. As the COVID-19 crisis hits Europe hard, innovative DIGITAL SMEs offer smart digital solutions to help people stay connected and facilitate their smart working environment. This campaign aims to help SMEs share their innovative ideas and reach a wider audience through the alliance. The alliance is currently running different projects such as i3-MARKET and Small Business ICT standards.

### 4.1.3    New Zealand: Preparing for Alert Level 3
**Link:** Preparing Your Business for Alert Level 3
**Link (video):** Cyber Security Tips for Your Business
**Application/Key learning points:** This is a best practice on how governments can intervene and support organisations (including SMEs) to maintain cyber security levels during COVID-19. Cert NZ, a Government of New Zealand agency, is good example of how government can guide and engage local businesses on cybersecurity risks. Cert NZ is a collaboration with business.govt.nz and runs several initiatives to improve data security awareness. It also runs different initiatives to help businesses to

improve security. One of these is an [online tool to help businesses conduct a self-assessment](#) and identify gaps in their IT systems.

Watch the three-minute video to see how Cert NZ conducts seminars and spreads its message of the need for strong cybersecurity measures within New Zealand businesses.

### 4.1.4    United States: Social Distancing for Construction Sites and Factories
**Link:** [Social Distancing Tech Hits Construction Sites and Factory Floors](#)
**Link (video):** [Proximity Trace](#)
**Application/Key learning points:** This article describes a couple of powerful tools that can promote social distancing in the workplace. The author discusses three key tools to help organisations support social distancing at work, and guide workers to respect social distance guidelines. These tools include [Proximity Trace](#), [machine learning](#) software, and [social distancing tools](#). Proximity Trace is a social distancing alarm system; it is an interesting tool to track employee presence, manage head counts and, most importantly, help employees maintain the six-foot safety buffer. This tool is good for use on construction sites and in big retail outlets.

### 4.1.5    New Zealand: Supporting Workers to Work from Home
**Link:** [Supporting Workers to Work from Home](#)
**Application/Key learning points:** This guide deals with different aspects of remote working, and includes remote working best practices, challenges, and important considerations when setting up a home office. It is a policy guide issued by the Government of New Zealand for its agencies. The attached guide explains all aspects of remote working using a Plan-Do-Check-Act framework. The paper offers simple, yet comprehensive guidelines to government staff. The guidelines include staff personal health and safety considerations, as well as guidelines on securing confidential information and other data security risks.

## 4.2    Access to Finance and Improving Risk Rating

### 4.2.1    New Zealand: Small Business Strategy
**Download (PDF):** [New Zealand Small Business Strategy](#)
**Application/Key learning points:** Here is an example from New Zealand to encourage SMEs to adopt governance and transparency standards and share information. The New Zealand government developed terms of reference for the SME sector as well as a strategy to support small businesses. It focuses on building capacity, developing government regulations, and providing access to finance when it is most needed. The strategy can be found on pp. 18-20 of the document. This document serves as the starting point for SMEs in New Zealand, and the government has accepted most of the recommendations from this strategy paper.

### 4.2.2    Singapore: How Financial Technology (FinTech) Fuels the Future of SMEs
**Link:** [How FinTech Is Fuelling the Future of SMEs in Singapore](#)
**Link (video):** [Finaxar Lazada Partnership](#)
**Application/Key learning points:** This article shows how Singapore's technology sector is flourishing with innovation, including the FinTech sector. As the financial hub of ASEAN, Singapore has led the region in FinTech development to improve financial inclusion. These innovations are breaking down financial barriers for SMEs by providing them with access to alternative funding solutions, as well as improving their chances of securing traditional financing through financial analytics and automated accounting. The video provides a short commentary (two minutes) on Finaxar Lazada's smart financing

solutions – Finaxar's Merchant Credit Line. It is a good example of how FinTech can help SMEs to access quick financing.

### 4.2.3    United States: SME loans, Temenos Tech Solution

**Link:** SME Loans: Technology Solution Launched by Temenos

**Application/Key learning points:** Government initiatives (SME assistance) such as the United Kingdom's Coronavirus Business Interruption Loan Scheme (CBILS) require immediate action from the bank to process loan applications from SMEs. The scheme helps SMEs access loans and other kinds of finance up to £5 million. The government guarantees 80 per cent of the finance to the lender and pays interest and any fees for the first 12 months. Temenos, the banking software company, helps UK banks to respond rapidly to the surging demand for bounce back loans during COVID-19. Temenos is also supporting US banks during the high demand for lending. Temenos announced the launch of Explainable AI (XAI) models to enable banks and credit unions to offer SME loans to businesses that have seen their cash flow disrupted by COVID-19.

## 4.3    Promoting Local Content and Supply Chains

### 4.3.1    United Kingdom: Policy Implication - Think Supply Chain!

**Link:** Policy Implication: Think Supply Chain!

**Application/Key learning points:** This report from the World Economic Forum is somewhat dated but offers some good guidelines to governments. There are three policy recommendations to outline the importance of local supply chains. In particular, recommendations 1 and 3 are relevant as best practices. Policy recommendation 1 is to create a national mechanism to set policy priorities for improving supply chain efficiency based on objective performance data and feedback loops between government and firms. While policy recommendation 3 is to ensure that SME interests are represented in the policy prioritisation process, and that solutions are designed to address specific constraints that disproportionately affect SMEs.

### 4.3.2    United Kingdom: How to Build a Local Supply Chain

**Link:** How to Build a Local Supply Chain: Six Tips to Survive in a Protectionist World

**Application/Key learning points:** Although this article written from a protectionist perspective, it gives some good tips for businesses to promote local suppliers. The tips are as follows:
- Analyse the local market.
- Supplier development.
- Bend the ear of the government (to get government support on local supplier development efforts).
- Invest in automation.
- Innovation incubators.
- Insourcing.

### 4.3.3    India: Special Tax Incentives for Manufacturing

**Link:** Special Tax Incentives for Manufacturing in India

**Application/Key learning points:** Recently, the Indian government has implemented a number of tax incentives for manufacturers. These incentives were created by the Make in India program and the Goods and Services Tax (GST), which are expected to increase the nation's share of the global electronics manufacturing market. The Make in India Program, established in 2014, provides new incentives aimed at promoting investment, fostering innovation, and protecting intellectual property. In

2017, India's GST program was launched and it provides a uniform, transparent tax code. The incentives include:

- Activity Incentives.
- Exportation Incentives.
- Industry Tax Incentives.
- Investment-based Incentives.
- New Employee Incentives.
- Skill Development Incentives.
- State-Based Incentives.

According to the *India Times*, these tax incentives have been very successful. However, there were other suggestions for actions such as the expansion in tax base and inclusion of data analytics for decision making to further improve tax incentives.

## 4.4   Policies to Protect and Create Jobs

### 4.4.1   Wellbeing New Zealand
**Link:** Wellbeing New Zealand
**Link:** Well-being budget approach
**Application/Key learning points:** The Government of New Zealand is committed to putting the wellbeing of current and future generations of New Zealanders at the heart of everything it does. The first link talks about the 2020 budget, which included a NZ$50-billion COVID-19 allocation. At the centre of this spending is a focus on keeping people in work through a sudden and deep recession, with a NZ$3.2B targeted extension to the wage subsidy scheme for a further eight weeks, NZ$3B in infrastructure investment with 8,000 new public homes being built, and NZ$1.6N\B for trades and apprenticeship training. Keeping in mind the current job losses, a specific budget has been allocated for training to retrain staff that have lost their job due to COVID-19.

### 4.4.2   Singapore: Attracting and Retaining Foreign Tech Talent
**Link:** Pilot Programme to Facilitate Hiring of Foreign Talent in Tech Companies
**Link:** How can Singapore SMEs Attract and Retain talents?
**Application/Key learning points:** Singapore is one of the preferred work and living destinations for foreign professionals. The first article discusses best practices adopted by the Singapore government to attract talent for tech companies. The Government of Singapore has decided to relax Entry Pass (EP) requirements to help tech companies to expand their business and investment in Singapore. In the plan, there is a two-year pilot programme proposed by the government to facilitate tech companies to set their core setup. In the second article, the author outlines various ways SMEs can attract and retain good talent. Hiring strategies such as improving candidates' hiring experiences, providing a quick turnaround on the job application, and having an ongoing focus on training and development can help SMEs retain good talent.

### 4.4.3   Switzerland: Top of Global Talent Competitiveness Index
**Download (PDF):** Switzerland Tops Global Talent Competitiveness Index
**Application/Key learning points:** The Global Talent Competitiveness Index (GTCI) shows that Switzerland is leading the world in terms of attracting and retaining top talent. The GTCI report shows how Switzerland is investing in vocational and technical skills, focusing on global knowledge skills for the regular supply of labour. For expatriates, the country offers the complete expat package with improved quality of life alongside excellent salaries and swift career progression.

### 4.4.4   Pan-European:   National Measures to Support SMEs
**Link:** Economic Responses to COVID-19
**Link:** Map of SME-Support Measures in Response to COVID-19
**Application/Key learning points:** The first link goes to a datasheet providing a complete list of measures implemented by national governments to combat the COVID-19 crisis; it also includes some regional measures. These have been compiled by the European Commission with contributions from the SME envoys of each member state. In the second link, a brief overview is provided for COVID-19-related national and regional policy measures taken to support SMEs. These actions are different in nature such as deferred or waived tax payments without penalties, support for rent and utilities, support where there have been job losses, etc. In addition, the datasheet also discusses countries' lending initiatives towards SMEs on flexible terms. For example, Spain forbids the cutting of water, gas and electricity supplies in cases of non-payment of bills, and forgives all social taxes for SMEs that do not lay off employees.

### 4.4.5   Singapore: Why Do Foreign Companies Relocate There?
**Link:** Why Do Foreign Companies Relocate to Singapore?
**Application/Key learning points:** Besides having one of the lowest corporate tax rates, Singapore is also considered by many as the gateway to ASEAN. In addition, its many business-friendly policies make it easy for companies to set up and run their businesses there. The country's extensive network of double tax treaties; its strategic location at the heart of developing markets; its economic and political stability; renowned legal system; extensive connectivity and talent resources; innovative business environment; and immense opportunities for business growth within the Southeast Asia region are just a few factors that drives Singapore's success as a preeminent business centre in the modern global economy.

### 4.4.6   Singapore: FinTech Powerhouse
**Link:** FinTech Powerhouse: Understanding the Rise of Singapore
**Application/Key learning points:** This article outlines the best practices from Singapore that helped the country to become the preferred location for tech companies after New York. The country has balanced incentives to attract overseas firms against sustained support for domestic firms with long-term goals. In addition, every technology company in Singapore benefits from the country's excellent IT infrastructure. For over two decades Singapore's leaders have launched a series of upgrades to the nation's technology infrastructure. The latest of these – Research Innovation and Enterprise 2020 – earmarked a SG$19B investment for the country's digital economy, as well as advanced manufacturing and engineering, health and biomedical sciences.

### 4.4.7   Unlocking the Full Potential of City Revenues
**Link:** Unlocking the Full Potential of City Revenues
**Application/Key learning points:** As city populations swell, municipal governments face increasing pressure from citizens and businesses to improve service delivery performance. Furthermore, the funding that municipalities receive from other orders of government is decreasing. This report from McKinsey guides a disciplined approach to revenue development. This report highlights revenue levers including service fee, fines, and revenue opportunities from asset monetisation. If governments do not wish to increase fees on business, the other option is to increase the number of transactions such as increasing the frequency of surveillance and inspection for selected fine sources to maximise detection of violations. An increase in frequency will increase revenue but only affect violators and will help government to change individual behaviours. Another point discussed in the report is improved collection via automation and reducing leakage in the system.

# Pillar 5: Societal Behaviour

## 5.1 Maintaining Social Distancing and Hygiene Practices

### 5.1.1 United States: Learning about Social Distancing from the 1918 Flu Epidemic
**Link:** How Some Cities 'Flattened the Curve' During the 1918 Flu Pandemic

**Application/Key learning points:** This is a statistical comparison of the impact of COVID-19 in different American states. These statistics show the outcome of COVID-19 after 24 weeks. This source has the following main points to understand about imposing social distancing regulations and lifting lockdown and social distancing measures:

- By comparing fatality rates, timing, and public health interventions, they found death rates were around 50 per cent lower in cities that implemented preventative measures early on, as opposed to those that did so late or not at all. St. Louis is an example of a city that implemented social distancing early (having a total of 358 deaths per 100,000 after 24 weeks) compared to the 748 deaths in Philadelphia.
- Relaxing intervention measures too early could cause an otherwise stabilised city to relapse. St. Louis, for example, was so emboldened by its low death rate that it lifted restrictions on public gatherings less than two months after the outbreak began. A rash of new cases soon followed. Of the cities that kept interventions in place, none experienced a second wave of high death rates.

### 5.1.2 South Korea: Know the Risks, and Avoid Them
**Link:** The Risks - Know Them - Avoid Them

**Application/Key learning points:** This article provides statistical data projecting how re-opening can adversely affect the situation arising from COVID-19. This article argues that asymptomatic cases can result in a significant second wave of COVID-19 cases. It explains the places with the highest potential for spreading the virus rapidly. It provides details and comparisons of how potent different activities are for spreading the virus. The second half of the article provides recommendations about the key public areas to which governments should pay attention after reopening. There are also real-life cases of how the virus has been spread in restaurants and workplaces, at choir practices and indoor sports activities, birthday parties and funerals. There are diagrams to illustrate the projection of spreading the virus. Of prime importance is making sure there is good ventilation in indoor areas.

### 5.1.3 United Kingdom: Safe Commuter Bus Transport So You Can Operate Safely
**Link:** Safe Commuter Bus Transport So You Can Operate Safely

**Application/Key learning points:** These set of guidelines are provided by a bus-sharing firm (Zeelo) based in the United Kingdom, and deal with maintaining social distancing in public transport after the lockdown has been lifted. Some highlights of these guidelines are as follows:

- Safety is a key priority.
- Routes should only be run when there is sufficient demand.
- Services should stick to a strict capacity limit.
- Social distancing on board.
- PPE for all drivers.
- Vehicles are fully sanitised before and after each journey or transfer.

The app developed by this firm provides real-time information to users to avoid overcrowding. The app's use is not be limited to public transport; it can also be used in other public facilities like gyms, parks, and libraries.

## 5.2    Personal Wellbeing

### 5.2.1    New Zealand: Epidemic Response Committee
**Link (video):** Epidemic Response Committee (30 April 2020) | NZ Parliament
**Application/Key learning points:** This video deals with protecting peoples' mental health during the lockdown period, and the source is a New Zealand Epidemic Response Committee webinar. The committee discussed ideas relating to the mental wellbeing of people during the lockdown period. The key piece of information in this source is from Sir Peter Gluckman who speaks in the beginning of the video (from 8'21"). Gluckman leads a global study on social cohesion. He warns that if people are not prepared for prolonged lockdown in advance, there is a subsequent risk of anger and frustration. His advice is for the government to mentally prepare the public for a longer period of lockdown, instead of giving an impression that it will soon be over.

### 5.2.2    New Zealand: Government Apps to Help with Mental Health
**Link:** Coronavirus: Government Releases Apps to Help Support Kiwis' Mental Health
**Application/Key learning points:** This is an example from New Zealand dealing with the development of mobile phone apps to support the general public's mental health. These apps are suitable for people of all ages and vulnerabilities, and help with accepting the "new normal". New Zealand government announced $40 million funding for these apps. The initiative includes the Mentemia app, a health journal app called Melon; and an e-therapy programme called "Staying on Track". These three online tools give people practical ways to support their mental wellbeing, including practical tips and techniques to help the user take control of their mental wellbeing; resources and self-awareness tools to help people manage their emotional wellbeing; and, practical strategies to cope with the stress and disruption to everyday life caused by COVID-19.

### 5.2.3    Canada: Wellbeing Index
**Link:** Canadian Index of Wellbeing
**Link (video):** Canadian Well-being Measures
**Application/Key learning points:** The University of Waterloo has developed an index for measuring general wellbeing. The video attached is a five-minute explanation of what this index or measurement tool is and how it works. The index shown below comprises of eight domains and eight indicators in each domain. These 64 indicators are used to measure the wellbeing of the wider population. This tool can also be used for measuring wellbeing in communities. It is useful for comparing wellbeing across various communities, perhaps with some modifications of the cultural indicators.

### 5.2.4    Germany: Drive-In Cinemas and Social Distancing
**Link:** Drive-In Cinemas Are Booming in Germany Amid COVID-19 Restrictions
**Link:** Drive-in Movie Theatres Thrive in Lockdown
**Application/Key learning points:** Germany has allowed drive-in cinemas to operate around social distancing policies. People drive their cars to designated areas in large, open spaces, which allows for a large number of cars to be parked next to each other. Live performances, movies or any other family entertainment can be provided with the same method, and could be considered for Dubai. It enables people to leave their homes, while staying in their cars and experiencing the entertainment activity live (as opposed to watching it on TV). The source comprises news articles; however, there is no set of guidelines available. Some of the guidelines are reported in these articles such as keeping the windows closed and maintaining distance between cars, both for parking convenience and safety.

## 5.3 Distance Learning

### 5.3.1    United States & New Zealand: Rolling out remote learning
**Link:** Rolling Out Remote Learning
**Link:** Massey NZ COVID-19 Website
**Application/Key learning points:** This is an article explaining the transition of education at the Massachusetts Institute of Technology (MIT) from contemporary classroom-based education to distance education in the wake of the COVID-19 lockdown. MIT had to take large steps in order to move to distance learning as described in the article as "building the switch before flipping it." The university developed a university-wide system for distance education. There are 500 volunteers in the university who work as student coaches, helping students through the transition, supporting them as they use the new methods of learning, and consequently enabling their academic success. The university also supported students through loaned laptops, wifi hotspots, and round-the-clock technology support. The second link is a good example of a university website: Massey University in New Zealand.

### 5.3.2    Tips to Motivate Distance Learners
**Link:** 5 Tips to Get Distance Learners Motivated Right Now
**Application/Key learning points:** This is a guide for motivating students who are learning remotely. The article provides details of five methods to increase student motivation to work hard in their distance learning program:
- Motivate with goal setting.
- Motivate with rewards and praise.
- Motivate with meaningful feedback.
- Work with parents to motivate students at home.
- Stay connected as a class and motivate each other.

The source is from 3P Learning, which is a good resource for online learning, and covers a wide range of topics regarding converting to online education. They also have learning software that may be tested for usefulness. The information on this website is important because it is a global leader in online education and partners with UNICEF to enable online learning programmes.

### 5.3.3    United States: Tools and Strategies to Succeed as a Distance Student
**Link:** Tools and Strategies for Succeeding as a Distance Student
**Application/Key learning points:** This is a collection of best practice resources from Harvard University. There are several areas covered in these resources, including how faculty and students connect during distant learning; how a campus experience can be supplemented in online learning environment; and. advice about making online pedagogy more successful. There is also advice on setting classroom norms; paying attention to time zones; graduate progression in mastering distance teaching; making the education more accessible; creating and uploading teaching material; presenting the lecture; and, much more.

### 5.3.4    UNICEF: How to talk to your child about Coronavirus
**Link:** How to Talk to Your Child About Coronavirus
**Link:** How Teachers Can Talk to Children About Coronavirus
**Application/Key learning points:** This is a collection of UNICEF guidelines that have been developed specifically to help children get through COVID-19 and move on from it.
- The first article is a set of guidelines on how parents can comfort their children about the changes that they are having to experience following the COVID-19 outbreak.

- The second article is a set of guidelines on how teachers can have appropriate discussions with their students about the changes that they are experiencing during COVID-19.

These guidelines are useful for disseminating to educational institutions, as well as educating parents.

## 5.4    Working Remotely

### 5.4.1    Australia: University of Sydney's Quick Roll-Out of Cloud-Based Courses
**Link:** In One Week, University of Sydney Deployed Cloud-Based Courses from Down Under
**Application/Key learning points:** This is a case study on the University of Sydney, which had to quickly establish a work-from-home solution so its teaching staff could continue teaching students. It is a recent case study (transferring operations to online because of COVID-19) and this can be used for both working online and for distance learning practices. It should be noted that the study has been written by CITRIX, the service provider with which the University of Sydney worked. The new digital environment was useful for staff to effectively carry out their jobs.

### 5.4.2    United States: Q&A with Automattic, a Remote Company
**Link:** All Around the World, Building a New Web, and a New Workplace
**Application/Key learning points:** This is an example of a company that carries out all of its operations online and remotely. Automattic is a major company and the tools and methodologies it uses to enable its 1200 employees to work remotely from 75 countries could be very useful. The source contains several questions and answers regarding how the company operates. Among several important areas of discussion, some of the more notable ones are:
- The characteristics that are desirable in employees to work remotely.
- The recruitment process for remote employees.
- What are the remote communication protocols for remote workers?
- How do the remote employees work and meet together when needed?
- How is the productivity of the remote employees measured?
- What is the time off policy for remote workers?
- How to ensure a healthy work culture despite being a remote workplace.

### 5.4.3    Singapore: Employer's Guide to Implementing ICT-Enabled Home-Based Work
**Link:** Work @ Home: An Employer's Guide to Implementing ICT-Enabled Home-Based Work
**Application/Key learning points:** This is a government document for employers in Singapore. It provides solutions to issues that employers may face while having employees work from home. This guide was disseminated by the Government of Singapore through its Ministry of Manpower. It is a compact 25-page document including checklists for implementing home-based work arrangements, facilitating communication and collaboration while having this arrangement, performance management during this arrangement and managing organisation change during this period.

### 5.4.4    United States: Apps to Monitor Employee Productivity Remotely
**Link:** Applications to Monitor Employee Productivity Remotely
**Link:** How to Measure Work from Home
**Application/Key learning points:** This is an example of a company called "Best Notes" which used Trello as a tool to measure the productivity of employees working remotely. There are several apps to monitor employee productivity in a remote working arrangement, Trello is one such application that may be recommended to be assessed for this purpose. The app can be used generally for teams working remotely. The Trello board shows what each employee is working on, so there is complete transparency

in the volume of work getting done. The second link synthesises the feedback from CEOs from 12 companies as to how they measure and monitor employee productivity.

### 5.4.5    United States: Zapier's Guide to Working Remotely
**Link:** [Zapier's Guide to Working Remotely](#)
**Application/Key learning points:** This article provides tips on managing remote employees in seven categories:
- Automation for remote work.
- Teamwork on a remote team.
- Remote work for managers.
- Remote work for employees.
- Remote workspaces.
- Remote work tools.
- The state of remote work.

## 5.5 Consumer Buying Behaviour

### 5.5.1    United States: How to Start an Online Food Business: The Ultimate Guide
**Link:** [How to Start an Online Food Business: The Ultimate Guide](#)
**Application/Key learning points:** This is a guide to help businesses start an on-line operation. It is a comprehensive guide on a wide range of topics, from making and selling food to packaging and delivering it to the consumer. It also covers the topics like ethics and transparency in running an online business. It serves as an all-in-one guide to help local businesses develop their online presence and operations. Highlighted are the benefits of online businesses for consumers: items delivered to their home, not having to wait in queues, not having to expose themselves to unnecessary health risks.

### 5.5.2    United States: Best Practices for E-commerce In-Store Pickup
**Link:** [E-Commerce In-Store Pickup UX: 10 Best Practices](#)
**Application/Key learning points:** This article provides best practices for managing a Click-and-Collect facility for a business. A Click-and-Collect facility allows customers to make purchases f a company website like a store or supermarket. The store or supermarket then organises and packages the order for the customer and notifies them when it is ready for pick up. This way the customer does not enter the store, making it a contactless purchase of items. These 10 best practices are very useful for managing online shopping of goods—or even services—that can be purchased by the customer online. It also reduces the pressure on home delivery services since the customers go and collect the items themselves.

### 5.5.3    United States: Helping Retail Supply Chains Navigate COVID-19
**Link:** [Five Actions Retail Supply Chains Can Take to Navigate the Coronavirus Pandemic](#)
**Application/Key learning points:** This is an article from McKinsey & Company to educate supply chain managers specifically to navigate through the COVID-19 situation. It comprises best practices for ensuring that essential items do not go out of stock either because people have over-purchased these items or because of a lapse in supply chain efficiency. One part of this article explains what changes are to be expected in consumer behaviour following the COVID-19 outbreak. The other part lists the five priority areas of retail supply. This can help in tackling issues related to hoarding or panic buying.

## 5.6    Post-Pandemic

### 5.6.1    France: Pedal Power to Reduce Post-Pandemic Pollution
**Link:** [France's Plan to Push Pedal Power to Keep Post-Pandemic Pollution Levels Low](#)
**Application/Key learning points:** This is an article written in the World Economic Forum. It gives an example of how France is promoting bicycle use amongst its population for several expected benefits: reducing pollution; reducing diabetes and respiratory problems; reducing the likelihood of transfer of virus on public transport. The government has invested US$22 million in this initiative and this money will be used to subsidise bicycle repairs, and pay for bicycle parking spaces in the cities. This is accompanied by a government campaign asking people to consider using bicycles or walking whenever feasible. It is being promoted as a measure for physical distancing with added health benefits in the form of physical activity.

### 5.6.2    Pan-Europe: Mental Health
**Link:** [Coronavirus: 8 Ways to Look After Your Mental Health](#)
**Application/Key learning points:** Taking care of your mental health is as important as looking after your physical health. Mental Health Europe (MHE) has pulled together eight ways to look after the mental health of the general population in Europe; these are applicable to all the countries around the world. MHE which is a European non-governmental network organisation committed to the promotion of positive mental health and the prevention of mental distress.

### 5.6.3    United States: COVID-19 Will Change the Future of Work
**Link:** [How COVID-19 Will Change the Future of Work](#)
**Application/Key learning points:** This is an article from Forbes deals with the future of jobs. It reports that 62 per cent of employed Americans are working from home during COVID-19. These employees are using countless new and pre-existing tools for working from home, such as Zoom for meetings, and more advanced tools for real time document management. The article reports some temporary and some permanent changes in how people will work in the future. There are five ways reported in this article through which working will change in the future and how to adjust to these changes. These areas are as follow:
- Getting used to working from home.
- Getting used to being monitored by your employer.
- Maintaining offices during remote work.
- More video calls and fewer in-person meetings.
- Happiness at work matters.

This article helps in realising what changes should be expected over the long term in the working/employment environment and how to manage these changes.

### 5.6.4    New Zealand: COVID-19 Innovation Acceleration Fund
**Link:** [COVID-19 Innovation Acceleration Fund](#)
**Application/Key learning points:** The Government of New Zealand has established a COVID-19 Innovation Acceleration Fund. The size of this fund is initially NZ$25 million and the minimum size of the proposals for funding grants is NZ$50,000. This funding will be granted to individuals and businesses that show promise in accelerating operational deployment of innovative solutions to support responses to COVID-19. This is a very broad area of interest and information on this fund has been made easily available on the website along with a simple application process.

### 5.6.5  New Zealand: New Ideas in Food Retail

**Link (podcast):** [How COVID-19 Is Inspiring New Ideas in Food Retail](#)

**Application/Key learning points:** This podcast is about innovative ideas emerging from a crisis situation; innovative ideas that being developed and used by businesses. Several examples of innovation are given such as a family-owned snack and refreshment bar making a switch to selling bread and coffee, thus becoming a deli and selling necessary items to the community. An example from Singapore shows DBS bank collaborating with government agencies Infocomm Media Development Authority and Enterprise Singapore, as well as various technology start-ups to help businesses set-up an online food ordering site in three days.

# 6. Conclusion

This report shares some of the best practice information that was found during Dubai We Learn's benchmarking initiative, "Conquering COVID-19".

There have been many good news stories – despite the difficulties the global economy has faced – and we have captured some of them here. There may well be significant changes to international trade and traditional commerce in the future; innovation, vision, and leadership, however, still thrive.

The report has been organised into five key aspects of civil society and focuses primarily on how various governments and organisations have tackled – and, indeed, are still tackling – both the pandemic and its effects.

The first pillar deals with crisis management and shows which countries demonstrated leadership in getting the pandemic under control. Iceland adopted a large-scale testing approach; New Zealand had an exceptionally clear plan and locked down early; Singapore led the way with social media campaigns; Norway developed its successful "Smittestopp" app, and South Korea made significant use of big data. All of them contributed to a focused, intelligent approach to dealing with the unknown effects of the pandemic.

The second pillar deals with health and it starts with an excellent round-up of the role of technology in the tracking, testing and treating of the virus. Germany's symptom checker app was very successful, and countries like Canada and Australia made use of telehealth options. Australia even developed a "virtual hospital" for its COVID-19 patients. Some of the immunology research from the United Kingdom has been promising for future treatments. You will also be able to see how Denmark managed to increase the number of healthcare practitioners during the early stages of the outbreak, and why Vietnam has done exceptionally well.

The third pillar focuses on food security and supply chains, which have enabled governments to keep supplying their citizens with food. Singapore learned many lessons from the 2003 SARS outbreak, and had an exceptional plan in place for this pandemic. We also take a look at the United Nations practice whom has promoted food and dietary diversification.

The economy is the focus of the fourth pillar. The European Digital SME Alliance has shared digital solutions to help people stay connected and facilitate a smart working environment. There are a number of excellent initiatives from New Zealand that support people to work from home, and we show how India has provided special tax incentives to support its manufacturing sector.

The fifth pillar looks at societal behaviour. Terms like "social distancing" and "flattening the curve" were essentially unknown three months ago. Now, however, they are part of our daily lives. The question is, will there be a time when they are no longer part of our daily lives? The pressure and worry of this affects everybody, whether or not we realise it. Canada has developed an excellent wellbeing index to look at, and there are a number of guides focusing on telework and remote work. There is also an interesting article from the United States about whether COVID-19 will permanently change the way we work.

We hope that you will find new ideas and initiatives and that they will prove useful to you and your organisation. Above all, we hope you are keeping safe and well.

*Disclaimer: Recent information has been included in this report; where possible, permanent links have been provided. At the time of publishing, all links are live. We apologise in advance for any broken links that might occur after publication due to matters beyond our control.*